

BULLETIN

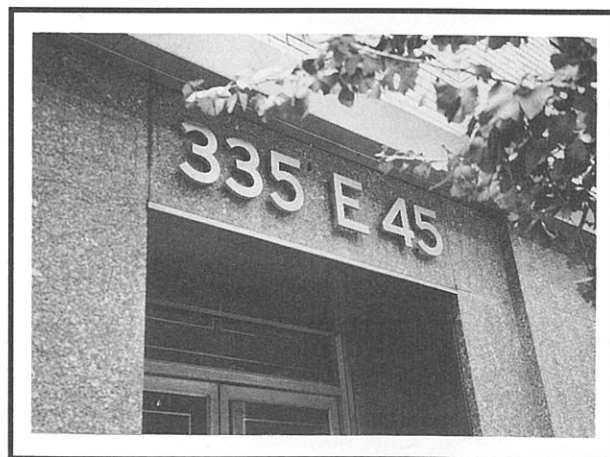
OF THE AMERICAN PHYSICAL SOCIETY



Transactions B

**Program of the 46th Annual
Gaseous Electronics Conference**

**December 1993
Volume 38, No. 13**



BULLETIN

OF THE AMERICAN PHYSICAL SOCIETY

Coden BAPSA6
Series II, Vol. 38, No. 13

ISSN: 0003-0503
December 1993

APS COUNCIL 1993

President

Donald N. Langenberg, *The University of Maryland System*

President-Elect

Burton Richter, *Stanford Linear Accelerator Center*

Vice-President

C. Kumar N. Patel, *University of California, Los Angeles*

Treasurer and Acting Executive Secretary

Harry Lustig, *City College of the City University of New York*

Editor-in-Chief

Benjamin Bederson, *New York University*

Past-President

Ernest M. Henley, *University of Washington*

General Councillors

R. Austin, A. Bienenstock, J. A. Cizewski, R. Eisenstein, J. Gollub, K. Gottfried, L. H. Greene, W. C. Haxton, M. Kastner, K. Kirby, M. V. Klein, B. Ripin, H. Swinney, M. S. Turner, B. Wilson

Chair, Nominating Committee

Patricia Dehmer

Chair, Panel on Public Affairs

Israel S. Jacobs

Division and Forum Councillors

L. E. Peterson (*Astrophysics*), D. J. Larson (*Atomic, Molecular, and Optical Physics*), W. Webb (*Biological*), S. A. Rice, R. E. Smalley (*Chemical*), C. M. Falco, S. Jackson, M. B. Stearns, J. W. Wilkins (*Condensed Matter*), D. V. Anderson (*Computational*), K. W. Schwarz (*Fluid Dynamics*), A. J. Lovinger (*High Polymer*), B. R. Appleton (*Materials*), G. T. Garvey, S. E. Koonin (*Nuclear*), B. Barish, A. Kernan (*Particles and Fields*), J. Peoples (*Physics of Beams*), T. K. Fowler (*Plasma*), J. J. Wynne (*Forum on Education*), A. Wattenberg (*Forum on History of Physics*), t.b.a. (*Forum on International Physics*), Barbara Levi (*Forum on Physics and Society*)

COUNCIL ADVISORS

Sectional Representatives

L. F. Cook, *New England*; A. Goland, *New York*; B. C. Clark, *Ohio*; I. Sellin, *Southeastern*; S. Baker, *Texas*

Staff Representatives

B. B. Schwartz, *Associate Executive Secretary*; M. Vasilikos, *Assistant Treasurer and Controller*; J. Sandweiss, *Chair, PRL Board of Editors*; R. L. Park, *Director, Office of Public Affairs*

Editor: Brian B. Schwartz (Brooklyn College)

Coordinator: Tammany Young

APS MEETINGS DEPARTMENT

One Physics Ellipse

College Park, MD 20740-3844

Telephone: (301) 209-3200

FAX: (301) 209-0866

Michael Scanlan, *Meetings Manager*

Tammany Young, *Assistant Meetings Manager*

Lauri A. Nichols, *Meetings Coordinator*

Desiree Atherly, *Secretary*

The *Bulletin of The American Physical Society* is published 13X in 1993: in March, April, May (3X), June, July, October (2X), November (3X), and December, by The American Physical Society, through the American Institute of Physics. It contains advance information about meetings of the Society, including abstracts of papers to be presented, as well as transactions of past meetings. Reprints of papers can only be obtained by writing directly to the authors.

The *Bulletin* is delivered, on subscription, by 2nd Class Mail. Complete volumes are also available on microfilm. **APS Members** may subscribe to individual issues, or for the entire year. **Nonmembers** may subscribe to the *Bulletin* at the following rates: Domestic \$300; Foreign Surface \$310; Air Freight \$320. Information on prices, as well as subscription orders, renewals, and address changes, should be addressed as follows: **For APS Members**—Membership Department, The American Physical Society, 1 Physics Ellipse, College Park, MD 20740-3844. **For Nonmembers**—Member and Subscriber Services, The American Institute of Physics, 500 Sunnyside Blvd., Woodbury, NY 11797. Allow at least 6 weeks advance notice. For address changes, please send both the old and new addresses, and, if possible, include a mailing label from a recent issue. Requests from subscribers for missing issues will be honored without charge only if received within 6 months of the issue's actual date of publication.

Second-class postage paid at Woodbury, NY and additional mailing offices. Postmaster: Send address changes to *Bulletin of The American Physical Society*, Membership Department, The American Physical Society, 1 Physics Ellipse, College Park, MD 20740-3844.

ON THE COVER: (TOP)—New and old APS staff say good-bye to the New York City headquarters. (BOTTOM)—Old APS headquarters address in New York City.

BULLETIN

OF THE AMERICAN PHYSICAL SOCIETY

Series II, Vol. 38, No. 13, December 1993

TABLE OF CONTENTS

PROGRAM OF THE 46th ANNUAL GASEOUS ELECTRONICS CONFERENCE 19–22 October 1993—Montréal, Québec

GENERAL INFORMATION (English)	2325
EPITOME	2326
MAIN TEXT	2327
AUTHOR INDEX	2380
CUMULATIVE AUTHOR INDEX (Volume 38)	2384
FIVE-YEAR PLANNING CALENDAR	Opposite Cover 3
CALENDAR OF MEETINGS	Cover 3

TABLE DES MATIÈRES

Programme de la 46^e Conférence annuelle sur l'électronique dans les gaz 19–22 octobre 1993—Montréal, Québec

Informations générales (français)	2325
Épitomé	2326
Résumés des communications	2327
Index des auteurs	2380
Index cumulatif des auteurs	2384
Calendriers pour fins de planification	Face à la page 3 de la couverture
Calendrier des réunions à venir	Page 3 de la couverture

GENERAL INFORMATION

The Forty-Sixth Annual Gaseous Electronics Conference (GEC) was held in Montréal, Québec on 19–22 October 1993, hosted by the Département de Physique de l'Université de Montréal, in cooperation with the Bureau de consultation et d'organisation de congrès. The meeting is an annual Sponsored Conference of the Division of Atomic, Molecular, and Optical Physics of the American Physical Society. Financial support was provided by the Université de Montréal, the Gouvernement du Québec (Ministère des Affaires Internationales), the Natural Sciences and Engineering Research Council of Canada, U.S. National Science Foundation, and the U.S. Army Research Office. A major corporate sponsor was General Electric Company. We also acknowledge support from ASTEX, OSRAM, SAIREM (France), EXTREL, COMDEL, and HYDRO-QUÉBEC. An updated list of the sponsors was distributed to the participants. This year's GEC highlighted the following topics: Advances in Electron Collision Processes, Electron-Molecule Collisions, Low Energy Ion-Molecule Collisions, Collisions of Cold Atoms, GEC Reference Cell, Dusty Plasmas, Low and High Pressure ICP's, Thermal Plasmas and Plasma Torches, Magnetized and Magnetically Enhanced Plasmas, and Modeling and Simulation.

INFORMATIONS GÉNÉRALES

La quarante-sixième Conférence annuelle sur l'électronique dans les gaz (CEG) a eu lieu à Montréal, Québec du 19 au 22 octobre 1993, sous l'égide du Département de physique de l'Université de Montréal, avec l'appui du Bureau de consultation et d'organisation de congrès. La rencontre est une conférence reconnue par la "Division of Atomic, Molecular and Optical Physics" de l'American Physical Society. Nous tenons à remercier pour leur soutien financier important l'Université de Montréal, le Gouvernement du Québec (Ministère des Affaires internationales), le Conseil de recherches en sciences naturelles et en génie du Canada, et du côté américain, la National Science Foundation, l'Army Research Office et la compagnie GENERAL ELECTRIC. Ont également contribué au financement les compagnies ASTEX, OSRAM, SAIREM (France), EXTREL, COMDEL et HYDRO-QUÉBEC. Une liste complète des commanditaires a été distribuée sur place aux participants. Cette année, la CEG avait mis l'accent sur les sujets suivants: les avancées dans les processus de collisions électroniques, les collisions électron-molécule, les collisions ion-molécule à faible énergie, les collisions d'atomes froids, le réacteur de référence CEG, les poussières dans les plasmas, les décharges inductives à faible et haute pressions, les plasmas thermiques et les torches à plasma, les plasmas magnétisés ainsi que les plasmas intensifiés par un champ magnétique statique et, finalement, la modélisation et la simulation des plasmas.

Epitome of the 46th Annual Gaseous Electronics Conference Montréal, Québec — 19-22 October 1993

MONDAY, 18 OCTOBER 1993

- 14:00- Registration
22:00
19:00 Welcome Reception

TUESDAY, 19 OCTOBER 1993

- 8:00- AA Magnetized and Magnetically-Enhanced Plasmas Including ECR, Helicon and Surface-wave Discharges I. Chair: *M. R. Wertheimer*, Ecole Polytechnique de Montréal
10:00
AB Collision Processes and Reactions in Plasmas. Chair: *A. Garscadden*, Wright Patterson AFB
10:15- BA Dusty Plasmas. Chair: *H. M. Anderson*, University of New Mexico
12:15
BB Excitation, Ionization and Scattering. Chair: *S. Chung*, University of Wisconsin
13:30- CA Magnetized and Magnetically-Enhanced Plasmas Including ECR, Helicon and Surface-wave Discharges II. Chair: *D. B. Graves*, U.C. Berkeley
15:45
CB Advances in Electron Collisional Processes. Chair: *K. Becker*, City College of N.Y.
15:45- Posters Chair: *J. Margot*, Université de Montréal
17:30
DA Diagnostics
DB Magnetized and Magnetically-Enhanced Plasmas Including ECR, Helicon and Surface-wave Discharges III
DC Dusty Plasmas
DD Plasma Surface Phenomena

WEDNESDAY, 20 OCTOBER 1993

- 8:00- EA Microwave Discharges. Chair: *M. Chaker*, INRS-Énergie et Matériaux
10:00
EB Electron Transport in Gases. Chair: *J. W. Gallagher*, NIST
10:15- FA Pollutant Processing and Plasma Cleaning. Chair: *J. Hubert*, Université de Montréal
11:30
FB Cold Atom Collisions. Chair: *T. Walker*, University of Wisconsin
11:30- G Business Meeting. Chair: *J. Dakin*, GE Lighting
12:00
13:30- HA GEC Reference Cell. Chair: *J. Keller*, IBM Fishkill
15:30
HB Electron Molecule Collisions. Chair: *M. A. Dillon*, Argonne National Laboratory

- 15:45- Posters Chair: *M. Fréchette*, Hydro-Québec
17:30

- JA Modeling and Simulation
JB Unique Plasma Systems
JC Lasers
JD Microwave Plasmas
JE RF Glow Discharges
JF Positive Columns

THURSDAY, 21 OCTOBER 1993

- 8:00- KA Inductively Coupled Plasmas I. Chair: *T. J. Sommerer*, General Electric Company
10:00
KB Recombination and Ion Collisions. Chair: *E. J. Mansky*, Georgia Institute of Technology
10:15- Posters Chair: *G. Sauvé*, Université de Montréal
12:15
LA Sheaths and Breakdown
LB Ion Transport and Ion Molecule Collisions
LC Electron Transport and Collisions
LD Inductively Coupled Plasmas II
13:30- MA RF Glow Discharges. Chair: *J. Ingold*, GE Lighting
15:30
MB Electron Collisions. Chair: *R. A. Bonham*, Indiana University
15:45- NA Inductively Coupled Plasmas III. Chair: *D. A. Dougherty*, General Electric Company
17:45
NB Low Energy Ion-Molecule Collisions. Chair: *A. V. Phelps*, JILA
18:30- Social Hour/Cocktail
19:30
23:00 Conference Dinner/Banquet. Speaker/Conférencières. Speaker: *S. Loney*, Hydro-Québec

FRIDAY, 22 OCTOBER 1993

- 8:00- PA Thermal Plasmas and Plasma Torches I. Chair: *M. I. Boulos*, Université de Sherbrooke
10:00
PB Modeling and Simulation. Chair: *T. W. Johnston*, INRS-Énergie et Matériaux
10:15- QA Thermal Plasmas and Plasma Torches II. Chair: *D. C. Schram*, Eindhoven Univ. of Tech.
11:45
10:15- QB Sheaths and Breakdown. Chair: *J. F. Waymouth*, Consultant
12:15
13:30- RA Plasma Surface Interactions. Chair: *D. B. Graves*, U.C. Berkeley
15:45
RB Diagnostics. Chair: *J-M Gagné*, Ecole Polytechnique de Montréal

MAIN TEXT

REGISTRATION/INSCRIPTION

Monday afternoon/evening, 18 October 1993
Salone des Arts, Niveau Foyer, 14:00-22:00

WELCOME RECEPTION/RECEPTION DE BIENVENUE

Monday evening, 18 October 1993
Foyer du Grand Salon, Basilaire I, 19:00

SESSION AA: MAGNETIZED AND MAGNETICALLY ENHANCED PLASMAS, INCLUDING ECR, HELICON, AND SURFACE-WAVE DISCHARGES I

Tuesday morning, 19 October 1993
Grand Salon A, 8:00-10:00
M.R. Wertheimer, presiding

AA-1 Side by Side Comparison of Ion Energy Distribution Functions for Helicon and Multipolar ECR Sources in an HBr Discharge, G.W. GIBSON, JR.*, N. BLAYO, D. IBBOTSON, J.T.C. LEE, H.H. SAWIN*, I. TEPERMEISTER, AT&T Bell Telephone Laboratories - The downstream ion energy distribution functions (IEDF) of a Helicon source and a multipolar ECR source have been measured as functions of source power, neutral gas pressure, chuck power and radius. The sources were mounted on identical platforms and were connected by loadlock to shared wafer-handling robotics. The IEDFs were taken with a miniature (1.0"x0.125"x0.060") electrostatic retarding grid analyzer which could be scanned radially and which had energy resolution of better than 0.5 eV. Data were taken during the etching of poly-Silicon wafers in an HBr chemistry. The sources are compared in terms of ion flux, mean ion energy, ion energy spread and ion energy flux. Furthermore, evidence of the coupling of RF power from the chuck into the bulk plasma will be given.

*Massachusetts Institute of Technology

AA-2 Helicon Sources with Density Gradients*, F.F. CHEN and M. LIGHT, UCLA--When helical antennas are used to excite helicon waves for plasma production, the flatness of the density profile is often found to depend on whether the waves are right-hand ($m = 1$) or left-hand ($m = -1$) polarized. We have reduced the helicon equations for radially varying density profiles to a form amenable to simple computation. The second-order differential equation contains a singularity in its coefficients, which may have escaped previous investigators. Treating the poles with care, we find that the $m = 1$ mode has a broad field intensity profile, while the $m = -1$ mode has a much narrower profile. The new effect stems from the drift of electrons along the radial density gradient, causing a charge buildup whose phase depends on the sign of m . A positive feedback mechanism can occur, especially for $m = -1$, where ionization is intense at the peak of the rf field, thus narrowing the density profile and further narrowing the field pattern. Thus, the $m = -1$ mode will produce dense, narrow columns, while the $m = 1$ mode will create broad, uniform discharges. Measurements of the field patterns using a single-turn coaxial magnetic probe are in good agreement with the theoretical curves computed using the measured density profiles.

*Supported by the Wisconsin ERC, a Livermore PPRI minigrant, and the UCLA ATRI program of the AFOSR.

AA-3 3D-Structure of DC Magnetron Sputtering by Emission-CT Technique using a Robot,

N.SHIMURA, A.ITOH* and T.MAKABE, Keio Univ. Yokohama Japan - DC magnetron discharges are widely used for thin film deposition. We have performed the automatic measurement of 3D-emission profiles in DC magnetron plasmas for sputtering by using a 4-axes scalar Robot. The essential principle is the emission selected-computer tomography (ESCT). The ray tracing is adopted to calibrate the absolute value of the net production rate of excited molecules with short radiative lifetime. The resultant spatial resolution will increase up to $1.0 \times 1.0\text{mm}^2$ under a sufficient emission intensity. ESCT technique is applied to the reactive sputtering in Ar/O₂ with Al target. Three lines, ArI(419.8nm)m ArII(434.8nm) and AlI(396.2nm) are selected for the ESCT analysis. The influence of the static magnetic field on the physical etching (sputtering) of the target is estimated indirectly by ESCT. Also the effect of a small prominence on the target surface is studied from the CT image.

*Permanent address: Shibaura Engineering Works Co. Ltd.

AA-4 Plasma Potentials in the Helicon Plasma Etching Reactor,

A.J. PERRY, H. PERSING and R.W. BOSWELL, Space Plasma and Plasma Processing Group, PRL, RSPHys.S.E. ANU, Australia - During plasma etching of SiO₂ the energy of the ions (in the range 15 - 200 eV) incident on the wafer plays a critical role in determining the etch rate. The ion energy can be inferred from the waveform of the rf bias applied to the substrate but these measurements suggest that, under certain conditions, the plasma potential rises well above its usual value of around 15 V. Using emissive and langmuir probes we have tried to determine whether the rf power applied to the wafer drives the plasma to higher potentials. These experiments suggest that the changes in the plasma potential occur because polymers, deposited on the reactor walls, insulate the plasma from earth and it is the plasma created in the source that is moving to higher potentials.

AA-5 Radial Ion Transport in a Limited Axisymmetric ECR Plasma: Effects of Magnetic Field Topology and Plasma Fluctuations,

G.W. GIBSON, JR. and H.H. SAWIN, Massachusetts Institute of Technology - The radial transport of ions across magnetic field lines in a modified ASTeX S1500 ECR source has been investigated. An uniquely configured discharge chamber allows the boundary conditions of the experiment to be carefully controlled. The upper chamber is lined with anodized aluminum. Inside the liner is a 3" diameter quartz limiter which can be positioned axially without breaking vacuum. Microwaves enter through a quartz window and the plasma streams onto a wafer and faux chuck which, like the limiter, can be moved axially. The plasma thus has a sharp radial edge and minimal wall contact. Such a configuration allows the effects of magnetic field strength and topology to be investigated independent of plasma boundary conditions. A miniature (3"x0.125"x0.06") electrostatic retarding grid energy analyzer which can be scanned axially and radially was used to make high resolution (<0.5 eV) spatially resolved measurements of ion energy distribution functions. Langmuir probes were used to diagnose the plasma fluctuations in order to determine the extent to which they effect cross-field diffusion.

AA-6 The Power Balance of a Surface-wave-produced Plasma Confined by a Static Magnetic Field in Comparison with that of Other High Frequency (HF) Magnetoplasmas,

J. MARGOT and M. MOISAN, U. de Montréal - We have performed measurements of the power balance, characterized by the power absorbed per electron θ , in plasmas produced by electromagnetic surface waves at various

TUESDAY MORNING

frequencies and gas pressures in the presence of an axial static magnetic field B_0 up to 2 kGauss. We find that, for a given gas pressure p , θ decreases with increasing magnetic field as a result of plasma confinement, as expected; further, no significant differences are observed with wave frequency. At low enough values of the product $B_0 p$ (typically < 1 Gauss.torr), θ depends only on the gas pressure while at higher values, it is then a unique function of $B_0 p$. These results indicate that the diffusion mechanism varies from the classical ambipolar regime at low $B_0 p$ to the so-called anomalous (Bohm-like) regime at high $B_0 p$. Our results for θ are compared with those obtained in other HF magnetoplasmas (ECR and non ECR (e.g. helicon) schemes) using the plasma density and the HF power values reported in literature. We find that the value of θ in these various plasmas is similar for given discharge conditions, whatever the mode of creation of the plasma and the operating frequency.

AA-7 Magnetic Field Enhancement of Electromagnetic Wave Penetration in Weakly Ionized Plasmas,* S.P. Bozeman and W.M. Hooke, U. of N. Carolina at Chapel Hill- The homogeneity and size of RF and microwave heated plasmas are often limited by the skin depth, d , of the electromagnetic radiation. To investigate increasing d by applying a steady magnetic field, B , we have adapted the theory for cold, collisionless plasma waves to include the effects of electron-neutral and ion-neutral collisions and determined d as a function of wave frequency, f , and collision frequencies for plane waves propagating at arbitrary angles with respect to B . The theory predicts that the most favorable scaling occurs for waves propagating nearly parallel to B and for $f \ll f_{ec}$ where f_{ec} is the electron cyclotron frequency. The skin depth also increases (though not as much) for propagation perpendicular to B provided that $f \ll f_{LH}$ where f_{LH} is the lower hybrid resonance frequency. Our RF magnetic probe measurements of wave penetration in an ICP (wave propagation nearly perpendicular to B) in Ar in the 0.2 to 20 Torr pressure range show an increase in d above f_{LH} and a damping of the effect of B with pressure. Observations of Stark line broadening in Ar in a microwave discharge (propagation parallel to B) show an increase in electron density with B at pressures as high as 20 Torr.

*Work Supported by Kobe Steel USA, Electronic Materials Center.

AA-8 Measurement of Space Resolved Ion Velocity Distribution in a Low Pressure Planar ECR Plasma Source, T. LAGARDE, F. CHATAIN*, Y. ARNAL, J. DEROUARD*, N. SADEGHI* and H. PERSING**, LPCPP, Université Joseph Fourier (Grenoble, France), Unité CNRS, France Telecom CNET, *L.S.P., Université Grenoble 1 - CNRS, **P.R. Lab., NAU Canberra- The purpose of this work is to provide some insight about the mechanisms which are responsible for the production and diffusion of the charged particles in a magneto-plasma. The components of the ion velocity drift along the three axes were measured using the Doppler shifted laser induced fluorescence (DSLIF) spectroscopy of Ar^+ metastable ions.¹ The reactor is a $x=100$, $y=20$, $z=12$ cm parallelepiped with a closed multipolar magnetic structure (magnetron type) with a linear antenna² along the x axis fed at 2.45 GHz. For a pressure of 10^{-4} torr and a power of 175 W, from Langmuir probe measurements we find n_e 5.10^{10} cm^{-3} , T_e 5 eV and V_p 12 V. DSLIF shows that ion velocities are small: $\langle v_x \rangle$ is at most 1.5 km/s and $(v_x - \langle v_x \rangle)^2$ corresponds to 0.3 eV. These results can be qualitatively understood by considering the motion of the ions in an inhomogeneous magnetic field.

¹ N. Sadeghi et al. J. Appl. Phys. **70**, 2552 (1991)

² M. Pichot et al. Rev. Sc. Instrum. **59**, 1072 (1988)

SESSION AB: COLLISION PROCESSES AND REACTIONS IN PLASMAS

Tuesday morning, 19 October 1993

Grand Salon C, 8:00-10:00

A. Garscadden, presiding

AB-1 Ion-Molecule Reactions in SF_6 Corona Discharges and Their Potential Relevance to Plasma Processing*

I. SAUERS, Oak Ridge National Laboratory -

Work on SF_6 ion chemistry in corona discharge at high pressure (several kPa) indicate that ions are rapidly converted to product ions whose nature depends on impurities such as water and SF_6 decomposition products. This is true for both positive and negative ions. Depending on the various neutral species present, their concentration, and on their residence time, conversion of SF_6 ions (SF_6^+ , SF_5^+ , F , SF_5^+) to product ions such as $SF_6(HF)$, SOF_5 , $F(HF)_n$, $OH(H_2O)_n$, SiF_5 , WF_7 (when the electrode is W), $SF_5^+(H_2O)_n$, SOF_3^+ , $H^+(H_2O)_n$, and $SF_5^+(SF_4)$ have been observed. Control in the formation of these ions could be utilized in plasma processing for example through the addition of additives (e.g. HF, H_2O , SOF_4 , SiF_4 , SF_4).

*Work supported in part by DOE under contract DE-AC05-84OR21400 with Martin Marietta Energy Systems, Inc.

AB-2 Models of the Negative Differential Voltage-Current Ratio in Low-Current Hydrogen Discharges, A. V. PHELPS, JILA, U. of Colorado and NIST -

A perturbation model based on ion-induced electron emission at the cathode quantitatively explains¹ steady-state differential voltage-current behavior of low-current ($< 1 \mu A/cm^2$), parallel-plane discharges in H_2 at $E/n > 700$ Td. This model is extended to include photon-induced electron emission at the cathode and two-step ionization via vibrationally excited H_2 and is compared with experiment at $E/n < 300$ Td. The photoelectron model includes calculated electron excitation rates, excited state quenching, far-uv transmission, spectrally-weighted photoelectron yields, and electron escape probabilities. The multistep ionization model includes calculated vibrational excitation rates, diffusion and quenching, and ionization coefficients for the excited states. The results are sensitive to the poorly known ion transit times and only photoelectron emission is close to explaining low E/n experiments².

¹A. V. Phelps, Z. Lj. Petrović, and B. M. Jelenković, Phys. Rev. E **47**, 2825 (1993).

²R. S. Sigmond, Proc. 4th Int'l. Conf. on Ionization Phenomena in Gases, ed. N.R. Nilsson (North-Holland, Amsterdam, 1960), p. 189.

AB-3 A Hybrid Model for Low Pressure Glow Discharges Using Equivalent Monte Carlo Representations for Charged and Neutral Particles. * Fred Y. Huang and Mark J.

Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - Low pressure etching and deposition reactors are typically in a quasi-continuum/molecular flow regime in which kinetic effects for neutral radicals as well as charged species may be important. We have previously introduced a new modeling technique in which electrons, ions and excited states are equivalently treated using particle-mesh algorithms. In this method, we have an electron density of states including both discrete negative energies (i.e., bound

states) and positive energies (i.e., continuum electrons). Heavy particles are treated as electrons in bound states having large effective masses. This technique has been incorporated into a kinetic-fluid hybrid model as the kinetic module. Results from the model are discussed for conventional glow discharges in etching mixtures (eg., CF_4/H_2). The kinetic distribution of excited states and hot atoms to the substrate will be presented.

* Work supported by SRC, NSF, and U. of Wisc. ERC for Plasma Aided Manufacturing

AB-4 Decomposition of CF_4 and SF_6 by a non-equilibrium plasma and their interaction with polymeric targets.

Y. KHAIRALLAH, F. AREFI, J. AMOUROUX,

Lab. de plasmas, ENSCP, 11 Rue P. et M. Curie, 75005 Paris, France.

The decomposition of SF_6 , CF_4 and their mixtures by a non-equilibrium plasma and their interaction with polyethylene films have been studied. The presence of oxygen and water vapor as trace contaminants and their role in the decomposition mechanisms were pointed out both by mass spectrometry and optical emission spectroscopy. The comparison of the results obtained by the calculations and those measured by surface and plasma diagnostic techniques brought evidence on the participation of the fluorine atoms in the heterogeneous mechanisms. Finally, the effect of the addition of a fluorine containing molecule such as CF_4 to SF_6 discharges on the energetic aspect of the discharge, the decomposition mechanisms and the fluorination processes will be discussed. The excitation efficiency of the electrons was correlated to the fluorine concentration as measured by actinometry and to its incorporation at the surface as shown by the XPS analysis.

EDF-DER is acknowledged for its financial support

AB-5 Chemical Kinetic Modelling of Ion and Neutral Compositions in a Thermal Plasma under Carbon Powder Injections, T.G. BEUTHE and J.S. CHANG, Department of Engineering Physics, McMaster University-

A chemical kinetic model for the prediction of ion and neutral compositions in a thermal plasma under carbon powder injections had been developed. Numerical results were carried out under electron temperature from 0.5 to 2eV, gas temperature from 300 to 20,000K and carbon percentage mixture from 0 to 10% for reduced and atmospheric gas pressure. The results show that the positive carbon ion is only generated by thermal ionizations, and no significant negative ions are observed. Molecular argon ions Ar_2^+ is dominant instead of Ar^+ in gas temperature below 4000K. The effects of carbon percentage mixture on the ion and neutral compositions were discussed in detail.

AB-6 Modeling of RF Methane Discharges, E. Gogolides, C. Buteau, A. Rhallabi*, G. Turban*, NCSR "Demokritos" Athens GREECE, * IMN, Nantes, FRANCE. Plasmas of methane and its mixtures are used to treat oxidized archaeological items or other surfaces, and deposit carbon. The aim of this work is to aid in better understanding the charged species dynamics and the gas-phase kinetics of a CH_4 plasma, by successfully combining a discharge fluid model

with a simple chemical kinetic model. Swarm data are used as input in a fluid model [1] which predicts the ion-electron densities, electric fields and ionization rates as a function of space and time in the RF period. Results show that the negative ion density in CH_4 is of order 10^{-2} to that of electrons, causing a capacitive behaviour similar to an electropositive gas. The effects of electrode spacing (2-6cm), gas pressure (80mTorr-1Torr) and RF current (2.2-3.4mA/cm², 0.06-0.15W/cm²) are studied and compared successfully with experimental data. The time-averaged, spatially-resolved electron density and energy, the set of cross sections for CH_2 and CH_3 dissociation [2], together with an assumption about the form of the electron energy distribution, are subsequently used as input in a simplified 1-dimensional kinetic model. The model predicts the CH_2 and CH_3 spatial profiles, which compare well with experimental data [3].

1 - E. Gogolides and H.H. Sawin, J. Appl. Phys. 72 (9), 3971-87, (1992)

2 - T. Nakano, H. Toyoda, H. Sugai, Jap. J. of Appl. Phys. 30 (11A), 2912-15, (1991)

3 - H. Sugai and H. Toyoda, J. Vac. Sci. Technol. A10 (4), 1193-1200, (1992)

AB-7 Ion Energy Distributions for Ar^{++} Ions formed in the Plasma Sheath region of an R.F. Discharge.

R. SUROWIEC[†], J. REES[‡], J. OLTHOFF and R. VAN BRUNT, [†]U. of Liverpool (U.K) and NIST, Maryland (USA) -

Recent investigations¹ of the ions produced in RF discharges in a G.E.C. reference test cell included observations of the energy distributions of the ions arriving at the grounded electrode. Among the data recorded were Ion Energy Distributions (IED's) for Ar^{++} ions produced in Argon plasmas. From the structure of the IED's observed, it was postulated that the ions were produced by electron impact ionisation in the sheath region at the grounded electrode. The work described here is a Monte Carlo simulation of the formation and transport of Ar^{++} ions across this sheath region and of the IED's to be expected. The IED's are compared with those observed experimentally and shown to be in good agreement. The simulations have been carried out for a range of experimental conditions and for various models of the sheath, including a time-varying sheath width.

¹J. Olthoff, R. Van Brunt, S. Radovanov, J. Rees and R. Surowiec (unpublished).

AB-8 Local profiles of the 2D-velocity distributions of Energetic ions and Neutrals in the Sheath region*,

T. MAKABE, Keio Univ. Yokohama Japan — The ion and high energy neutral transports in the sheath region in a collision dominated-plasma are of key importance plasma processings. That is, the physical etching by energetic particles contributes strongly to two-kinds of processes, as is known as the sputtering and dry etching. Ion transport is mainly subject to the charge transfer collision and the elastic scattering with a thermal neutral, as well as the production by electron impact ionization. The fast neutral is formed by charge transfer and the energy decays by a successive elastic collision with a thermal neutral. Then, the cold gas approximation will be valid to study the 2D-velocity distribution in the sheath, where the ion energy is quite high as compared with neutrals. These massive and energetic particle transports are described by the Boltzmann equation. In this work, the local profile of 2D-velocity distributions of ions and fast neutrals are numerically investigated from the Boltzmann equation under the basis of the ion density and the field distributions in the sheath by RCT model. Case studies in RF discharges in SF_6 and Ar are reported.

*Works supported by a Grant-in-Aid for Science Research.

TUESDAY MORNING

SESSION BA: DUSTY PLASMAS
Tuesday morning, 19 October 1993
Grand Salon A, 10:15-12:15
H.M. Anderson, presiding

Invited Paper

BA-1 Summary of the NATO Workshop on Formation, Transport and Consequences of Particles in Plasmas, G. S. SELWYN, IBM Research Division, Yorktown Heights, NY-A NATO Advanced Research Workshop, dedicated to the topic of Dusty Plasmas with emphasis on microelectronics processing, was held at Chateau de Bonas, Castéra-Verduzan (near Toulouse), France from August 30 to September 3, 1993. The meeting consisted of approximately 60 invitees from N. American, European, and Japanese universities, industry and government research institutions. Special emphasis was placed upon achieving a diversity of professional backgrounds to improve communications and to accelerate learning in this multi-disciplinary field. This presentation will review the major results and highlights of the meeting. The proceedings will be published in a special issue of *Plasma Sources Science and Technology* in 1994.

Contributed Papers

BA-2 Reactor Scale Transport of Dust Particles in Capacitively and Inductively Coupled Radio Frequency Discharges. * Seung J. Choi, Helen H. Hwang, Robert J. Hoekstra, Peter L. G. Ventzek, and Mark J. Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - The transport of particles ("dust") in low pressure glow discharges is of interest due to their role in contaminating wafers during plasma etching and deposition. The distribution of particles (10s nm to many microns) is determined by many forces including electrostatic, viscous ion drag, gravitational, thermophoretic, and neutral fluid drag. The transport of dust particles in rf glow discharges has been investigated using a series of computer models: a 2-d Monte Carlo-fluid hybrid model for ion fluxes, a PIC/MCC simulation for ion-dust cross sections, a fluid model for advective flow fields and a dust transport code. 2-d time dependent distributions of dust particles will be discussed for RIE and ICP discharges for various gas flows, powers and topography of the electrode. We found that wafer contamination occurs in high density plasmas due to large ion drag forces. Topography alters the distribution of particles in the plasma by perturbing sheaths. * Work supported by NSF, Sandia Natl. Lab., SRC, and U. of Wisconsin ERC for Plasma Aided Manufacturing

BA-3 An Experimental Study of Particle Trapping and Spatial Distributions in RF Glow Discharges, J. E. Daugherty and D. B. Graves, Dept. of Chemical Engineering, U.C. Berkeley - Contaminative particles in radiofrequency glow discharges are subject to various forces (e.g. electrical, thermophoretic, convective drag, ion-particle momentum transfer) which are responsible for the observed particle spatial distributions and the transport of particles to the wafer surface. The focus of this study is on the relationship between measurable plasma parameters (including plasma density, potential, electron temperature, and neutral gas temperature), and the segregation of particles into localized regions of the discharge (i.e. particle "traps"). We have injected monodisperse polystyrene-latex particles into the plasma and observed their trapping locations. These traps appear to be caused by nearby topographical features in the plasma chamber such as

a wafer or clamping devices, or by other electrical, mechanical, or thermal features in the system. We map out the location of particle traps with one- and two-dimensional elastic laser light scattering, and we explore the plasma conditions in the vicinity of the traps with Langmuir probe measurements and optical emission spectroscopy. The use of spheres with well characterized optical properties and size distributions greatly simplifies the interpretation of the light scattering results. We also compare our experimental results with model predictions of the plasma structure and the forces on particles in a discharge.

BA-4 Charge Fluctuations in a Dusty Plasma*
C. S. CUI and J. GOREE, Dept. of Physics, Univ. of Iowa

Particulate contamination is a problem in plasma processing of semiconductor materials. Eliminating this contamination requires understanding some physical processes, such as charging, of these dust particles. A particle acquires an electric charge by collecting electron and ion currents from the plasma. These currents consist of discrete charges arriving at the particle at random intervals, causing the charge to fluctuate around an equilibrium value $\langle Q \rangle$. Many charging models neglect the discrete nature of the charge and the fluctuations. To study the fluctuations, we developed a numerical simulation of the collection of individual ions and electrons, yielding a time series $Q(t)$ for the particle's charge. We analyzed $Q(t)$ to obtain the power spectrum and the rms level of the fluctuations, as well as a distribution function of the charge. It is found that the fractional rms fluctuation varies as $0.5N^{-1/2}$, where $N = \langle Q \rangle / e$ is the number of electron charges on the particle. This inverse square-root power law is consistent with counting statistics.

* Work supported by NASA and NSF

BA-5 Dynamic Laser Light Scattering and Particle Flux Measurements in the GEC Reference Cell H. M. Anderson and D. Behl, University of New Mexico - Particulate generation has been studied during reactive ion etching (RIE) of oxide wafers in CF_4/CHF_3 plasmas using the GEC Reference Cell, modified to resemble a Drytek Quad RIE commercial etch tool. The modifications to the Reference Cell involved installation of a quartz focus ring around the cathode and shortening of gap space between the electrodes. The addition of the quartz ring to the reference cell had a dramatic effect on the distribution of particles in the reference cell. Particles could now be readily detected by laser light scattering in a ring above the powered electrode, whereas without the focus ring, particles were confined below the plane of the electrode. Laser light scattering experiments reveal a time and reactor power dependence to the appearance of particles in the ring-like particle trap region. Variable lag times were observed for particle detection dependent on pre-etch cleaning of the chamber. Particle detection was also seen to be enhanced with the addition of CHF_3 in the feed gas, but absent at either very low or very high applied voltages. Further results obtained during RIE of oxide wafers while simultaneously performing in situ dynamic laser light scattering with a sensitive PMT detector and a downstream particle flux monitor will be presented.

BA-6 Nucleation and Growth of Dust Particles in Discharge Plasmas, A. SATHEESH KUMAR* and A. GARSCADDEN, Plasma Research Group, WPAFB - The nucleation and the initial growth mechanisms of solid particles in inert gas plasmas are examined. Atoms or clusters of a few atoms may be released into the plasma by interaction of the plasma with the electrode surface via. 1) the formation of very small arc spots on the electrode surface, and 2) the sputtering of the electrode surface caused by the

bombarding ions. The first process occurs more commonly in high-pressure arc discharges and, the second process occurs widely under low-pressure glow discharge plasma processing conditions. These vaporized or sputtered atoms form a condensable vapor. The expansion of the vapor formed by the arc spots is similar to that in shock waves, whereas sputtering results in an almost continuous vapor source. The one-dimensional flow equations along with the equation of state and a condensation rate equation have been solved to predict the mass fraction of the condensed species and the region of their formation. Nucleation rates and cluster sizes for several electrode materials are illustrated.

* National Research Council Associate

BA-7 Plasma-Dust Interactions of Mutually Shielded Particles in Low Pressure Glow Discharges. * Seung J. Choi and Mark J. Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - "Dust" contamination is a major concern in the plasma processing of microelectronics components. Particles (10s nm to many microns) negatively charge in glow discharges and are therefore subject to both electrical and fluid forces. These forces cause particles to accumulate in regions where the interparticle spacing may be less than the plasma shielding distance of the particles. We have developed a Pseudoparticle in Cell-Monte Carlo simulation for electron and ion transport in the vicinity of dust particles to investigate conditions where the sheaths of adjacent particles overlap. Results from the model will be discussed. We found that when two dust particles are aligned parallel to the electric field, the upstream particle (with respect to the electron drift) shadows the rear particle, resulting in a lower total charge on the rear particle. We also observe that the total charge on two dust particles decreases as the interparticle distance decreases and their mutual shielding increases.

* Work supported by NSF, Sandia Natl. Lab., SRC, and U. of Wisconsin ERC for Plasma Aided Manufacturing

SESSION BB: EXCITATION, IONIZATION AND SCATTERING

Tuesday morning, 19 October 1993
Grand Salon C, 10:15-12:00
S. Chung, presiding

BB-1 Absolute Experimental Electron Impact Cross Section for the Copper $4^2S \rightarrow 4^2P$ Resonance Transition CONNOR FLYNN AND BERNHARD STUMPF, Dept. of Physics, University of Idaho. - We have measured the linear polarization and the apparent excitation function [1] of the copper $4^2S \rightarrow 4^2P$ resonance transition (324.8, 327.4 nm) from threshold (3.8 eV) to 1000 eV. Relative experimental cross section data are normalized at an energy of 1000 eV with respect to first Born theory that includes the $4^2S \rightarrow 4^2P$ transition with an oscillator strength of 0.652 and cascading from the $(3d^{10}nd)^2D$ states with $n = 4, \dots, 10$. Our measured Cu $4^2S \rightarrow 4^2P$ cross section agrees very well with the ten-state close-coupling theory of Scheibner and Hazi [2] at low energies ($E < 8$ eV) and with the four-state close-coupling theory of Msezane and Henry [3] at intermediate energies ($8 \text{ eV} < E < 100$ eV). Absolute experimental cross sections for excitation of the magnetic sublevels of the 4^2P state are also given.

*Supported in part by NSF/Idaho-EPCoR under grant RII-8902065 and by Lawrence Livermore National Laboratory under contract B160497.

- [1] C. Flynn, Z. Wei, and B. Stumpf, Phys. Rev. A, in press
[2] K. F. Scheibner and A. U. Hazi, private communication (1993)
[3] A. Z. Msezane and R. J. W. Henry, Phys. Rev. A 33, 1631 (1986)

BB-2 Azimuthal Effects in Excited State Scattering. * Z. SHI, C. H. YING, W. TAN, and L. VUŠKOVIĆ, Old Dominion U. - Elastic collisions of low energy unpolarized electrons with laser excited, polarized 3P sodium atoms are being studied. Electron energy of several eV is of the same order as the kinetic energy of the valence electron and collision time is comparable with the revolution period. "Parallel" or "antiparallel" motion of the valence and the projectile electrons in the scattering plane results in an asymmetry between the scattering cross sections for $\phi=0$ and $\phi=\pi$ at the same θ . Such an effect is more significant for large polar scattering angles dominated by smaller impact parameters. A new scattering system is built, which includes a low energy electron gun, interaction region with electron beam collectors, and a scattered electron detector with energy analyzers. Preliminary data will be compared with close coupling calculation¹.

* Research supported by U.S. National Science Foundation.

¹H. L. Zhou, D. W. Norcross, and B. L. Whitten, Correl. and Polariz. Elec. and Atom. Coll. and (e,2e), Flinders University, Adelaide, IOP Conf. Proc. No. 122, edited by P. J. O. Teubner and E. Weigold, pp.39-48 (1992).

BB-3 Electron Impact Ionization of Excited Sodium, * W. TAN, Z. SHI, C. H. YING, and L. VUŠKOVIĆ, Old Dominion U. - We studied electron impact ionization of excited sodium in the energy range from the threshold to 30 eV by measurements of collisionally produced ions as a function of electron energy. A traveling wave laser field of circularly polarized light is utilized to prepare 3P state atoms. The fraction of excited-state atoms is determined by the displacement of the photon-recoiled atom beam in the plane perpendicular to its propagation. Assuming a Gaussian electron energy distribution, the total ionization cross sections of excited- a ground-state sodium are simultaneously determined from the measured quantities. The fitting function involved in the data analysis procedure is taken from Ref. 1. Results will be compared with absolute measurements² of ground-state and calculation³ of ground- and excited-state ionization.

* Research supported by U.S. National Science Foundation.

¹Y.-K. Kim, Bull. Am. Phys. Soc. 37, 1067 (1992).

²I. P. Zapesochnyi and I. S. Aleksakhin, Soviet Phys. JETP 28, 41 (1969).

³E. J. McGuire, Phys. Rev. A 3, 267 (1971) and 16, 62 (1977).

BB-4 Electron Impact Excitation from Metastable States of Helium and Neon, * D.C. CARTWRIGHT, G.CSANAK, R.E.H. CLARK, and J. ABDALLAH, Jr, Los Alamos National Laboratory - Differential and integral cross sections for excitation from the metastable states: 2^3S and 2^1S in Helium and 3^3P_2 and 3^3P_0 ($2p^53s$) in Neon, have been calculated using Distorted-Wave level approximations. For Helium, the individual cross sections to all higher S,P, and D states, and their sum, have been obtained by using the n-dependence

TUESDAY MORNING

determined from the lower-*n* states. The cross section sum from either Helium metastable state is two-orders of magnitude larger than the corresponding sum from the ground state. Initial results from an analogous study involving the two metastable states of Neon will be presented.

*Supported by the NSF/OIP, the DOE, and Univ. of California / Los Alamos Collaboration (CALCOR)

BB-5 Optical Detection of N₂⁺ Ions Produced by Electron Impact on N₂. R.B. SIEGEL and K. BECKER, City College of C.U.N.Y. - Neutral ground-state dissociation fragments produced by electron-molecule collisions can only be detected using optical techniques such as laser-induced fluorescence (LIF). We have recently completed the construction of a triple-beam apparatus (electron-beam, gas-beam and laser-beam) for measurements of electron-impact cross sections for the formation of neutral ground-state dissociation fragments from halogen-containing molecules. We used N₂ to test the performance of the apparatus and to demonstrate the proof-of-principle of the method. Results are reported for the cross section for the formation of N₂⁺ ion from N₂ obtained by analyzing the 391 nm N₂⁺ LIF emission produced by pumping the electron-impact produced ground-state N₂⁺ ions with an excimer-pumped dye laser. The results are compared with the N₂ ionization cross section which is well-known from previous experiments.

*Work supported by the National Science Foundation (NSF) and the American Chemical Society-Petroleum Research Fund (ACS-PRF).

BB-6 Images of Photoelectrons from Atoms, Molecules, and Surfaces. H. HELM, M. SAEED, M. J. DYER, and D. L. HUESTIS, SRI International, Menlo Park, Ca 94025--Photoelectrons generated at a point source with a discrete energy travel outward on the surface of a sphere that expands with time. For example, electrons produced at time *t*=0 with an energy of 1 eV can be found 20 ns later on the surface of a sphere of 25 mm diameter. This sphere can be projected onto a flat screen using an external electric field. A circular image results with a diameter that is proportional to square root the electron energy and a filling pattern that reveals the spatial distribution of the electrons on the surface of the sphere. In this way, the squared angular wavefunction of the free electrons is accessible to direct observation.

We have used this approach to investigate multiphoton ionization of helium, neon, and xenon¹ atoms; hydrogen and oxygen molecules; and metal surfaces in intense laser fields. Simultaneous visualization of the photoelectron energy and angular distributions facilitates the identification and classification of ionization mechanisms as well as modifications of the electronic structure of the target by the radiation field.

* Supported by NSF Grant No. PHY-9249199

¹ H. Helm, N. Bjerre, M. J. Dyer, D. L. Huestis, and M. Saeed, Phys. Rev. Lett. 70, 3221 (1993).

BB-7 Metastable Production Following Electron Impact on CO₂ and CO*, L.R. LECLAIR, M.D. BROWN and J.W. MCCONKEY, University of Windsor, Ontario, Canada - A special detector has been developed¹ based on Xe matrix isolation followed by fluorescence. This has been used in conjunction with time-of-flight spectroscopy to study the production of O(¹S) and CO(*a*²π) by electron impact over an energy range from threshold to 1 keV. Data have been made

absolute using O(¹S) production from N₂O as a secondary standard. The maximum cross-section for production of O(¹S) from CO₂ was measured to be 16.8 x 10⁻¹⁸ cm² at 50 eV. Full details of the techniques and all the data obtained will be presented at the Conference.

* Research supported by the Petroleum Research Fund administered by the American Chemical Society and by the Natural Sciences and Engineering Research Council of Canada.

¹ L.R. LeClair and J.W. McConkey, J. Chem. Phys., in press (1993)

SESSION CA: MAGNETIZED AND MAGNETICALLY ENHANCED PLASMAS, INCLUDING ECR, HELICON, AND SURFACE-WAVE DISCHARGES II

Tuesday afternoon, 19 October 1993
Grand Salon A, 13:30-15:30
D.B. Graves, presiding

CA-1 Plasmas Excited by Uniform Distributed Electron Cyclotron Resonance: Principle and Performance, T. LAGARDE, J. PELLETIER, Y. ARNAL, J. COCAGNE and F. FABIANO, Laboratoire de Physique et Chimie des Procédés Plasma, Université Joseph Fourier (Grenoble, France), Unité CNRS, France Telecom CNET - The principle of distributed electron cyclotron resonance (DECR)¹ which combines multipolar magnetic field confinement and microwave excitation at electron cyclotron resonance (ECR) is recalled. The advantages of the new design, the so-called uniform distributed ECR (UDECR)², over conventional DECR are presented in terms of plasma density and uniformity for a single applicator and for a set of height linear microwave applicators in a cylindrical configuration. The interest of closed multipolar magnetic field structures to improve the confinement of energetic primary electrons is experimentally demonstrated. In particular, the track- and comb-like magnetic structures are both well-suited to the cylindrical and planar UDECR configurations. With argon or krypton, plasma densities up to 10¹² cm⁻³ are currently achieved at 2.45 GHz excitation frequency.

¹ M. Pichot, J. Pelletier and Y. Arnal, US patent n° 4745337 (1988)

² J. Pelletier, US patent n° 7 824 210 (1992)

CA-2 The Dissociation of Silane in a High-Density Silane-Oxygen Helicon Plasma, H. M. PERSING, R. W. BOSWELL, C. CHARLES, A. DURANDET, A. J. PERRY, Space Plasma and Plasma Processing Group, PRL, RSPHYSSE, Australian National University - In experiments aimed at producing high-quality SiO₂ films for planar optical waveguide applications, a pressure rise of up to a factor of 10 has been measured when the high-density Helicon plasma is turned on. Optical spectroscopy and energy-selective ion and neutral mass-analysis show that even at low powers (less than 50 watts) the silane is highly dissociated. This has major consequences for the quality of thin SiO₂ films (very low hydrogen incorporation) and for the formation of dust.

CA-3 Thomson Scattering Measurements of Spatial Profiles of T_e and N_e in an ECR Discharge, H. MUTA, M. YOSHIDA, M.D. BOWDEN, K. UCHINO, K. MURAOKA, M. MAEDA, Y. MANABE, M. KITAGAWA, T. KIMURA and R.K. PORTEOUS, Kyushu U., Mitsubishi Heavy Industries, Matsushita Electric and Australian National U - We have previously reported incoherent Thomson scattering measurements of electron temperature T_e and density N_e in the centre of the source region of an argon ECR

discharge¹. In this paper, we report measurements of radial profiles of T_e and N_e in a similar ECR discharge chamber. The dependence of these profiles on the strength and configuration of the applied magnetic field was investigated and compared to the results of a 2-D simulation of the plasma. The density profile was observed to be smooth and monotonically decreasing from the plasma centre to the edge but the temperature profile was observed to be peaked near the plasma edge for some discharge conditions.

¹M.D. Bowden *et al.*, *J. Appl. Phys.* **73**, 2732 (1993).

CA-4 Free Radical Distribution in an ECR Etching Reactor, M. MEYYAPPAN, *Scientific Research Associates, Inc.* - The ability to maintain a high density discharge at low pressures and absence of any serious damage-inducing self bias make ECR an attractive technique for etching semiconductors. In an effort to understand the complex physical and chemical processes inside an ECR chamber, a number of diagnostic techniques are employed¹ to measure concentration of free radicals. We have developed a model to aid in the interpretation of the diagnostic experiments. The model consists of mass balance equations for constituent species. The diffusion process is represented by an effective diffusion coefficient combining ordinary diffusion, and Knudsen diffusion when mean free path is comparable to reactor dimensions. Analytical solutions have been obtained for the radially-averaged equations. The model has been applied to a CF_4 plasma and distribution of various free radicals as a function of process parameters has been calculated.

¹N. Hershkowitz and H.L. Maynard, American Vacuum Society 39th Natl. Symp., Nov. 1992.

CA-5 Time and Spatially Resolved Optical Emission in a Helicon Reactor, A.R. ELLINGBOE, R.W. BOSWELL, J.P. BOOTH*, N. SADEGHI*, *Space Plasma and Plasma Processing, The Australian National University, Canberra, Australia* - Short lifetime Argon ion line ($\lambda=443$ nm, $\tau=20$ ns) emission strengths have been measured as a function of axial and angular positions (integrated over the radius). The modulation is found to travel in the axial dimension at the same speed as waves launched by the antenna. Implications for Landau damping and power deposition will be discussed.

*Laboratoire de Spectrométrie Physique, Université Joseph Fourier, Grenoble, France.

CA-6 The structure of the presheath in an ECR plasma, S.L. GULICK, B.L. STANSFIELD, C. BOUCHER, C. KHODR, D.A. POIRIER, *INRS-Energie et Matériaux, Varennes, Québec* - We have attempted to develop a self-consistent picture of an Argon plasma interacting with an Aluminum target. The plasma is created in an ECR source, and flows along a relatively uniform magnetic field. The spatial distributions of the density, temperature and potential are measured using Langmuir probes. The ion velocity distribution is measured at various positions in the presheath by Laser Induced Fluorescence. Far from the target, the ion flow velocity is low, but it increases as we approach the surface. These results are compared to those from a 1D fluid model assuming isothermal electrons and cold ions. An important element is the ionization source term due to recycling of the atoms from the surface. The experimental and numerical results are generally in good agreement, although the measured ion distribution function is broadened due to the production of cold ions via ionization.

CA-7 Theory of the plasma-sheath transition in a magnetic field, K.-U. RIEMANN, *Institut für Theoretische Physik, Ruhr-Universität Bochum, D-44780 Bochum, Germany*. In the limit of a small Debye length ($\lambda_D \rightarrow 0$) the plasma boundary layer in front of a negative absorbing wall is split up into a collision-free planar space charge sheath and a quasineutral presheath where the ions are accelerated to ion sound speed (Bohm criterion). Usually the presheath mechanism depends decisively on collisional friction of the ions, on ionization or on geometric ion current concentration. If the ion dynamics in the presheath is dominated by a magnetic field (nearly) parallel to the wall, an additional effect must be considered to provide an ion transport to the wall. The special cases of an ion transport by field lines intersecting the wall at a small angle [1] and of an ion transport by collisions [2] result in somewhat contradictory conclusions. To resolve the contradiction we investigate a simple hydrodynamic model of the presheath accounting for an oblique magnetic field and for collisions. We discuss the limiting cases [1] and [2] and show that a strong magnetic field alone is not able to provide a presheath mechanism, but that it 'compresses' the collisional presheath into a thin layer with a characteristic extension of the ion gyroradius ρ_i .

[1] R. Chodura, *Phys. Fluids* **25**, 1628 (1982)

[2] J. Behnel, Report 85-O2-118 SFB 162 Bochum/Jülich (1985)

CA-8 Relation between Sputtered-Film Quality and Inner Plasma Characteristics of DC Magnetron*,

T.MAKABE, A.ITOH† and N.SHIMURA, *Keio Univ. Yokohama, Japan* - Magnetron sputtering is very simple process, and covers the major part of the large area thin film deposition. The quantitative control of film composition in addition to the thickness is required for the magnetron in the field of reactive sputtering and compound metal target. In these circumstances, there are not so many investigations on the relation of the inner magnetron plasma structure to the quantitative film property. In this work, we describe the self-consistent procedure to estimate the film composition and the thickness by using the plasma/target surface/substrate surface equations of active particles based on the 3D-CT image observation by Robot. A case study is performed in the oxidized-Al thin film deposition in Ar/O₂ reactive DC-magnetron sputtering. The predicted radial composition and the film thickness are compared with experimental, and we find fairly good quantitative agreement between them. *Work supported by a Grant-in-Aid for Sci. Research No.05237104 †Permanent address: Shibaura Engineering Works Co. Ltd.

SESSION CB: ADVANCES IN ELECTRON COLLISIONAL PROCESSES

Tuesday afternoon, 19 October 1993

Grand Salon C, 13:30-15:45

K.H. Becker, presiding

Invited Papers

CB-1 Absolute Low Energy Electron Scattering Cross Section Measurements S.J. Buckman, R.J. Gulley, D.T. Alle, M.J. Brennan and M.J. Brunger[†] *Electron Physics Group, RSPHysSE, Australian National University* - A number of recent experiments in our laboratory on both absolute total and differential cross sections (DCS) for electron-molecule/atom scattering will be discussed. Particular emphasis will be placed on measurements below 5 eV, and in the case of the DCS experiments, both elastic and vibrational excitation cross sections will be presented. Where possible, comparison with other experimental and theoretical results will be made. Gases which have been studied include N₂, Ne, Xe, H₂S, SO₂, and N₂O. A brief discussion of some of the many pitfalls involved in such measurements will also be included.

[†] Present Address: School of Physical Sciences, The Flinders University of South Australia, Bedford Park, 5042, South Australia.

TUESDAY AFTERNOON

CB-2 Theoretical Studies of Low Energy Electron - Molecule Collisions* T. N. RESCIGNO Lawrence Livermore National Laboratory - With the additional degrees of freedom associated with nuclear motion, low energy e-molecule collisions present a body of physics far richer than that found in electron-atom scattering. Numerical difficulties, however, make the problem much more difficult and *ab initio* theoretical studies of molecular collisions have lagged e-atom studies by a considerable amount. I will review recent progress in variational treatments of e-molecule scattering using the Kohn method, with particular emphasis on the low-energy region where target correlation and polarization effects are important. I will discuss our recent studies of threshold vibrational excitation in H₂ and CH₄, as well as studies of electronically inelastic scattering in CL₂ and H₂O..

* This work was performed under the auspices of the U.S.

Department of Energy by LLNL under contract W-7405-ENG-48.

Contributed Papers

CB-3 Inelastic Low-Energy Electron Collisions with Laser-Excited Rubidium Atoms. Z. WEI, C. FLYNN AND B. STUMPF, Dept. Physics, University of Idaho. --- First experimental cross section data for Rb $5^2P(J=3/2, M_J=3/2) \rightarrow 6^2D$ electron excitation have been obtained using the optical excitation function method in a crossed atom and electron beam arrangement. The initial state for electron impact is created as a pure spin and angular momentum state $|L=1, S=1/2, M_L=1, M_S=1/2\rangle$ by optical pumping with a circularly polarized diode-laser beam, tuned to the $F'=3 \rightarrow F=4$ hyperfine transition of the $5^2S_{1/2} \rightarrow 5^2P_{3/2}$ resonance line (780 nm) of ⁸⁵Rb. The role of simultaneous $5^2S \rightarrow 6^2D$ direct electron excitation from the ground state, measured previously [1], $2^1F \rightarrow 6^2D$ cascading, anisotropy of observed $6^2D \rightarrow 5^2P$ fluorescence, and normalization to first Born theory at high energies are carefully discussed.

*Supported by NSF/Idaho-EPCoR under grant RII-8902065

[1] Z. Wei, C. Flynn, A. Redd, and B. Stumpf, Phys. Rev. A 47, 1918 (1993)

CB-4 Electron-Metastable Atom Collision Theory*, E. J. MANSKY School of Physics, Georgia Tech. The current status of theoretical techniques used to compute cross sections for the electronic excitation of atoms *initially* in an excited or metastable state is reviewed. A detailed discussion of the relative merits of fully quantal versus semiclassical treatments of the scattering will be given. Results of semiclassical multichannel eikonal calculations for the electron impact excitation of He *initially* in the $2^{1,3}S$ and $2^{1,3}P$ states will be presented and compared to recent measurements of Lin *et al.*, of the integral cross sections for the excitation of the $n = 3, 4$ levels of helium from the $2^{1,3}S$ states. The inclusion of electron exchange effects within the multichannel eikonal theory will be discussed and the role played by interchannel couplings in general, and the $4^{1,3}F$ states in particular, will be given.

* Work supported by AFOSR grant no. 89-0426.

CB-5 A Charge Exchange Target for Measuring Cross Sections of Electron Excitation Out of Metastable Levels.* MARK E. LAGUS, JOHN B. BOFFARD, L. W. ANDERSON, and CHUN C. LIN, U. of Wisconsin - Previous measurements of electron excitation out of metastable levels are limited to electron energies low enough that excitation out of the ground level cannot occur since in the target the metastable number density is much less than the ground level number density. In order to measure the excitation cross sections out of metastable levels at higher energies it is necessary to develop a target where the metastable number density is higher than or comparable to the ground level number density. To accomplish this we use a metastable target produced by charge exchange of a fast He⁺ ion beam incident on an alkali target. The charge exchange process is nearly resonant into the 2^1S or 2^3S metastable levels of He so that the formation of the He metastable atoms is

favoured over the ground level atoms. We have used this new target to measure electron excitation cross sections out of both metastable levels up to 150 eV by the optical method. The effects of ground level contamination on these measurements are eliminated.

*Supported by the NSF Grant PHY-9005895.

CB-6 Resonant Dissociative recombination of H₃⁺* A.E. OREL University of California, Davis B. H. LENGFIELD III IBM Almaden and K.C. KULANDER Lawrence Livermore National Laboratory - Recent experiments by Larsson *et al.*¹ have confirmed the prediction² of a high energy (~9eV) peak in the cross section for dissociative recombination of H₃⁺. This peak is caused by four resonant states of H₃. Electron scattering calculations using the complex Kohn method provide the resonance positions and widths as a function of internuclear separation. This information was used as input to a wave packet calculation for the dissociation dynamics. Substantial autoionization occurs during dissociation due to the large widths of the resonant states. The shape and magnitude of the calculated resonance cross section agrees with experiment.

* This work was supported by NSF PHY-90-14845 and performed under the auspices of the U.S. Department of Energy by LLNL under contract W-7405-ENG-48. Computer time was provided by the San Diego Supercomputing Center.

¹ M. Larsson, H. Danared, J.R. Mowat, P. Sigra, G. Sundström, L. Broström A. Filevich, A. Källberg, S. Mannervik, K.G. Rensfelt, and S. Datz, Phys. Rev. Lett, 70, 430 (1993)

² K.C. Kulander and M.F. Guest J. Phys. B 12, L501 (1979)

CB-7 Ionization and Simultaneous Excitation of Helium Atoms by Electron Impact*. K. BARTSCHAT, Drake University and A. RAEKER, University of Münster, FRG. --- A recently developed method [1, 2] for calculating total and single differential (with regard to energy loss) cross sections for electron and positron impact ionization within the R-matrix (close-coupling) method has been applied to electron impact ionization of helium. This approach includes channel coupling, autoionizing resonances and a multi-configuration expansion of the initial state in an *ab initio* manner. Results for ionization and simultaneous excitation to various (nl)-states of He⁺ from the (1s²)¹S ground state as well as metastable initial states will be presented.

[1] K. Bartschat and P.G. Burke, J. Phys. B 20 (1987), 3191

[2] K. Bartschat (1993), Comp. Phys. Commun. 75, 219

* Work supported by the National Science Foundation, the Research Corporation, NATO, and the Deutsche Forschungsgemeinschaft.

SESSION D: POSTER SESSION
Tuesday afternoon, 19 October 1993
Grand Salon B, 15:45-17:30
J. Margot, presiding

DA: DIAGNOSTICS

DA-1 Characterization of Impurities in a Low Power Pulsed Discharge* G.F. GOMES, M.E. KAYAMA, C.J.B. PAGAN, M.A. ALGATTI, E.A. ARAMAKI and R.P. MOTA, UNESP-FEG-DFQ, Guaratinguetá, SP, Brazil - The impurities introduced by electrode erosion during a low power discharge were characterized by high resolution spectroscopy. The experiment was carried out in a Z-Pinch using brass electrodes. Inductive radio frequency discharge (frequency 10 MHz, power 10 W) was used for pre-ionization of residual gas. The discharge was performed using a capacitor (8.5 μF, charge voltage 5.0 kV) and a two-electrode spark-gap triggered by 15 kV thyatron pulse. The ringing current profile had 17 μsec period and 14.0 kA peak current. The total charge and current density on the electrode were 0.33C and 3.1 kA/cm², respectively. The gas used were Argon and Nitrogen with filling pressure in the

range of 25-105 mTorr. The spectroscopic measurement was carried out in a 2 meter spectrograph (dispersion 7.3 Å/mm) using photographic emulsion. The measurements indicate lines of ArI, ArII and ArIII. The impurity lines from electrode material were 3247.54Å, 3273.96Å of CuI and 3345.02Å, 3282.33Å, 3302.59Å of ZnI.

* Work supported by CAPES (Brazil).

DA-2 Gas Phase Atomic Hydrogen Sensor, * Z. YU, D. SHAW, D. KOBEL and G. COLLINS, Colorado State University - Atomic hydrogen has been plasma generated to form arsenic hydrides, AsH_3 , used in GaAs epitaxy.¹ The technique we employ to quantify atomic hydrogen generation in the plasma is based on the chemical reaction of atomic hydrogen with a prepared silver oxide surface, $2H+AgO \rightarrow Ag+H_2O$. A microbalance is used to quantify this reaction, resulting in an atomic hydrogen detection sensitivity of 10^{12} atoms/cm²·sec. The flux of hydrogen atoms from a 50 W microwave hydrogen plasma and from a 50 W hydrogen disc plasma² were 10^{19} atoms/cm²·sec and 10^{18} atoms/cm²·sec respectively. The detailed dependence of atomic hydrogen flux on plasma operating conditions and distance from the sources will be presented.

*Work supported in part by NSF Grant DDM - 9108531, and NREL Contract XM-0-19142-9.

¹B. Pihlstrom, L. Thompson, D. Shaw, J. Lurkins and G. Collins, *J. Electronic Materials*, **22**, 81 (1993).
²D. Shaw, T. Sheng, Z. Yu, G. Collins and N. Adachi, *Jpn. J. Appl. Phys.* **31**, 24 (1992).

DA-3 Spectroscopic measurements in a C₂H₂/H₂ hot filament diamond CVD system,* K.L. MENNINGEN, H. TOYODA, M.A. CHILDS, L.W. ANDERSON, AND J.E. LAWLER, University of Wisconsin. - The time evolution of the methyl radical (CH₃) density, acetylene (C₂H₂) mole fraction, and filament properties, as well as the diamond growth rate and film quality, are measured in a hot filament CVD system when C₂H₂ and H₂ are the input gases. The CH₃ density and C₂H₂ mole fraction depend greatly on the degree of filament surface poisoning. The results obtained when C₂H₂ and H₂ are the input gases are compared to those obtained when CH₄ and H₂ are the input gases. Under such conditions that the filament surface is not poisoned, the CH₃ concentrations are similar if the input gas contains an equivalent amount of carbon in the form of either C₂H₂ or CH₄.

*Work supported by the Army Research Office.

DA-4 Two-photon LIF and VUV absolute atom density measurements in a H₂ discharge, J. AMORIM*, M. TOUZEAU, G. BARAVIAN, J. JOLLY, LPGP (CNRS), U. of Paris-Sud, Orsay, France and J. LOUREIRO, Univ. Tec. Lisboa (IST), 1096 - Lisboa - Portugal - Multiphoton Laser Induced Fluorescence (LIF) and Vacuum Ultraviolet Absorption (VUV) are employed in order to measure hydrogen atom concentration in a dc glow discharge. An absolute calibration of the LIF signal is obtained by absorption on the L_α line. The atom temperature values are deduced from LIF Doppler profiles. In typical operating conditions of a positive column (0.5 - 5.0 Torr pressure range and 1 - 50 mA discharge current), the atom density varied from 10^{13} cm⁻³ to 10^{14} cm⁻³, and the atom temperature between (336±43) K to (1580±90) K. The experimental data are compared to the results of a kinetic model, where the electron energy distribution function, the vibrational distribution function of H₂(X¹Σ_g⁺, v) molecules, the concentrations of dissociated atoms H(1s) and negative ions H⁻ have been self-consistently calculated by solving the Boltzmann equation coupled to a system of rate balance equations.

* partially supported by CNPq/MAer - Brazil.

DA-5 Comparison of Different Excitation Schemes for Two-Photon Excited Laser Induced Fluorescence Spectroscopy in Atomic Hydrogen, U. CZARNETZKI, K. MIYAZAKI, T. KAJIWARA, K. MURAOKA, M. MAEDA, and H. F. DOBELE*, Kyushu University, *Universitat Essen - Two-photon excited laser induced fluorescence spectroscopy in atomic hydrogen was performed under various excitation conditions. A flow tube reactor provided well reproducible atomic hydrogen densities of the order of 10^{14} cm⁻³. The laser bandwidth (0.8 cm⁻¹ and 11 cm⁻¹), the polarization (unpolarized, linear and circular polarized) as well as the excitation wavelength (2 x 205 nm to n = 3 and 193 nm + 195 nm to n = 4) and the observation wavelength (Balmer alpha and beta) have been varied. The experimental results for the different schemes are compared with each other and with theoretical predictions. Application was made to the determination of absolute and spatially resolved atomic hydrogen densities in an RF-discharge operated in silane.

DA-6 H Atom Detection in a DLC Deposition Plasma*, R. CHESHIRE, W.G. GRAHAM, M. HIGGINS, T. MORROW, V. KORNAS† and H.F. DÖBELE†, Queen's Univ. Belfast - Since atomic hydrogen can play a crucial role in many plasma processes the determination of its ground state density in processing plasma is important. We report on the application of two-photon LIF in connection with a commercial DLC film deposition system. Two 205 nm-photons excite ground state atoms to the n=3 state and the light from the subsequent decay to the n=2 state (H_α) is observed. The 205 nm beam is produced by mixing of 615 nm and 307.5 nm dye laser generated radiation in a BBO crystal with energy up to 1 mJ. Special emphasis is given to absolute concentration measurements. A hot filament atom source is used for in-situ-calibration which in turn is calibrated itself using the NO₂ titration technique. Commissioning measurements, made in hot filament sources and a magnetron, will be reported.

*Work supported by EC BRITE project BE-4647-90

†Univ. Gesamthochschule Essen

DA-7 Laser-Induced Fluorescence Spectroscopy of Laser Ablation Plasma, S. BOILY, M. CHAKER, Y. HUAI, S. GULICK, J. C. KIEFFER, B. STANSFIELD and J. MARGOT*, INRS-Énergie et Matériaux, Varennes, Qc. * U. de Montréal, Qc.

Time-of-flight laser-induced fluorescence spectroscopy has been used for the characterization of the SiC plasma produced by an excimer KrF laser (λ=249 nm, E=100 mJ, τ=12 nsec) in the context of laser ablation deposition studies. The spatio-temporal evolution of the fluorescence signal was obtained by exciting the ground state Si $3p^2 \ ^3P_0 \rightarrow 4s \ ^3P_1^0$ transition at 251.43 nm and observing the fluorescence of the $4s \ ^3P_1^0 \rightarrow 3p^2 \ ^3P_2$ transition at 252.85 nm. This allows us to quantify the velocity of the neutral silicon Si⁰ and then the spatial evolution of the velocity distribution function with the laser intensity (10^8 - 10^9 W/cm²). These results were compared with those obtained by time-resolved emission spectroscopy measurements.

DA-8 Measurement of Electron and Negative Ion Densities in a RF SF₆ Plasma, A. KONO, M. ENDO and T. GOTO, Nagoya Univ., Nagoya 464-01, Japan - Electron and negative ion densities in a RF (13.56 MHz) SF₆ plasma have been measured in a pressure range of 30-700 mTorr using microwave-cavity-resonance and laser-

TUESDAY AFTERNOON

photodetachment techniques. A 10-cm diam. disk was electrically separated from one of the bottoms of a cylindrical microwave cavity (14.6-cm inner diam., 2-cm high); the disk and the rest of the cavity thus served as a quasi-parallel-plate RF electrode system. At a RF power of 10 W, the electron density (N_e) peaked at SF₆ pressure of ~ 50 mTorr, where $N_e = 7 \times 10^8 \text{ cm}^{-3}$; the N_e value decreased down to $1 \times 10^8 \text{ cm}^{-3}$ as the pressure was increased up to 700 mTorr. The negative ion density (N_n) peaked at ~ 200 mTorr, where $N_n = 3 \times 10^{10} \text{ cm}^{-3}$. The N_n/N_e ratio was ~ 20 at 50 mTorr and it monotonically increased up to ~ 110 as the pressure was increased up to 700 mTorr. The decay of N_e and N_n in the afterglow was also measured. The initial decay of N_n was found to be very fast (time constant of $\sim 10 \mu\text{s}$) and thus could not be ascribed to the ion-ion recombination process. The mechanism of this rapid decay is under study. *Work supported by the Ministry of Education, Science and Culture and by Kurata Research Grant.

DA-9 Quenching of Two-photon Excited H(n=3) Atoms by Several Plasma-relevant Gases, A.D. TSEREPI, E. WURZBERG, B.L. PREPPERNAU, and T.A. MILLER, The Ohio State U. - Absolute calibration of LIF signals in high pressure plasmas requires knowledge of the efficiency of the quenching of the fluorescence by various gases present in these environments. Quenching rate coefficients have been measured for hydrogen atoms in the 3s²S and 3d²D states by H₂, O₂, N₂, Ar and He. A constant H-atom source is provided by the photolysis of C₂H₂ by 205 nm light, two photons of which are subsequently absorbed by the photofragment atoms to prepare the states under investigation. The fluorescence intensity and its temporal decay are measured as a function of quencher gas concentration in order to determine quenching rate coefficients. A model assuming quenching and 1-state mixing is used to fit the data and to evaluate the rate constants over a wide range of pressures. The results are compared to previous measurements over a more restricted range of pressures¹.

*Work supported by Air Force Wright Laboratories.

¹J. Bittner *et al*, Chem. Phys. Lett. 143, 571 (1988).

DA-10 Vacuum Ultraviolet Laser Absorption Spectroscopy of Hydrogen Discharges -- A. T. YOUNG, K. N. LEUNG, and D. M. PONCE, Lawrence Berkeley Laboratory, University of California, Berkeley, CA 94720, and D. WAGNER and H. F. DÖBELE, Institut für Laser-und Plasmaphysik, Univ. GH Essen, 45117 Essen, Germany, -- Low pressure plasmas have found use in a wide variety of applications, such as in ion sources. The chemical physics occurring in these plasmas, however, is not always well understood. In order to better understand these processes, Vacuum Ultraviolet (VUV) laser absorption spectroscopy has been used to measure the atomic and molecular densities and temperatures in low pressure ($< 3 \times 10^{-2}$ mbar) hydrogen discharges. Both filament driven and inductively-coupled rf plasmas have been studied. VUV light has been generated using two methods, Four Wave Sum Mixing, which has been used for measurements in the wavelength range from 93 nm to 125 nm, and Stimulated Raman Scattering, which has been used at wavelengths ≥ 120 nm. Measurements of the absolute H and internal-state-specific H₂ densities have been made under a variety of discharge conditions for both types of plasmas. These measurements will be compared and contrasted.

* This work has been supported by the U.S. AFOSR, the US DOE under contract No. DE-AC03-76SF00098, the German DFG through SFB191, and a NATO Collaborative Research Grant.

DA-11 Fast EEDF Probe Measurements Using DC Coupled Stepped Signal, F. M. DIAS, CEL Lisbon Technic. U. - We present an inexpensive, combined intermodulation-numerical differentiation

system that provides fast on-line analogic EEDF measurements with the advantage of convolution inversion. The measured signal only requires numerical smoothing for the calculation of higher order derivatives, *i.e.*, we do not need to smooth the probe characteristic. We present results of measured EEDFs in a surface wave sustained coaxial discharge. With the frequency constraints imposed by large capacitances in the system-experiment interfacing devices, the second derivative measurement is accomplished in 300 μs . Without averaging over multiple data points and with the limitation of a 12-bit acquisition board, a 3-decade EEDF range is achieved. This is made possible by taking advantage of the optimum transfer function provided by the analogic 3-point differentiation technique and using a finite amplitude stepped probing signal. As a direct result of the system high speed we did not experienced any problems of probe contamination, so no extra time was needed to clean the probe between successive data acquisitions.

DA-12 Eedf Measurements in a H₂/C₂H₂ Plasma.*

W. G. GRAHAM, Queen's Univ. Belfast, R. DOYLE and M. B. HOPKINS, Dublin City Univ. and T. O'BRIEN, Eolas, Dublin - The electron energy distribution function (eedf) in an H₂/C₂H₂ plasma, used for the deposition of diamond-like carbon, has been measured using a passively-compensated electrostatic probe technique. Deposition of material on the probe and its supporting structures can induce changes in the probe characteristic which are unrelated to the plasma behaviour. Here the plasma was created in an asymmetric, single electrode system, driven at 13.56 MHz. The electrostatic probe was positioned about 1 cm from the electrode. The probe's digitally-based data acquisition system allowed rapid and separate measurement of each energy point in the eedf immediately after probe cleaning. Nonsequential energy measurements meant that any hysteresis effects could be observed. Although changes in the spatial structure of the plasma, following 7% C₂H₂ addition to the H₂ plasma, complicate the interpretation, cooling of the high energy tail of the eedf is apparent.

* Work was supported by EC BRITE project BE-4647-90.

DA-13 Probe Measurements Using an Emissive Probe as a Reference Electrode, K. OHE and T. KIMURA, Nagoya Inst. Tech. Japan.

A tiny emissive probe (EP) of 0.06 mm ϕ and 10 mm length is used as a reference electrode in probe measurement using a cylindrical single probe of 0.06 mm ϕ and 4 mm length. The electron energy distribution function (EEDF) is detected in a He homogeneous positive column of 50 mm ϕ and 800 mm length, filled with $p = 0.32$ torr and operated at I_d from 5 mA to 80 mA. The probe $V_p - I_p$ characteristics is detected by sweeping the probe bias voltage using a 20 Hz ramp voltage with 50 V_{pp} . After digitizing both I_p and V_p , and averaging them 128 times, the EEDF is obtained from the second derivative of I_p with respect to V_p by a digital filtering method using the finite impulse response¹. The EEDF detected by the EP as the reference agrees with that by the cathode as the reference. A fairly good agreement between them is obtained by suppressing a small voltage difference between the plasma and floating potentials of EP due to the EP wire temperature by a feedback system using another tiny single probe. The present method is applicable to electrodeless discharge plasmas with minimum disturbance.

1. T. Kimura, A. Yoneya and K. Ohe, *Jpn. J. Appl. Phys.* **30** 1877 (1991)

DA-14 Plasma Monitoring System Using the Triple-Probe Method. T. UMEZAWA, K. SHINOHARA, Nihon Koushuh Co. Ltd., Yokohama, Japan and S. TEI, Musashi Institute of Technology, Tokyo, Japan. Plasma has been widely used for material processings such as etchings, depositions and sputterings in the fields of thin film and semi-conductor productions. For controlling the quality of these productions, plasma parameters must be monitored to kept always uniform in space and unchanged with time. For this purpose, a plasma monitoring system using the Triple-Probe method with an ion bombardment circuit has been developed. This system enables us to display continuously the electron temperature T_e and the electron density N_e for a long time in reactive gas discharge. Experiments have been carried out both in Silane and Methane gaseous plasmas. The obtained data and the basic circuit used will be presented.

DA-15 Mass Spectroscopy of Growth Precursors in Thermal Plasma CVD of Diamond Films. * H. J. YOON, P. G. GREUEL D. W. ERNIE, and J. T. ROBERTS, U. of Minnesota - Instrumentation has been developed for mass spectrometric analysis of the growth precursor species impinging on growing films in high-pressure, high-power thermal plasma CVD. Growth precursor species are extracted from the plasma through a supersonic convergent-divergent nozzle located in the substrate into a two-stage differentially pumped mass spectrometer system. The system is designed to minimize alteration of species composition during the extraction/analysis processes, with threshold ionization mass spectroscopy utilized for the reliable detection of radical species. This presentation will focus on the system's design and its application to the study of diamond film deposition onto molybdenum substrates from a 3.3 MHz inductively coupled torch operating between 100 to 800 Torr in $\text{CH}_4/\text{H}_2/\text{Ar}$ mixtures. Results will be presented demonstrating the system's ability to reliably monitor growth precursor neutral and radical species. Measurements of precursor species (e.g., CH_n) as a function of discharge conditions and resulting film quality will be presented and the implications of these results for film growth mechanisms will be discussed.

*Work supported by NSF Grant No. ECD-8721545, Engineering Research Center for Plasma-Aided Manufacturing.

DA-16

Spatially-Resolved Mass Spectroscopy of Hydrocarbon Species in the Boundary Layer During the Deposition of Diamond Thin Films K. R. STALDER and W. HOMSI, SRI International, Menlo Park, CA 94025—We report on continuing investigations of high-pressure arcjet plasmas. In addition to optical-emission and laser-induced-fluorescence studies,¹ we are studying the spatial variation of the hydrocarbon species that impinge upon the surface. Previous measurements of non-spatially-resolved mass spectra showed a linear conversion of methane to acetylene, and erratic methyl radical signals, the latter of which could be due to turbulent boundary layer chemical reactions. Both CH_3 ($M/e=15$) and C_2H_2 ($M/e=26$) are thought to be important species leading to diamond formation. We continue to observe these species, and their fragments. We also observe significant concentrations of $M/e=28$ and 29, which are probably C_2H_4 and C_2H_5 , respectively. Spatially-resolved mass scans are achieved by mounting the arcjet source on a large x-y-z translator that enables the arcjet's stagnation point to be scanned around the sampling orifice in the deposition substrate.

¹K. R. Stalder and J. B. Jeffries, *Diamond and Related Materials* 2, 443 (1993)

*Work supported by ARO under Contract DAAH04-93-K-0001

DA-17

Spectroscopic and Video Observations of Fullerene Production Arcs. D. C. LORENTS, K. R. STALDER, D. M. KEEGAN, R. S. RUOFF, and R. M. MALHOTRA, SRI International, Menlo Park, CA 94025 - Spatially resolved spectroscopic studies of a carbon arc operating under fullerene production conditions have been made across the visible wavelength range using an imaging Optical Multichannel Analyzer. C_2 Swan bands are observed to be the major visible emissions although strong CI and CII as well as He I atomic lines are also observed. Video and photographic studies of the arc characteristics show the Swan-band emissions to be concentrated most intensely near the anode but also to appear strongly in regions well outside the electrode gap region. Vibrational and rotational temperatures of these bands provide information on the temperatures in various regions of the arc. The characteristic spatial structure of the arcs observed in the Swan-band light suggests that they are excited by electrons whose trajectories are controlled by the local electric and magnetic fields. The arc exhibits complex and interesting temporal behavior that has been observed with a video camera using short exposure times. Video film taken through a Swan-band filter clearly shows the dominant spatial features of the C_2 emissions.

*Work supported by Sandia National Laboratories.

DA-18 Optogalvanic Single-color Multiphoton Ionization Spectroscopy of Uranium in a Hollow Cathode Discharge. S. LÉVESQUE, F. BABIN and J.-M. GAGNÉ, École Polytechnique de Montréal - Single color multiphoton ionization spectra of atoms can be obtained using the fast pulsed ($\sim 10^{-9}$ s) optogalvanic signal generated by photoionization in the dark space of a hollow cathode discharge. Such spectra have been measured for uranium in the spectral range of rhodamine 6G with a high laser bandwidth excitation (0.3 cm^{-1}). In the process of ascribing an ionization scheme to each line through the known levels of uranium, many possibilities appear. In order to help us select the correct scheme, we perturbed the atomic level population distribution by optical pumping of the 16900.37 cm^{-1} level (7M_7). The spectrum obtained this way show many new strong lines. We try to explain these lines by a three photon resonant or quasi-resonant scheme, using known levels of uranium, or by a two photon scheme from the 16900.37 cm^{-1} level. In both perturbed and unperturbed spectra, many ionization schemes are still possible for each line. For this reason we have performed higher resolution scans of selected lines (in particular 5915.4\AA) in order to confirm the existence of more than one scheme for many lines.

DA-19 OH Dynamics in High Energy Pulsed Air Discharge * ALEXANDER ERSHOV and JACEK BORYSOW, Physics Department, Michigan Tech. University - Time transients of the number density of hydroxyl radical ground state ($X^2\Pi(v=0)$) formed in the DC high energy pulsed corona discharge were measured by means of laser-induced fluorescence. Frequency doubled tunable dye laser was tuned to one of the rotational lines of the $A^2\Sigma \leftarrow X^2\Pi$ ($v' = 1 \leftarrow v'' = 0$) band near 282 nm while emission at 309 nm, within $A^2\Sigma \rightarrow X^2\Pi$ ($v' = 0 \rightarrow v'' = 1$) band, was observed. The discharge peak current, I , varied from 10^{-2} to 10 A, and the time duration was from 500 ns to 50 μs . The discharge was operating at the atmospheric pressure and at 10 Hz repetition rate. The population of $v'' = 0$ of OH reaches the steady state within first 20 μs of the discharge and is independent on current for $I \geq 0.2\text{A}$. The significant build up of $v'' = 0$ state population was observed after the discharge pulse. Hydroxyl ground state number density reaches maximum value approx. 100 μs after the discharge and is up to three times larger than during the discharge pulse.

TUESDAY AFTERNOON

This increase of $v'' = 0$ population is attributed to the vibrational relaxation within $X^2\Pi$ state.

* Supported by The State of Michigan Research Excellence Fund

DA-20 Laser Induced Fluorescence Measurements of the Electric Field in an RF Sputtering Discharge, M.D. BOWDEN, Y.W. CHOI, K. MURAOKA and M. MAEDA, Kyushu U. - The electric field in the sheath region of an RF sputtering discharge was measured using a laser induced fluorescence technique. With this technique, a normally forbidden transition in the BCl radical becomes partially allowed in the presence of an electric field and detection of the fluorescence intensity of this transition allows the electric field to be determined^{1,2}. The discharge was operated in pure BCl₃ gas and in an Ar/BCl₃ gas mixture. The electric field distribution in the sheath region was measured for a range of gas pressures and input RF power. The ultimate aim of this experiment is to determine the relationship between the electric field distribution near the RF electrode and the velocity distribution of atoms which are sputtered from the electrode surface.

¹C.A. Moore, G.P. Davis and R.A. Gottscho, *Phys. Rev. Lett.* **52**, 538 (1984).

2. Y. Yamagata *et. al.*, *Jpn J. Appl. Phys.* **30** 166 (1991).

DB: MAGNETIZED AND MAGNETICALLY ENHANCED PLASMAS, INCLUDING ECR, HELICON, AND SURFACE-WAVE DISCHARGES III

DB-1 Laser Diagnostic Measurements of Electron and Ion Velocity Distributions in an ECR Discharge, M.D. BOWDEN, F. KIMURA, T. YONEDA, K. UCHINO, K. MURAOKA, M. MAEDA, Y. MANABE, M. KITAGAWA, T. KIMURA and R.K. PORTEOUS, Kyushu U. Matsushita Electric and Australian National U. Laser induced fluorescence has been used to measure the temperature and velocity distribution of ions in an argon ECR discharge. Measurements made in the source showed that the ion temperature was 0.15 eV and was not dependent on the conditions of the discharge such as gas pressure and microwave input power. The ion velocity distribution was also measured in the reactor region as a function of distance from the substrate. These measurements were compared to previously obtained measurements of electron temperature and density¹ and also to the results of a 2-D simulation of ECR plasmas².

¹M.D. Bowden *et. al.*, *J. Appl. Phys.* **73**, 2732 (1993).

²R.K. Porteous and R.W. Boswell, *Proc. 45th GEC*, 170 (1992).

DB-2 One Dimensional Modeling for Magneto-Microwave Plasma Using the Monte Carlo Method, M. IKEGAWA, Y. KAKEHI, and J. KOBAYASHI, Mechanical Engineering Research Laboratory, and R&D Promotion Office, Hitachi Ltd. - 1-D simulator for a magneto-microwave plasma used in semiconductor manufacturing equipment such as etching reactors and CVD reactors was developed combining a Monte Carlo particle plasma model and an electromagnetic

wave (2.45 GHz) damping model.¹ In this simulation a plasma production mechanism with electron cyclotron resonance and electromagnetic wave damping can be analyzed. For argon gas pressures of 0.13, 0.67, and 9.3 Pa, simulation results show that the plasma density distribution is strongly pressure dependent. As the gas pressure increases, the maximum moves from the ECR point towards the incident microwave.

¹M. Ikegawa, Y. Kakehi, & J. Kobayashi, *Jpn. J. Appl. Phys.* **31** (1992)p2030.

DB-3 Radial Modelling of a Surface-wave-produced Plasma Confined by a Static Magnetic Field, M. FORTIN and J. MARGOT, Université de Montréal - We present a self-consistent radial model for a cylindrical plasma column sustained by an electromagnetic surface wave in the presence of an axial, static and uniform magnetic field. Our model is based on that previously elaborated by Ilic¹ for a DC discharge. It requires solving the first three moments of the Boltzmann equation for both electrons and ions and it yields the radial profiles of the density and velocity of charged particles, of the space-charge electric field as well as of the electron and ion temperatures. The coupling between the plasma and the wave electric field occurs through the equation for the power balance per electron. Our presentation focuses on the influence of the discharge parameters (gas pressure, intensity of the magnetic field, wave frequency and plasma vessel diameter on the spatial distribution of the plasma characteristics. The calculations are performed for an argon plasma by assuming the electron energy distribution function to be Maxwellian and direct ionization to occur by electron impact on the atoms in their ground state.

¹D.B. Ilic, *J. Appl. Phys.* **44**, 3993 (1973)

DB-4 A Two-Dimensional Model of an Axisymmetric Electron-Cyclotron-Resonance (ECR) Plasma Processing system, *K.A. ASHTIANI, J.L. SHOHET, and W.N.G. HITCHON, Engineering Research Center for Plasma-Aided Manufacturing, University of Wisconsin-Madison - A two-dimensional particle-in-cell model of an ECR plasma processing system is developed in a cylindrical coordinate system, (r, z). The code is fully kinetic and treats both electrons and ions as particles. Each charged particle in the simulation has three velocity components, (v_r, v_θ, v_z). However, the variations in the azimuthal direction are ignored due to symmetry. An ECR heating scheme based on a single-particle solution of the particle trajectories in a Doppler-broadened resonance zone is utilized. The microwave fields are analytically calculated based on an extension of the WKB theory. Collisions with background neutrals are treated by a Monte-Carlo technique. In addition to being implicit, the model utilizes novel techniques to speed up the overall execution time of the code.¹ Two dimensional contours of plasma parameters such as density and potential will be presented and results will be discussed.

*Work supported by NSF Grant No. ECD-8721545.

¹W.N.G. Hitchon, T.J. Sommerer, and J.E. Lawler, *IEEE Trans. on Plasma Science*, Vol. 19, No. 2, 113 (1991).

DB-5 Simulations of a Magnetically Enhanced, Capacitively Driven Etching Reactor, * R.K. Keinigs, R.J. Faehl, M.E. Jones, Los Alamos National Laboratory, Los Alamos N.M. 87545 - Results from two-dimensional particle-in-cell / Monte Carlo simulations of a generic magnetically enhanced, capacitively

driven etching reactor are presented. The simulations are performed in a rectangular x-z geometry with a weak externally imposed dipole magnetic field. The B-field lies in the x-y plane, transverse to the driving electric field, and the field strength is chosen such that the electrons are magnetized and the ions are unmagnetized. Argon collisional cross-sections are employed in the Monte Carlo routines. The simulations provide qualitative information on the sheath structure at various angles to the magnetic field. The results of these simulations indicate how azimuthal etching asymmetries might arise in such a reactor. Ion phase space plots yield information pertaining to ion energy distributions across the powered electrode. How these qualitative features change as a result of changes in gas pressure and electric field strength will be presented.

*Work supported by U.S. Department of Energy

DB-6 Longitudinal Distribution of Plasma Density in the Low Pressure Glow Discharge with Transverse Magnetic Field. L PEKKER, Photran Corp., Lakeville Minnesota - In the magnetron sputtering systems the confinement of electrons is provided by transverse magnetic field. The influence of the magnetic field on the movement of ions in these systems can be ignored. As the ion free path is usually greater than the distance between anode and cathode-target, we can consider the movement of ions to the cathode without collisions. Based on these assumptions a one dimension model of the glow discharge was developed. Numerical results for the parameters typical for the magnetron sputtering systems are presented and discussed.

The conditions under which the cathode fall, in such glow discharge will disappear and the influence of magnetic field on the cutoff of the discharge is also discussed.

DB-7 A Long Mean-Free-Path Model of Neutral Transport and Chemistry in an ECR Etching System.* R.E.P. HARVEY, W.N.G. HITCHON, G.J. PARKER, Engineering Research Center for Plasma Aided Manufacturing, University of Wisconsin - Madison - In many low neutral-pressure (≤ 2 mtorr) systems the mean-free-path of a neutral particle may be of the order of the dimensions of the system. Fluid models of neutral transport are not valid in these cases; therefore, a long mean-free-path model of transport of neutral particles has been developed. A propagator matrix¹ is set up indicating the fraction of particles originating in the cell at (r', z') which experience their next collision in the cell at (r, z) . The matrix depends only on the particles mean-free-path and the dimensions of the system. The propagator matrix is iterated with neutral source rates, allowing for chemical reactions, to obtain a steady-state density of neutral species. The model is part of a hybrid model of the ECR etch system in CF₄.

* Work supported by NSF grant # ECD-8721545

¹W.N.G.Hitchon, D.J.Koch, and J.B.Adams, J. Comp. Phys. **83**, 79 (1989)

DB-8 Spectroscopic diagnostics in an oxygen RF Helicon plasma. A. GRANIER, G. TURBAN, B. GROLLEAU, LPCM, Institut des Matériaux de Nantes, 44072 Nantes, FRANCE. Optical emission spectroscopy is performed in a low pressure (1-50 mTorr) RF (13.56 MHz) helicon reactor in oxygen. First, the validity of actinometry, using argon as actinometer, is discussed and the variations of the actinometric signal with the pressure and the RF power are compared to those obtained in DECR plasmas¹ and microwave plasmas created by surface waves². In particular, it is shown that the oxygen atom

density linearly increases with the RF power (from 20 to 500 W). Second, the weak atmospheric band of neutral molecular oxygen, located at 760 nm (forbidden transition from O₂(b¹Σ) (v=0) to O₂(a¹Δ) (v=0)), is recorded and yields the rotational temperature of O₂(b¹Σ) which is expected to be close to the translation gas temperature. Temperatures in the range 300 to 400 K are so deduced.

¹ J.P. Booth, O. Joubert, J. Pelletier and N. Sadeghi, J. Appl. Phys., **69**, 618 (1991)

² A. Granier, D. Chéreau, K. Henda, R. Safari and P. Leprince, submitted to J. Appl. Phys.

DB-9 Investigation by Means of Optical Emission Spectroscopy of SF₆ and SF₆/O₂ Surface-wave Magnetoplasmas under ECR Conditions. L. ST-ONGE, J. MARGOT and M. CHAKER*, U. de Montréal - We examine the emission spectrum of a surface-wave-sustained SF₆ discharge operated at 2450 MHz and submitted to an axial static magnetic field, the intensity of which is close to that for ECR (875 Gauss). Various atomic and ionic lines of F and S are observed. The relative fluorine atom concentration is determined as functions of external conditions (gas pressure, magnetic field intensity, wave power) through actinometry measurements. At a fixed axial position in the reactor, the yield of F atoms per SF₆ molecule decreases by a factor of 3 when increasing the gas pressure from 0.1 to 5 mtorr, the operating range of our ECR system. Nonetheless, globally we observe a net increase of F concentration with pressure. We also observe the F atom density to increase with increasing wave power. The increase of the magnetic field intensity from 840 to 960 Gauss results in a decrease of the F concentration, except for a small peak around 895 Gauss. Finally, the addition of O₂ to SF₆ yields a maximum F density for [O₂/O₂+SF₆]=25%.

*INRS-Énergie et Matériaux

DB-10 Density and Uniformity of Large Planar Plasma Sources Excited by Uniform Distributed Electron Cyclotron Resonance. A. DURANDET*, K. TYNELIUS - DIEZ*, T. LAGARDE and J. PELLETIER, Laboratoire de Physique et Chimie des Procédés Plasma, Université Joseph Fourier (Grenoble, France), Unité CNRS - In the conventional cylindrical configuration of plasma reactors, the capability of processing substrates of large dimensions requires the generation of large volumes of plasmas. In such a configuration, a large volume of a uniform high density plasma cannot be achieved. Obviously, a uniform planar plasma source is better adapted than the cylindrical configuration in the case of treatment of planar substrates. The uniform distributed electron cyclotron resonance (UDECR) plasma reactor, where linear microwave applicators can sustain standing waves of a constant amplitude along the multipolar magnetic structure, may be used to create large planar plasma sources. The capabilities of this technique are illustrated at 2.45 GHz excitation frequency with a 40 cm x 50 cm plasma reactor, equipped with four parallel UDECR applicators in a planar configuration. We present the density and uniformity of an Ar plasma as a function of gas pressure and microwave energy. Plasma densities saturate at the critical density ($n_c = 7.5 \times 10^{10} \text{ cm}^{-3}$ at 2.45 GHz).

* Métal Process (Meylan, France)

DB-11 Spatial Profiling of Ion and Neutral Excitation in Noble Gas Electron Cyclotron Resonance Plasmas*, R.L. RHOADES and S.M. GORBATKIN, Oak Ridge National Laboratory. Due to the complex nature of ECR plasmas, spatial variations can be driven by microwave modes, gas kinetics, and many other factors. In an effort to characterize these variations, spectroscopic techniques were used to profile the spatial distribution of emission from various noble gas

TUESDAY AFTERNOON

neutrals and ions (Kr, Ar, Ne, He, and combinations thereof). Plasmas were generated in a commercial two-coil mirror-field system with typical microwave input powers of 750W. In argon, the profiles {Ar(696.5nm) and Ar⁺(488nm)} were slightly center-peaked at 0.25 mTorr with a gradual transition to a very hollow appearance at 1.0 mTorr. Neon {Ne(585.3nm) and Ne⁺(377.7nm)} showed a similar trend from 2.5 mTorr to 10.0 mTorr. In general, ion profiles showed slightly stronger variation than neutral profiles, with the majority gas dominating the overall shape of the profile in mixtures. These measurements along with probe data provide insight into the role of neutral depletion in the formation of hollow emission profiles.

* This research was sponsored by the Division of Materials Sciences, U.S. Department of Energy, under contract DE-AC05-84OR21400 with Martin Marietta Energy Systems, Inc.

DB-12 CF, CF₂ and CF₃ Radical Densities in On-off Modulated ECR-CHF₃ Plasma, M.HORI, K.TAKAHASHI and T.GOTO, Dept. of Quantum Eng., Nagoya University - The CF, CF₂ and CF₃ radical densities were investigated using infrared diode laser spectroscopy (IRLAS) in a down stream of CHF₃ electron cyclotron resonance (ECR) plasma with changing on-off period of microwave source. CHF₃ pressure was fixed at 0.4Pa, the microwave on-power at 300W and the CHF₃ gas flow rate at 5sccm. Microwave was on-off modulated by a pulse generator. The pulse width was kept constant at 100ms and on-period of the microwave was changed from 15ms to 100ms. The radical measurement was carried out at 2cm above the substrate plate placed at 22cm downstream from the ECR Plasma region. In an on-period of 15ms and off-period of 85ms, the CF₃ and CF radical densities were estimated to be $4 \times 10^{13} \text{cm}^{-3}$ and $1 \times 10^{12} \text{cm}^{-3}$, respectively. The CF and CF₂ radical densities decreased rapidly and reached a steady state with increasing on-period, while the CF₃ radical density was varied slightly.

DB-13

Experimental Determination of the Maximum X-ray Production in an ECR Processing Plasma by Using Response Surface Methods* K.H. Chew, J.L. Shohet, E. Barrios, L. Ponce-de-Leon, and S. Bisgaard. Engineering Research Center for Plasma-Aided Manufacturing, U. of Wisconsin-Madison-Electron cyclotron resonance(ECR) processing plasmas have been previously shown to produce low-energy x rays¹. This radiation may cause damage to the wafer being processed. The x-ray production, both in terms of energy and total number of photons, depends on many plasma parameters. In order to determine the potential for damage of a wafer being processed, one would need to know what values of these parameters produce maximum x-radiation. Response surface methodology (RSM) is used to find the parameter levels which enhance or minimize a particular operational condition. An ECR plasma reactor is used for this experiment. The x-ray detection apparatus consists of a Si(Li) detector with a beryllium window, a pulse processor, and a pulse-height analyzer. Initial x-ray measurements show a maximum energy of 17 keV at an operating power of 1 kW with the most intense x-rays coming from points where the magnetic field lines pass through the resonant zone and cross the chamber wall. Response surface models are generated for air, nitrogen, and CF₄.

* This work was supported by the National Science Foundation under Grant No. ECD-8721545
1. T.J. Castagna, J.L. Shohet, D.D. Denton, and N. Hershkowitz, Appl. Phys. Lett. **60** 2856 (1992)

DB-14 Langmuir Probe Results on an MBE Plasma Ion Source, M. J. BUIE*, H. L. SPINDLER**, J. B. GEDDES and M.L. BRAKE, Department of Nuclear Engineering, Univ. of Michigan,

and M. DAHIMENE, Wavemat, Inc., Plymouth, MI - Density and temperature uniformity measurements have been made using double Langmuir probes on an electron cyclotron resonance plasma ion source used for molecular-beam epitaxy. The ECR ion source is a Wavemat MPDR® 610 resonant cavity based system utilizing permanent magnets with a microwave excitation frequency of 2.45 GHz. The probe position is varied in the axial and radial direction downstream of the ion source to determine the spatial uniformity of the ion beam. Power levels are varied from 50 to 300 Watts for flow rates ranging from 2.5 to 30 sccm for argon pressures ranging from < 0.1 mTorr to 3 mTorr. These results will be compared to optical emission spectroscopic measurements.

* IBM Manufacturing Fellow 1992-1993
** GE Fellow 1992-1993

DB-15 Ion energy control in an ECR ion source,* T. AKITSU, E. OGAWA,^{a)} H. MIYASHITA, M. MIZUNO, and H. MATSUZAWA, Yamanashi University, JAPAN- In a grid-less ECR ion source, the ion beam energy was controlled with a positively-biased multicusp beam-guide that was set closely around a beam extracting aperture. The ion energy spectrum showed reasonable correlation with the voltage drop at the target sheath. The multicusp stabilized low frequency oscillations inside the source plasma. At pressures lower than 4.7×10^{-2} Pa, the superposition of the DC cross-field discharge caused significant increase in the extracted ion beam current.

a) Present address: Kokubu Works, Hitachi LTD, Japan.

* Work realized by the courtesy of the ANELVA LTD. Dry Etching Division.

DB-16 Investigation of the Etching Selectivity of W, SiC and Resist in a Surface-wave-sustained Discharge under conditions close to Electron Cyclotron Resonance (ECR), F. BOUNASRI, M. MOISAN, J. MARGOT, M. CHAKER* and M.A. EL KHAKANI*, U. de Montréal - We present initial results concerning the application of a surface-wave-sustained ECR plasma to the etching of W, SiC and thin films of SAL - resist deposited on Si substrates. We focus mainly on the influence of the gas pressure (0.1-5 mtorr), percentage of O₂ in SF₆ (10-90%), magnetic field intensity, and microwave power upon the etching selectivity of W, SiC and resist. As an example, our results show that the etching selectivity for W/SiC increases rapidly with the discharge total pressure, reaching 16 at 5 mtorr; the highest value of selectivity in the present work is obtained with W/resist at 4.5 mtorr with pure SF₆ where it reaches 25. Addition of oxygen to the discharge increases the selectivity for W/SiC and resist/SiC.

* INRS-Énergie et Matériaux

DB-17 Etching of Amorphous Si_{1-x}Ge_x Films in a Helicon Reactor, H. M PERSING, A. J. PERRY, and R. W. BOSWELL, Space Plasma and Plasma Processing Group, PRL, RSPhysSE, Australian National University - Previous etching of SiGe alloys has focused on the etching of crystalline films using conventional Reactive Ion Etching (RIE) [1,2]. In contrast, the Helicon reactor allows etching at low pressures. Undoped Si_{1-x}Ge_x films with $0.05 \leq x \leq 1.0$ were evaporated onto Si(100) wafers. These films were etched in a Helicon reactor using CF₄, CHF₃, SF₆, and CFCl₂ chemistries. The etch characteristics were measured as functions of etchant flow rate (neutral

density), rf power (ion density), and substrate bias voltage (ion energies). The implications of these results for device fabrication will be discussed.

[1] A. A. Bright, S. S. Iyer, S. W. Robey and S. L. DeLage, *Appl. Phys. Lett.* **53** (23), 5 December 1988, 2328.

[2] G. S. Oehrlein, Y. Zhang, G. M. W. Kroesen, E. de Fresart and T. D. Bestwick, *Appl. Phys. Lett.* **58** (20), 20 May 1991, 2252.

DB-18 Deposition in the Helicon Reactor with SiCl_4 , H.M. PERSING, M.A. JARNYK, R.W. BOSWELL, K.G. ORRMAN-ROSSITER*, and J.S. WILLIAMS, Plasma Research Laboratory, Australian National University, *Materials and Microelectronics Technology Centre, Royal Melbourne Institute of Technology — Experiments in the helicon reactor have demonstrated that etching in a SiCl_4 plasma competes with a deposition process. Ex-situ RBS and AES analyses of the deposited films indicate a SiO_x composition. The etch profiles in mask-shadowed regions show that the deposition is strongly dependent on the neutral flux whereas the removal of the deposited material is a function of the ion-energy flux. Under conditions of low ion-energy flux, conditions experienced by the sidewalls, deposition dominates and etching is inhibited. Increasing the ion-energy flux by changing the applied bias voltage or changing the plasma potential increases the etching component of the process. Temperature measurements of the helium back-cooled samples show that the sample temperature varies between 20 and 100°C. Over this range, temperature effects are not observed.

DB-19 ECR-Plasma Enhanced Deposition of Protective Coatings for Space Structures* J. BLEZIUS, M. OLIVIER, A.K. GHOSH and A. SINGH, MPB Technologies Inc. and National Optics Institute - Long duration exposure of space structures in low earth orbit environment deteriorates materials due to multiple effects of atomic oxygen interaction, UV radiation, extreme thermal cycling as well as micrometeoroid impacts. In this paper the development of protecting coatings based on ECR-plasma enhanced deposition of various materials (P-SiO₂, P-SiON, P-DLC_{Al}) are described. The advantages of ECR plasmas with regard to efficient microwave energy coupling into the plasmas, low temperature deposition of films, high deposition rates etc., will be discussed. The scalability of the process for larger structures will be outlined.

* Work supported by Canadian Space Agency.

DB-20 Magnetic field enhanced nitrogen atom beam source, J. GEDDES, R.W. McCULLOUGH, D.P. HIGGINS, J.M. WOOLSEY and H.B. GILBODY, The Queen's University of Belfast, U.K. - The dissociation of nitrogen in a 2.45 GHz microwave discharge has been greatly enhanced by the application of a magnetic field perpendicular to the oscillating electric field. The degree of dissociation (of up to 0.67) in the emergent nitrogen beam was found to be strongly dependent on magnetic field strength, nitrogen pressure and microwave power. Observations have been interpreted in terms of microwave absorption resonances.

DC: DUSTY PLASMAS

DC-1 The Effects of Dust Particles on Ion Energy Distributions in rf Glow Discharges. * Helen H. Hwang, Seung J. Choi and Mark J. Kushner, University of

Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - The transport of dust particles in radio frequency (rf) glow discharges is often dominated by momentum transfer from ions through a viscous ion drag force. The ion energy distribution (IED) resulting from the penetration of ions through large accumulations of dust at sheath edges can be significantly altered by this momentum transfer. We have theoretically investigated the effects of dust particles on IEDs in rf etching glow discharges using a Monte Carlo-Fluid hybrid model, and results from that study will be reported. The model uses Monte Carlo simulations (MCS) to obtain electron and ion energy distributions, and a fluid model for charge densities. The transport of dust particles is included in the fluid model using ion-dust momentum transfer cross sections generated by an off-line PIC simulation. Ion-dust particle collisions are also included in the MCS. We will discuss IEDs in dusty plasmas for conditions of the GEC reference cell.

* Work supported by U. of Wisc. ERC for Plasma Aided Manufacturing, SRC, NSF, and Sandia Natl. Lab.

DC-2 Particulate growth and detection in RF plasmas*

G. PRABURAM, J. GOREE, Dept. of Physics, Univ. of Iowa

Sub-micron size carbon particulates are grown in an argon rf plasma with graphite electrodes. The dust grains are levitated by the sheath electric field several millimeters from the electrodes. They stratify into layers according to their size, and each layer is less than 1-mm thick. The plasma device is a capacitively-coupled rf parallel-plate configuration with 7-cm diameter electrodes, $f = 13.56$ MHz and ≈ 100 W power.

Also, we have carried out a numerical study of various schemes of measuring particle size and density by Mie scattering of laser light. Assuming spherical dielectric particles, we have computed the scattering cross section and extinction coefficients as a function of particle radius for various values of laser wavelength, refractive index and polarization. We have tested these for sensitivity to systematic experimental errors such as scattering angles that are slightly mis-aligned.

* Work supported by NSF and NASA

DC-3 Forces on Dust Particles in RF Discharges*

D. WINSKE, M. E. JONES, R. K. KEINIGS, R. A. GERWIN Los Alamos National Lab., M. DALVIE, G. S. SELWYN, M.

SURENDRA IBM T. J. Watson Res. Ctr. - Particulate contaminants in rf sustained plasma processing reactors remain a significant problem. Laser scanning measurements have demonstrated that these dust particles migrate to well-defined regions of the discharge; the traps have characteristic, long-lived boundaries. We analyze in detail the various forces on the dust: electric, gravitational, neutral-dust drag, and ion-dust drag, including the effects of the size of the dust grains compared to their relative spacing and the Debye length. The dynamics of dust particles subject to these forces are investigated using one- and two-dimensional fluid discharge models to determine the steady state macroscopic parameters. The dust tends to reside at the edge of the sheath where the dominant electric and ion-dust drag forces balance, producing structures similar to those observed.

*This work was performed under the auspices of the U.S. Dept. of Energy.

DC-4 Plasma Process Monitoring using Spatially-Resolved Optical Emission and Diode Laser Spectroscopy H. M. Anderson and D. Behl, University of New Mexico, A.C. Stanton, Southwest Sciences, Inc. Real-time plasma etch process monitoring,

TUESDAY AFTERNOON

based on sensors which measure plasma properties which directly relate to the desired wafer features, is critical to the future competitiveness of the U.S. microelectronics industry. This paper reports on work with multiple fiber port, spatially resolved optical emission spectroscopy and lead-salt diode laser absorption spectroscopy for use as plasma monitoring sensors. Both the GEC Reference Cell and a TCP-modified Lam Research AutoEtch reactor were used in these experiments involving oxide wafer etching in fluorocarbon gases. Monitoring of CF_x and COF_x radicals along with broadband optical emission is shown to be an accurate measure of plasma etch characteristics.

DD: PLASMA SURFACE PHENOMENA

DD-1 Reflection coefficient of N_2 metastable molecules at the boundary surface. S. SUZUKI, H. ITOH, H. SEKIZAWA and N. IKUTA*, Chiba Inst. Tech., Tokushima U., Japan. --- The effective lifetime of N_2 ($A^3\Sigma_u^+$) metastable molecules has been measured in our laboratory using boundary condition of the third kind considering the reflection coefficient^{1,2}. Experiments are done in pure N_2 , N_2/CO , N_2/O_2 , and N_2/CH_4 . According to the analyses of effective lifetimes, we could determine the reflection coefficients but the values of them vary with time and the kind of mixture gas. The XPS observation has proved the change of concentration of surface substances³. In mixture gases, gradual change of surface materials are observed, and the constancy of the surface conditions seems not be expected. The reflection coefficients and the effective lifetimes are influenced largely by the history of surface conditions.

¹S. Suzuki, H. Itoh, N. Ikuta and H. Sekizawa, *J. Phys. D (Appl. Phys.)*, **25**, 1568 (1992).

²S. Suzuki, H. Itoh, H. Sekizawa and N. Ikuta, *J. Phys. Soc. Jpn.*, **62**, 2694 (1993).

³S. Suzuki, H. Itoh, H. Sekizawa and N. Ikuta, *Trans. IEE of Japan*, **113-A**, 1993. (in Japanese)

DD-2 Measurements of Surface Deactivation of Vibrationally Excited $N_2(X,v)$ on Various Materials Using 3D-BOXCARS. P. P. YANEY, K. A. RIMKUS* and J. W. PARISH, U. of Dayton**.

-- A flowing-gas discharge tube was developed to provide a range of molecular residence times of the gas in the discharge from more than 800 ms to 40 ms. For these measurements, the tube was operated at 30 mA and 15 Torr. The scanning 3D-folded BOXCARS technique was used with a probe volume of ≈ 6 mm long by ≈ 100 μ m diameter. The studies on N_2 were carried out to the fourth hot band ($v = 4$ to 5) with aluminum, pyrex and other specimen materials. The deactivation coefficient obtained for pyrex of $\gamma \approx 3.6 \times 10^{-4}$ was essentially independent of v . However, our measurements with aluminum show almost a linear dependence on v with the $v=1$ value of $\gamma \approx 4.9 \times 10^{-4}$ and a $v=4$ value of $\approx 34 \times 10^{-4}$. The $v=1$ value obtained for pyrex is in fair agreement with the previous calorimetric value of 4.6×10^{-4} .

* In partial fulfillment of the requirements for the M.S. degree in Electro-Optics.

** Supported by USAF Contract F33615-93-C-2303.

DD-3 Emission of High Energy (≈ 1 MeV) Charged Particles during implantation of 5 keV Protons on Palladium and Titanium foils. A. R. CHINDARKAR, A. S. PAITHANKAR, A. M. BHAGWAT*,

G. R. NAIK*, S. K. IYYENGAR and M. SRINIVASAN**, APPD/*RSSD/*NTPD, BARC, BOMBAY INDIA 400085. - Experimental observations of the anomalous emission of high energy (≈ 1 MeV) charged particles, when 5 keV protons impinge on Palladium and Titanium foils are presented. Thin (100 μ m) foils of Pd and Ti were implanted with a 5 keV proton beam produced by an RF ion source. The probe type ion beam extractor of diameter 3mm and length 13mm was employed to give current density at the target foil to about 0.1 mA/cm^2 and the total ion flux of $\approx 10^{18}$ ions/hour. For the measurement of the low intensities of high energy charged particles, the integrating property of CR-39 SSNTDs films was made use of. The energy estimate indicates that about 30-40% of the particles emitted have energy > 0.9 MeV. The results of the experiment show positive and reproducible evidence of emission of high energy charged particles.

DD-4 Influence of Nitrogen on the Oxygen Dissociation in a D.C. Discharge.* C.V. SPELLER, A.R. DE SOUZA and J.L. MUZART, Depto. de Física/LABMAT-UFSC, Brazil - The effect of the addition of molecular nitrogen on the oxygen dissociation is investigated in a low pressure gas discharge. The dissociation efficiency was measured as a function of N_2 concentration for $0.3 < p < 3$ Torr in discharge tubes of $6 < \text{diameter} < 21$ mm. It is shown that for a few percent of nitrogen the oxygen dissociation degree varies by a factor ranging from 1.5 to 10, depending on the nitrogen concentration, tube diameter and total pressure. The interpretation of the results clearly indicates that the observed effect is due to a wall diffusion loss decrease. This could be attributed to the occupation of recombination sites on the wall, thus leading to a decrease of the wall recombination process, as suggested previously¹.

*Supported by PADCT/FINEP, FUNCITEC and CNPq (Brazil).

¹C.Y. Kim and M. Boudart, *Langmuir*, **7**, 2999 (1991).

DD-5 The Use of Thin Silver Films as a Monitor for Oxygen Atoms*
by D. B. Oakes, R. H. Krech, and G. E. Caledonia
of Physical Sciences Inc.
20 New England Business Center
Andover, MA 01810

Monitoring of oxygen atom concentrations can be important in a variety of applications including discharges, photolysis systems and upper atmospheric/low earth orbit (LEO) studies. In LEO oxygen atom measurements must be made under conditions when the space platform is bombarded by oxygen atoms at orbital velocity, ~ 8 km/s. We have utilized our laboratory fast oxygen atom source to investigate the efficiency of oxidation of thin silver films by energetic oxygen atoms. Parameters varied include oxygen atom velocity, film temperature and film thickness. Measurements will be presented of transient observations of film oxidation using both resistance measurements and quartz crystal monitor evaluation of mass change.

* This work supported in part under NASA Johnson Space Center contract NAS9-18526 and USAF Phillips Lab/Geophysics Directorate contract F19628-88-C-0069.

SESSION EA: MICROWAVE DISCHARGES
Wednesday morning, 20 October 1993
Grand Salon A, 8:00-10:00
M. Chaker, presiding

Invited Paper

EA-1 Studies of Surface-Wave Induced Plasmas at Atmospheric Pressure in Helium Mixed Gas Plasmas for Elemental Analysis, J. HUBERT, S. BORDELEAU, C. TRAN KHANH, S. MICHAUD, C. BARBEAU* and J. MARGOT*, Chemistry and Physics*, U. de Montréal - Low power microwave induced plasmas have been extensively studied as atomization, excitation or ionization sources for elemental analysis. Several devices were used to sustain these microwave discharges including the surfatron. However, there are only a few reports on the use of higher power microwave discharges (> 300 W) for elemental analysis. Our presentation describes the use of a waveguide-surfatron launcher coupled with a water cooled discharge tube to achieve a high power (up to 1 kW) surface wave plasma at atmospheric pressure. The plasma gases are mixtures of helium and several atomic or molecular doping gases. The physical characteristics of these plasmas used in elemental analysis are examined. We also report the emission characteristics of several metals and non metals as a function of the plasma composition and absorbed power. Finally, examples of the analytical use of these mixed gas plasmas in the area of elemental analysis will be presented.

Contributed Papers

EA-2 2D Modeling of Microwave Plasma Enhanced Diamond CVD, B. Lane, *Plasma Dynamics*, Belmont, MA 02178 and *ASTeX, Inc.*, Woburn, MA 01801, E. Hyman, K. Tsang and A. Drobot, *Science Applications International Corporation*, McLean, VA 22102, and Richard Post, *ASTeX, Inc.* - We present results from a 2D self-consistent numerical model of microwave plasma assisted CVD reactors for diamond deposition in the 1-100 torr regime. Such modelling requires the treatment of (a) the microscopic coupling of electromagnetic energy to electrons and thence to the neutral gas, (b) the local gas phase neutral and charged particle chemistry of hydrogen, carbon and oxygen, (c) the macroscopic diffusive flows, species densities and temperature profiles and (d) the macroscopic microwave field pattern in realistic cavity geometries in the presence of plasma. These processes are tightly coupled: (i) the temperature and neutral density profiles depend on the heat deposition pattern which depends on the microwave coupling which in turn depends on the neutral density profile; (ii) the plasma density pattern depends on the electromagnetic field pattern which in turn is strongly influenced by the plasma. The problem thus requires a simultaneous, self consistent solution of all the above processes. We present 2D (R-Z) self-consistent simulations of the electromagnetic field pattern, electron density, temperature, atomic and molecular hydrogen and selected hydrocarbon species densities in an ASTeX High Growth Rate (HGR) reactor.

EA-3 Laser Diagnostics of Atomic Hydrogen and Oxygen Production in Diamond Deposition Microwave Plasmas, B.L. Preppernau,* K.D. Pearce, and T.A. Miller, Laser Spectroscopy Facility, The Ohio State University, Columbus, Ohio - This research involved the application of two-photon allowed laser-induced fluorescence (TALIF) to the study of atomic hydrogen and oxygen production in an industrial scale microwave plasma discharge apparatus. Absolute two-dimensional atomic hydrogen and oxygen concentration profiles were measured in an ASTeX HPMM microwave plasma diamond deposition reactor during actual diamond growth. Measurements were made in plasmas fed by the standard CH₄/H₂ diamond growth mixture as well growth mixtures based on acetone and O₂. The plasmas were operated at 1200 Watts microwave power, 40 Torr total pressure, and a substrate heater temperature of 830 C. Particular attention was paid to refining the concentration calibration technique and in determining a correction to account for the collisional quenching of excited state fluorescence in high pressure gases. Typical concentrations exceed 10¹⁷ per cm³ for these atomic species.

* Present Address: Sandia National Laboratories, Albuquerque, NM

EA-4 Long microwave field applicators for plasma generation: review, classification and main features, Z. ZAKRZEWSKI* and M. MOISAN, U. de Montréal - Linear (extended in one direction) microwave field applicators can be used to sustain without the need for a static magnetic field discharges long with respect to the free space wavelength. These discharges find applications, for example, in the plasma processing of large surfaces that can be made to move transversely in front of the field applicator (conveyor feeding) or to activate gaseous medium in high power gas dynamic lasers. A classification of these discharges is proposed, based on the characteristics of the wave sustaining the plasma, distinguishing between traveling wave discharges (slow and fast wave structures) and standing wave discharges (resonant structures). Examples of practical realizations of discharges in the various proposed categories are briefly presented (more in the poster session). The influence of the discharge mechanisms, wave characteristics and waveguiding structures upon the stability of the discharge and the plasma properties (including uniformity) is also analyzed.

*Permanent address: Polish Academy of Sciences, IMP-PAN, 80-952 Gdansk, Poland.

EA-5 Characterization by Emission Spectroscopy of a Microwave Sustained Plasma (TIA torch design) Operated in Open Air, A. GICQUEL*, J. HUBERT, M. MOISAN, A. RICARD**, G. SAUVÉ and L. ST-ONGE, U. de Montréal - We have contributed to the development of a plasma torch system where the gas flows through the inner conductor of a coaxial-like field applicator at the tip of which it gets ionized. This torch allows axial injection of working gases at flow rates of the order of 10 l/min. We will report the data obtained at 2.45 GHz and 500 W with He or Ar as the carrier gas using a 1 mm bore nozzle. The gas temperature T_g was determined by probing the rotational spectra of N₂ and N₂⁺ radiative states of the ambient air nitrogen. These two probes, which give similar values, show that T_g increases over the first few mm away from the nozzle tip, typically from 1000 to 3400 K in He and 2500 to 3700 K with Ar. The properties of H₂ in He mixtures were also investigated. It was found that a H₂ fraction of only 1% in the carrier gas increases T_g significantly. The electron density was measured through Stark broadening of the H_β line, yielding a value that decreases from 2 to 0.5 x 10¹⁵ electrons/cm³ when going away from the nozzle tip.

* U. Paris-Nord

**U. Paris-Sud

EA-6 Plasma Resonance Heating Effects in Surface Wave Sustained Plasmas, YU.M. ALIEV, A.V. MAXIMOV, Lebedev Institute, Russian Academy of Sciences, Moscow, Russia, H. SCHLÜTER, U. KORTSHAGEN, Exper. Physics II, Ruhr-University, Bochum, Germany and A. SHIVAROVA, Faculty of Physics, Sofia University, Sofia, Bulgaria - The radial temperature distribution of electrons and ions in surface wave sustained plasmas are studied accounting for the nonlocal heating effects caused by the enhanced radial electric field component in the presence of a plasma resonance. The case of resonance width larger than the electron mean free path is considered. It is shown that due to the resonance the maintenance of the discharge may be largely due to the enhanced radial component of the surface wave. On the basis of hydrodynamics the temperature of electrons and ions are predicted to have maximum values near the wall of the discharge tube. The resonance situation is also discussed in the frame of a nonlocal kinetic approach with radially varying electron distribution functions.

EA-7 High density microwave atomic source for dosing surfaces, G. C. H. ZAU, G. W. GIBSON and H. H. SAWIN, Massachusetts Institute of Technology - A new atom source based on a coaxial waveguide microwave cavity has been developed for dosing surfaces. All the tuning elements for the

WEDNESDAY MORNING

microwave cavity are external to the vacuum environment. This allows easy tuning of the cavity and eliminates the need for complex vacuum feedthroughs. The source also eliminates the transport losses of the traditional flow-through atom sources by generating the atoms in vacuum close to the reaction site and emitting them directly at the site. As a result, >90% dissociation has been achieved for chlorine feed gas.

SESSION EB: ELECTRON TRANSPORT IN GASES

Wednesday morning, 20 October 1993

Grand Salon C, 8:00-10:00

J.W. Gallagher, presiding

EB-1 Electron Transport in Helium at High E/N, JOHN INGOLD, GE Lighting, Cleveland, OH 44112--The five-moment method¹ is used to predict electron transport in helium at high E/N where inelastic effects are more important than elastic effects. Theoretical results for average velocity, average energy, and Townsend's ionization coefficient α are compared with those of Riemann.² It is concluded that the five-moment method gives good qualitative results at high E/N.

¹J. H. Ingold, Phys. Rev. A 40, 3855 (1989).

²K.-U. Riemann, Phys. Rev. A 46, 4717 (1992).

EB-2 Electron Drift Velocities in Molecular Gas-Rare Gas Mixtures, A. GARSCADDEN and R. NAGPAL, Plasma Research Group, WPAFB--Using realistic model cross sections for the buffer rare gas and the diluent molecular gas, experimental trends in the drift velocity (w_d) data for gas mixtures are explained. Observed data shows that there is a region at low E/N where w_d for the higher concentration of the molecular gas in the mixture are lower than those for the lower concentration. It is shown that this is due to an interplay between the effects on the electron distribution by momentum transfer frequency (ν_m) in the cartesian space and by the inelastic collision frequency (ν_{im}) in the velocity space. For Ramsauer rare gas buffer, w_d decrease because ν_m increases at lower electron energies to the left of the minimum while for non-Ramsauer rare gas buffer, the effect will occur only when the total effective ν_m increases. Model calculations in ref. 1 fail to explain these phenomena, since they would always predict an increase in w_d when the magnitude of the inelastic cross section is increased.

* Work Supported by the Wright Laboratory.

¹ Z. Lj. Petrovic, R. W. Crompton and G. N. Haddad, Aust. J. Phys. 37, 23 (1984).

EB-3 Analysis of the arrival-time spectra of electron swarms, H. DATE, H. HASEGAWA, K. KONDO, M. SHIMOZUMA and H. TAGASHIRA, Hokkaido Univ., Anan Tech. Col., Tomakomai Tech. Col., Hokkaido Univ. and Hokkaido Univ.--Arrival-time distributions of electrons, which are measured in usual time-of-flight (TOF) experiments, have been analyzed by a Boltzmann equation method¹ in nitrogen. In the analysis, the electron swarm parameters directly defined by the arrival-time spectra were calculated with using the electron collision cross sections, and the results were compared with those by a TOF experiment at E/N values, 100, 160, and 200 Td. The parameters consist in the newly introduced-continuity equation deduced by the interchange of space and time in the conventional continuity equation. By solving the new continuity equation, the arrival-time distributions were represented also to be compared with those by the experiment. The calculated parameters and the estimated distributions are in good agreement with the experimental results.

¹ H. Date, K. Kondo, S. Yachi and H. Tagashira, J. Phys. D: Appl. Phys. 25 442 (1992)

EB-4

WITHDRAWN

EB-5 Validity of the Boltzmann Equation Analysis for Electron Transport Using The Momentum Transfer Cross Section II R. YOKOYAMA H. Gotoda and N. IKUTA, Tokushima Univ. Jpn.----- Accompanied with a recent examination¹ of usual Boltzmann equation analyses for the electron transport under elastic collisions, test analyses are further performed in Reid's inelastic ramp model gas² using the FTI method. Differential elastic cross section assumed here is $q(\lambda) = q_0(1 + a \cos \lambda)$, "a" the anisotropy index of $-1/2 \sim 1$, and the integral cross section q_0 is given by a constant momentum transfer cross section q_m as $q_0 = q_m / (1 - a/3)$. Regardless of anisotropies in the velocity distribution, it is found that the mean energy and the drift velocity can be obtained accurately by the usual pseudo-isotropic analysis (PIA). However, the transverse diffusion coefficient D_T can not be given by PIA because it varies seriously by changing "a". This fact shows that ND_T at a given E/N can not be determined by the momentum transfer cross section q_m but are given by the integral cross section. Consequently, collision cross sections so far derived from D_T/μ data obtained in usual circumstances with anisotropic scatterings may have to be reanalysed.

1) N. Ikuta and H. Gotoda: J. Phys. Soc. Jpn. to appear 1993.

2) Ivan D. Reid: Aust. J. Phys. 32(1979)231.

EB-6 Transport Coefficients in Argon and Krypton with trace impurities of H₂, D₂, CO, CO₂, and H₂O, J. L. Pack* and R. E. Voshall, Gannon University, Erie, PA, Using a method described previously the distribution function of electron energies for electrons in argon and krypton with trace impurities has been obtained by a numerical solution of the Boltzmann equation. The electron drift velocity w , longitudinal diffusion coefficient DL/μ , and transverse diffusion coefficient DT/μ are computed. A comparison of calculated and experimental values of these coefficients give good agreement in hydrogen argon mixtures. Calculations show that impurity levels in excess of 200 ppm of H₂, D₂, or N₂ are required to cause a 10% change in w in the area of the Ramsauer minimum in either noble gas. Impurity levels of 2 ppm of CO, CO₂, or H₂O cause a change in w of 7% in the same range of E/N. As these impurity levels are typical of Reagent grade gas samples, further purification is necessary for accurate measurements.

* Present address: John L. Pack, 3853 Newton Drive, Murrysville, PA 15668

EB-7 Monte Carlo Simulation of Electron Swarm in Strongly Attaching Gases at Low E/N, M. YOUSFI, A. HENNAD, Univ. Paul Sabatier, CNRS, CPAT, Toulouse, FRANCE. It is known that electron distribution function and swarm parameters are calculated from Monte Carlo method by following electron seeds from initial conditions till their disappearance either by collisions (e.g. attachment) or by passing beyond the limits of simulation domain (arrival to anode or reaching maximum time allowed for simulation, etc...). At low E/N in the case of strongly attaching gases such as SF₆ having high attachment cross

sections at low energy (for reaction: $e + SF_6 \rightarrow SF_6^-$), most of electron seeds, after a few free flights, can be attached. In this case, Monte Carlo simulation is not able to calculate hydrodynamic swarm parameters with enough precision, because as time increases, the number of simulated electrons drastically decreases thus enhancing the statistical fluctuations. Furthermore, if E/N is too low all electrons can be attached thus completely stopping the simulation. In this communication, an improved Monte Carlo method is proposed to overcome this drawback. It is based on an additional fictitious ionization process with constant ionization frequency which artificially increases the number of simulated electrons. Then, using a simple relation between the electron distribution function of the fictitious gas (including the additional ionization process) and the real gas, the electron density and swarm parameters of the real gas (e.g. SF_6) can be obtained at low E/N values.

EB-8 High-Resolution Electron Energy Distribution Function in a RF Glow Discharge. * Chwan-Hwa Wu and Chihwen Li, EE Dept, Auburn U.

A two-dimensional electron-kinetic and ion-fluid simulation model coupled with Poisson's equation has been developed for helium radio frequency (RF) glow discharges. The new kinetic Generalized Monte Carlo Flux (GMCF) model handles the computations similar to that of Boltzmann equation, but it uses one transition matrix to compute the collision terms in two dimensional velocity space cells (v : speed and μ : velocity angle).^{1,2} Assuming a cylindrically symmetric geometry, the 2D simulation results illustrate the field, ionization rate, densities, electron current density, and electron mean energy in the radial (r)-axial (z) space. From the analysis of the electron energy distribution function, the electrons around the sheath close to the radial wall have a higher energy tail than the electrons in the center. The higher energy tail caused by the nonequilibrium radial transport effects due to radial fields generates more ionization events and makes higher densities in the radial sheath-bulk boundary.

* This work is supported by NSF under ECS-9009395.

[1] G. Schaefer and P. Hui, *J. Comput. Phys.* **89**, 1 (1990).

[2] C. Li and C. Wu, 45th Annual Gaseous Elec. Conf., **36** (1992).

SESSION FA: POLLUTANT PROCESSING AND PLASMA CLEANING

Wednesday morning, 20 October 1993

Grand Salon A, 10:15-11:30

J. Hubert, presiding

FA-1 Coronal Discharges in Air. * P. A. VITELLO, B. M. PENETRANTE, AND J. N. BARDSLEY, LLNL - Non-thermal plasmas generated through streamer coronas are of current interest due to their application to pollution control devices. A streamer coronal discharge produces non-thermal energetic electrons which, through dissociation and ionization processes, generate active radicals that in turn react with toxic molecules. Non-thermal plasma techniques can be used to destroy many types of hazardous molecules. For a given chemical gas mixture, the energy distribution of the electrons produced as the streamer bridges the gap between the electrodes is determined by the spatial and temporal evolution of streamer coronas. Streamers propagate due to a highly non-linear space charge driven ionization wave. We have developed a multi-dimensional coronal discharge model that can be applied to arbitrarily shaped electrode structures. We have applied this code to study some of the issues related to finding the optimum working conditions for streamer corona reactors. Our results show that the radial components of the electron flow and the space charge field are very important in providing an accurate picture of the streamer morphology. Results are shown for point-to-plane simulations with a 2 cm gap in air for various voltages.

*This work was performed at LLNL under the auspices of the U. S. DOE under Contract Number W-7405-ENG-48.

FA-2 Some Reactions in Pollutant Treatment Discharges.

T.H. TEICH, Swiss Federal Institute of Technology, Zürich. - While the final result of gas treatment by discharges can largely be assessed by IR absorption, the primary reactions initiated by electron collisions are not so readily surveyed, although insight into these reactions might indicate approaches to increased efficiency of the treatment process. In order to obtain information on at least some of the species initially involved and on the time scale of their reactions, sensitive measurements of light emission (190 - 830 nm) from a pulsed corona discharge¹ have been expanded. The emissions from the constituents of a standard flue gas (N_2 , CO_2 , H_2O , O_2 , NO) have been explored and the states $N_2(D)$, $N_2^+(B)$, $N_2^+(C)$, $CO_2^+(A^2\Pi)$, $CO_2^+(A^2\Sigma^+)$, $OH(A)$, $NO(A)$ and $NO(B)$ identified as suitable candidates for detection. Time-gated spectra combined with systematic changes in gas composition provide some hints as to the origin of the excited states and yield also rough quenching data as required for optical assessment of excited state initial concentrations. The emission history of particular excited states is then further explored by time-correlated photon counting and compared to relative energetic electron concentration which manifests itself, for instance, by $N_2(D-B)$ or $N_2^+(C-B)$ emission.

¹T.H. Teich, 45th Annual Gaseous Electronics Conference, Boston, Paper HB-4 (1992)

FA-3 Strategies for NO_x Cleanup from Air Streams

Using Dielectric Barrier Discharges. * Ann C. Gentile and Mark J. Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - Efficient processes for the removal of NO_x from exhaust gases due to the combustion of fossil fuels is of increasing interest due to stringent EPA limits on allowable emissions. Strategies for plasma remediation of NO_x using both reduction ($N + NO \rightarrow N_2 + O$) and oxidation ($NO_2 + OH \rightarrow HNO_3$) techniques are being developed as an energy efficient cleansing method. The dry reduction technique is preferred since there is no acidic waste product. We have developed a plasma chemistry computer model for atmospheric pressure gas streams excited by dielectric barrier discharges to investigate optimum methods to remove NO_x from air. We will report on efficiencies for removing 100s ppm of NO_x while varying water content and power deposition. Comparisons will be made to experiments by Chang et. al.¹

¹ M. B. Chang, M. J. Kushner and M. Rood, *J. Env. Eng.* **119**, 414 (1993)

* Work supported by Los Alamos National Laboratory and the National Science Foundation.

FA-4

WITHDRAWN

WEDNESDAY MORNING

FA-5 Plasma Cleaning by Ion Cyclotron Resonance for Plasma Source Ion Implantation. *J.L. SHOHEET M.J. KUSHNER** and E.F. WICKESBERG, Engineering Research Center for Plasma-Aided Manufacturing, Univ. of Wisconsin-Madison. -- Utilization of ion implantation techniques, as well as other processing involving plasmas often requires the elimination of unwanted ion species. Conventional implantation techniques use a mass spectrometer filter of an ion beam. In order to permit effective use of plasmas, which can allow implantation over wide areas, unwanted ion species must be removed. Ion Cyclotron Resonance Mass separation is particularly useful in this regard. In order to examine the feasibility of this technique, a Monte Carlo numerical simulation which demonstrates the effectiveness of this technique was undertaken. O_2^+ , N_2^+ , Ar^+ and Ne^+ are equally distributed in a 5 cm x 50 cm cylindrical region imbedded in a 15 x 1 x 100 cm rectangular chamber. A uniform external d.c. magnetic field of 875 Gauss is oriented parallel to the axis of the cylinder, with frequency-swept (20 kHz-100 kHz in 1 msec) circularly polarized r.f. electric field of 1 V/cm oriented perpendicular to the d.c. magnetic field. Collisions are included for all ions for elastic and inelastic charge exchange and the simulation was run for two pressures, 0.1 and 0.5 millitorr. In all cases, when the r.f. field approached the ion cyclotron resonance frequency of a particular ion, removal of the ion species took place. By eliminating the sweep component of a particular ion, no evidence of enhanced transport of that species was observed.

*Work Supported by NSF under Grant ECD-8721545

**University of Illinois, Urbana, IL

SESSION FB: COLD ATOM COLLISIONS
Wednesday morning, 20 October 1993
Grand Salon C, 10:15-11:30
T.G. Walker, presiding

Invited Papers

FB-1 Excited State Trap Loss Collisions.* P.L. GOULD, C.D. WALLACE, T.P. DINNEEN, K.Y.N. TAN, and A. KUMARAKRISHNAN, U. of Connecticut. We have measured rate constants for cold collisions which lead to ejection of rubidium atoms from a laser trap. Dramatic differences between ^{85}Rb and ^{87}Rb are seen^{1,2} which are attributed to the different hyperfine structures of both ground and excited states. The temperature dependence of the collisional rate constant can be investigated by exploiting the variation of temperature with trap laser intensity.

*supported by DOE, PRF, and NSF.

¹C.D. Wallace *et al.*, Phys. Rev. Lett. **69**, 897 (1992).

²P. Feng *et al.*, Phys. Rev. A **47**, R3495 (1993).

FB-2 Frequency Shifts due to Ultra-cold Atom Collisions, KURT GIBBLE, Yale University - It was anticipated that laser cooling of atoms to 2 μK would improve the accuracy and resolution of laser and microwave spectroscopies by 2 to 3 orders of magnitude. In state-of-the-art room temperature Cs frequency standards, the 9 GHz ground state hyperfine transition is measured with a fractional accuracy of 3×10^{-14} . Since all of the formerly known systematic effects that limit the accuracy increase either linearly or as some higher power of the atom's velocity, the accuracy of a laser cooled Cs standard should be $\approx 10^{-16}$. However, at μK temperatures, the de Broglie wavelengths of the atoms are much larger than the scale of the interatomic potential so that collision cross sections can be as

large as $\lambda_{dB}^2/2\pi \approx 10^{-10} \text{ cm}^2$. Here, collisional frequency shifts in a laser-cooled Cs fountain are measured to be -1.4×10^{-12} corresponding to a cross section of $0.5 \times 10^{-10} \text{ cm}^2$.¹ I also expect to report experimental results showing a potentially strong magnetic field dependence of these cross sections for fields smaller than 0.2 G. The field of ultra-cold collisions will also be reviewed.

¹K. Gibble and S. Chu, Phys. Rev. Lett. **70**, 1771 (1993).

Contributed Paper

FB-3 The Effects of Hyperfine Interactions on Collisions Between Optically Trapped Atoms.* T. WALKER, D. HOFFMANN, M. PETERS, and J. TOBIASON, University of Wisconsin-Madison -- We report measurements of excited-state collision rates of optically trapped ^{85}Rb and ^{87}Rb . The collision rates have been measured in the vicinity of the $P_{3/2}$ and $P_{1/2}$ states of both isotopes. By studying the collision rates as a function of the frequency of light used to cause the collisions, we obtain collision spectra that reveal the importance of hyperfine interactions on the collision dynamics. In certain frequency ranges the collision rates for the two isotopes are nearly identical, while in others we find substantially reduced rates for ^{87}Rb (large hyperfine interaction) as compared to ^{85}Rb (small hyperfine interaction). For the $P_{1/2}$ states, where hyperfine splittings are large compared to the characteristic frequency scale for these collisions, the shapes of the spectra more closely correspond to those expected from simple models that neglect hyperfine interactions.

*Supported by the NSF (PHY-9257058 and PHY-9213666) and the Packard Foundation. T. W. is an Alfred P. Sloan Fellow.

SESSION G: BUSINESS MEETING
Wednesday morning, 20 October 1993
Grand Salon A, 11:30-12:00
J. Dakin, presiding

SESSION HA: GEC REFERENCE CELL
Wednesday afternoon, 20 October 1993
Grand Salon A, 13:30-15:30
J.H. Keller, presiding

Invited Paper

HA-1 Nonlinear Electrical Phenomena in the GEC Reference Cell and in Industrial Reactors,* P. MILLER, B. ARAGON, K. GREENBERG, M. KAMON, R. PATTESON, P. POCHAN, L. ROMERO, and B. SMITH, Sandia National Laboratories - The initial interlaboratory comparison of Reference-Cell plasmas emphasized rf voltage and current measurements. Plasma properties were found to be dependent on rf circuit impedances at harmonics of the 13.56-MHz excitation frequency as well as on power, pressure, etc. The dependence was due to the nonlinear interaction of the plasma with the rf generator, cables, and matching network. This finding led to studies of performance

problems common to industrial etching reactors. Electrical diagnostics and methodologies that had been developed with the Reference Cell were applied to the production problems. We developed understanding of and control over subharmonic generation and we developed cures for chamber-to-chamber variability in etch rate and dc bias.

*Work supported by the U.S. Dept. of Energy and SEMATECH.

Contributed Papers

HA-2 Radial Concentration of Atomic Hydrogen in the GEC Reference Cell - B. Ganguly and P. Bletzinger, Aero Propulsion and Power Directorate, WPAFB, Ohio-- The radial concentration profile of atomic hydrogen has been measured as function of substrate loading with silicon wafers with diamond, diamond-like-carbon coating and uncoated in a GEC reference reactor operating over a range of 1 to 9 Torr H₂ pressure and 100 W rf power. A phase-locked two-photon laser induced fluorescence technique was used to measure atomic hydrogen concentrations¹. The radial concentration profiles have been measured at several axial locations and as close as 2mm from the grounded electrode. The wafer loading was found to slightly modify the radial profile as compared to the bare aluminum electrode. At pressures above 5 Torr the discharge becomes annular, however the radial atomic hydrogen concentration profile was still uniform. I. A.D. Tserepi, J.R. Dunlop, B.L. Preppernau and T.A. Miller, *J. Vac. Sci. Techn.*, **10**, 1188 (1992).

HA-3 The UK GEC Reference Reactor.*

N. Stj. BRAITHWAITE, Open Univ. UK, and W. G. GRAHAM, Queen's Univ., Belfast, N. Ireland. - A GEC Reference Reactor is currently under construction. The reactor will have a top moveable electrode, the bottom electrode will be powered and both will have alumina insulators. Paralleling the construction there is a programme to develop accurate electrical characterisation of the reactor. The reactor will also be equipped with a compensated Langmuir probe, ion mass and kinetic energy analysis through the bottom electrode and a time resolved optical emission diagnostic. When commissioned the reactor will act as a user facility for the UK low temperature plasma physics community with a particular role as a test bed for new diagnostic techniques. Progress on construction, commissioning and electrical characterisation will be reported.

* Work supported by the Science and Engineering Research Council of Great Britain and Northern Ireland.

HA-4 Two-Dimensional Simulations of RF Glow Discharges in the GEC Reference Cell, D.P. LYMBEROPOULOS and D.J. ECONOMOU, University of Houston. Two-dimensional fluid simulations of 13.56 MHz argon glow discharges in the GEC Reference Cell geometry were performed. Metastable species were included in a self-consistent manner. Spatio-temporal variations of electron energy and density, ion and metastable density, excitation and ionization rates were predicted. The electron density was found to peak in the radial direction. The metastable density profiles showed "hot spots" in both axial and radial directions at 1 torr pressure. These hot spots disappeared at low pressures. Ion and neutral flux non-uniformities along the electrodes were also predicted.

HA-5 Ion Energy Distributions for Multicomponent Gas Mixtures in the GEC Reference Cell. * Helen H. Hwang, Florence L. Foy and Mark J. Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - The ion energy distribution (IED) incident on wafers in rf discharges is important in determining the isotropy of etching microelectronic devices. In gas mixtures both exothermic (eg., He⁺ + N₂ → N₂⁺ + He) and endothermic (eg., N₂⁺ + He → He⁺ + N₂) ion molecule reactions alter the IED. Endothermic reactions cause the IED to be cut-off at the threshold energy for the inelastic process. A computer model has been developed to examine the effects of endothermic ion kinetics in rf discharges using the GEC reference cell. The model is a hybrid model combining electron and ion Monte Carlo simulations with a fluid simulation for charge densities and electric fields. Results for IEDs will be discussed for He/CF₄/H₂, He/N₂ and Ar/H₂ gas mixtures as a function of gas pressure and rf voltage; and for symmetric and asymmetric discharges.

* Work supported by U. of Wisc. ERC for Plasma Aided Manufacturing, SRC, and NSF

HA-6 Ion Energy Distributions and Balmer Alpha (H_α) Excitation in Ar-H₂ RF Discharges, S. B. RADOVANOV, J. K. OLTHOFF, R. J. VAN BRUNT, and S. DJUROVIĆ*, NIST - Time-resolved optical emission, mass-selected ion energy distributions (IEDs) at the grounded electrode, and current and voltage waveforms were measured for radio-frequency (rf) discharges generated in a GEC rf Reference Cell at 13.56 MHz using Ar-H₂ gas mixtures. Measurements were performed for different mixture ratios, total gas pressures, and applied rf voltages. Structure in the ion energy distributions suggest that ArH⁺ and H₃⁺ are formed in the sheath by ion-molecule collisions at energies between 5 and 35 eV. Consistent with previous reports,¹ we have observed an increase in the H_α emission from discharges in hydrogen when argon was added. Possible correlations between the measured IEDs and Doppler broadening of H_α emission are examined.

*Permanent address: Institute of Physics, Novi Sad, Yugoslavia
¹B. M. Jelenkovic, Z. Lj. Petrovic and A. V. Phelps, 1990 GEC Conference Abstracts, p. 170.

SESSION HB: ELECTRON-MOLECULE COLLISIONS
Wednesday afternoon, 20 October 1993
Grand Salon C, 13:30-15:30
M.A. Dillon, presiding

Invited Papers

HB-1 Electron Scattering Studies of Chlorine-bearing Hydrocarbons,* P.D. BURROW, U. of Nebraska, Lincoln, NE Halogenated hydrocarbon molecules appear in a number of applications of interest to Gaseous Electronics. Under low-energy electron impact many of these compounds readily fragment into free radicals and stable negative ions. Theoretical predictions of the cross sections and products of the dissociative attachment (DA) process in molecules with several halogens appear to be extremely difficult to carry out, although progress has been made on diatomics. This talk summarizes recent measurements and calculations on a much simpler family of molecules, namely those containing a single chlorine atom attached to a hydrocarbon frame. Even so, DA cross sections varying over 6 orders of magnitude can be illustrated. These results will be discussed in light of temporary negative ion energies, molecular

WEDNESDAY AFTERNOON

structure and related measurements on vibrational excitation.¹

*Work supported by NSF.

¹Contributions from D. Pearl, G. Gallup, I. Fabrikant, K. Jordan and J. Nash are gratefully acknowledged.

HB-2 Studies of Electron-Molecule Collisions on Highly Parallel Computers. V. McKOY and C. WINSTEAD, California Institute of Technology—We report on results of our studies of the cross sections for collisions of low-energy electrons with polyatomic molecules. These results are obtained using a multichannel extension of Schwinger's variational principle and an implementation of key steps of the associated computational procedure on distributed-memory parallel computers. After a brief discussion of some relevant aspects of the formulation^{1,2} and of our parallel implementation,³ we will present results from recent studies of electronic excitation by electron impact in several polyatomic molecules, including SiH₄, CF₃Cl, (CH₃)₂CO, *p*-C₆H₄O₂, and the C₅H₆ isomer [1.1.1]propellane.

*Supported by NSF and AFOSR.

¹K. Takatsuka and V. McKoy, Phys. Rev. A 23, 2352 (1981); 30, 1734 (1984).

²C. Winstead and V. McKoy, Phys. Rev. A 47, 1514 (1993).

³C. Winstead, P. G. Hipes, M. A. P. Lima, and V. McKoy, J. Chem. Phys. 94, 5455 (1991).

Contributed Papers

HB-3 Isomer Effects in Low Energy Electron Scattering by C₃H₆ Molecules. T. TAKAGI, L. BOESTEN, H. TANAKA, Sophia U., Tokyo, H. SATO, Ochanomizu U., Tokyo, and M. KIMURA, Argonne National Laboratory -- We recently measured differential elastic cross sections for electron scattering by the C₃H₆ isomers propylene and cyclopropane in the energy range 1.5-100 eV. We observed a strong isomer effect at small angles below 7 eV. In addition, the cross section for cyclopropane showed conspicuous structures at all angles. Both cross sections converged above 15 eV. Our continuum multiple scattering (CMS) calculations for the process reproduced the measured results reasonably well, and calculation provides an interpretation for the isomer effects, because of the presence of a weak dipole moment in propylene.

* Supported by the U.S. Department of Energy, Office of Energy Research, Office of Health and Environmental Research, under Contract W-31-109-ENG-38 (MK), and by a Grant in Aid from the Ministry of Education, Science, and Culture, Japan.

HB-4 Total Electron Scattering Cross-Sections and Negative Ion States of Halogenated Methanes.* T. UNDERWOOD-LEMONS, D. C. WINKLER, J. H. MOORE, and J. A. TOSSELL, U. of Maryland at College Park—The interaction of low energy electrons with halogenated methanes plays an important role in both their atmospheric and plasma processing chemistry. In this work, the total electron scattering cross-sections of mixed fluorohalomethanes (CF_nX_{4-n}) were measured for incident electrons in the energy range of 0.2-12 eV using electron transmission spectroscopy. Resonances in the scattering cross-sections may be interpreted as the capture of low energy electrons into unoccupied molecular orbitals. To aid in the assignments of

the resulting negative ion states, we performed quantum mechanical calculations of the electron attachment energies and measured the dissociative attachment cross-sections. The effect of halogen substitution on the orbitals participating in electron capture are examined.

*Work supported by the National Science Foundation Grant No. CHE-91-20504.

HB-5 Low Energy Electron Collisions with SF₆. S. K. Srivastava, Jet Propulsion Laboratory, Caltech - A survey on the electron collision cross sections for SF₆ will be presented for the following processes: elastic and inelastic scattering, ionization, attachment, and inner shell excitation. The energy range covered will be from 0 eV to 1 KeV. This survey will include previously published results and our most recent measurements on ionization and attachment. Cross sections for the formation of SF₅⁺, SF₂⁺, SF₂⁺⁺, and SF₃⁺⁺ have recently been measured in our laboratory. Cross sections for collisions leading to the formation of SF₆⁻, SF₅⁻, SF₄⁻, SF₃⁻, SF₂⁻, F₂⁻, and F⁻ have also measured and compared with previously published results.

*Work supported in part by the National Aeronautics and Space Administration and in part by the Airforce Office of Scientific Research.

HB-6 Ab-initio complex-Kohn calculations of dissociative excitation of the water molecule. TOMASZ J. GIL, THOMAS N. RESCIGNO, C. WILLIAM MCCURDY, AND BYRON H. LENGFIELD, Lawrence Livermore National Laboratory.—We are reporting results of close-coupling complex-Kohn calculations of cross sections for electron-impact excitation of the water molecule into electronically dissociative states in the energy range from the threshold at 8 eV to 30 eV. We have coupled five channels including the ¹A₁ ground state and excited singlet and triplet states formed by promoting the 3a₁ and 1b₁ electrons to the valence-Rydberg IVO 4a₁ orbital. They have theoretical vertical energies in the range from 8 to 12 eV and are known to be dissociative. Our calculations have confirmed the existence of Feshbach resonances related to the A₁ and B₁ excited states which are responsible for dissociative attachment in water at rather high energies. We found that they indeed correspond to configurations 3a₁4a₁² and 1b₁4a₁². Our results include both total and differential cross sections. We discuss the comparisons between theory and relative experimental data. Work was supported by the U.S. Department of Energy.

SESSION J: POSTER SESSION

Wednesday afternoon, 20 October 1993

Grand Salon B, 15:45-17:30

M. Fréchette, presiding

JA: MODELING AND SIMULATION

JA-1 Gas Pumping Effect in Low Pressure Discharges*

H.-B. VALENTINI, D. WOLFF, IPHT inc. Jena, Germany -

Using a steady-state gas dynamical three-fluid model the axial gas transport¹ in a positive column is calculated. The space charge density, the inertia of the particles, elastic and inelastic collisions and the viscosity of the neutral gas are taken into account across the

whole plasma. The equations of continuity and of momentum transfer for each species, the energy equation of the electrons as well as the Poisson equation for the electric field are used. Results for the radial profiles of the electric potential, the particle densities and the radial and, in particular, the axial drift velocities are given. In accordance with well-known experimental results it is shown that neutral gas flows to the anode if the degree of ionization is relatively high and to the cathode if the degree of ionization is very small. The change of the direction of the neutral gas flux is mainly caused by expansion of the space charge sheath with ion excess from wall into the plasma.

*Work supported by Deutsche Forschungsgemeinschaft

¹C.C. Leiby, Jr. and H.J. Oskam, Phys. Fluids 10, 1992 (1967)

JA-2 Influence of Background Gas Temperature on Electron transport coefficients and Propagation of Ionizing Wave in Flue Gas Discharges, A. POINSIGNON, H. HAMANI, M. YOUSFI, Univ. Paul Sabatier, CNRS, CPAT, Toulouse, FRANCE. The dependence of particularly electron attachment processes on temperature T_g of background electronegative gas is already known. Indeed, as T_g increases, due to the corresponding enhancement of the number density of vibrational excited molecules, the attachment processes become more efficient. Furthermore, it is known that temperature of flue gas from coal or oil fired power plants are generally higher than ambient gas temperature corresponding to usual conditions of measurements of electron transport coefficients. So, in typical flue gases (including mainly N_2 , O_2 , H_2O and CO_2), electron transport coefficients are calculated from numerical solution of Boltzmann equation taking into account the temperature effect on, more particularly, attachment coefficients. Then, from numerical solution of hydrodynamic conservation equations of electrons and ions coupled to Poisson equation, much emphasis is laid on the non-negligible consequences of such temperature effect on the anode directed ionizing wave characteristics (electron and ion densities and space charge electric field). Calculations are undertaken in flue gas discharge under overvoltage conditions and atmospheric pressure.

JA-3 Transition from a Townsend Discharge to a Normal Discharge via 2D-Modeling - V.I. Kolobov, A. Fiala, J.P. Boeuf, and L.C. Pitchford, CPAT, Université Paul Sabatier, Toulouse, France. - The constriction of a Townsend discharge on the right branch of the Paschen curve and an evolution of a subnormal discharge to a normal one has been investigated using a two-dimensional numerical modeling and an approximate analytical analysis. The calculations have been made for argon $pd=1-10$ Torr cm, gap length $d=1$ cm, electrode diameter 3 cm, a secondary emission coefficient $\gamma=0.07$, and the ionization source depending on the local electric field or provided by a Monte-Carlo simulation of the fast electrons. An analytical model provides an explanation of the mechanism of the constriction; field distortion is responsible for the constriction when the sign of the second derivative of the ionization coefficient with respect to the electric field strength is positive. A few calculations have been made to illustrate the influence of a possible E/N dependence of γ .

JA-4 Models for Plasma Etching, B. ABRAHAM-SHRAUNER, Washington University - Plasma etching surfaces are modeled analytically for isotropic and plasma assisted etching. In addition to exact evolution (surface) equations¹

in two cases and approximate superimposed isotropic and normal ion etching² solutions approximate analytical expressions for etch rates proportional to the ion energy flux¹ are used to calculate etching surfaces. Aspect ratio dependent etching is clearly seen. The simple etching expressions allow each user to plot etch rates and etching surfaces.

1. V. K. Singh et al, J. Vac. Tech. B 10, 1091 (1992).
2. D. J. Economou & R. C. Alkire, J. Electrochem. Soc. 135, 941 (1988).

JA-5 Vibrational Temperature Axial Profiles in Nitrogen Plasma Jet, S. ONO and S. TEII, Mutsashi Inst. of Tech. Tokyo, JAPAN-- Vibrational temperature axial profiles of the nitrogen electronic ground state has been calculated numerically in a reduced pressure N_2 -Ar DC plasma jet. Results show that the vibrational temperature decreases along the axis and reach minimum value, then increase to $T_v \approx 8000K$ and show almost constant temperature. The numerical calculation also shows that relatively high vibrational temperature in the down stream region is caused by the vibrational energy supply from highly vibrationally excited molecules that are produced by the recombination process. A comparative experiment has also been conducted by the spectroscopic measurement of the vibrational temperature⁽¹⁾. The theoretical T_v profile agrees well with the experimental T_v qualitatively.

- (1) S. Ono and S. Teii, J. Phys. D: Appl. Phys., 16, 163-170(1983)

JA-6 Applications of a 2D Simulation to Industrial Reactors, A. R. ELLINGBOE, H. Kim, B. D. Higgins, R. K. Porteous, and R. W. Boswell, Space Plasma and Plasma Processing Group, PRL, RSPHysSE, Australian National University - The HAMLET code is a 2D hybrid fluid/PIC plasma transport simulation. Atomic and ionic species are modeled using adaptively weighted particle-in-cell (PIC) techniques. The plasma potential and electron density and potential are solved using a fluid model. The HAMLET code has been used to model the transport in several inductively coupled systems of industrial relevance.

The transport of material from an evaporative source through a high density magnetized plasma has been studied. The material cools as it diffuses through the filling gas, until it is adsorbed on the chamber walls. Some proportion of the material is ionized during its transit of the plasma and is entrained, allowing it to be transported to a remote substrate.

A second simulation has been used to study an energy analyser immersed in the downstream plasma of a diffusion-type reactor. The ion energy distribution functions (IEDF's) measured by the analyser are examined for various analyser orientations, with and without magnetic fields, and in rapidly streaming plasmas. These IEDF's are compared to those obtained experimentally.

JA-7 Simulation of non-Maxwellian Electron Velocity Distributions in an Inhomogeneous Plasma Driven by Intense Microwaves*, J.P. Matte (1), T.W. Johnston (1), J.M. Liu (2), J.S. De Groot (2), and R.P. Drake (3); (1) INRS-Energie et Matériaux, Varennes, Québec; (2) UC Davis; (3) PPRI, LLNL and UC Davis. -- Flat-topped electron velocity distributions, of the type $\exp(-v/u)^{**m}$,

WEDNESDAY AFTERNOON

with $m > 2$, are observed in the UCD AURORA II device for inverse Bremsstrahlung heating with intense microwaves ($V_{osc} \approx 2/V_e \approx 2$ of order 1), in approximate agreement with electron kinetic simulations. Permanent magnets are arranged on the surface of the vacuum tank to confine the argon discharge plasma and to produce an axial density gradient. A microwave reflector limits the heating region to $0.7 N_c$ to avoid any collective heating at the critical surface. The ionization fraction (1%) is high enough that charged particle collisions dominate. A short microwave pulse (~ 0.2 to $2 \mu s$) creates a very steep temperature gradient ($LT/l_{ei} \sim 0.1$ to 10). Langmuir probes are used to measure the electron distribution function in the plasma. Results will be compared to nonlocal heat transport theory and Fokker-Planck calculations.

* Work supported by NSERC (Canada) and U.S. DOE, PPRI, UCD and LLNL.

JA-8 Characteristic Energy and the Ratio of Longitudinal Diffusion Coefficients to Mobility for Electrons in NO at Moderate E/N. W. ROZNERSKI, J. MECHLIŃSKA-DREWKO and Z. LJ. PETROVIĆ*, Faculty of Applied Phys. and Math., Techn. Univ. Gdańsk, Poland - By means of a new version of a numerical procedure described earlier¹ the characteristic energy (D/μ) and the ratio of longitudinal diffusion coefficient to mobility (D_l/μ) have been determined over the reduced electric field E/N : $70 \leq E/N \leq 300$ Td and $70 \leq E/N \leq 400$ Td respectively. The present results of the D/μ are within the combined experimental errors of this work data and those reported previously². As to the D_l/μ , the data-points of this work lie lower than those presented previously² and the difference between both data sets exceeds the combined experimental errors of both works.

*Inst. Phys., Belgrade, Yugoslavia.

¹W. Roznerski, J. Mechlińska-Drewko and K. Leja, Joint Symposium (Gold Coast, 1991), p. 83.

²W. Roznerski, J. Mechlińska-Drewko and Z. LJ. Petrović, 45th GEC (Boston, Mass., 1992), p. 122.

JA-9 A Comprehensive Model for Radical Chemistry in Methane Discharges. J.R.DOYLE, D.J.DAGEL and C.Z.MALLOURIS, Macalester College, St Paul MN - We propose a quantitative model for the radical chemistry in methane glow discharges. A zero-dimensional (volume-averaged) rate equation approach is used, with additional terms to account for electrode and pumping losses. The model quantitatively predicts electrode radical fluxes as a function of pressure, electrode spacing, and methane dissociation rate, with other parameters provided by current literature values where available, and reasonable estimates otherwise. CH_3 is found to be the dominant mono-radical under all conditions, with CH_3-CH_3 recombination as the principal loss channel. Compared to previously proposed models, the present model utilizes a considerably simpler reaction scheme motivated by a careful evaluation of literature rate data. Under some conditions (e.g. at sufficiently low pressures) a reasonably accurate analytic model is in fact possible. A discussion of the uncertainties in the results based on the uncertainties in the literature rate constant data is presented. The validity of the zero-dimensional approach is also examined, using a linearized form of the one-dimensional diffusion-reaction equations. This procedure takes into account an approximate spatial radical source function $S(x)$, and a generalized criteria for the validity of volume-averaged models is developed which can be applied to other plasma chemistry systems.

*Work supported in part by the donors of the Petroleum Research Fund, administered by the ACS.

JA-10 Nonlinear Gaseous Electric Discharge - Mathematical Modeling. M. KUMAN, Department of Electrical Engineering, University of Tennessee, Knoxville, TN 37996 --- A nonlinear equation is offered for description of the gaseous dynamic of a specific nonlinear electric discharge field. Such nonlinear field could be used for separation of components in a gas mixture or enrichment of some of the components. The model leads to consequences that can be tested experimentally.

JA-11 Non-Equilibrium Vibrational Kinetics in N_2-H_2 Mixtures. R. NAGPAL and A. GARSCADDEN, Plasma Research Group, WPAFB- Results from a detailed self-consistent collisional radiative model where the Boltzmann transport equation is coupled to the system of vibrational master equations in N_2-H_2 mixtures are presented. The results show that $N_2(X^1\Sigma_g^+, v \geq 30)$ are strongly quenched due to the V-T deactivation by H_2 even at a very low concentration (0.05 %) of H_2 in the gas mixture. This causes a severe depletion of N atom production by the vibrational mechanism which is the dominant dissociation channel at moderate E/N (30-60 Td)¹. Above 0.2 % of H_2 in the mixture, the N atom number density is roughly constant and is due to direct electron impact dissociation. Implications of V-T quenching on the plasma chemistry and ionization balance in the gas mixtures will be presented.

* Work Supported by the Wright Laboratory.

¹ R. Nagpal and P. K. Ghosh, Chem. Phys. Lett. 183, 129 (1991).

JA-12 Transport in Neutral Beam Assisted Etching. M.D.KILGORE and D.B.GRAVES, U.of California-Berkeley - Etching systems which utilize directed beams of reactive neutrals have been explored recently as an alternative to conventional plasma etching.¹ Plasmas are employed to produce directed neutral beam species as well as background neutral radicals. These reactive species can etch the substrate with a minimum of charge-related device damage. However, neutral beam processing is inherently limited by pressure considerations. Very low pressures are desirable to maintain beam characteristics for anisotropic etching. Higher pressures are desirable to obtain high etch rates for reasonable process throughput. We apply the Direct Simulation Monte Carlo (DSMC) method to investigate this trade-off. We study reaction and transport effects for a simple model etching system consisting of beam and background reactants as well as etch products in a 2-D cylindrical chamber. Using model surface reaction probabilities, we look at the effect of gas-phase collisionality on the resulting etch rate. This enables the prediction of the optimum background gas pressure for neutral beam processing.

¹T. Mizutani and T. Yunogami, Jap. J. Appl. Phys. 29, 2220, (1990).

JA-13 A Nonlocal Model of Surface Wave Produced Plasmas. U. KORTSHAGEN, University Bochum, 44780 Bochum, Germany - A nonlocal kinetic model, which allows the approximate solution of the spatially inhomogeneous Boltzmann equation with the space charge electric field and the spatial diffusion taken into account,^{1,2} is applied to a surface wave produced plasma. The results are compared to those of a local model, where the electron energy distribu-

tion function (EEDF) is calculated from the spatially homogeneous Boltzmann equation under the assumption that the EEDF is in equilibrium with the local electric field strength. In surface wave produced plasmas usually a pronounced radial inhomogeneity of the maintaining electric field is found. Thus the nonlocal and the local model yield considerably different predictions for the radial variation of the EEDFs and the radial distribution of spectral line intensities. The theoretically calculated EEDFs are compared to results of Langmuir probe measurements of the EEDF. Furthermore measured radial profiles of line intensities, obtained via Abel inversion, are compared to the theoretical predictions of both models.

¹I.B. Bernstein and T. Holstein, Phys. Rev. **94**, 1475 (1954)

²L.D. Tsengin, Sov. Phys.-JETP **39**, 805 (1974)

JB: UNIQUE PLASMA SYSTEMS

JB-1 Pulsed e-beam generated in a dielectric limited discharge with proper preionization. M.GANCIU, G.MODREANU, A.M.POINTU, LPGP, Univ. Paris-Sud, Orsay, France and IFTAR, Magurele, Bucharest, Romania-A pulsed self collimated intense e-beam is produced on the axis of a discharge quartz tube, 2.8cm diameter, filled with oxygen at pressure, p, between 0.1 and 1mbar. It uses superposition of two discharges. The first one is created by two identical external electrodes adjacent to the tube (respectively cathode C and anode A, 8cm length, 2.5cm interelectrodes width) biased with symmetrical voltage steps, $\pm V$, by means of a rotary atmospheric switch ensuring commutation time under 10ns. The second one is a negative glow-type DC discharge, current I, whose tip penetrates the inside part of C. Creation of the e-beam requires to adjust I for every set of p and V values. Then, intense light channel appears on the whole axis between C and A. Typical e-beam parameters, measured using Rogovsky coil and studying the emission of an excitation state of atomic oxygen ion, are: 50A, 50ns, 8keV, 3mm diameter, 100Hz.

JB-2 Spark Yields of S_2F_{10} , S_2OF_{10} , and $S_2O_2F_{10}$ in SF_6 .^{*} I. SAUERS, R. CACHEIRO,[†] and S. MAHAJAN,^{*} ORNL -

There has been recent interest in the production of S_2F_{10} by spark discharges in SF_6 due to the very high toxicity of this decomposition product. Improvements in detection sensitivity to below 10 parts-per-billion (1 in 10^8) using a cryogenic-enrichment gas chromatographic technique with an electron capture detector has permitted the detection of S_2F_{10} produced by a single spark discharge for energy deposited down to 10 J/l. The S_2F_{10} yield (order of 10^{-10} mol/l) was found to depend on the presence of moisture and on electrode condition, with low moisture and conditioned electrode resulting in the highest yields. The formation of two other products S_2OF_{10} and $S_2O_2F_{10}$, both electronegative and possible interferents in S_2F_{10} detection were also investigated. Because of the lack of commercially available S_2F_{10} , production of S_2F_{10} by spark discharge under well defined conditions may be used in generating reference standards of this compound. Comparison of the yields of these disulfur compounds in spark to corona and arc discharges will be made.

^{*}Work supported in part by OEM/DOE under contract DE-AC05-84OR21400 with Martin Marietta Energy Systems, Inc., Bonneville Power Administration, Tennessee Valley Authority, EPRI, CEA and ESEERCO.

[†]U. of Tenn. ^{*}Tenn. Tech. Univ.

JB-3 Nonideality of Nuclear Plasmas, YOICHI WATANABE, Valley Research Corporation, Austin, TX - 3He gas can be heated and ionized by the high energy protons and tritons generated from in-situ neutron induced nuclear reactions. Such plasmas (nuclear or fissioning plasmas) are weakly nonideal; that is, the ratio of the interaction energy between charged particles to the mean thermal energy, γ , is equal to or less than unity¹. Using a two-temperature fluid model², we compute γ of a pure 3He gas at various gas temperatures and pressures as a

function of the thermal neutron flux. We find that γ exceeds 0.1 for neutron fluxes higher than $10^{16} \text{ cm}^{-2}\text{s}^{-1}$ at 298 K and 10 atm. For example, $\gamma = 0.12$ (or $n_e = 1.8 \times 10^{15} \text{ cm}^{-3}$ and $T_e = 2600 \text{ K}$) for a neutron flux of $10^{18} \text{ cm}^{-2}\text{s}^{-1}$. The results indicate that weakly nonideal and nonequilibrium plasmas can be easily generated in a laboratory.

¹V.E.Fortrov and I.T.Iakubov, Physics of Nonideal Plasma, Hemisphere Publishing Corporation, New York (1990).

²Y.Watanabe, J.Appelbaum, I.Maya, AIAA90-1613 (June 1990).

JB-4 Plasma Memory Devices,* P.J.DRALLOS, V.P. NAGORNY, and W.WILLIAMSON, JR., Dept. of Physics and Astronomy, Univ. of Toledo, Toledo, OH 43606 - The operation of certain gas discharge devices, such as AC-plasma display panels, depends on a 'memory' capability, which is accomplished through the interaction of the discharge and dielectric layers on the electrode surfaces. Typically, a single memory unit is comprised of a pair of parallel-plate electrodes, each coated with a thin insulating layer of dielectric. A source gas fills the remaining space between the electrodes. The electrodes are supplied with a square-wave, sustain potential. This potential is insufficient to produce a discharge when the dielectric is in an uncharged, or memory-off state. However, when the electrodes are charged (memory-on state,) the added potential due to the free charge, combines with the sustain potential, producing a brief discharge and leaving the dielectric in an equal but oppositely charged, memory-on state. 'Write' and 'erase' pulses control the dielectric surface charge, or memory state. These are accomplished by adjusting the magnitude and timing of the applied potential. Boltzmann computer simulations of the various duty cycles of these devices will be presented, and applications to AC-plasma display panels will be discussed.

* This work supported by the USDOE under contract No. DE-AC04-76DP00789.

JC: LASERS

JC-1 High Efficiency, High Power Output CO_2 Laser Operating at Unstable Glow Discharge Plasma Conditions*, C.E. FELLOWS and C.A. MASSONE, Laboratório de Espectroscopia e Laser, UFF, Brazil - A CO_2 DC laser without cooling set up and having high nitrogen parts in gas mixture, giving 30 W power output - 17% efficiency in 60 cm discharge tube length plasma, has been developed. It operates in an unstable glow discharge plasma regime which presents nonperiodic voltage spikes. This spikes depend on cathode surface and, if suppressed, CO_2 power output and efficiency drastically diminish. The fact that a CO_2 laser without cooling is able to give those output power and efficiency values opens a field in plasma-gas laser emission interaction.

*Work supported by the Financiadora de Estudos e Projetos (FINEP) and the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) of Brazil.

JC-2 Output Modifications in Pulsed Gas Lasers By Plasma Impedance Matching*, C.E. FELLOWS and C.A. MASSONE, Laboratório de Espectroscopia e Laser, UFF, Brazil - A theory that considers plasma impedances as an integral part of the electric circuit and explains the detected resonant narrowing of the laser pulse has been developed. From a normal and well-known excitation circuit having a spark-gap with capacitance and inductance plasma values, a charging capacitor, coupling inductance (L_{ext}), parasitic inductance because of wires, transfer capacitor and plasma laser discharge tube capacitance and inductance (L_p), theory shows that, when $L_p \ll L_{ext}$, excitation pulse period does not depend any more on L_{ext} values. We then obtain, for example, pulse width values of 0.8 ns having L_{ext} values as high as 16 μH .

*Work partially supported by the Financiadora de Estudos e Projetos (FINEP), the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and the Pró-Reitoria de Pesquisa e Pós-Graduação da Universidade Federal Fluminense (PROPP-UFF).

WEDNESDAY AFTERNOON

JC-3 Modeling of self-sustained discharge in an ArF excimer laser, H. Akashi, Y. Sakai and H. Tagashira, Department of Electrical Engineering, Hokkaido University, Sapporo 060 Japan

A self-sustained discharge development in an ArF excimer laser medium [Ar/F₂/He=7.89%/0.24%/91.87% (=1900 Torr)] is simulated using continuity equations for charged particles, an energy conservation equation for electrons and a Poisson's equation. The results show that the cathode and anode sheaths are negligibly narrow but the space charge at the cathode brings tremendous magnitude of the field distortion. This distortion suggests to initiate a filamentation from a fine projection on the cathode surface, if there is, by the field emission, when the electron density grows up to $\sim 10^{14}$ cm⁻³. The electron emission by energetic photons from the cathode is shown to be essential to moderate the field distortion at the cathode and to sustain the uniform glow discharge. Role of the preionization and the parameters of an external circuit for sustaining a uniform glow discharge are discussed.

JC-4 Temperature dependent gain of the atomic xenon laser,*

Gregory A. Hebner, Sandia National Laboratories, Albuquerque New Mexico, Jong. W. Shon and Mark J. Kushner, University of Illinois, Department of Electrical and Computer Engineering, Urbana, Illinois - Measured and calculated gain of the 1.73 μ m (5d[3/2]₁ - 6p[5/2]₂) and 2.03 μ m (5d[3/2]₁ - 6p[3/2]₁) atomic xenon transitions for gas temperatures between 290 K and 590 K are presented. Fission-fragment excitation was used to characterize the gain in several Ar/Xe, He/Ar/Xe and Ne/Ar/Xe gas mixtures at a pump power of 8 W/cm². For a constant gas density, the gain exhibits an approximately T_{gas}⁻ⁿ dependence with n between 2 and 3. The dominant reactions for controlling gas temperature dependencies have been identified as dimer formation, dissociative recombination and their effects on electron density. The implications of these measurements and calculations on scaling and high temperature operation will be discussed.

* This work was performed at Sandia National Laboratories and supported by the United States Department of Energy under contract DE-AC04-76PD00789.

JC-5 E-Beam Excitation of the He/Ne/Ar Laser,* L. M. LITTLE and J. T. VERDEYEN, Department of Electrical and Computer Engineering, U. of Illinois - Lasing on the 703 and 725 nm Ne transitions was observed for Ne excited in a coaxial diode driven by a Febetron 706 pulse forming line. He, Ne, and Ar pressures were varied and the resulting spontaneous and stimulated emission output characteristics were examined for comparison with previously determined characteristics on the 585 nm transition.^{1,2} These parametric studies showed a maximum peak power for a mix of approximately 6/14/1 at a total pressure of 1050 Torr. This was a higher Ne pressure and lower He pressure than that for the peak at 585 nm, which occurred at 26/6/1 with a total pressure of 1650 Torr. With a mix of 4/8/1 at 650 Torr, for which all three transitions will lase, the time to lasing onset and time to peak were compared. Results showed that each onset time and peak was separated by approximately 25 ns, with the 703 nm transition lasing and peaking first and the 585 nm transition lasing and reaching its peak last.

*Work supported by Sandia National Laboratory

¹Jong W. Shon, et al, J. Appl. Phys., 73(12), 8059, (1993)

²Greg Hebner, J. Appl. Phys., to be published, 15 August, 1993

JD: MICROWAVE PLASMAS

JD-1 Self-Contained Modeling and Experimental Study of Surface Wave Argon Discharges in a Coaxial Structure, X. L. ZHANG, F. M. DIAS and C. M. FERREIRA, CEL-IST Lisbon Technic. U. - A self-contained model is presented for argon discharges sustained by an azimuthally symmetric surface wave propagating along a central metallic cylinder-plasma-glass tube-air-outer metallic cylinder, coaxial structure. For given operating parameters, the model provides a complete description of the spatial variation of the plasma density and of the field intensity, the wave dispersion relation and

the power transfer from the wave to the plasma. Due to the presence of the central cylinder: *i*) the wave is guided both by this conductor and the plasma-glass interface; *ii*) the wave propagates beyond the end of the plasma column; and *iii*) absolute field measurements are possible. Probe measurements of the EEDF, the electron density and the plasma potential were performed. Experimental results for 360 MHz are presented and compared to calculations vs. the gas pressure.

JD-2 Linear slotted waveguide field applicator for sustaining microwave discharges, G. SAUVÉ, M. MOISAN and Z. ZAKRZEWSKI*, U. de Montréal - An elongated field applicator used to sustain long (with respect to the wavelength), uniform gaseous discharges is experimentally investigated. The power leaking aperture is a resonant array of centered inclined slots in the wide wall of a rectangular waveguide. The design, based on a WR-430 standard waveguide and operating at 2.45 GHz, was described earlier by Ji and Gerling¹ who tested its free-space performance. Our study focuses on experiments in an actual discharge setup. It shows the influence of both the plasma and the dielectric wall of the discharge chamber on the power match of the applicator. A properly designed simple structure with no adjustable elements can be made to assure an efficient power transfer to plasma and axial uniformity.

*Permanent address: Polish Academy of Sciences, IMP-PAN, 80-952 Gdansk, Poland.

¹ T.R. Ji and J. Gerling, J. Microwave Power and Electromagnetic Energy, 23, 3 (1988).

JD-3 Long microwave discharges sustained by leaky-wave structures, G. SAUVÉ, M. MOISAN and Z. ZAKRZEWSKI*, U. de Montréal - The characteristics of leaky-wave structures as field applicators in linear (extended in one direction), high throughput plasma sources has been investigated. The analysis of the general features of this class of discharges provides the base for an initial design of such applicators. We have tested experimentally (2.45 GHz up to 3 kW) a fast wave so-called troughguide structure, well known in antenna engineering. Long discharges of good axial uniformity were achieved using a periodically asymmetrical troughguide terminated with a matched load. To assure high power operation, we have devised and tested a new kind of ridge-waveguide mode transformers that allows to feed the microwave energy to the applicator directly from a standard waveguide. The main advantages of leaky-wave applicators are their simplicity of design and operation (no adjustable elements), a good power match at the input and good axial uniformity of the plasma. Their drawback is a lowered efficiency due to the power loss in the terminating matched load.

*Permanent address: Polish Academy of Sciences, IMP-PAN, 80-952 Gdansk, Poland.

JD-4 A 2-D Model of a Microwave Plasma Ball Reactor, S.E. COE, D.S. BAILEY and A.D. BARNES, CRL, Hayes, U.K. - A 2-D axisymmetric model of a microwave plasma ball reactor, as used in Plasma Assisted Chemical Vapour Deposition systems, has been developed. The model can be broken down into two main parts. Firstly a model of the microwave coupling to the discharge and secondly a Collisional-Radiative-Diffusion model of the discharge plasma. Self-consistent solutions are obtained incorporating these two components of the model. The model is able to compute the position, size and shape of the plasma ball in the reactor in addition to the general discharge properties such as 2-D excited state density, electron density and electron temperature profiles. The model represents a valuable design tool for the optimisation of practical deposition systems. In addition to describing the key features of the model, results will be presented from initial calculations performed for an argon discharge plasma (for which the relevant cross-sections, diffusion coefficients etc.

are well known). The extension of the model to deal with methane/hydrogen mixtures, suitable for diamond coating applications, will also be discussed.

JD-5 Deposition of Thin Diamond Films in a Surface-wave Sustained Discharge (SWD), C. DE MELLO BORGES, M. MOISAN and L. ST-ONGE, U de Montréal - The deposition of thin diamond films with microwave plasmas at reduced gas pressure (torr range) is a current matter of investigation. One can classify these systems according to whether the plasma is in direct contact with the discharge wall (e.g. resonant cavity plasma and SWD) or not (e.g. bell jar system). This classification relates to the fact that hydrogen atoms, which play a key role in etching graphite and stabilizing the diamond phase, recombine on the discharge wall, the recombination rate increasing exponentially with the wall temperature. To reduce H atom recombination in SWD, a cooling jacket with an appropriate dielectric liquid is used around the tube and its efficiency controlled by actinometry measurements of the H-atom relative concentration and by assessing the deposition rate and quality of the diamond film. A second problem related to the use of SWD occurs when using large radius (R) discharge tubes such that $fR > 2$ GHz-cm (f is the operating frequency). The surface wave then propagates in high order modes which induce azimuthal non uniformity of the plasma, affecting the film quality and reproducibility. Ways of circumventing these problems are investigated.

JE: RF GLOW DISCHARGES

JE-1 GLOBAL MODEL OF ELECTROPOSITIVE AND ELECTRONEGATIVE PLASMAS INVOLVING MOLECULAR GASES V. VAHEDI, C. LEE, K. NIAZI, AND M. A. LIEBERMAN EECS Department, UC Berkeley, Berkeley, CA 94720 - The global electropositive model [1] has been extended to include the presence of metastables and various ionic species (including negative ions for electronegative gases). Inelastic processes such as two-step ionization, dissociative attachment, mutual neutralization, and superelastic quenching of metastable species are included. Results of Lichtenberg et al. [2], giving the density profiles of positive and negative ions, are integrated to obtain the global particle balance for each species. In molecular gases, the global power balance equation becomes more complicated, as multiple ionic and neutral species interact through various inelastic processes. Thus, an expression for the generalized power balance is needed. Molecular gases such as chlorine, oxygen, and nitrogen will be used for case studies, and results will be presented over a wide range of neutral gas pressure and input power.

1. G. R. Misium, A. J. Lichtenberg, and M. A. Lieberman, *J. Vac. Sci. Technol. A* 7, 3 (1989).
2. A. J. Lichtenberg, V. Vahedi, M. A. Lieberman, and T. D. Rognlien, "Modeling Electronegative Plasma Discharges," submitted to *J. Appl. Phys.* for publication.

JE-2 2D SIMULATIONS OF DUAL RF EXCITED PLASMAS V. VAHEDI, C. K. BIRDSALL, M. A. LIEBERMAN EECS Department, UC Berkeley, Berkeley, CA 94720 - It has been observed experimentally by Goto et al. [1] that for a fixed power, the DC sheath voltage drop (ion bombarding energy) decreases as the RF drive frequency increases, causing less damage and sputtering at the target. Furthermore, it has been seen in simulations by Vahedi et al. [2] that for a fixed applied voltage, as the RF drive frequency is raised, the width of the capacitive-sheath decreases causing the ions to arrive more normally at the target. Simple scaling laws [2] also show that for a fixed applied voltage, the plasma density and power deposited into the system increase as the square of the RF drive frequency. Based on these results, we are studying a two-frequency capacitive RF discharge reactor with our two-dimensional simulation code, PDP2 [2]. One electrode is driven at 30-50 MHz to set up the plasma density while the target electrode is driven at 13.56 MHz with an adjustable voltage or current source to determine the ion bombarding energy. Plasma density and ion angular and energy fluxes will be shown over a range of operating frequencies.

1. Haruhiro H. Goto, Hans-Dirk Lowe, and Tadahiro Ohmi, *J. Vac. Sci. Technol. A* 10, 3048 (1992).
2. V. Vahedi, G. DiPeso, T. D. Rognlien, and C. K. Birdsall "Verification of Frequency Scaling Laws for Capacitive RF Discharges Using Two-Dimensional Simulations," accepted by *Phys. Fluids B* for publication.

JE-3 MODELING ELECTRONEGATIVE PLASMA DISCHARGES A. J. LICHTENBERG, V. VAHEDI, and M. A. LIEBERMAN EECS Department, UC Berkeley, Berkeley, CA 94720 - A macroscopic analytic model for a three-component electronegative plasma has been developed [1]. Assuming the negative ions to be in Boltzmann equilibrium, a positive ion ambipolar diffusion equation is found. The electron density is nearly uniform, allowing a parabolic approximation to the plasma profile to be employed. The resulting equilibrium equations are solved analytically and matched to an electropositive edge plasma. The solutions are compared to a simulation of a parallel-plate RF driven oxygen discharge for several cases. In the simulation, α_0 , the ratio of the negative ion to the electron density in the middle of the discharge, was found to be directly proportional to the pressure and inversely proportional to the discharge power. Using an electron energy distribution function that approximates the simulation distribution by a two-temperature Maxwellian, the analytic values of α_0 are found to be close to but somewhat larger than the simulation values. The results indicate the need for determining a two-temperature electron distribution self-consistently within the model.

1. A. J. Lichtenberg, V. Vahedi, M. A. Lieberman, and T. D. Rognlien, "Modeling Electronegative Plasma Discharges," submitted to *J. Appl. Phys.* for publication.

JE-4 COMPARISON OF LABORATORY RESULTS FOR SPATIAL VARIATION OF AVERAGE ELECTRON ENERGY AND PIC SIMULATIONS V. VAHEDI, C. K. BIRDSALL and P. MIRRASHIDI EECS Department, UC Berkeley, Berkeley, CA 94720 - Spatially resolved probe measurements of the electron energy distribution function (EEDF) in capacitive RF discharges in argon showed that the effective electron temperature decreases with increasing plasma heating RF field [1]. This is being investigated with the Particle-In-Cell simulation code PDP1 [2]; similar results are obtained over the same range of neutral pressure in RF driven argon plasmas. Non-Maxwellian EEDFs and negative bulk heating rates are observed at low pressures, which are typical in low pressure capacitive RF discharges in a Ramsauer gas. We will present comparisons of laboratory measurements for spatial variation of average electron energy with those obtained from PDP1 over a range of neutral pressures and discharge powers.

1. V. A. Godyak, and R. B. Piejak, "A Paradoxical Spatial Distribution of the Electron Temperature in a Low Pressure RF Discharge," Presented at *IEEE ICOPS*, Vancouver, BC, June 1993.
2. V. Vahedi, C. K. Birdsall, M. A. Lieberman, G. DiPeso, and T. D. Rognlien, "Capacitive RF discharges modeled by Particle-In-Cell Monte-Carlo simulation. I. Analysis of numerical techniques," accepted by *Plasma Source Sci. Technol.* for publication.

JE-5 Measurements and Simulations of Plasma Densities in Capacitively Coupled RF Discharges, R. A. DOYLE, M. B. HOPKINS and M. M. TURNER, Dublin City University, Ireland; L. J. OVERZET, University of Texas at Dallas - We present inter-comparisons of plasma density measurements obtained using microwave interferometry and various Langmuir probe techniques with densities calculated using a self-consistent kinetic simulation (PIC-MCC). All these approaches have their problems, and we discuss the systematic discrepancies that appear in terms of the known limitations of the techniques. We will present results for argon and nitrogen in the pressure range 20 to 200 mTorr, corresponding to plasma densities from $10^9 - 10^{10}$ cm⁻³. Under these conditions electron temperatures varying from 1 to 4 eV are observed.

JE-6 Collisional Electron Heating in a RF-Discharge* E. QUANDT, H.-M. KATSCH, P. MARK and K.G. MÜLLER Universität Gesamthochschule Essen

In a parallel plate RF-discharge operating by a nonsinusoidal voltage with a steep rise and fall to a plateau the displacement and the convective current can be separated in time. By optical emission spectroscopy with time and spatial resolution the γ - and the α -mechanism of an Argon and Helium RF-discharge can be identified. Consequently the sheath oscillation heating, the Joule heating close to the sheaths, the energy deposition and the role of the secondary electrons from the cathodic sheaths are observed. The results are compared with model calculations on basis of the transport equations and with computer (PIC-MC) simulations. The fluid model

WEDNESDAY AFTERNOON

roughly confirms with the experimental results. While taking into account a spatial distribution of Helium metastable atoms the computer simulation gives excellent confirmation.

*Work was supported by the DFG, SFB 191.

JE-7 Vector and Parallel Techniques for Simulations of Multi-Dimensional Nonequilibrium RF Glow Discharges.* Fongray Frank Young and Chwan-Hwa "John" Wu, Dept. of EE, Auburn University - Due to the advance of high performance computer systems, multi-dimensional simulations become possible in the past few years. However, the required computation time is still significant. The use of parallel systems can provide solutions within a reasonable turnaround time. Efficient numerical algorithms and techniques of vectorization and parallelization for rf glow discharge modeling are introduced. Performance measurements are investigated from Cray systems. Consequently, the simulation code is fully vectorized and the speedup ratio of the fully-vectorized code between the vector mode and the scalar mode approaches 12.20. Moreover, the parallel processing has a speedup ratio of 6.07 on a dedicated Cray Y-MP machine with eight processors versus a single processor. Therefore, mechanisms of rf discharge can be understood within a shorter turnaround time.

* This work is supported by NSF under ECS-9009395.

JE-8 Electrode geometry effects on local nonuniformities in rf discharges, M. SURENDRA, M. DALVIE, G. S. SELWYN, and C. R. GUARNIERI, IBM T. J. Watson Res. Ctr. - Discontinuities in bounding surfaces of rf discharges have important ramifications for discharge uniformity. These effects, which are predicted by 2-D fluid simulations of rf discharges, have been experimentally verified with spatial maps of optical emission. The model consists of charged species conservation equations, together with ion momentum and electron energy balances. Poisson's equation is solved for the self-consistent field. Domain boundaries can contain topological discontinuities and/or material changes. The perturbations in the boundaries give rise to local variations in electric field profiles and electron heating rates, and consequently nonuniform excitation and ionization rates. These variations can in turn lead to the formation of traps for contaminant particulates in the discharge. The presence of these traps and their relationship to local plasma nonuniformities is demonstrated experimentally.

JE-9 Using RF Transport Coefficients to Achieve a More Accurate Fluid Model For RF Glow Discharges.* Xing "Peter" Wu, Chwan-Hwa "John" Wu and Fongray Frank Young, Dept. of Electrical Engineering, Auburn University -- Transport coefficients are critical to the fluid models for rf glow discharge simulations. Transport coefficients used in traditional fluid simulation models were always obtained from a DC Monte Carlo simulation. For more accurate results, transport coefficients from a kinetic model under radio frequency field influence are applied. Results from this new fluid model are compared with those from a traditional fluid model, other benchmark simulation results collected by M. Surendra, and the experimental measurement in terms of plasma density, bulk energy, sheath width and other plasma properties. The comparison results show the new model has the high advantages of simulation accuracy and cost. The results display less than 5% error compared to the experimental measurements. This investigation provides a good chance for a more accurate fluid model for multi-dimensional simulations.

* This work is supported by NSF under ECS-9009395

JE-10 Ion Energy Distribution Functions in a Symmetrical RF-Discharge. U. KORTSHAGEN and M. ZETHOFF, University Bochum, 44780 Bochum, Germany - The ion energy distribution function at the electrode of a capacitively coupled RF-discharge in the collisional regime exhibits a structure of peaks and double peaks. This structure has been related to the temporal modulation of the electric field in the sheath in combination with the temporally constant creation of ions by symmetric charge exchange collisions.¹ This paper presents a theoretical and experimental investigation of the ion energy distribution functions at the grounded electrode of a symmetrical, capacitively coupled RF-discharge. The theoretical model is based on a self-consistent hydrodynamic sheath model coupled to a nonlocal kinetic model of the bulk plasma. The measurements are performed using an electrostatic energy analyzer. The parameters entering the model are determined via Langmuir probe measurements, evaluation of the ion energy analyzer characteristics and electrical measurements of the discharge current. Theoretical and experimental results are also compared to predictions of PIC simulations.

¹C. Wild and P. Koidl, J. Appl. Phys. **69**, 2909 (1991)

JE-11 Modeling of a Plasma Display Cell- Ramana Veera-singam and Robert B. Campbell, Sandia Nat'l Lab Plasma display panels are actively researched as a possible choice for High Definition TV (HDTV) monitors. The physics is essentially a gas discharge phenomenon similar to RF discharges but operate on a much faster time scale and at higher pressures of the order of several 100's of Torr. Presently, a major effort is to improve the luminosity or brightness of a color display without compromising cost or power consumption. To better understand the operation of a display, we are developing multi-dimensional plasma models. We will present some results from a 1D model which is being developed as a first step in the project. The model will use a fluid description for the plasma using rates from a Boltzmann solver characterized as a function of E/N. We will include non-local effects using a model transfer function. A fully implicit Newton's method will be the numerical algorithm of choice.

JE-12 Comparison of Two-Dimensional Continuum Model Results to Measurements from a Simple Parallel-Plate Reactor. G.L. HUPPERT, V. MOHINDRA, R.A. BROWN and H.H. SAWIN, Massachusetts Institute of Technology - Continuum model results for a 13.56 MHz Argon plasma will be compared to measurements made on a cylindrically symmetric etching reactor. Comparison will be made for plasma induced emission, current-voltage characteristics, plasma potential, ion energy, ion flux, and electron energy.

JE-13 Particle Simulation of Low-Pressure Processing Plasmas. M. LAMPE, G. JOYCE and S.P. SLINKER, Naval Research Laboratory, Washington, DC 20375-5346 - In processing discharges with pressure < 1mtorr, both the ions and electrons have long mean free paths and nonthermal velocity distributions, and therefore should be modeled kinetically. Development of kinetic models has been hindered by the problem of resolving time scales ranging from 10⁻¹¹s (plasma oscillations) to > 10⁻²s (ion residence times). We report on the development of a fast-running fully kinetic 2-D (r-z) simulation code for systems (such as ECR discharges) with well-magnetized electrons. Ions are treated by 2-D PIC simulation with MC collisions. Bulk electrostatic fields are calculated from quasineutrality, thereby avoiding the plasma frequency time scale. Between collisions and ion time steps, electrons are treated by guiding center dynamics with frozen electrostatic fields, which eliminates the gyrofrequency time scale. Microwave heating is included in a formulation which does not require resolution of the microwave period. Sheath potentials are calculated from reflection conditions. Ionization and plasma chemistry are included in a Monte Carlo formulation coupled to the electron distribution.

JE-14 Very High Frequency Capacitively Coupled Argon Discharges: Experiment and Simulation, M. J. COLGAN and D. E. MURNICK, Rutgers University, Newark, NJ and M. MEYYAPPAN, Scientific Research Associates, Glastonbury, CT—The effects of frequency (13.6-54.4 MHz) on 250 mTorr argon discharges were investigated. Scaling relations derived from spatially resolved optical emission data and fluid model simulations are reported. Voltage scaling at fixed frequencies is linear for many internal parameters, similar to the 13.56 MHz case. When frequency is increased at constant applied voltage, large increases in excitation and ionization rates at the sheath/glow interface and ion flux to the electrodes are accompanied by substantial increases in the average ion energy at the electrodes. At constant current, the plasma density, ion flux, and excitation and ionization rates are nearly independent of frequency, while total power dissipation and ion energy at the electrodes both decrease with increasing frequency. The results suggest that operation of diode reactors at very high frequencies can reduce damage to processed films and improve process efficiency.

JE-15 Sensitivity of Argon Plasmas to O₂, N₂ and H₂O Impurities, M. A. SOBOLEWSKI and J. K. OLTHOFF, N.I.S.T. We have investigated rf discharges in mixtures of Ar gas with small quantities of O₂, N₂ and H₂O, using rf current-voltage measurements and mass-spectrometry. We have found that Ar discharges are very sensitive to small quantities of common impurity gases. This sensitivity must be considered if one is to obtain reproducible experimental data and valid comparisons of experiment with theory.

The current and voltage characteristics, especially the dc self-bias of the powered electrode, were sensitive to small quantities of all three gases. Concentrations as low as 20 ppm of O₂ in Ar had measurable effects on the dc self-bias. As N₂ is added to Ar plasmas the dc self-bias becomes less negative, with the change in bias proportional to the logarithm of the N₂ concentration. For O₂, the self-bias follows a more complicated, non-monotonic dependence. The effect of H₂O on self-bias is similar to that of O₂.

The changes in the electrical characteristics can be related to changes in charge density, sheath thickness, and sheath potential, which in turn influence the transport of ions across the sheaths. Indeed, changes in the electrical characteristics as the O₂ concentration is varied are correlated to changes in the ion energy distributions. This suggests that the electrical measurements could be used to monitor the reproducibility of ion energies, a critical factor in plasma processing applications.

JE-16 Time-resolved Laser Optogalvanic Spectroscopy of Bromine in a Radiofrequency Discharge, D. KUMAR and S. P. MCGLYNN, Department of Chemistry, LSU, Baton Rouge, LA - Pulsed laser optogalvanic (LOG) spectra of ~100 mTorr bromine in a ~32 MHz rf discharge are excited in the range 14,900 - 17,100 cm⁻¹. As with iodine¹, the transient LOG signal consists of a fast component synchronous with the laser pulse (width ~ 1 μs), followed by a delayed component (width 50-100 μs) whose delay accords with the acoustic wave propagation time to the nearer rf electrode. The fast component exhibits atomic transitions of bromine from plasma excited atoms, whereas the delayed component reproduces the photoacoustic spectra due to $\tilde{B} \leftarrow \tilde{X}$ and $\tilde{A} \leftarrow \tilde{X}$ excitations of molecular bromine. The origin and spectral characteristics of these two components will be discussed.

*Work supported by grants from U. S. Department of Energy and the LSU Center for Energy Studies.

¹D. Kumar, P. L. Clancy, and S. P. McGlynn, *J. Chem. Phys.* **90**, 4008(1989).

JE-17 Efficient Two-Dimensional Simulation of RF Glow Discharges, G.L. HUPPERT, R.A. BROWN and H.H. SAWIN, Massachusetts Institute of Technology - Efficient algorithms have been applied to the calculation of time periodic steady state solutions of the continuum model for an Argon discharge. Direct

calculation of the time periodic steady state is coupled with iterative solution techniques to provide an efficient scheme. Spatial accuracy is obtained through use of a spectral-element discretization. Results for Argon discharges will be presented for simulations of a simple reactor for both equal and unequal electrode areas. Issues of numerical accuracy and computational efficiency will be addressed.

JE-18 Self-consistent particle-in-cell simulations of an rf sheath, M. SURENDRA, IBM T. J. Watson Res. Ctr. and D. VENDER, Dept. Phys., Eindhoven Univ. Tech. - The behavior of a collisionless rf sheath is studied in a PIC simulation. The 1-D simulation is bounded on one side by an electrode and a quasi-neutral plasma on the other side. The electrode is driven by an rf current. Particle fluxes are controlled at the plasma boundary to maintain a quasi-static source sheath. The plasma density at the sheath edge is $8 \times 10^{15} \text{ m}^{-3}$ and the maximum rf current is 50 Am^{-2} . Some characteristics of this system compare well with analytic models of rf sheaths. However, essentially no electron heating is observed under the conditions considered, with minimal distortion of forward and reverse electron velocity distributions. This contrasts with analytic models of collisionless rf sheath heating and non self-consistent simulations of electrons interacting with oscillating boundaries. The results indicate that collisionless rf sheath heating may be characteristic of a complete system. Alternatively, heating may be a threshold effect.

JE-19

WITHDRAWN

JF: POSITIVE COLUMNS

JF-1 On a simple method for ambipolar diffusion time calculation in non-circular cross-section low pressure discharges, N.BASHLOV, N. TIMOFFEEV*, G. ZISSIS, LE VAN HIEU*, C.P.A.Toulouse.-- A method for the ambipolar diffusion time calculation in a non-circular cross-section discharge is proposed. Indeed, in the present work we deal with a trapezoidal cross-section discharge. The method is based on the following procedure. Ambipolar diffusion term in the electron density conservation equation can be presented as an electron density divided by the ambipolar diffusion time. This representation gives us the uniform Helmholtz equation for the electron density; the eigenvalue of this equation contains the ambipolar diffusion time. The Helmholtz equation with zero boundary conditions on the discharge wall has a nontrivial solution which, in the Cartesian coordinates, is a combination of the exponential functions. The form of the general solution depends on the shape of the tube's cross-section. In the case of the trapezoidal cross-section discharge the solution of the Helmholtz equation can be represented as the sum of the trigonometric and hyperbolic functions. Zero boundary conditions for the electron density leads to a homogeneous system of equations. Therefore this system has a nontrivial solution only when its determinant is equal to zero. Thus, our system is reduced only to the one equation whose solution gives the eigenvalue of the Helmholtz problem and therefore the ambipolar diffusion time in the discharge. The calculation were made for the different discharge tubes of the trapezoidal cross-section. According to our calculations the shape of trapezium has a strong influence on the ambipolar diffusion time. For each trapezium we determined effective radius (radius of the cylindrical tube with the same diffusion time). The contour of such a tube is about 10-20% less than having that of trapezium one.

*Laboratory of Plasma Physics, St Petersburg State University, Russia. N. Bashlov is also with Lab. of Plasma Physics, St. Petersburg University.

THURSDAY MORNING

JF-2 The VUV Efficiency of Xenon/Rare-Gas Positive Column Discharges*, D.A. Doughty, General Electric Corporate Research and Development - Mercury-based fluorescent lamps provide high efficiency lighting in a broad range of commercial and residential applications. There is an increasing concern however, regarding the mercury from spent lamps entering the waste stream. To evaluate the possibility of a xenon-based system replacing mercury, the VUV efficiency of xenon/rare-gas discharges has been measured. The relative efficiency of the 147nm xenon resonance emission is measured as a function of xenon pressure, rare-gas buffer pressure, and discharge current. To calibrate these measurements an absolute determination of the 147nm emission must be made. Because these plasmas tend not to be diffuse radiators, it becomes very difficult to measure the radiant emittance at 147nm using direct calibrated detection. An alternate method is described, in which the density of the resonance level is measured via absorption. This density is combined with a calculation of the trapped decay rate of the resonance level and appropriate geometrical factors to yield the 147nm radiant emittance from the positive column.

* Work supported in part by the National Institute of Standards and Technology under the Advanced Technology Program.

JF-3 Measurement of Metastable Density in a Narrow Tube Noble Gas Glow Discharge Plasma, T. TOYOSHIMA, Y. OHSONE, T. KANEDA, Department of Electronics Engineering, Tokyo Denki University, J.S. CHANG, Department of Engineering Physics, McMaster University, Metastable density in a narrow tube (tube diameter $d < 10\text{mm}$) helium neon dc glow discharge positive column plasma is investigated both experimentally and numerically. The results show that: (1) He singlet density is observed to be nonmonotonically depend on the gas pressure, and no significant discharge current, hence plasma density, effects are observed; (2) He triplet density increases with increasing gas pressure and discharge current; (3) Ne metastable densities increase with increasing both gas pressure and discharge current; (4) Metastable densities predicted by the computer code (Chang et.al., 1992) agree qualitatively well with a present experiment.

JF-4 Further Study of Mercury Transport in Hg-Rare Gas D. C. Discharges, M. W. GROSSMAN, OSRAM SYLVANIA INC., DANVERS, MA. - Ion mobility and density gradient induced diffusion are the mechanisms usually discussed with respect to cathoretic migration of mercury in Hg-rare gas d. c. discharges. In an earlier presentation¹, neutral gas entrainment was discussed as an additional mechanism of mercury transport. However, both transport mechanisms, that is, the neutral gas entrainment and gradient induced diffusion are dependent on the mercury density for the experimental conditions reported earlier¹. The result was the folding together of the two transport mechanisms in the measurement of mercury transfer.

This presentation will discuss an experimental technique which permits unfolding of the neutral gas entrainment transport process from other mercury transport processes. A description of the experimental technique will be given. Also, data will be presented to indicate the magnitude of neutral gas entrainment for different tube and discharge configurations.

Related work² on cathoresis will be discussed.

¹ M. W. Grossman 1992 Gaseous Electronics Conference
² C. Kenty, J. Appl. Phys., **38**, 4517 (1967)

SESSION KA: INDUCTIVELY COUPLED PLASMAS I
 Thursday morning, 21 October 1993
 Grand Salon A, 8:00-10:00
 T.J. Sommerer, presiding

KA-1 Characterization of Plasma in an Electrostatically Shielded Inductively Coupled Plasma Source, W.L. JOHNSON, Prototech

Res. Arizona - The inductively coupled plasma source with electrostatic shielding ESRF has found application to semiconductor reactive ion etching. This source can operate at pressures between 10^{-5} torr and 10 torr. Measurements of the uniformity of plasma density both axially and radially are presented for the 12 inch bore plasma source. Radial uniformity depends upon the presence of both the susceptor and the susceptor bias. Measurements of the bias voltage and bias power are presented for the 8 inch air cooled source. Data is presented for the best etching to date on polysilicon and GaAs.

KA-2 Capacitive Coupling Effects in Inductively Coupled Plasmas for Etching. * Peter L. G. Ventzek, Robert J. Hoekstra, Joseph M. Barich, and Mark J. Kushner, Univ. of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - Inductively coupled plasmas (ICP) are being developed as high plasma density (10^{11} - 10^{12} cm^{-3}), low pressure (a few - 10s mTorr) sources for semiconductor etching. In one configuration, the coil is a flat spiral placed at top of a squat cylinder generating an azimuthal electric field. An rf bias is separately applied to the substrate to control ion energies incident onto the wafer. The inductive voltage across the coil often capacitively couples to the discharge, thereby perturbing the plasma. We have developed a 2-d hybrid model for ICP reactors including both inductive and capacitive coupling. The model consists of electro-magnetic, electron Monte Carlo and fluid modules which are iterated to convergence; and an off line plasma chemistry Monte Carlo simulation to obtain ion and hot atom energy distributions. Results from the model will be presented for plasma densities, plasma potentials and ion fluxes to the substrate while varying the inductive and capacitive coupling to the plasma.

* Work supported by SRC, NSF, IBM, LAM Research Inc., and U. of Wisc. ERC for Plasma Aided Manufacturing

KA-3 Operation of Remote Plasma Enhanced CVD Reactors with Unconfined Plasmas. * Irene Peres and Mark J. Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - In Remote Plasma Enhanced Chemical Vapor Deposition (RPECVD) the plasma is generated by inductively coupled electric fields in a narrow tube upstream of the deposition chamber. High selectivity of producing deposition precursors is made possible by isolating the plasma from injected gases. This is often compromised by penetration of the plasma into the downstream deposition chamber. The inability to confine the plasma results from fringing inductively coupled fields and undesirable capacitive coupling from the coils. We have developed a 2-dimensional hybrid model for RPECVD reactors which includes inductive and capacitive coupling to investigate the unconfined mode of RPECVD. The hybrid model iterates between electro-magnetic, electron Monte Carlo and fluid modules until convergence. The model properly accounts for dielectric walls with surface charging. We will discuss conditions for which the plasma remains confined or penetrates downstream for O_2 , He and He/SiH_4 mixtures.

* Work supported by SRC, NSF, IBM and the University of Wisconsin ERC for Plasma Aided Manufacturing

KA-4 Spatial Density and Power Deposition of a Planar Inductively-Coupled Plasma (TCP) Studied Via Langmuir Probe Data and Induced Electric Field Simulation, A.J.Lamm, N.M.P.Benjamin, T.Wicker, Lam Research Corp., Fremont, California 94538. -Planar inductively-coupled discharges are presently utilized to etch various types of thin films used in semiconductor applications. Of considerable

interest in the processing of thin films is the uniformity of etch. In order to achieve process uniformity, it is necessary to be able to control the uniformity of the plasma above the wafer. In the present experiment, the uniformity of the discharge is studied as a function of coil configuration in order to understand the influence of coil geometry on spatial power deposition. Langmuir probe data are presented for various coil configurations. These data are compared to a computer model of the time-dependent magnetic and electric fields induced in the presence of a plasma with a prescribed density and profile.

KA-5 High Power RF Monitoring of a Planar Inductively-Coupled Plasma, N.M.P. BENJAMIN, A.J. LAM and R.G. VELTROP, Lam Research Corp., Fremont, Ca 94538. - Power and RF monitoring in plasma processing systems is usually confined to the 50 Ω side of the power transmission system between the generator and the matching network. Data that is more relevant to the process plasma can be obtained by measuring directly adjacent to the electrode in a capacitive discharge, or to the antenna in an inductive discharge. However, the voltages and currents at these points may be large, with substantial phase angles, when compared with the 50 Ω case, so considerable care must be taken in order to obtain valid data. High density processing plasmas are now often generated using inductive coupling techniques, but there is still a residual capacitive coupling fraction. In the present experiments RF monitoring is performed adjacent to the antenna in a planar induction system with a view to differentiating between the capacitive and inductive coupling components.

KA-6 A 2-D Fluid Model of High Density Inductively Coupled Plasma Sources, R. A. Stewart, P. Vitello*, and D. B. Graves, University of California-Berkeley. - A 2-D (r,z) time-dependent fluid model is used to study plasma transport in inductively-coupled plasmas. A self-consistent calculation yields power delivered to the plasma electrons from both an external antenna coil and capacitive coupling to a biased substrate. We consider high aspect ratio reactor geometries and various antenna coil configurations. We have used our model to study the variation of the 2-D spatial profiles of plasma parameters including density, electron temperature and ion flux with both input power and gas pressures in Ar and Cl₂ discharges. Comparison is made with available experimental data.

*Lawrence Livermore National Laboratory

KA-7 Spatiotemporal Characteristics of Collision Dominated-Inductively Coupled-Plasma, K.KONDO*, H.KURODA and T.MAKABE, Keio Univ. Yokohama Japan - Plasma maintenance by rf currents applied to induction coils is one of the traditional and renewed methods, as is known as inductively coupled-plasma (ICP). This work describe time- and space-characteristics in a periodic steady state of a collision dominated-ICP with external coils and without static magnetic field. The governing equation system is one-dimensional relaxation continuum (RCT) model, developed by our previous work. RCT model is developed into the system including Maxwell's equations. Electron swarm parameters in $E \times B$ fields, E - and $E \times B$ -drift velocities and ionization rate constant et al, are calculated beforehand as functions of B/N and E/N using the Boltzmann equation. ICP for pressures of 0.1-5 Torr and 13.56 MHz in Ar is

simulated as a function of dissipated power, and the spatiotemporal behavior is discussed. It will be stressed that the plasma is mainly sustained in the vicinity of wall sheath during the phase when the radial drift velocity is emphasized by $E \times B$ -drift. *Permanent address: Fuji Electric, Corporate Research & Development, Ltd.

KA-8 Acoustic Resonances in Inductively-Excited, Electrodeless High-Pressure Discharges, M. E. DUFFY and J. T. DAKIN, GE Lighting, Cleveland, OH 44112 - Electrodeless fused quartz arctubes, approximately cylindrical in shape, having external diameter and height of 20 and 17 mm respectively, were dosed with metal halide salts and filled with 250 Torr Kr at room temperature before sealing. Inductive excitation was provided by a seven turn coil, which was capacitively matched to the 50 ohm output of a 13.56 MHz (f_{rf}) power source. The power source was controlled by a signal generator whose dc output level established the time average rf power level in the range 250 to 500 W. The signal generator output had a sinusoidal ac component at 10 to 50 kHz (f_{am}), which caused the instantaneous rf power level to modulate. Phenomena were observed at $f_{am} \approx 25$ kHz, the most obvious feature being a visible change in the shape and stability of the discharge. These phenomena were studied by varying the power level and the arctube height, and by sweeping the modulation frequency through 25 kHz at about 100 Hz (f_{fm}). A simple model identified the phenomena with the lowest acoustic resonance mode in the discharge gas.

SESSION KB: RECOMBINATION AND ION COLLISIONS
Thursday morning, 21 October 1993
Grand Salon C, 8:00-10:00
E. Mansky, presiding

KB-1 Electron-Ion Dissociative Recombination*, M. R. Flannery ITAMP, Harvard - Smithsonian and School of Physics, Georgia Tech. Dissociative recombination in electron-diatom molecular ion collisions has been described theoretically by a first-order treatment and by two *ab-initio* fully quantal treatments based on configuration mixing and on multichannel quantum defect theory, respectively. Agreement with experiment is limited to only ($e^- - H_2^+$) collisions and possibly to ($e^- - N_2^+$) collisions. In an effort (a) to gain further insight into the physics not included in the first-order treatment, and difficult to extract from the numerical quantal procedure; and (b) to see if simple analytical expressions for the recombination rate which are more accurate than the first-order expression can be derived without recourse to the full quantal treatments, a two-state semiclassical theory is presented here. Not only will it be invaluable for the simpler diatomic species, but the present theory can also be applied to cases where curves do not cross and to complex molecular systems.

* Work supported by AFOSR grant no. 89-0426 and partially supported by an NSF grant via ITAMP at Harvard.

KB-2 FALP-MS Measurements of Dissociative Recombination of Cyclic and Polycyclic Hydrocarbons*, B.R. ROWE, H. ABOUELAZIZ, J.C. GOMET, D. PASQUERAULT, A. CANOSA and J.B.A. MITCHELL, DPAM, Université de Rennes - Rate

THURSDAY MORNING

coefficients for the dissociative recombination of electrons with the ions $C_3H_3^+$, $C_6H_6^+$ and $C_{10}H_8^+$ have been measured using the Flowing Afterglow Langmuir Probe-Mass Spectrometer technique (FALP-MS).¹ Values of 0.7×10^{-6} , 1.0×10^{-6} and $0.3 \times 10^{-3} \text{ cm}^3 \text{ s}^{-1}$ have been obtained. Studies are continuing on anthracene, $C_{14}H_{10}^+$, and will be reported upon.

*Supported by CNRS

¹H. Abouelaziz et al., J. Chem. Phys. **98**, 12 (1993)

KB-3 Dissociative Recombination Studies by Time of Flight Spectroscopy. K.A. HARDY and J. SHELDON*, Physics Department, F.I.U. and J.R. PETERSON**, Molecular Physics Laboratory, SRI International. - The direct products of dissociative recombination (DR) of Ne_2^+ , Ar_2^+ , and Kr_2^+ ions have been observed and identified using time of flight (TOF) spectroscopy. The ions are formed and the DR reactions occur in an effusive source of metastable rare gas atoms, where an electric discharge is maintained by a hot filament source of electrons placed on the beam axis and held at potentials of -40 to -90 volts. The TOF spectra show a normal thermal distribution plus superthermal peaks that are ascribed to fast products of the DR of Ne_2^+ , Ar_2^+ and Kr_2^+ ions. When an axial magnetic field is present in the discharge, the relative signal from DR increases relative to the thermal metastables which also increase absolutely. In addition to the major DR peaks, other small peaks appear in the distribution, which can be attributed to the DR reaction, including DR to the ground state.

*JS and KAH received support from AFSOR Grant F49620-93-1-0159DEF

** JRP received support from NSF Grant PHY 911872

KB-4 Effect of Temperature on Electron Attachment and Detachment in SF_6 and $c-C_4F_6$. P. G. DATSKOS, L. G. CHRISTOPHOROU, and J. G. CARTER, Oak Ridge National Laboratory and The University of Tennessee. - The total electron attachment rate constant for SF_6 and $c-C_4F_6$ was found to be virtually independent of T, for gas temperatures, T, in the range of 300 to 600 K and for mean electron energies below 1.0 eV. Under the same experimental conditions the stabilized SF_6^- does not undergo autodetachment but the stabilized $c-C_4F_6^-$ undergoes a profound increase in autodetachment (about four orders of magnitude). This difference between the SF_6^- and the $c-C_4F_6^-$ autodetachment can be attributed to the larger electron affinity of the SF_6 molecule compared to $c-C_4F_6$. The heat-activated autodetachment of $c-C_4F_6^-$ is related to the increase in the anion's internal energy with increasing T and is found to have an activation energy of 0.237 eV.

[#]Research sponsored by the Wright Laboratory, U.S. Department of the Air Force, under contract No. AF 33615-92-C-2221 with the University of Tennessee and the Office of Health and Environmental Research, U.S. Department of Energy under contract No. DE-AC05-84OR21400 with Martin Marietta Energy Systems, Inc.

KB-5 Neutral Dissociation Cross Sections for N_2 and CF_4 *, M. R. Bruce, L. Mi, D. Soruco, and R. A. Bonham, Indiana U. - We have employed a method for absolute efficiency measurements of detectors suggested by Srivastava [1]. It consists of measuring the electron energy loss spectrum at a fixed scattering angle in coincidence with all ions produced by an incident electron pulse of fixed energy. The ratio of the number of coincident ions to the total number of electrons detected at the same energy loss is the ion detection efficiency of the apparatus if it is assumed that electrons losing more than the ionization potential only produce ions.

Difficulties arise with atoms if resonance states in the continuum, which fluoresce to neutral states, occur with significant cross sections. For molecules an additional problem is neutral dissociation. We have used electron-ion coincidence measurements as a means of investigating neutral dissociation. The electron-ion coincidence spectra at 45° and 40 eV impact energy for He, Ar, Kr, N_2 , and CF_4 will be reported. Absolute detector efficiencies of 0.46 ± 0.03 for energy loss values above 25 eV were obtained in each case. Ratios of fluorescence to ionization for the rare gases and neutral dissociation to ionization for molecules will be reported.

[1] S. Srivastava, U. S. Pat. Appl.(NTIS Order No. PAT-APPL-7-358 027) * We acknowledge support from NSF grant PHY 9214126

KB-6 Spectroscopic study of nitrogen bombarded by MeV ions of hydrogen. JACINTHE PLANTE and ÉMILE J. KNYSTAUTAS, Dép. de physique, Université Laval, Québec G1K 7P4 - A nitrogen gas target (at various pressures) bombarded by 1 MeV H^+ , 2 MeV H_2^+ and 3 MeV H_3^+ ions was studied spectroscopically in the vacuum UV (1200 Å to 2200 Å). Emission spectra were studied as a function of pressure (5 mT, 15 mT, 40 mT) and type of projectile (H^+ , H_2^+ , H_3^+). The spectra show the presence of atomic nitrogen N I and N II lines, molecular bands of N_2 ($a^1\Pi_g - X^1\Sigma_g^+$) and of N_2^+ ($C^2\Sigma_u^+ - X^2\Sigma_g^+$). No emission of Lyman α at 1216 Å was observed in the collision of 1 MeV H^+ on nitrogen but the line was observed in the spectrum of H_2^+ at 5 mT. Other qualitative features in the spectra were noted and considered in terms of primary and secondary collisions.

KB-7 Ion Recombination Coefficients in Noble Gases: Pressure and Temperature Effects. R. COOPER and R.N. BHAVE, School of Chemistry, U. of Melbourne, Parkville 3052, Australia - Ion recombination kinetics have been observed by time resolved microwave absorption techniques on pulsed e-beam ionised rare gases. Conductivity decay in weakly ionised gases from 50 to 1500 torr was measured on time scales from 10 nanoseconds to 10 microseconds. Bulk gas pressure and ion densities ensured that recombination coefficients were for dimer cations with thermal electrons. Recombination coefficients have been measured for helium¹ from 50 to 1200 torr and at temperatures from -78 °C to +100 °C. At low temperatures, a distinct third body effect α_3 is observed as well as a two body rate α_2 . A negative temperature coefficient for α_3 is observed of $T^{-2.9}$ for helium. For argon² no third body effect was observable over the temperature range studied. In neon a very weak third body effect is observed at 20 °C.

¹R. van Sonsbeek, R. Cooper and R. Bhavé, J. Chem. Phys. **97**, 1800 1992.

²R. Cooper, R. von Sonsbeek and R. Bhavé, J. Chem. Phys. **98**, 383 1993.

SESSION L: POSTER SESSION
Thursday morning, 21 October 1993
Grand Salon B, 10:15-12:15
G. Sauvé, presiding

LA: SHEATHS AND BREAKDOWN

LA-1 2-D Model of Glow Discharges Including the Cathode Regions and the Positive Column. A. Fiala, L.C. Pitchford and J.P. Boeuf, CPAT,

Université Paul Sabatier, Toulouse, France. - Results from a self-consistent 2-D hybrid fluid-particle model are presented to illustrate the electrical behaviour of DC low pressure discharges in the current range 10^{-7} - 10^{-1} A in Argon for pd (product of the gas pressure and the gap spacing) from 1 to 3.3cmTorr. The principal results which will be presented include the 2-D distributions of the potential and the charged particle densities (1) during the transition from the Townsend to the normal and abnormal regimes and (2) in the positive column for discharges of 1 and 2cm diameters. The model consists of Poisson's equation coupled to the continuity equations for the electrons and ions with the important feature that the ionisation source term appearing in the continuity equations is determined from a Monte Carlo simulation. This treatment gives a correct physical picture of discharge behaviour over a wide range of conditions.

LA-2 Effects of the Operating Parameters on the Barium Emission and the Electrode Temperature of a Fluorescent Lamp. K. MISONO* and J. T. VERDEYEN, Dept. of Electrical and Computer Engineering, University of Illinois 61801 - The dependence of the neutral and ionized barium emission has been studied as a function of the operating parameters of the lamp such as current, heater power, and operating frequency (6-3000 Hz). Most of the observations utilized a square wave current source, but some comparison was made with the traditional 60 Hz inductive ballast operation. The barium emission intensity is proportional to I^{2-3} except at low current where it increases due to sputtering. When the anode oscillations disappear, the Ba^* and $(Ba^+)^*$ emissions increase rather significantly. These effects are very sensitive to the amount of seasoning of the lamp reaching more or less steady state after ~ 100 hours of operation. One of the major conclusions is that sputtering appears to be more significant for barium loss than is thermal evaporation.

*Visiting scholar from Toshiba.

LA-3 Sheath Models In Glow Discharges: S. SHANKAR, Tech. CAD, Intel Corporation, Santa Clara, California -

The intention of the paper is to compare and contrast between the various simple models that can be used to study the physics of plasma sheaths. These range from simple drift-diffusion models to higher moment models like second and third order moments. It will also be shown that various models can be arranged in a formal hierarchy based on these assumptions. Some of the cases that will be studied include DC discharges: mobility-limited regimes, diffusion-limited regimes, RF discharges: collisionless and collisional sheaths, and Magnetically-enhanced discharges. Validity of some of the existing models will be analyzed using Boltzmann equation simulations that have been done previously. Depending on the assumptions, the models will be used to study different parameter regimes and understand the physics in different regimes. Most of the models will have closed analytic forms for the solutions. Some numerical simulations using finite element techniques will be used to supplement the theoretical analysis. The paper will also examine critically the different models that are used in the continuum approximations to study weakly ionized plasmas.

LA-4 Time-resolved Avalanches in SF₆ under slightly Non-uniform Field. M.F. FRECHETTE, N. BOUCHELOUH, and R.Y. LAROCQUE, Câbles et Isolants, IREQ (HQ) and Ecole Polytechnique - Avalanches in low-pressure SF₆ were investigated in slightly perturbed uniform-field geometry. An avalanche was initiated by means of a short ultraviolet pulse. The UV pulse impinges on the plane cathode, resulting into the release of a large amount of photoelectrons. The plane anode hole by which the beam pervades, produces the geometrical field nonuniformity. The experiment was conducted under DC voltage. It was experimentally shown that the use of small ratios of the gap length over the hole diameter, which ranged from 0.3 to 0.8, perturbed the temporal growth of the avalanche. When compared with avalanches observed in a Pulsed Townsend experiment, the present rate of growth is typically slower. The present experimental conditions, namely large initial currents and slight geometrical field nonuniformity, tend to enlarge the duration of the avalanche while favoring delayed processes.

LA-5 Development of the Cathode Fall in Low Pressure Argon Discharges, * B.M. JELENKOVIĆ** and A.V. PHELPS, JILA, CU and NIST - The temporal and spatial development of the cathode fall of argon discharges was determined for a voltage pulse applied to a radially-uniform, low-current (100 μ A) discharge. Typical final pulsed currents were 25 and 2 mA at 0.5 and 2 Torr. The parallel-plane electrodes were 80 mm dia. and separated by 11 mm. The 811 and 750 nm lines monitored the moderate and high energy electrons. The discharge voltage initially increases almost linearly, while the current increases as $I_0 \exp(at^2)$, where I_0 is the current between pulses. The collapse of the electric field and electron energy near the anode produce a drop in the emission from near the anode even though the current is increasing smoothly. The emission peak shifts towards and then away from the cathode as the current and emission increase further and then decrease to their final values. At 0.5 Torr cathode fall development starts at about 2 mA and requires about 2 μ s. Spatial scans at 0.5 Torr show strong heavy particle excitation near the cathode once the high field region develops.

* Supported in part by US Air Force, Wright Laboratories.

** Permanent address: Institute of Physics, University of Belgrade.

LA-6 High Voltage Fast Discharge in Pure Mercury for Optimization of 254 nm Radiation, M. GANCIU and G. MUSA, IFTAR Plasma Dept. Bucharest Romania, O. MOTRET, A. KHACEF, C. CACHONCINLE and J.M. POUVESLE GREMI CNRS/University of Orléans, France - In this work, we used a very compact Blumlein system with surface ferrite discharge preionization working with input voltage around 10 kV and allowing discharges of 25 ns duration with 0.2 J stored energy at 30 Hz. The mercury concentration inside the flash tube (dia : 0.8 cm, electrode separation : 2 cm) was controlled by heating. Despite a strong reabsorption, the total UV fluorescence at 254 nm increases with the concentration up to about 1.5×10^{19} cm⁻³ (maximum concentration for discharge stability in our system). Results were compared with 1 atm xenon discharge in the same experimental conditions. Results showed the possibility of improving the 254 nm UV emission yield in short high voltage thin surface discharge device in hot high pressure pure mercury.

THURSDAY MORNING

LA-7 A Gas-Discharge Breakdown Model, M. AGACHE, S. LAUBE, M. FITAIRE, LPGP Orsay France - The breakdown of a DC electrical discharge between 2 parallel plates is investigated. The ions, because of their weak mobility, don't play an important role for the secondary emission at the cathode during the prebreakdown. We aim to show that the photoelectric effect may be responsible of the discharge prebreakdown. A numerical 1D simulation, taking in to account the differential cross sections, was used to analyse the electrons and U.V. photons productions (104.8, 106.7nm) in Ar. For values of the product $pd > 2 \text{ mmHg.cm}$ and voltage V corresponding to a Paschen curve¹ for Ar with a Pt cathode the number of photons attending the cathode has been evaluated. Considering the efficiency of the photoelectric effect on Pt we can conclude that the second electron avalanche may be produced by a photo-electron. This leads to time lags of few μs to compare to a few tens of μs in the case of the secondary emission by ionic bombardement. The first Townsend coefficient calculated with this code is in good agreement with the values reported by von Engel² for $E/p < 1000 \text{ V/cm/mmHg}$.

¹M. Druyvestein, M. Penning, Rev. Mod. Phys. 12, 87(1940)

²A. von Engel, Hndbuch der Phys. Springer Verlag, 1956, Vol 21, pg 504.

LA-8 Formative Time Lag in Breakdown of Long Slender Discharge Tubes

JOHN F. WAYMOUTH, 16 Bennett Rd., Marblehead, MA. 01945. The breakdown of long slender discharge tubes takes place as an ionization front propagating from the high potential electrode toward the grounded electrode. This process is modeled as a non-linear RC transmission line in a manner similar to that of Horstman et al.¹ The capacitors consist of the wall capacitances to ground of 1-diameter long segments, while the resistors are the time-dependent resistances of 1-diameter long segments of the plasma column. Initial conditions are: segment resistances R_0 very high (though not infinite), inner wall potentials zero (capacitances C uncharged). Breakdown occurs first at the high potential electrode, since E -field in the first resistor segment is high. Ionization frequency is very much greater than $1/R_0C$; thus, the first segment resistance decreases by factor ca 10,000 before C charges nearly to potential of the energized electrode. When C has charged, the rate of decrease of R slows drastically, while the high field region becomes the second segment and it breaks down in turn.. This mechanism is modeled as a set of difference equations with a spread-sheet program on a personal computer. Results agree with experiments of Horstman, except that calculated propagation velocity appears to be too fast. I propose that this is caused by electron energy distribution not reaching equilibrium with local field; thus experimental ionization frequency is less than calculated.

¹R. E. Horstman & F. M. Oude Lansink, J Phys D, 21 1130 (1988)

LA-9 Suppression of Vacuum Breakdown Using Thin Film Coatings*, C. B. FLEDDERMANN, C. S. MAYBERRY, B. WROBLEWSKI, AND E. SCHAMILUGLU, Dept. of Electr. and Comp. Eng., Univ. of New Mexico- The use of thin film coatings for increasing the breakdown voltage in a parallel-plate high-voltage gap has been investigated. Both metallic and ceramic thin films were deposited at varying thicknesses and deposition conditions on a screen cathode using ion-beam sputtering. Improvements in breakdown voltage were observed for nearly any type of deposited film, with significant variations in breakdown voltage depending on film thickness and oxygen partial pressure during ceramic film deposition. For 500 nm thick metallic or oxide films, breakdown voltage was nearly doubled compared to the bare stainless steel screen, which is attributed to the burying of surface imperfections on the cathode. For 200 nm thick films, the covering of imperfections is less effective; however, high breakdown voltages can still be obtained by choosing an appropriate oxygen partial pressure during film deposition. Electric fields as high as 60 kV/mm were sustained across a 1 mm gap for 10 μsec pulses; lesser fields could be sustained for as long as 10 ms. These coatings allowed for the successful study of a planar liquid metal ion source.

*Supported by Sandia National Laboratories contract No. 69-5698, and partially supported by AFOSR grant F49620-92-J-0157P00001.

LA-10 Ignition Characteristics of the Thin-Wire Discharge.*

A. KUTHI, J. R. BAYLESS and C. BURKHART, FPSI - In order to understand the functional dependence of ignition potential on gas pressure, electrode sizes, and geometry a simple phenomenological model for the cylindrical thin-wire discharge has been developed. The model is based on the concept of a voltage-dependent ionization volume. It correctly predicts the Paschen breakdown characteristics of thin-wire discharges in the low-pressure regime, i.e. below the Paschen minimum. The ignition voltage strongly depends on the diameters of both the anode wire and the cathode cylinder. The dependence of ignition voltage on cathode material is shown to be weak. Experimental data using 0.0125 cm diameter tungsten wire as the anode running along the center of a 5 cm x 2.5 cm cross-section, 20 cm long copper cathode box is in agreement with the model when the working gas is air. However, the measured thin-wire Paschen minimum for helium is 50% higher than the corresponding plane electrode Paschen minimum voltage required by the model.

*Work supported in part by NSF.

LA-11 Voltampere characteristics from SPEAR III.*

J. BENSON, E. E. KUNNHARDT and S. POPOVIC, Polytechnic University and Stevens Institute of Technology- SPEAR III is rocket-based space experiment which includes a study of several different mechanisms for discharging a negative charged spacecraft to plasma potential i.e. "grounding". The vehicle body was driven to a high negative potential by biasing a separate conductive sphere positive. Four different grounding techniques were applied: hollow cathode discharge, neutral gas release, thermionic emission and field emission. We have performed the analysis of data collected during glow discharge enhancement by the neutral gas releases at various altitudes and attitudes with respect to the Earth's magnetic field. The results will be compared with the laboratory experiments and theoretical predictions.

* Work supported by SDIO/DNA

LA-12 Comparisons between 1.5D and 2D Simulations for Gas Pre-breakdown.*

Jing-Ming Guo and Chwan-Hwa "John" Wu, Department of Electrical Engineering, Auburn University. The nitrogen gas pre-breakdown phenomena under homogenous external conditions has been respectively studied by the following four models: 1) 1.5D equilibrium fluid model; 2) 1.5D nonequilibrium fluid model; 3) 2D equilibrium fluid model; and 4) 2D nonequilibrium fluid model. In order to provide the solution with steep and varying gradients in large dynamic ranges, a More Accurate Flux-Corrected Transport (MAFCT) technique is adopted to solve the electron fluid equations¹. The streamer speed in 1.5D simulations depends on the ionization channel radius and the streamer speed increases as the channel radius increases. The 2D models is used to assess the validity of 1.5D models. A more accurate way to decide the radius is adopted in this paper and it is compared with the 2D model. From the study, it is unrealistic to ignore the change of the electron density, the electric fields, the electron average velocity, and the electron mean energy along the radial axis, which play relatively important roles in streamer development.

*Work supported by NSF under ECS-9009395.

¹E. E. Kunhardt and C. Wu, J. Comput. Phys. 68, 127 (1987).

LA-13 Discharge Pumped Resonant VUV Emission Sources Based on Rare Gas Mixtures. A.I. IVANOV, A.G. ZHIDKOV, Russian Academy of Sciences, General Physics Institute 117942 GSP-1 Moscow B-333, Vavilov Street, 38 - During a long time, rare gas mixtures have been used as active media for laser and gas discharge emission sources. From the viewpoint of VUV emission generation, resonant levels of rare gases are of special interest, because the essential power density of the emission can be achieved under relatively low pressure (0.01-1 atm) and pumping power (of the order of 1-10 W/cm³). This allows one to use such VUV emission sources in both laser techniques and adjacent fields: pulse or, more importantly, continuous discharge devices. This work is devoted to the theoretical study of the kinetics of rare gas binary mixtures pumped by electric discharge at up to atmospheric pressure. Special attention is paid to He-Kr mixture, whose kinetics have been studied insufficiently.

LA-14 Streamer Formation in Coronal Discharges.* P.A. VITELLO, B.M. PENETRANTE and J.N. BARDSLEY, LLNL - Filamentary streamer discharges are of current interest due to their application to pollution control devices. Streamers produce non-thermal energetic electrons which, through dissociation and ionization processes, generate active radicals that in turn react with toxic molecules. For a given chemical gas mixture, the energy distribution of the electrons produced as the streamer bridges the gap between the electrodes is determined by the spatial and temporal evolution of the streamer. Streamers propagate due to a highly non-linear space charge driven ionization wave. We have developed a multi-dimensional coronal discharge model that can be applied to arbitrarily shaped electrode structures. We have applied this code to study some of the issues related to finding the optimum working conditions for streamers in corona discharges. We show for a point-to-plane electrode geometry in air how a coronal discharge evolves, as a function of gap voltage, from a diffuse to a filamentary streamer discharge.

*This work was performed at LLNL under the auspices of the U. S. DOE under Contract Number W-7405-ENG-48, with support from the Advanced Energy Projects Division of the Office of Energy Research.

LB: ION TRANSPORT AND ION-MOLECULE COLLISIONS

LB-1 Collision-Induced Dissociation and Charge Transfer Reactions of SiF_x⁺ (x = 1 - 4). Thermochemistry of SiF_x and SiF_x⁺. ELLEN R. FISHER, BERNICE L. KICKEL, AND P. B. ARMENTROUT, U. of Utah - Guided ion beam techniques are used to measure cross sections as a function of kinetic energy for interaction of Xe with SiF_x⁺ (x = 1 - 4) ions. Energy dependences of the collision-induced dissociation cross sections are analyzed to yield the following 0 K bond dissociation energies (BDEs): D(SiF₃⁺-F) = 0.85 ± 0.16 eV, D(SiF₂⁺-F) = 6.29 ± 0.10 eV, D(SiF⁺-F) = 3.18 ± 0.04 eV, and D(Si⁺-F) = 7.04 ± 0.06 eV. The ionization energies, IE(SiF₂) = 10.84 ± 0.13 eV and IE(SiF₃) = 9.03 ± 0.05 eV, are also measured from analysis of endothermic charge transfer reactions. From these BDEs, measured IEs and previous results,^{1,2} we derive heats of formation for the silicon fluoride cations and neutrals.

1. M. E. Weber and P.B. Armentrout, *J. Chem. Phys.* 88, 6898 (1988).
2. B. L. Kickel, E. R. Fisher and P. B. Armentrout, *J. Phys. Chem.*, submitted.

LB-2 Electron Capture in Collisions of He⁺ Ions with CO Molecules below 100 eV.* M. KIMURA, Argonne National Laboratory and Rice U., N. F. LANE, Rice U., and A. DALGARNO, Harvard U. -- Electron capture in He⁺ + CO collisions is considered to be one of the dominant processes causing He⁺ ion disappearance in the astrophysical environment [1]. We have investigated this process theoretically by using the diatomics-in-molecules (DIM) method for adiabatic potential surfaces and the quantum-mechanical close-coupling method for collision dynamics. Because of the strong dipole moment of CO, the adiabatic potential surfaces are strongly dependent on the molecular orientation of the CO molecule along the collision plane, and collinear formation of He⁺-CO is most effective for electron capture.

- * Supported by the U.S. Department of Energy, Office of Energy Research, Office of Health and Environmental Research, under Contract W-31-109-ENG-38 (MK), and Office of Basic Energy Sciences (NFL and AD).
¹ S. Lepp, A. Dalgarno, and R. McCray, *Ap. J.* 358, 262 (1990).

LB-3 The Modified Adiabatic Invariance Method for Thermal Ion-Dipole Molecule Reactions*, M. R. Flannery[†] and X. Qi[†], *ITAMP, Harvard - Smithsonian[†] and School of Physics, Georgia Tech.^{††}* A new modification to the semiclassical adiabatic invariance method (AIM) is presented to compute thermal energy rate coefficients for capture of various atomic and molecular ions by diatomic and triatomic molecules with permanent dipole moments. Results are presented for the following ion-molecule systems: He⁺, C⁺, and H₃⁺ ions reacting with polar HCl molecules; and H⁺, C⁺, O⁺, HCO⁺, and H₃⁺ ions with HCN molecules. The present modification of the AIM accounts for the coupling of the internal rotational angular momentum (*j*) of the target molecule to the orbital angular momentum (*ℓ*) of the projectile ion about the center of mass of the target molecule, and is most important in the limit of light ion mass or weak ion-molecule interactions.

* Work supported by AFOSR grant no. 89-0426 and partially supported by an NSF grant via ITAMP at Harvard.

LB-4 Ion-Molecule Reactions at High Temperatures. M. MENENDEZ-BARRETO, J. F. FRIEDMAN, T. M. MILLER, A. A. VIGGIANO, R. A. MORRIS, and J. F. PAULSON, *USAF Phillips Laboratory, Geophysics Directorate* - Reactions of O⁻ with H₂, D₂, and CH₄ have been studied in a flowing afterglow in the temperature range 300-1300 K. The reaction rate coefficients *k* measured for O⁻ + H₂ and D₂ versus temperature follow the trend observed¹ previously for the translational energy dependence of the reaction rates; apparently, rotational energy is unimportant in the reaction. The *k* values for O⁻ + CH₄ are found to decrease (by about 50%) between 300-1300 K. The translational energy and temperature dependences of *k* match up to 0.09 eV. It is not yet clear, within the scatter in the data at the highest temperatures, if the thermal rates show the beginning of a subsequent increase in *k* that was found with translational energy.² The problems associated with high temperature operation will be discussed.

- 1 A. A. Viggiano, R. A. Morris, C. A. Deakyne, F. Dale, and J. F. Paulson, *J. Phys. Chem.* 94, 8193 (1990) and 95, 3644 (1991), and references therein.
- 2 W. Lindinger, D. L. Albritton, F. C. Fehsenfeld, and E. E. Ferguson, *J. Chem. Phys.* 63, 3238 (1975).

LB-5 Absolute Differential Cross Sections for keV-energy Collisions between Ions, Neutrals and Molecules, R. S. Gao, B. G. Lindsay, G. J.

THURSDAY MORNING

Smith, K. A. Smith, and R. F. Stebbings, Rice University*. We have measured absolute angular scattering cross sections for collision processes including angular scattering, charge exchange, stripping, and electron capture in the energy range between 500 and 5000 eV. Projectile species include H, H⁺, O, O⁺, He and He⁺. Targets include H₂, N₂, O₂, and rare gases. In many instances these data are the only absolute angular scattering data available. We will review these measurements in the light of their application to discharge phenomena.

*Supported by the Robert A. Welch Foundation, NASA, and the NSF Atmospheric Sciences Section.

LB-6 Heavy Ion Beam Induced Charge Transfer in Ar-Cs Mixtures.* D. E. MURNICK, Rutgers U. Newark, NJ 07102, R. GERNHÄUSER, A. ULRICH, W. KRÖTZ, J. WIESER, Tech. U. München, Germany - In situ production of target ions in cold, dense matter by heavy ion collisions and subsequent selective charge transfer may provide an effective pumping scheme for heavy ion beam pumped lasers. Charge transfer from cesium atoms to doubly charged argon ions was used for selective population of 4d-levels in Ar II. The argon ions were produced in an argon-cesium gas target by a pulsed beam of 100 MeV ³²S⁸⁺ ions from the Munich Tandem van de Graaff accelerator. The ion beam of 12x10⁶ ions/pulse had a pulse width of 2 ns and a repetition rate of 32 kHz. The argon pressure was typically 250 mbar. The cesium partial pressure was adjusted by heating the gas target, including a cesium reservoir, to temperatures between 250 and 500°C. Time resolved wavelength spectra showed large intensity increases corresponding to 4d ⁴D and 4d ⁴F to 4p transitions in Ar II in the ultraviolet wavelength region between 300 and 400 nm. This is interpreted as a resonant charge transfer of outer electrons of cesium to 4d levels in Ar II in Cs⁰⁺ Ar²⁺ collisions.

*Work supported in part by the German Ministry of Research and Technology (BMFT).

LB-7 Hydrogen Atom and Ion Source, R.J. SEVERENS, M.J. DE GRAAF, Z. QING, D.K. OTORBAEV, R.P. DAHIYA, J. WEVERS, R.F.G. MEULENBROEKS, M.C.M. VAN DE SANDEN, and D.C. SCHRAM, Eindhoven Univ. Techn. - High intensity hydrogen atom and ion beams can be obtained by expansion of a cascade arc plasma in a low pressure vessel. At intermediate ambient pressure, anomalous recombination results from charge exchange of H⁺ with H₂^v to H₂⁺, conversion to H₃⁺ and subsequent dissociative recombination. The required H₂^v reenters the atomic plasma beam from wall association and recirculation. At lower pressure (10 Pa) in a confining magnetic field this recombination is much less effective and a highly ionized plasma beam results; then the ro-vibrational excitation of the residual H₂^v molecules favour negative ion formation. Applications in ion sources and archaeological artefact restoration are discussed.

LB-8 Effect of Excitation Energy Loss on the Transport Property of Ions in Gas N. Ikuta and S. OKUDA Tokushima Univ. Jpn. --- Ion transport properties in model gases having a constant total collision cross section (CCS) are analysed replacing a part of CCS to excitation cross sections by using the FTI method¹⁾. Isotropic scattering only in the center of mass frame is assumed for both the elastic and inelastic collisions but excluding superelastic collisions. In the thermal region, the mean energy is lowered from the thermal energy due to

excitation energy loss, but mobilities naturally have high values to recover the mean energy. The mean energy completely recovers to a value of only elastic collision in a high E/N value. Such variations with the recovering effect is given with the balance of gain and loss rates in the momentum and energy through a loop of flight and collisions. Wannier's energy²⁾ will largely depart from the true value of mean energy in such situations of "low energy and high drift velocity". However, note that the recovering effect works well in conditions "d_y/ε > 0" with highly anisotropic velocity distributions. Superelastic collisions with the principle "detailed balance" may markedly reduce the recovering effect.

- 1) N. Ikuta, E. Nishi and S. Nakajima: J. Phys. Soc. Jpn. 61(1992)4425.
- 2) G.H. Wannier: Bell System Tech. J., Jan. (1953)170.

LB-9 Dependences of Ion mobility on Masses of Ion and Gas. N. IKUTA and T. KAWABATA, Tokushima Univ. Jpn. ----- Transport properties of ions in model gases are analysed using the flight time integral (FTI) method¹⁾ taking into account the mass ratio between an ion and a gas atom, R:1/1, S:4/1 and T:1/4, referred to He atom. Here, S and T have the same reduced mass 4/5. A constant collision cross section is assumed throughout this work. Isotropic scattering in the center of mass frame (ISCM) which demands anisotropic scattering in the Labo frame is assumed, and analysis is executed with an extended FTI procedure. Ion mobility curves are commonly dependent on (a): the mean collision frequency proportional to the mean relative speed, (b): mean acceleration in a flight which is dependent on ion mass, and (c): residual forward velocity moment after scattering in ISCM which is dependent on the mass ratio. The ion transport properties in various mass ratios vary as complex functions of E/N and conditions above described, and the data in R, S and T draw independent mobility curves in several view points. Nevertheless, the outline of them obeys the basic transport property in a constant collision cross section. Details will be shown at the conference.

- 1) N. Ikuta, E. Nishi and S. Nakajima: J. Phys. Soc. Jpn. 61(1992)4425.

LB-10 Relations between Interaction Potentials and Ion mobility Curves N. IKUTA, Tokushima Univ. Japan ----- Reduced mobility curves of ions in gases have been analysed theoretically estimating the interaction potential in such forms as V(r) = C₁r⁻¹² - C₂r⁻⁴. The long range interaction potential due to induced dipole -C₂r⁻⁴ gives the momentum transfer and integral cross sections both inversely proportional to relative velocity v_r in a low range. Accordingly, ions must have a constant mobility independent of ion and gas temperatures. However, it is well known that the Langevin limit given by the polarizability of gas is valid only in very low E/N and in very low gas temperature. Furthermore, the zero-field mobility reported often do not agree with the Langevin limit¹⁾. On the other hand, the constant mobility in the low E/N thermal region²⁾ are proved to be given by the thermal motion of gas atoms with positive and negative dependencies on gas temperature. We consider, therefore, that the dipole potentials might not work effectively on the ion transport property even in a thermal region but also in a high E/N region as are observed in mobility curves forming a hump or a fall without a hump.

- 1) H. Tanuma et al.: Sect. Meeting, Phys. Soc. Jpn. 27aZK11(92).
- 2) N. Ikuta, E. Nishi and S. Nakajima: J. Phys. Soc. Jpn. 61(1992)4425.

LB-11 Ion Transport Properties under Constant Collision Frequency E. HOLCOMB, S. OKUDA and N. IKUTA Tokushima Univ. Japan ----- Recently, transport properties of ions have been analysed by using the Flight Time Integral

(FTI) method assuming isotropic scattering in both the CM and Labo frames¹⁾ (ISCL). Transport properties of ions in gas of the same mass as He with a Maxwellian distribution at 300K have been analysed accurately using the assumption of a constant collision frequency (CCF) with an extended FTI method adequate for isotropic scattering in the CM, consequently anisotropic in the Labo frame. Starting velocity distributions with anisotropic components have been obtained from the velocity dispersion functions and the relative velocity v_r with respect to gas atoms. The drift velocities obtained are proportional to E/N with values twice those of the previous data (ISCL) due to the forward components of the starting velocities used in this analysis for the first time. Wannier's energy accurately agrees with the mean energy in flight, and quite clear relations among the various quantities and the drift velocity are obtained. Detailed comparisons with those under constant collision cross section (CCS) are also performed.

1) N. Ikuta, E. Nishi and S. Nakajima: *J. Phys. Soc. Jpn.* **61** (1992)4425.

LB-12 Ion Swarm Analysis in Dynamic Equilibrium, K. IINUMA, N. SASAKI, and M. TAKEBE, Tohoku U., Yamagata U., JAPAN - A mathematical analysis of dynamic equilibrium for an arbitrary number of ion swarms drifting, diffusing, and inter-reacting in a neutral gas has been developed for the first time. An asymptotic solution derived from a general solution of a coupled transport equations¹ describes a set of similar Gaussian profiles with two common "equilibrium" transport coefficients which are functions of the drift velocities, diffusion coefficients, and reaction-frequency determinants. Although all the arrival time spectra apparently aggregate to the same location, there exists a slight peak difference between arbitrary two spectra. The difference holds even in the equilibrium. The discrepancy between thermal equilibrium and dynamic equilibrium is ascribed phenomenologically to the appearance of the peak difference. A generalized equilibrium constant for ion-molecule reactions is defined by a quotient of two reaction-frequency determinants. Those four kinetic constants can uniquely be determined by the transport coefficients and reaction frequencies of all ion species without any influence of the initial conditions.

1. K. Iinuma, *Can. J. Chem.* **69**, 1090 (1991).

LB-13 Fast Beam Photofragmentation Dynamics of $H_2(i^3\Pi_u, v=4)$, B.R. CHALAMALA*, E.R. WOUTERS and W.J. VAN DER ZANDE, FOM Inst. Atomic Molecular Phys., Amsterdam - The decay of several quasibound rotational levels of $H_2(i^3\Pi_u, v=4)$ is investigated experimentally using fast neutral beam photofragmentation spectroscopy.¹ A fast 4-6 keV beam of metastable H_2 is formed by the charge transfer of H_2^+ on cesium. An intracavity CW dye laser excites the $H_2(c^3\Pi_u, v=4)$ molecules to the $i^3\Pi_u$ electronic state. The excited $i^3\Pi_u$ decay by photon emission to the repulsive $b^3\Sigma_u^+$ state or by barrier tunnelling. Upon dissociation, the fragments scatter out of the beam and are detected on a two-particle time and position sensitive detector. From these coincidence measurements, we determine the positions of the fragments (R1, Φ 1, R2, Φ 2) with respect to the center of the detector and their flight time difference (τ). These observables then yield the kinetic energy of the hydrogen fragments (ϵ) and the angle of dissociation with respect to the fast beam (Θ). From the kinetic energy release spectra, we determine the branching between fluorescence before and after barrier tunnelling.

* Permanent address: Dept. Phys., U. N. Texas, Denton, TX 76203.

¹ H. Helm, D.P. de Bruijn, J. Los, *Phys. Rev. Lett.* **53**, 1642 (1984).

LB-14 Toward Detailed Correct Kinetics of Rare Gas Halide Active Media: Accurate Analytical Potentials and Related Properties of R'RX Molecules with Application to $RXeF^*$ (R=Ne, Ar, Kr), F.Y. NAUMKIN, V.G. PEVGOV, General Phys. Inst., Moscow - Accurate analytical potentials have been derived for arbitrary R'RX systems with spin-orbit coupling included. Three combinations of 3 potentials arise from interaction of ground state rare gas R' atom with rare gas halide RX molecule in $^2\Sigma_{1/2}^+$, $^2\Pi_{3/2}$ and $^2\Pi_{1/2}$ states. For $ArXeF^*$ molecule, emphasis has been placed on respective B, C, D states of XeF^* interacting with Ar. Polarization bond of Ar in field of $Xe^+ - F^-$ dipole reaches 0.1 eV maximum value on normal to Xe-F axis at $re=3A$ of Ar-XeF separation, all equilibrium distances (re 's) being almost unperturbed from those of isolated diatomics. To consider temporal dynamics of excited states in terms of their diabatic potentials, a simple perturbation theory treatment is proposed. Corresponding effects on radiative lifetimes are evaluated. All above properties are considered also for $NeXeF^*$ and $KrXeF^*$.

LB-15 Electron Detachment and Charge Transfer in Low Energy Collisions of Na^- with Atomic Hydrogen, J.A. FEDCHAK, R.L. CHAMPION and L.D. DOVERSPIKE, College of William & Mary, and Y. WANG, University of Notre Dame Radiation Lab - Cross sections for electron detachment and charge transfer have been measured for the system $Na^- + H$ in the relative energy range $3 < E_{cm} < 20$ eV. The electron detachment cross section decreases from about 30 \AA^2 at $E_{cm}=8$ eV to 20 \AA^2 at 18 eV. An absolute scale could not be experimentally determined for the charge transfer channel, but the cross section is seen to increase by a factor of five between $E_{cm}=5$ and 15 eV. In order to establish a scale for the charge transfer channel, a perturbed stationary state (PSS) calculation was performed and predicts the cross section to be less than 0.02 \AA^2 over the energy range investigated.

LC: ELECTRON TRANSPORT AND COLLISIONS

LC-1 Absolute and Relative Optical Oscillator Strength Determinations for the Group IV Tetrafluorides with Zero Angle Electron Energy Loss Spectroscopy,* M. DILLON, D. SPENCE and K. KUROKI, Argonne National Laboratory, Argonne, IL - Energy loss spectra using incident electrons of 200 eV and recorded at zero scattering angle have been determined for CF_4 , SiF_4 , and GeF_4 . The range of energy losses (≈ 20 eV) includes all transitions out of the upper valence shells. The upper valence shells of each of the tetrafluorides has an electronic configuration and ordering $\{ (a_1)^2 (t_2)^6 (e)^4 (t_2)^6 (t_1)^6 \}$ consisting of predominantly lone-pair electrons. The zero-angle spectra were first transformed to relative optical absorption spectra by employing an electron optical conversion function valid for circular orifices. Where possible these were normalized to a previous measurement and compared with determinations found in the literature. Orbital assignments and ionization potentials are also included. The former were determined from a combination of *electron energy loss* and *vacuum ultraviolet* spectroscopies.

* Work supported in part by the U.S. Department of Energy, Office of Environmental Research under contract w-31-109-Eng-38

LC-2 Lifetime of $A^3\Sigma_u^+$ State of N_2 in the Afterglow of Nitrogen Pulsed Discharge,* E.AUGUSTYNIAK and J.BORYSOW, Physics Department, Michigan Tech. University - The absorption time transients and populations of $N_2(A^3\Sigma_u^+)$ were measured, us-

THURSDAY MORNING

ing a high resolution laser absorption technique ($B^3\Pi_g(v'=2) \leftarrow A^3\Sigma_u^+(v''=0)$) in a pure nitrogen pulsed discharge. The experiment was performed at various pressures (0.25 - 1.25 Torr), discharge currents (0.4 - 1.3 Amp), pulse durations (5 - 40 μ s) and repetition rates (5 - 500 Hz). The lifetimes and populations are in the range 100 - 470 μ s and $(0.5 - 4.7) \times 10^{12} \text{cm}^{-3}$, respectively. The postulated, parameter free, model describes the measured lifetimes within an experimental error. The model takes into consideration the loss of $N_2(A)$ metastables due to energy pooling, quenching by nitrogen atoms and diffusion. At high excitation (0.5 Torr, 1 Amp, 30 μ s pulse, 24 Hz) quenching of $N_2(A)$ is caused mostly by atoms (50%) and diffusion (40%).

* Supported by The National Science Foundation and State of Michigan Research Excellence Fund.

LC-3 Electron Transport in Hydrocarbon - Rare Gas Mixtures *

A. A. SEBASTIAN and J. M. WADEHRA, Wayne State University. --- We have recently applied an extended version of our novel algorithm¹ for exactly solving the Boltzmann equation to the problem of electron transport in mixtures of simple hydrocarbon gases with argon, neon and krypton subjected to externally applied electric fields. It is observed that the values of the electron swarm parameters for these mixtures exhibit a great deal of sensitivity to the relative concentration of the hydrocarbon component. For the case of ethane gas, when mixed with these rare gases, we have calculated the drift velocity, average energy and the ratio of the longitudinal diffusion coefficient to the mobility (characteristic energy). In the collision term to the Boltzmann equation we have included the contributions of momentum transfer, vibrational excitation, ionization and dissociation cross sections. It also is of interest to note that both the rare gases and the hydrocarbon gases we have investigated possess a Ramsauer minimum in their elastic cross sections. The sensitive nature of the swarm parameters to relative concentration is due in part to the overlap of vibrational cross sections with these R/T minima.

*Support of the AFOSR (F49620-92-J-0027) is gratefully acknowledged.

1. Drallos P.J. and Wadehra J.M., *Phys. Rev. A*, **40**, 1967 (1989)

LC-4 Drift Velocities of Gas Mixtures from Electrical Insulation Used in Low Pressure Environments.

D. L. SCHWEICKART and A. GARSCADDEN, Wright Laboratory, W.P.A.F.B., OH. - Several practical issues must be considered when solid electrical insulation is used in a low pressure environment. The physical basis for charge transport in the gaseous medium, which inevitably accompanies the solid insulation, is important from a reliability viewpoint. A methodology was established to enable the measurement of drift velocities and an original version of a pulsed-Townsend drift tube was designed, constructed and instrumented. The gases investigated were not specific to any one polymeric insulation, but instead covered a range of typical polymers. Drift velocities were measured in a broad range of synthesized binary mixtures chosen from the three molecular gases (CO_2 , CO, N_2O) and Ar. In general, the measurements were made within the E/n range from 0.5 to 500 townsend. In most instances the drift velocities of the molecular binary mixtures are shown to scale linearly with the ratio of partial pressures in the mixture. However, certain mixtures (CO_2/CO , Ar/CO) exhibited a synergistic drift velocity enhancement which is believed to be attributable to the interaction between the respective elastic and inelastic collision processes.

LC-5 Electron collision cross sections for H_2 II, H. ITOH, H. WADA* and N. IKUTA*, Chiba Inst. of Tech., Furukawa Electric Co. Ltd. *, Tokushima U. *, Japan---It is now an open but serious problem that the vibrational excitation cross sections of H_2 molecule theoretic-

cally obtained by Morrison¹ and that deduced by England² from the swarm data disagree to each other. The results of beam experiment, on the other hand, agree with the theoretical cross section³. Examinations in order to find the cause of these discrepancies have been carried out using the FTI method⁴. We obtained the cross sections which fit to the drift velocity data and the D_T/μ data independently, but it has been impossible to obtain a cross section that fits to both of them. Theoretically derived cross section for vibrational excitation by Morrison can not give swarm parameters that agree with the data of swarm experiments. These facts show that there may be a fault in the present swarm theory. A possible cause of errors is the anisotropy in scatterings⁵ which has not been strictly included to the analyses.

¹M. A. Morrison et al: *Aust. J. Phys.*, **40**(1987)239.

²J. P. England et al: *Aust. J. Phys.*, **41**(1988)573.

³H. Ehrhardt et al: *Phys. Rev.*, **173**(1968)220.

⁴N. Ikuta and Y. Murakami: *J. Phys. Soc. Jpn.*, **56**(1987)115.

⁵N. Ikuta and H. Gotoda: 8th Swarm Seminar, (1993).

LC-6 Measurement of Electron Impact ionization and attachment coefficients in NO_2/He Mixtures and derived electron collision cross sections for NO_2 , Y. Sakai, Y. Okumura, S. Sawada and H. Tagashira, Department of Electrical Engineering, Hokkaido University, Sapporo 060 Japan

The electron impact ionization α/p_{20} and attachment coefficients η/p_{20} in NO_2/He mixtures with various fractional partial pressure K of NO_2 are measured by a steady-state Townsend method for E/p_{20} up to 500 V/cm/Torr. The α/p_{20} depends significantly on K, since α/p_{20} in NO_2 is smaller than that in He for $E/p_{20} < 200$ V/cm/Torr, but the former $>$ the latter for $E/p_{20} > 200$ V/cm/Torr. The η/p_{20} in NO_2 decreases strongly with increasing E/p_{20} , on the contrary the η/p_{20} for $K < 0.8$, the decreasing tendency of α/p_{20} against E/p_{20} is very small. It and decreases with decreasing K. From these data we derived a set of the electron collision cross sections for NO_2 using a Boltzmann equation so as to obtain good agreement between the calculated α/p_{20} and the measured ones. The cross section are fundamentally modified from available data for N_2O .

LC-7 Validity of Cross Sections Derived from D_T/μ Data under Anisotropic Scattering Conditions, K. YAMAMOTO and N. IKUTA*, Shikoku Univ. and Tokushima Univ*. Japan

---A series of calculations to test the validity of the Boltzmann equation analysis with momentum transfer cross section q_m is performed by FFT Monte-Carlo simulation¹⁾. Differential model cross sections of Reid²⁾ and of Haddad et al.³⁾ with pronounced backward and the inverted forward dominated scatterings are used under constant q_m in both the elastic and inelastic collisions. The results are discussed here. While the mean energy and the drift velocity vary slightly with the change of anisotropy in scattering, the transverse diffusion coefficient D_T significantly varies with the change of integral cross section in relation with the change of anisotropy. This fact shows that the usual analyses of the Boltzmann equation are invalid in D_T if anisotropic scatterings exist. ND_T cannot be determined solely by the reduced field E/N but varies with the anisotropy in scatterings. Therefore, the collision cross sections so far derived from D_T/μ data may have to be reanalysed.

1) N. Ikuta, K. Yamamoto et al.: *J. Phys. Soc. Jpn.*, **54**(1985)2485

2) Ivan D. Reid: *Aust. J. Phys.*, **32**(1979)231.

3) G. N. Haddad, S. L. Lin and R. E. Robson: *Aust. J. Phys.*, **34**(1981)243.

LC-8 Experimental determination of cross sections for emission of H_γ and $CH(A-X)$ lines in $e + C_3H_8$ collisions in a plasma carburizing furnace. * G. SULTAN and G. BARAVIAN, LPGP CNRS, U. of Paris-Sud, Orsay France, - Optical emission spectroscopy which was used as diagnostic, characterization and control technique of the $H_2-C_3H_8$ plasma in a BMI reactor for carburization of metallic parts allowed the determination of some cross sections of interest in the formation of radiative species created from discharge dissociation of C_3H_8 . The discharge conditions were varied with the respective concentrations of the mixture propane-hydrogen. The current density was equal to about 1 mA/cm^2 , the total pressure 1 Torr, and the flow rate 5 l/mn. The study of the relative intensities of the CH line at 431.4 nm and the H_γ line at 434 nm versus the concentration of propane leads to the cross sections for emission of H_γ and $CH(A^2\Delta - X^2\Pi)$ in $e + C_3H_8$ collisions. These values are respectively included in the range $2.2 \cdot 10^{-21} - 1.1 \cdot 10^{-20} \text{ cm}^2$ for H and $1.3 \cdot 10^{-21} - 6.5 \cdot 10^{-21} \text{ cm}^2$ for CH . This method also applies to the determination of cross sections by electron impact creation of excited C, CH and H species.

* Work supported in part by EDF.

LC-9 Dissociative Attachment to Vibrationally Excited H_2 Molecules as the Principal Mechanism for H^- Formation in Hydrogen Discharges. * J.R. Hiskes, LLNL, Univ. of CA, Livermore, CA - Several mechanisms have been proposed for H^- formation in a hydrogen discharge. The lack of essential theor. and exp. data has made a specific identification difficult since both vibrational distributions and negative ion densities must be known for a modelling comparison with experiment. Eenshuistra et al.¹ report both $H_2(v)$ and H^- concentration observed in a medium density discharge. Principal excitation processes included in this analysis are thermal resonant and fast electron excitation throughout the full vibrational matrix and molecular-ion surface recombination. Principal de-excitation include $b^3\Sigma_u(v)$ and fast-electron excitation and ionization, $H_2(v)$ surface and V-T relaxation. H^- equilibrium forms via DA, detachment and recomb. processes. Variations in modelling results are expressed in terms of both rate processes and exp. density uncertainties. The solutions presented here represent the first successful comparison of both $H_2(v)$ and H^- concentrations with exp. and confirm the $H_2(v)$ - DA process as the principal mechanism.

*Work performed at LLNL, under the auspices of the U.S. DOE under contract W-7405-ENG.

¹P.J. Eenshuistra, R.M.A. Herren, A.W. Kleyn, and H.J. Hopman, *Phys. Rev. A* **40**, 3613 (1989).

LC-10 Covariant Matrix Mass Spectra of CF_4^+ , M.R. Bruce, L. Mi, and R.A. Bonham, Indiana U. - We report a covariant matrix mass spectroscopic study of CF_4 using pulsed electron beam time-of-flight mass spectroscopy. The frequency of detecting two ions in the same experiment is plotted with the flight time of the fastest ion on the horizontal axis and the flight time of the second ion on the vertical axis. Correlated events (two ions from the same parent) show up as elliptically shaped objects while uncorrelated events (different parents) are circular. Contour maps of frequency vs. flight times with 3 % statistical accuracy will be shown for the reactions $CF_4^+ \rightarrow CF_3^+ + F^+$; $CF_3^+ + F^+ + F$; $CF_2^+ + F^+ + (F_2 \text{ or } 2F)$; and $C^+ + F^+ + (F_2 + F \text{ or } 3F)$. Because of the increased sensitivity of the method, a number of new break up processes have been identified and their appearance potentials have been observed. A vertical exponentially decreasing tail extending to higher mass, was observed on the $CF_3^+ - CF_2^+$ accidental coincidence peak. A fast CF_3^+ ion is followed by a slower CF_2^+ ion, probably from the break up of a long lived CF_4^+ ion. The appearance potential is close to 15 eV and its lifetime is less than $1 \mu\text{sec}$ compared to $15 \pm 3 \mu\text{sec}$ reported by Schmidt et al [1].

[1] M. Schmidt, R. Seefeldt, and H. Deutsch, *Int. J. Mass Spec. Ion Proc.* **93**, 141 (1989). * We acknowledge support from NSF grant PHY 9214126.

LC-11 Appearance Potentials of Positive Ions Produced by Electron-Impact Dissociative Ionization of SF_6 , SF_5Cl , S_2F_{10} , and SOF_2 , K. L. STRICKLETT, J. M. KASSOFF, J. K. OLTHOFF, and R. J. VAN BRUNT, NIST - Appearance potentials (APs) of positive ions produced in the ion source of a quadrupole mass spectrometer by electron collision with the molecules SF_6 , SF_5Cl , S_2F_{10} , and SOF_2 are measured. The electron-energy scale is calibrated by comparing the ion onset energies with the observed onset of Ar^+ from argon mixed with the sample gases. The APs of the fragment ions from SF_6 are in agreement with previous results.¹ In the case of S_2F_{10} , which has a mass spectrum at 70 eV nearly identical to that of SF_6 , the APs of the predominant fragment ions are found to be significantly lower than the corresponding ions from SF_6 , e.g., SF_5^+ and SF_3^+ appear respectively at 13.2 and 13.3 eV from S_2F_{10} and at 15.7 and 19.7 eV from SF_6 . The relevance of these results to the use of mass spectrometry for detection of discharge by-products in SF_6 is discussed.

¹B. P. Pullen and J. A. D. Stockdale, *Int. J. Mass Spectrom. Ion Phys.*, **19**, 35 (1976).

LD: INDUCTIVELY COUPLED PLASMAS II

LD-1 ANALYTIC MODELING OF RF INDUCTIVE SOURCES

V. VAHEDI, G. J. DIPESO, T. D. ROGNLIEN and D. W. HEWETT Lawrence Livermore National Laboratory, Livermore, CA 94550 - We have developed a two-dimensional ($R-Z$) analytic model of an RF inductive source based on magnetized diffusion theory. For a given profile of B_r , the radial component of the magnetic field, all the other electromagnetic field components are calculated. A diffusion equation is then solved to obtain the two-dimensional profiles of the ion density and power density deposited into the electrons. To determine the electron temperature, T_e , and plasma density, n_0 , we also solve particle and power balance equations. We will show a comparison between the analytic results and self-consistent simulation results from the code ZMR [1, 2].

This work performed by LLNL under DoE contract No. W-7405-ENG-48.

1. D. W. Hewett, *J. Comp. Phys.* **38**, 378 (1980).
2. D. W. Hewett, G. J. DiPeso, V. Vahedi, and T. D. Roglien, "Self-Consistent Fluid Simulation of RF Inductive Sources," to be presented at this conference.

LD-2 A 1-D Fluid Model of a High Density, Low Pressure Chlorine Discharge.

J. D. Bukowski and D. B. Graves, Dept. of Chemical Engineering, U.C. Berkeley -

We present a 1-D fluid model of a high density, low pressure chlorine plasma. We have investigated issues such as degree of dissociation, electron attachment, and ion-ion recombination at these low pressures, and their effects on plasma properties. The advantages of analytic sheath models over numerical resolution of the sheath are explored. Electrons are treated with the drift-diffusion approximation and the electron temperature is obtained from an electron energy balance. The ion momentum balance and ion energy balance are spatially resolved. Atomic and molecular neutral species densities are also spatially resolved.

LD-3 A One Dimensional Inductively Coupled Plasma

Experiment, B. P. COONAN, M. B. HOPKINS and M. M. TURNER, Dublin City University, Ireland - We describe an inductively coupled plasma (ICP) with cylindrical symmetry. This one-dimensional system is a more appropriate platform for basic investigations than geometrically more elaborate ICPs designed for

THURSDAY MORNING

particular applications, since many of the theoretical complications associated with helical coils are removed. We will discuss the design of the system and present a preliminary characterization in terms of currents, voltages and Langmuir probe measurements.

LD-4 The Response of an Inductively Coupled Plasma to the Power Interruption, D.C. SCHRAM, F.H.A.G. FEY, J.A.M. VAN DER MULLEN and J.M. DE REGT, Eindhoven Univ. Techn. - The study of the response of the emission to the power interruption gives insight in the fundamental processes in the ICP. It is found e.g. that levels of elements (analytes) introduced via water droplets respond essentially different from those of the main gas argon. Due to evaporation the Saha balance of analytes will be distorted. It is essentially this deviation from LTE which, manifested in the response of analyte levels to the interruption of the power, makes it possible to probe the overpopulation of ground levels of various analytes as a function of position, central flow and power. The response of argon levels gives information on the transport phenomena of electrons and the temperature inequality $T_e \neq T_a$. By studying the response of the continuum it is possible to unravel the contribution of the free-bound and free-free interactions from each other. This provides insight in radiative recombination processes and in the electron-atom momentum transfer collision.

LD-5 Electrical Characterization of a High Density Inductively Coupled RF Plasma Etching System R. PATRICK, LSI Logic Corp. and F. BOSE, ETH Hoenggerberg - An inductively coupled RF (13.56 MHz) system consisting of a flat powered coil situated above a dielectric window at the top of a plasma reaction chamber has been characterized using single and double Langmuir probes. The system is found to be capable of generating a high density plasma ($N_i > 10^{11} \text{ cm}^{-3}$) at pressures of $< 5 \text{ mTorr}$. By making measurements as a function of probe position, it is found that both the density of the plasma and its uniformity are strong functions of the applied power. Correlations have been made with etch rate, etch uniformity and Si lattice damage measurements using Thermawave techniques. It is found that these quantities are dependent on the power deposited in the wafer and reflect non-uniformities seen in the discharge.

LD-6 Density Profile of Inductively Coupled Argon Plasma Sphere M. HASEGAWA and M. KAWAGUCHI, Mie University, Japan

Profiles of plasma density and electron temperature have been measured for an ICP argon sphere (pressure of 1 Torr and 130 mm in diameter) excited by a circular rf coil (13.56 MHz) wound around the sphere. The profiles were measured by using a movable electrostatic double probe. The rf output of an oscillator was below 40 W. The profile of plasma density showed significant nonuniformity. For example, on the coil surface, it had a peak between the center and the wall, which made the plasma like a luminous ring. On the other hand, plasma density on the axis perpendicular to the coil surface decreased gradually from the center toward the wall. The inhomogeneity in electron temperature was much smaller than in the plasma density. Typical values of plasma density and electron temperature were $6 \times 10^{16} \text{ m}^{-3}$ and 5eV, respectively. By using those profiles, the flow pattern of plasma particles was illustrated under the assumption that dc transport of charges obeys an ambipolar diffusion.

LD-7 A 1-D Model of an Inductively Coupled Fluorescent Lamp Discharge, S.E. COE and G.G. LISTER, C.R.L. Hayes, U.K. - A comprehensive 1-D model of an inductively coupled fluorescent lamp discharge has been developed. The model treats the discharge as an infinitely long annulus with the coil represented by an annular current sheet inside the internal re-entrant. The model includes treatment of the radiation transport of the two main U.V. lines based upon the Biberman-Holstein theory, solution of the mercury excited state and electron ambipolar diffusion equations to determine the density profiles of all the discharge species, solution of Maxwell's equations to determine the electric and magnetic field profiles and also a full power balance calculation. In addition the model solves the local electron energy balance equation to determine the spatial variation of the electron temperature, which occurs in these lamps, due to the non-uniform power deposition. Key outputs from the model include the overall lamp efficiency, the electrical properties of the discharge and the thermal loading on the lamp walls. Results from the model have been very promising and have semi-quantitatively reproduced experimental results. In addition to a detailed description of the model, example results will be presented along with comparisons with experiment.

LD-8 2D FLUID SIMULATION OF RF INDUCTIVE SOURCES

D. W. HEWETT, G. J. DIPESO, V. VAHEDI, and T. D. ROGNLIEN Lawrence Livermore National Laboratory, Livermore, CA 94550 - Inductive and other high density sources are of great interest to industry and are promised to be the next generation of plasma processing reactors. The two-dimensional ($R - Z$) electromagnetic code ZMR [1] is being modified to include interactions between charged-particles and neutral species for modeling inductive sources self-consistently. Presently, the code models an argon plasma with momentum-transfer, excitation and ionization as electron-neutral reactions and scattering and charge-exchange for the ion-neutral reactions. The electrons and ions are treated as Maxwellian fluid species. In the zero electron inertia limit, the electron momentum equation is combined with a modified set of Maxwell's equations to do the field advance. The numerical techniques used in ZMR relax the typical temporal and spatial constraints (e.g. $\omega_{pe} \Delta t < O(1)$, $\lambda_{De} / \Delta x < O(1)$, and $c \Delta t / \Delta x < 1$) allowing one to choose appropriate time-step to resolve only the frequencies of interest (e.g. $\omega_{RF} \Delta t < O(0.1)$). Analytic boundary conditions are used to resolve the proper density profile without resolving the Debye sheaths. Density and power profiles will be shown over a wide range of neutral pressures and input powers.

This work performed by LLNL under DoE contract No. W-7405-ENG-48.

1. D. W. Hewett, *J. Comp. Phys.* **38**, 378 (1980).

LD-9 Inductive Plasma Source for Thin Film Growth*, J.T. SCHEUER, M. TUSZEWSKI, M.R. DAW, I. CAMPBELL, B.K. LAURICH, Los Alamos National Lab - We are developing a tool for semiconductor thin film growth based on the plasma immersion ion implantation technique. This compact, inexpensive, high throughput implanter will allow separate control of dose rate, ion energy and substrate temperature while mitigating charging effects. The present system employs a cylindrical inductive plasma source (35 cm diameter, 400 kHz, 500 W) which has been characterized using Langmuir and magnetic probes. Radial and axial profiles of plasma density and electron temperature along with measurements of induced plasma current will be presented for a range of neutral pressure and rf power. Comparisons will be made to a model of inductive source operation. Initial results of oxide growth on silicon and III-V materials will be presented.

*This work performed under the auspices of the US Department of Energy.

SESSION MA: RF GLOW DISCHARGES
 Thursday afternoon, 21 October 1993
 Grand Salon A, 13:30-15:30
 J. Ingold, presiding

MA-1 GEC rf discharge benchmark model, M. SUREN-DRA, IBM T. J. Watson Res. Ctr. - A basis of comparison for self-consistent simulations of rf discharges was introduced at the 1992 GEC. 12 modeling efforts have produced results from 1-D. simulations using identical cross sections or swarm parameters under specified conditions. The agreement between groups using the particle-in-cell - Monte Carlo collisions technique is good. Differences between PIC-MCC and convective scheme solutions to the Boltzmann equation exist primarily in the electron number density, and not energy density. Fluid simulations, which range from drift-diffusion for charged species transport with an electron energy balance to two ion-moment, three electron-moment equation solvers, generally show variation in the electrode rf voltage. The differences are most significant at the lowest pressure. These results demonstrate the effect of neglecting or approximating various terms in the moment equations, such as ion inertia, electron pressure and heat conduction gradients, and also different boundary conditions.

MA-2 Numerical Simulation and Acceleration Method for Electronegative Plasmas, Merle E. Riley, Sandia National Laboratories, Albuquerque, NM 87185 USA - An rf-driven, low-temperature, capacitively-coupled, chemically-reacting plasma is a fiendish combination of physical time scales resulting in mathematical stiffness. Previously we developed a combination of electron Boltzmann equation, ion fluid equation, and time-cycle average equation descriptions which enabled a reasonable numerical solution for the one-dimensional electropositive plasma.¹ Those solutions are reasonably independent of the numerical approximations. The electronegative plasma (Cl₂ in particular) adds a new measure of difficulty to the acceleration schemes when the plasma charge balance is dominantly between positive and negative heavy ions. Results will be discussed on the Cl₂ discharge.

¹M.E.Riley, K.E.Greenberg, G.A.Hebner, and P.Drallos, submitted to J.Appl.Phys., July, 1993.

MA-3 Localized and Distributed Discharges in Helical Resonators P.Bletzinger, Aero Propulsion and Power Directorate, WPAFB, Ohio Analog to inductive discharges, helical resonators can also operate in inductive and capacitive modes. A medium sized helical resonator using argon could be switched between the two modes solely by changing the operating frequency, depositing similar rf powers into either a well confined annular, or a diffuse, widely distributed plasma. No matching network was used. Maximum rf power was 200W. In the inductive mode power deposition improved with rf power, pressure and transformer ratio increasing. In both modes the resonances were broadened with increasing pressure and shifted by increasing electron density. The resonances were broadened much further using SF₆. Power also could be deposited into higher order modes, but with higher SWR. The voltage at the end of the coil had resonance peaks only in the capacitive modes, similar to operation without plasma. Especially at pressures below 0.1 Torr the discharge was no longer purely inductive in the inductive mode. The operating modes were also checked measuring the electron density outside the resonator with a microwave interferometer.

MA-4 RF Power Dependence of Transient Laser Optogalvanic Signals in a Capacitively-Coupled Neon Discharge*, D. KUMAR, R. R. ZINN, and S. P. MCGLYNN, Department of Chemistry, LSU, Baton Rouge, LA - Temporal characteristics of pulsed-laser induced optogalvanic signals in some 1s_j → 2p_k (Paschen notation) excitations in ~ 5 torr neon have been investigated in rf discharges at rf powers ranging from 0.05 to 5.0 watts. A gradual transition to a drastically different temporal profile is observed as the rf power is decreased in steps from maximum to minimum. These changes may be studied using a recently developed method which permits distinction between the two components of an optogalvanic signal, one generated by ionization rate changes and the other by photoacoustic effects.¹

*Work supported by grants from U. S. Department of Energy and the LSU Center for Energy Studies.

¹D. Kumar and S. P. McGlynn, J. Chem. Phys. 93, 3899 (1990); Chem. Phys. Lett. 176, 536(1991).

MA-5 Measurements and Simulations of Electronegative RF Plasmas, D. VENDER, E. STOFFELS, W. W. STOFFELS, G. M. W. KROESEN and F. J. DE HOOG, TUE - The presence of negative ions in rf processing plasmas strongly influences discharge maintenance and behaviour. Measurements in low pressure, negative ion dominated plasmas prepared by adding small amounts of halocarbon (CF₄ or CF₂Cl₂) to an Ar plasma give negative ion densities of 10¹⁷ m⁻³ at 25 mTorr neutral pressure and a power of 50 W at 13.56 MHz in a parallel plate reactor with 5 cm electrode separation. The dominant negative ions are F⁻ for CF₄ (with n₋/n_e ~ 10) and Cl⁻ for CF₂Cl₂ (n₋/n_e ~ 100). Ar⁺ is the dominant positive ion for halocarbon concentrations of up to 30%. The measurements are used to guide the development of kinetic simulations of the electronegative plasma. In order to adequately resolve the electron distribution and attain tolerable run times, species dependent scaling is used in the simulation which uses the PIC/MCC algorithm. Measurements of the spatial negative ion distributions and energy resolved Ar⁺ fluxes are compared with the simulation results.

MA-6 Time Dependence of the EEDF and the 3p⁵4s Populations in HF Argon Discharges, C. M. FERREIRA, P. A. SÁ and J. LOUREIRO, CEL-IST, Lisbon Tech. U. - We present a systematic investigation of the time dependence of the electron energy distribution function (EEDF) and the populations in the 3p⁵4s levels of argon in a low pressure argon discharge sustained by a harmonic electric field for a wide range of the angular frequency, ω, from microwaves to a few kHz. The analysis is based on the time-dependent coupled solutions to the Boltzmann equation and the system of rate balance equations for the populations of the 3p⁵4s levels of argon. From the present formulation, the time behavior of both the EEDF and the populations n_j(t) may be explained as follows: (i) For frequencies ω >> ν_e, ν_e denoting the characteristic frequency for electron energy transfer, the EEDF has practically no time-modulation and it follows the applied field with a large time-delay; (ii) For ν_j^e << ω << ν_e, where ν_j^e denotes an effective frequency for relaxation of the j-th level of the 3p⁵4s configuration (due to diffusion of metastables, radiative decay of resonance levels and quenching by electronic and atomic collisions), the EEDF and the electron rate coefficients for excitation of the 3p⁵4s levels are strongly time-modulated, while the populations of the levels are practically constant; (iii) Finally, when ω ≤ ν_j^e, there is an increasingly large modulation in the populations as ω decreases.

THURSDAY AFTERNOON

MA-7 Low Temperature Plasma Simulations Using Direct Application of Electron Energy Distribution Functions.* Kazutaka Kitamori, Hokkaido Institute of Technology, Department of Industrial Engineering, Sapporo, 006 Japan and P.L.G. Ventzek, University of Illinois, Department of Electrical and Computer Engr., Urbana, IL 61801 - A short-coming of fluid simulations is that the macro-parameters used at low pressures near boundaries may not be accurate. We present an extension of a PIC model in which electron and ion velocity distribution functions generated by an electron and ion Monte Carlo simulation (MCS) are imported into a module that uses an analytic solution of the Boltzmann equation to solve for steady state reactor charged species densities. In this scheme, Boltzmann's equation contains only ionization rate terms and is field-free. The solution for the species densities begins from an initial guess on a spatial mesh and is allowed to relax without using macroparameters. Electron and ion dynamics are determined only by their velocity distribution functions. Poisson's equation is semi-implicitly solved at each time-step and the fields are used in the MCS. The model will be applied to an inductively coupled plasma (ICP) reactor.

* Work supported by the National Science Foundation

MA-8 A Dynamic Stochastic Simulation of the Boltzmann Equation, D.P. LYMBERPOULOS, J.D. SCHIEBER and D.J. ECONOMOU, University of Houston - A stochastic simulation method is proposed which allows the efficient treatment of the Boltzmann equation. The stochastic process is described by a master equation. Interesting quantities, e.g. the time evolution of mean electron energy, and the electron velocity distribution function, are evaluated not by solving the master equation as an ordinary differential equation but with the help of a stochastic simulation, which generates realizations of the underlying stochastic process, referred to as the Dynamic Monte-Carlo Simulation, DMCS, method. Both the direct simulation Monte-Carlo, DSMC, as well as the "null collision" Monte-Carlo, NCMC, treatment of the electron-collisions require as input the mean-free path distribution, MFPD. However in DMCS the MFPD is actually an output. Applications of the DMCS method to electron motion in He and Cl₂ in time-dependent uniform and space-varying fields will be presented.

SESSION MB: ELECTRON COLLISIONS

Thursday afternoon, 21 October 1993

Grand Salon C, 13:30-15:30

R.A. Bonham, presiding

MB-1 Free-free Transitions of Electrons Colliding with Oxygen Atoms,* S. CHUNG and CHUN C. LIN, U. of Wisconsin and E. T. P. LEE, Phillips Laboratory (Air Force Systems Command) - The cross sections for electron free-free transitions in the presence of neutral oxygen atoms are calculated at about 100 incident-electron energies for a given photon wavelength. From these cross sections the Maxwellian-averaged continuous absorption and emission coefficients are obtained for the wavelength range of 1 to 30 μ and for the electron-temperature range of 5x10³ to 5x10⁴ K. The continuum wave functions are computed by the Hartree-Fock method. The electron exchange and the orthogonality conditions are included in the integro-differential equations which are solved non-iteratively without ancillary approximations. The effects of the polarization of the oxygen atoms are taken into account by means of the method of polarized orbitals. A significant difference is found between the present work and previous calculations which treated the polarization empirically.

*Work supported by Phillips Laboratory (Air Force Systems Command).

MB-2 Autoionization States in CO₂ and CS₂ Studied by Electron Impact.* A.T. Wen, D. Tremblay, B. Tremblay, C. Gourier and D. Roy, LPAM, Dépt. de Physique, U. Laval, Québec, Qc. G1K 7P4. A multi-angle-detector electron scattering spectrometer has been adapted to electron ejection measurements. A study of autoionization from Rydberg states has been carried out for CO₂ in the continuum region 15 - 19 eV by low-energy electron impact. Observations have been made of structure due to excitation of these states by slow electron scattering and their decay by ejection of electrons. A multi-angle parallel detection technique has been used and this has enabled some CO₂ autoionizing states resulting from non-dipole transitions to be observed clearly. The major features appearing in the ejected electron spectra of CO₂ have tentatively been classified and/or assigned, and the spectral behaviour (intensity, width, and shape) of these features has been addressed as a function of incident energy and angle of ejection. In addition to the features already known, new features have been observed, and they seem to be rather sensitive to electron impact energies employed. Studies of autoionizing states in CS₂ in the energy region 11 - 14 eV are also presented.

* Work supported financially in part by NSERC/CRSNG, Fonds FCAR du Québec and NCE Programme.

MB-3 Electron-Molecule Collisions using the R-Matrix Method, Jonathan Tennyson, University College London - The R-matrix method has been used for low energy (<20eV) electron collision from diatomic molecules. Targets studied include homonuclear systems such as H₂, N₂ and O₂, polar molecules such as NO, CO and HF, and ions including H₂⁺ and HeH⁺. Processes studied include elastic scattering, vibrational excitation, electronic excitation and dissociative attachment or recombination. Nuclear motion can be included in these calculations either within the adiabatic approximation or using a generalised non-adiabatic approach. The R-matrix method is particularly good for studying systems for which resonant processes are important. Recent work has focussed on improved treatments of target wavefunctions which means that many electronic states can accurately be treated at the same time, and on studying dissociative recombination in cases where there are no curve crossings. A survey of latest results will be presented at the conference.

MB-4 Revised Electron Collision Cross Sections for Silane Derived from Swarm Data,* R. NAGPAL and A. GARSCADDEN, Plasma Research Group, WPAFB - The two-term Boltzmann analysis of the swarm data breaks down completely in pure SiH₄ and SiH₄-Ramsauer rare gas mixtures. Large discrepancy between the two-term and Monte-Carlo calculated drift velocities in the above systems indicates inconsistency in the existing¹ two-term derived SiH₄ cross sections. We have removed this inconsistency by using Monte-Carlo calculations to unfold the cross sections in SiH₄ and in SiH₄-Ar, -Kr mixtures. It is shown that swarm data in SiH₄-He mixtures² is a valuable alternative where the two-term and Monte-Carlo results agree very well and hence two-term analysis can be accurately used to derive the cross sections in these mixtures. Significantly improved momentum transfer and the first vibrational excitation cross sections for 0-5 eV are presented.

* Work Supported by the Wright Laboratory.

¹ M. Kurachi and Y. Nakamura, IEEE Trans. Plasma. Sc. 19, 262 (1991).

² M. L. Andrews, K. A. Kirkendall and A. Garscadden, 36th GEC SUNY New York (1983).

MB-5 Electron-Impact Ionization of NF_3 , NF_2 and NF .* A LEVIN, V. TARNOVSKY, K. BECKER, City College of C.U.N.Y., R. BASNER, M. SCHMIDT, INP Greifswald, Germany and H. DEUTSCH, Universität Greifswald, Germany - The electron-impact ionization of NF_3 has been studied using two different experimental methods, the fast-beam technique at City College and a high-resolution double-focusing mass spectrometer at Greifswald. Absolute parent ionization cross sections were measured independently by both groups and the results were found to agree to within 20% (at 70 eV). We also report measurements of the partial cross sections for dissociative ionization of NF_3 carried out in both apparatus. Ionization and dissociative ionization cross sections for the NF_2 and NF free radicals could only be measured using the fast-beam technique by the City College group. The measured cross sections will also be compared to calculated total single ionization cross sections for NF_3 , NF_2 and NF using a new additivity rule.

*Work supported by the National Science Foundation (NSF), the American Chemical Society-Petroleum Research Fund (ACS-PRF), AT&T Bell Laboratories, and by a NATO Collaborative Research Grant

MB-6 Elastic and Vibrationally Inelastic Cross Sections and Energy Loss Spectra for Electron Collisions with Propane.* M.A. DILLON, L. BOESTEN,[†] H. TANAKA,[†] M. KIMURA, and H. SATO,[&] Argonne National Laboratory, Argonne, IL - Absolute elastic cross sections for electron-propane (C_3H_8) collisions have been measured using incident kinetic energies of 2, 3, 4, 5, 6, 7.5, 8.5, 10, 15, 20, 40, and 100 eV and recorded over scattering angular range of 10° to 130° . These cross-sections have been integrated by employing a nonlinear phase shift fitting procedure. Angular distributions have been found to correspond at least qualitatively to a scattering formulation using only local potentials and also to a multi channel Schwinger variational calculation.

Experiments on vibrationally inelastic scattering reveal the existence of a shape resonance with a peak at 7.5 eV characteristic of trapping by C-H antibonding valence orbitals.

[†] Sophia University, Tokyo, Japan

[&] Kochanomizu University, Tokyo, Japan

* Work supported in part by the U.S. Department of Energy, Office of Environmental Research under contract w-31-109-Eng-38

MB-7 Electron- H_2^+ Scattering Using the Finite-Element Method With Iterative-Variational Solution of the Algebraic Problem. C.A. WEATHERFORD,^a Florida A & M University - Coulomb Sturmians are used to calculate the ground state of H_2^+ . The required multicenter integrals are calculated to very high accuracy in momentum space. Differential cross sections describing electron scattering from the ground state of H_2^+ are then calculated using the finite element method.¹ The solution of the resulting linear algebraic problem is accomplished using the iterative-variational method.²

^aSupported by FAMU-NASA CeNNAs 30-1704-019 and by Air Force contract FY33615-90-C-2032.

1. C.A. Weatherford, W.M. Huo, and J. Shertzer, *Bull. Am. Phys. Soc.* **37**, 1108 (1992).

2. B.I. Schneider and L. Collins, *Comp. Phys. Comm.* **53**, 381 (1989).

SESSION NA: INDUCTIVELY COUPLED PLASMAS III

Thursday afternoon, 21 October 1993

Grand Salon A, 15:45-17:45

D.A. Doughy, presiding

Invited Paper

NA-1 An Enclosed Inductively Coupled Plasma for Spectrochemical Analysis of Semiconductor Gases. RAMON M. BARNES, TRACEY JACKSIER*, and ANA GAILLAT, DEPT. of Chemistry, Univ. of Massachusetts - An enclosed inductively coupled plasma discharge operated at atmospheric pressure and 40.68 MHz at modest power (<1.6 kW) has been developed for the analysis

of gases used in the semiconductor industry (e.g., arsine, boron trichloride, chlorine, hydrogen chloride, silane).¹ Discharge container geometry, inlet and outlet configuration, and chemical admixtures are critical in the design and operation of stable discharges under low-flow (100 mL/min) and non-flow conditions. Computer simulations for noble (Ar, Ne, Kr, Xe) and reactive (chlorine, HCl) gases support experimental observations. Qualitative identification and quantitative calibration procedures for ultratrace concentrations of metallic impurities have been demonstrated based on atomic emission spectrometry. Each of these aspects will be described and illustrated.

*American Air Liquide, Chicago Research Center, Countryside, IL 60525.

¹M.J. Jahl, T. Jacksier, and R.M. Barnes, *J. Anal. At. Spectrom.* **7**, 653 (1992).

Contributed Papers

NA-2 A Molecular Flow-Hydrodynamic Model for Hot Atom and Ion Fluxes in Inductively Coupled Plasmas for Etching. * Robert J. Hoekstra, Peter L. G. Ventzek and Mark J. Kushner, University of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - Inductively coupled low pressure (2-20 mTorr) reactors are being developed as high plasma density sources for etching and deposition. ICP reactors operate in the quasi-continuum flow regime. To address these conditions, we have developed a hybrid molecular flow-hydrodynamic (MFH) transport model. The model uses as input electron impact sources for ionization and excitation, and electric fields produced by a companion plasma model of ICP reactors. The MFH model then follows the trajectories of pseudo-particles for ions and radicals while including all pertinent charge exchange and neutral chemical reactions using iterative particle-mesh algorithms. Momentum transfer with an advecting fluid flow field, produced by an off line model, is included. We will discuss the effects of geometry (flow inlets/outlets) and gas pressure on the uniformity of the hot atom, radical, and ion energy fluxes in ICP and RIE reactors. The gas mixtures will include Ar, Ar/ CF_4/O_2 and He/ CF_4 .

* Work supported by SRC, LAM Research Inc., NSF, and U. of Wisc. ERC for Plasma Aided Manufacturing

NA-3 Off-Resonance Raman Scattering Experiments in a Hg-Kr Inductively Coupled Discharge. D. MICHAEL, GE Lighting. An Off-Resonance Raman Scattering technique is used to measure the absolute number density of excited Hg (6^3P_1) state in a Hg-Kr Inductively Coupled Discharge.¹ The discharge is created within a cylindrical quartz container with a coaxial inner wall (76mm OD, 23mm ID and 103mm length). Axial and Radial scans were obtained at various input power levels (10-30W). Variation of this excited Hg state and the 253.7nm UV Hg line were obtained as a function of Hg vapor pressure. Detection of collisionally induced LIF at detuned pump beam settings may explain discrepancies between estimates and measured Hg (6^3P_1) densities. An absorption experiment was also performed to check the validity of the Raman Scattering technique. Another cell that contained Hg-He was constructed to look for possible interference effects from Krypton with the Raman signal.

¹L. Bigio and D. Johnson, "Near-Resonance Electronic Raman-Scattering Measurements of Hg (6^3P_1) in a low pressure Hg-Ar discharge", *J. of Opt. Soc. Am. B*, Vol.8 No.3, 525-530 (1991)

NA-4 Modelling of Mixed E and H Regimes in an Inductively Coupled Plasma. F. A. HAAS, S. YANG and N. St. J. BRAITHWAITE, Oxford Research Unit, Open University, Oxford, UK - Low power inductively coupled discharges show faint light emission (E regime), but as the power is raised, a much brighter annular ring (H regime) is formed. A two-dimensional (r,z) theoretical model of the diffusion processes involved, shows a

THURSDAY AFTERNOON

saddle structure for the electron density as well as determining the ionization rates through eigenvalue conditions. Consideration of the electron pressure balance reveals the importance of line averaged inertial terms arising from the electron motion induced by the imposed fields. Experiments have been performed with a 500 kHz radio frequency source coupled to a low pressure argon plasma via a thirty turn coil wound on a containing glass vessel (diameter 15cm, height 50cm). Probe measurements reveal that the electron density has a saddle structure about the mid-plane of the containing vessel.

NA-5 Collisionless Electron Heating in Inductively Coupled Discharges, M. M. TURNER, Dublin City University, Ireland - An electromagnetic particle in cell simulation, with Monte Carlo collisions, is used to show that there is a collisionless electron heating mechanism of importance in inductively coupled discharges. The process is a warm plasma effect and can be understood in terms of linearizations of the Vlasov-Maxwell equations. Results for various gases show that collisionless heating dominates when the pressure is less than ~ 10 mTorr, provided that the plasma density is greater than $\sim 10^{11}$ cm $^{-3}$.

NA-6 Electrical Characteristics and Electron Heating Mechanism of an Inductively Coupled Argon Discharge V.A. GODYAK, R.B. PIEJAK and B.M. ALEXANDROVICH, Osrsm Sylvania Inc. The external electrical characteristics of inductively coupled argon rf discharges at 13.56 MHz have been measured over a wide range of power at gas pressures ranging from 3 mTorr to 3 Torr. External parameters, such as, coil voltage, current and phase shift between the two were measured. From these measurements the equivalent discharge resistance and reactance, the power transfer efficiency and the coupling coefficient between the primary coil and the plasma were determined as a function of discharge power and gas pressure. The efficient rf power transfer and the large value of the effective electron collision frequency found here at low gas pressure suggest some collisionless electron heating mechanism. This mechanism is identified as non-local electron heating in the inhomogeneous rf field due to spatial dispersion of the plasma conductivity, a phenomenon which underlies anomalous skin-effect.

NA-7 Spectroscopic Measurements of Species Concentration for Oxide Etching Chemistry in Inductively Coupled Plasma Reactors, E. A. WHITTAKER, H. C. SUN, V. PATEL, B. SINGH, H. LEE, B. BRYCKI, New Jersey Sematech Center of Excellence in Plasma Etch. The development of a fundamental understanding of semiconductor plasma etching chemistry is a long sought goal of the processing community. We have recently developed a tunable diode laser absorption spectrometer capable of sensitive, chemically selective detection of a wide range of chemical species found in etching plasmas. The method may be used *in-situ* and in real time and thus can provide a wealth of data for use in chemical models of etching. Using this method we have measured the concentration of various species that occur in fluorocarbon based discharges in different inductively coupled plasma reactor configurations. The species yields have been measured for a range of reactor and process conditions. For comparison, the oxide etch rate was monitored using *in-situ* laser interferometry and plasma characteristics of the reactor were determined using radial and vertical scanning tuned Langmuir probes. A factor of three to five improvement in oxide etch-rate was observed with inductively coupled schemes as compared to parallel plate tools. Preliminary chemical modeling efforts will also be presented.

Social Hour/Cocktail
18:30-19:30
Salon Alfred Rouleau C

Conference Dinner/Banquet
19:30-23:00
Salon Alfred Rouleau A
Speaker/Conférencier: S. Leney, Hydro-Québec

Vol. 38, No. 13 (1993)

SESSION NB: LOW-ENERGY ION-MOLECULE COLLISIONS

Thursday afternoon, 21 October 1993
Grand Salon C, 15:45-17:45
A.V. Phelps, presiding

Invited Paper

NB-1 Internal Energy Effects on Ion Molecule Reactivity, ALBERT VIGGIANO, Phillips Laboratory, Geophysics Directorate, Hanscom AFB MA -- The variable temperature - selected ion flow drift tube has proven to be a valuable tool for deriving internal energy dependences of a variety of ion molecule reactions. The technique will be described and compared to other techniques for obtaining information on internal energy dependences. Rotational energy has been found to effect reactivity in number of ways such as adding energy and preventing dipole locking, but frequently has been found to have only a minor effect on reactivity. Vibrational excitation often has a more pronounced effect on reactivity, both positive and negative. A number of examples showing the versatility of this technique will be given including the effect of N₂ rotations and vibrations on the charge transfer between Ar⁺ and N₂.

Contributed Papers

NB-2 Product State Distributions in Low-Energy Ion-Molecule Reactions,* P. C. COSBY, J. R. PETERSON, AND B. VAN DER KAMP, SRI International-- Charge transfer neutralization of molecular ions in cesium vapor produces Rydberg states of the neutral molecule built on the reactant ion core that generally lie above one or more dissociation limits of the molecule and predissociate. The translational energy release spectrum of these dissociative charge transfer products provides a rapid and complete measurement of the vibrational and electronic population distributions in the molecular ion.¹ Changes produced in these populations by low energy (eV) ion-molecule reactions can thus be monitored with the dissociative charge transfer reaction at keV energies. This technique has been applied to the vibrational quenching of O₂⁺, CO⁺, and NO⁺ by their parent gases in a Nier-type electron impact ion source. The influence of extraction voltage on the state composition of ions produced by a hollow cathode discharge is also examined.

*Research supported by the NSF Grant PHY-91-11872.

¹C. W. Walter, P. C. Cosby, and J. R. Peterson, *J. Chem. Phys.* **98**, 2860 (1993) and references therein.

NB-3 Exciton and ion reactions within van der Waals clusters*, M. FOLTIN and T.D. MÄRK, Inst. Ionenphysik, Univ. Innsbruck, Austria

Electron impact ionization of rare gas clusters R_n has been found to result¹ via multiple collisions of the incoming electron in the production of cluster ions R_n⁺* containing-besides an ionic chromophore (e.g. R₂⁺)- an excimer R₂^{*}. Radiative decay of this excimer (trapped exciton) in the ns and μ s time regime leads to violent fragmentation of the respective cluster ions. However, this fragmentation may be quenched in the presence of a dopant molecule reacting with the excimer and the ionic chromophore by charge and excitation transfer. Energetics, kinetics and dynamics of these reactions (including also mixed cluster systems² such as Ar/O₂) have been studied by mass spectrometric methods and by

molecular dynamics calculations thereby given a vivid picture of the rather complex reaction sequence involved.

*Work supported in part by the Österr. Fonds zur Förderung der Wissenschaftlichen Forschung and the BMWF, Wien.

1 M. Foltin and T.D. Märk, Chem. Phys. Lett., 180 (1991) 317

2 M. Foltin, V. Grill and T.D. Märk, Chem. Phys. Lett., 188 (1992) 427

NB-4 Proton Transfer and Drift of Positive Ions in Methane,* J. de URQUIJO, C. CISNEROS, H. MARTINEZ and I. ALVAREZ, Instituto de Física, UNAM, México - The mobility of CH_5^+ , H_3O^+ , C_2H_5^+ and C_3H_5^+ has been measured with a drift tube-mass spectrometer for $15 < E/N < 500$ Td ($1 \text{ Td} = 10^{-17} \text{ V cm}^2$), and low gas pressures in the range 3-16 Pa. All ion mobilities are about 15% lower than those calculated from the polarisation-limit theory, but they do scale according to it. Over the range $100 < E/N < 240$ Td, the mobilities of CH_5^+ and H_3O^+ are lower than those of C_2H_5^+ . This behaviour is thought to be due to proton transfer reactions of CH_5^+ and H_3O^+ with CH_4 and H_2O^1 . At low E/N the present mobilities of CH_5^+ and C_2H_5^+ are in good agreement with those of Ridge and Beauchamp².

* Work supported by DGAPA and CONACYT.

¹ J. D. Betowski et al, Chem. Phys. Lett. **31**, 321(1975)

² D.P. Ridge and J.L. Beauchamp, J. Chem. Phys. **54**, 2735 (1976)

NB-5 Single- and Double-Electron Capture in Collisions of Multiply Charged He^{2+} , C^{4+} ($q = 4, 5$), and Ar^{9+} ($q = 6, 8$) Ions with H_2 Molecules at eV Collision Energies,* M. KIMURA, Argonne National Laboratory, Argonne, IL 60439 and Rice U., Houston, TX 77251, N. SHIMAKURA, N. F. LANE Rice U., S. KRAVIS, I. SHIMAMURA, Y. AWAYA, RIKEN, Tokyo, Japan, and K. OKUNO, Tokyo Metropolitan U. - Recent experiments [1] suggest that double-electron capture dominates, single-electron capture in $\text{He}^{2+} + \text{H}_2$ collisions below 1 keV while single electron-capture becomes dominant above this energy. Another experiment [2] suggests that double-electron capture is always the dominant process in $\text{Ar}^{9+} + \text{H}_2$ collisions in the energy region from 0.1 eV to a few keV. Our theoretical results obtained by using a molecular orbital expansion method clearly confirm these experimental findings and provide a theoretical rationale based on adiabatic potentials and dynamic analysis.

* Work supported in part by the U.S. Department of Energy, Office of Energy Research, Office of Health and Environmental Research, under Contract W-31-109-Eng-38 (MK), and by the Office of Basic Energy Sciences (NFL, NS).

1 K. Okuno, K. Soejima, and Y. Kaneko, J. Phys. B **25**, L105 (1991).

2 S. Kravis, M. Kimura, K. Shimamura, Y. Awaya, N. Shimakura, and K. Okuno, Phys. Rev. A **XX**, XXX (1993).

NB-6 Reactivity of Atmospheric Ions with Fully Fluorinated Compounds, R. A. MORRIS, A. A. VIGGIANO, and J. F. PAULSON, Air Force Phillips Laboratory, Geophysics Directorate- The ions O^- , O_2^- , O^+ , O_2^+ , CO_3^- , NO_3^- , NO^+ , and H_3O^+ have been studied in the gas phase for reactivity toward the fully fluorinated compounds CF_4 , C_2F_6 , C_3F_8 , C_6F_{14} , and SF_6 . Rate constants and reaction product branching fractions were measured at 300 K by using a selected ion flow tube (SIFT) apparatus. Recently, the atmospheric lifetimes of the reactant neutrals in the study have been predicted¹ to be extremely long, some greater than 2000 years. Some of the reactions reported here are rapid, a result which leads to decreased atmospheric lifetimes for these compounds compared with the earlier predictions. Many of the reactions feature dissociative charge transfer pathways leading to multiple ionic products. The chemistry and atmospheric implications will be discussed.

¹A. R. Ravishankara, et al., Science, **259**, 194 (1993).

NB-7 Guided Ion Beam Studies of the Reactions of Group 3 Metal Ions (Sc^+ , Y^+ , La^+ , and Lu^+) with Silane. Metal Silicon Bond Energies,* BERNICE L. KICKEL and P. B. ARMENTROUT, Univ. of Utah - Guided ion beam techniques are used to measure cross sections as a function of kinetic energy for the reactions of the group 3 metal ions, Sc^+ , Y^+ , La^+ and Lu^+ with silane. In all four systems, products include the metal hydride and dihydride cations, as well as metal silicon species, MSiH_x^+ ($x = 0 - 3$). The general mechanistic details of these reactions may be understood in terms of an insertion of the metal center into the Si-H bond of silane. The subsequently formed intermediate then decomposes to yield the observed products. The energy dependences of the cross sections are analyzed to yield 0 K bond dissociation energies of the various metal silicon species. The present results are compared to those previously reported by Sunderlin and Armentrout for reactions of the group 3 metal ions with methane.

*Work supported by the National Science Foundation.

¹L. Sunderlin and P. B. Armentrout, J. Am. Chem. Soc. **111**, 3845 (1989).

SESSION PA: THERMAL PLASMAS AND PLASMA TORCHES I

Friday morning, 22 October 1993

Grand Salon A, 8:00-10:00

M. Boulos, presiding

Invited Papers

PA-1 Non-equilibrium Mechanisms in (sub)Atmospheric Plasmas and in their Expansion, D.C. SCHRAM, J.A.M. VAN DER MULLEN and M.C.M. VAN DER SANDEN, Eindhoven Univ. Techn. - Stationary or flowing (sub)atmospheric plasmas can be characterized by two non-equilibrium parameters: the ground state deviation from Saha δ_b , and the heavy particle to electron temperature ratio T_p/T_e . The state is then defined by p , n_e , δ_b and T_p/T_e , with T_e as a dependent parameter. This description allows for a simplification of the plasma transport equations in e.g. a 2 D-code and easier comparison with measurable quantities (as n_e) as illustrated from recent work on ion current from a flowing cascade arc plasma source. The expansion of such a plasma in a low-p vessel leads to a flowing high density recombining plasma with underpopulated excited states as manifest from a.o. absorption spectroscopy. Additional reactions as asymmetric charge exchange and dissociative recombination of molecular ions with injected molecules as H_2 , N_2 , C_mH_m and SiH_4 (for surface modification and plasma deposition) are summarized. The importance of recirculation flows and ro-vibrational excitation is indicated.

PA-2 Advances in Induction Plasma Modeling and Diagnostics, M.I. BOULOS, Plasma Technology Research Center, U. of Sherbrooke (Qué.) - Induction plasmas are characterized by the simultaneous presence of both laminar and turbulent flow regimes in the discharge. These can have a major influence on the flow pattern temperature and concentration fields. Results obtained based on mathematical modelling and diagnostics studies provide an insight in the basic phenomena involved and an estimate of the effective turbulent diffusivity under such conditions. Examples are given for the synthesis of ultrafine ceramic powders and the plasma spraying of protective coating and free-standing bodies under atmospheric and low pressure conditions.

Contributed Papers

PA-3 A Model for Diamond Film Growth in a Thermal Plasma Reactor,* B. W. YU and S. L. GIRSHICK. A numerical model was developed for diamond film CVD in an atmospheric-pressure rf plasma reactor. The main components of the model are submodels for the plasma, the fluid boundary layer above the deposition surface, and the growing diamond film. The plasma model predicts two-dimensional temperature and velocity profiles. The boundary layer model covers the region between the substrate and the 4000 K isotherm, and treats the chemical kinetics of the C-H-Ar system. This is coupled to any of several proposed surface growth mechanisms. The numerical calculations are compared to experimental data obtained in our laboratory. Good agreement is found regarding predicted growth rates based on methyl radicals or monatomic carbon as growth monomers.

*Work supported in part by NSF, the Engineering Research Center on Plasma-Aided Manufacturing, and the Minnesota Supercomputer Institute.

PA-4 Atmospheric pressure waveguide-fed plasma torch, M. MOISAN, G. SAUVÉ and Z. ZAKRZEWSKI*, U. de Montréal - Theoretical and experimental investigations of the electrodynamic properties of a waveguide-based microwave sustained plasma torch, operating at 2.45 GHz with input power up to 3 kW, are reported. The plasma is sustained at the end of a coaxial shaped section: the working gas (argon and helium in the present case) flows in a channel within the inner conductor and exits into the discharge through a nozzle at the conductor tip. The system comprises coaxial and waveguide elements that serve the purpose of wave mode conversion and impedance matching. Its description in terms of an equivalent circuit yields the full electrodynamic characteristics of the torch, which is verified experimentally. From the outcome of this model, new features are introduced in the torch structure, allowing us to optimize its performance and simplify its design.

*Permanent address: Polish Academy of Sciences, IMP-PAN, 80-952 Gdansk, Poland.

PA-5 Non-equilibrium Effects in Thermal Plasma Systems, D.V. GRAVELLE and S. VACQUIE*, CRTP, U de Sherbrooke - The state of equilibrium of different plasma sources is examined using experimental results obtained at CRTP and CPA. Parameters such as the temperature and the electron density distribution, using emission spectroscopy, are analyzed in terms of power levels, chamber pressure and plasma gas composition. Four basic concepts for generating thermal plasmas are used in data collection, namely: high power transferred arc plasma reactor, wall-stabilized transferred arc column, non-transferred arc plasma torch and high frequency induction plasma reactor. Determination of the temperature, from N_2 data, using Saha equation and from a Boltzmann plot show important deviations from equilibrium for certain experimental conditions and regions of the plasma. Departures from LTE are evaluated using electron density measured from the Stark broadening of hydrogen lines and from the recombination continuum which do not rely on LTE assumptions. The mutual correlation between non-LTE behaviour and some coating properties obtained under low pressure plasma spraying operations is shown. The importance of establishing the limits of validity of LTE in thermal plasma modeling is pointed out.

*Centre de Physique Atomique, Université Paul Sabatier, Toulouse

PA-6 Destruction of Acetone Using a DC Plasma Torch, C. B. FLEDDERMANN, K. WROBLEWSKI, B. WROBLEWSKI, W. WILBANKS, D. ADAMS, L. ENRIQUEZ, AND J. M. GAHL, Department of Electrical and Computer Engineering, University of New Mexico - Plasma torches are a viable technology for the destruction of hazardous industrial chemicals. In this work, a dc plasma torch is used to destroy acetone, a common industrial solvent. The plasma torch is of cylindrical geometry with a tapered inner bore and is excited using a tungsten electrode located along the axis of the cylinder. The torch is powered by a welding power supply operating at 25 V with currents between 20 and 100 mA. The acetone vapor is generated by bubbling argon through heated liquid acetone. The destruction of the acetone vapor is monitored using optical absorption spectroscopy. The absorption edge of acetone is at approximately 330 nm: for shorter wavelengths, acetone is highly absorbing. A copper hollow cathode lamp producing line radiation at 324.7 or 327.4 nm, just below the absorption edge, and a monochromator/PMT combination located downstream from the torch, are used to monitor the effluent from the gun. Results will be presented for the acetone destruction efficiency as a function of the operating parameters of the torch. This type of system will be readily applicable to the destruction of other industrial wastes.

SESSION PB: MODELING AND SIMULATION

Friday morning, 22 October 1993

Grand Salon C, 8:00-10:00

T.W. Johnston, presiding

PB-1 Tonks-Langmuir Problem for a Bi-Maxwellian Plasma V. A. GODYAK, Osram Sylvania Inc., V. P. MEYTLIS, Courant Inst., NYU. Non-equilibrium electron energy distribution functions (EEDF) are typically observed in low pressure gas discharge plasmas. Numerous experiments and electron kinetic modeling of various low pressure (mTorr range) discharges have demonstrated EEDF's which may be represented by a sum of two Maxwellian distributions with essentially different temperatures. In this work we give an analytical solution for the ionization balance in an ion inertia controlled plasma slab (Tonks-Langmuir problem) with a bi-Maxwellian EEDF. The solution shows that the ambipolar potential, the plasma density distribution and the ion flux to the wall are governed by the cold electrons, while ionization rate and voltage drop across the wall sheath are governed by the hot electrons. The ionization rate is found to be spatially uniform contrary to the T-L solution where it is proportional to the plasma density distribution. The temperature of hot electrons is found to be close to that of the T-L solution and in good agreement with experiments¹ carried out in a capacitive rf discharge. The energy balance for cold electrons shows that their heating by hot electrons, if accounted for only by recoil on atoms and ions, does not agree with experiment¹ unless an electron cooling effect involving electron acoustic waves² are taken into account.

References:

1. V.A. Godyak et. al., *Plasma Sources Sci. & Technol.*, **1**, 36 (1992).
2. M. Surendra & D. Graves, *Phys. Rev. Lett.*, **66**, 11, 1469 (1991).

PB-2 Radiation Trapping Simulations Using the Propagator Function Method with Complete Frequency Redistribution, J. E. LAWLER, G. J. PARKER, and W. N. G. HITCHON, Univ. of Wisconsin-Madison - An integral method of solving the Holstein-Biberman equation based on a propagator function is described.¹ This method is used to solve the equation with a Lorentz lineshape and complete frequency redistribution in an infinite plane parallel geometry, a (hollow) spherical geometry, and an infinite cylindrical geometry. The method is ideal for solving for both the time dependent and the steady state density of resonance atoms which results from a production rate per unit volume with arbitrary spatial and temporal dependence. Resonance atoms are important in the power balance and ionization balance of many glow discharge plasmas. The propagator function method is 100 times faster than the Monte Carlo method. The greater speed of the propagator function method makes it

well suited for fully self-consistent kinetic simulations of glow discharge plasmas.

¹J. E. Lawler, G. J. Parker, and W. N. G. Hitchon, *J. Quant. Spectrosc. and Radiat. Transfer*, **49**, 627 (1993).

PB-3 Radiation Trapping Simulations Using the Propagator Function Method with Partial Frequency Redistribution, G. J. PARKER, W. N. G. HITCHON, and J. E. LAWLER, Univ. of Wisconsin-Madison—An integral method of solving the modified Holstein-Biberman equation based on propagator functions is further developed. This method is used with a Voigt lineshape and partial frequency redistribution in an infinite plane parallel, a spherical geometry, and an infinite cylindrical geometry. An emission spectrum is also generated in these simulations. Simple analytic expressions are derived for the propagator matrix elements in the standard high symmetry geometries, and a Monte Carlo method is used to evaluate the propagator matrix elements in more complex cases. Time dependent spatial maps of the resonance atom density and emission spectrum are computed from production rates per unit volume with arbitrary spatial and temporal dependences. The huge speed advantage of a propagator function simulation over a pure Monte Carlo simulation makes the propagator function method ideal for simulations of glow discharges in which resonance atoms dominate the ionization and/or power balance.

PB-4 Simulation of Electron Density Increase during the After-Glow of an RF Discharge,* P.J. DRALLOS, Dept. of Phys and Astron, Univ. of Toledo, Toledo, OH 43606 and M.E. RILEY, Sandia National Labs, Albuquerque, NM 87185 - Numerical simulations of the after-glow of capacitively-coupled, radio-frequency-driven He discharges have been performed. The solutions incorporate a self-consistent, fully kinetic solution of the time-dependent Boltzmann equation coupled with a novel time-cycle-average equation method¹. Our results indicate that, during the after-glow, the electrons and ions can undergo nearly a four-fold increase in density. We have determined that the increase in density is due to the large metastable populations. During the early stages of the after-glow, metastable-metastable collisions continue to produce electrons and ions. However, unlike the the mobility-dominated transport during the rf-driven discharge, the after-glow transport is controlled by the much slower ambipolar diffusion. When the metastable densities are much larger than the plasma density, the ion production rate may exceed the diffusion loss rate, allowing the plasma density to increase. These results are in good agreement with experimental observations².

* This work supported in part by Sandia National Laboratories and the USDOE under contract No. DE-AC04-76DP00789.

¹ P.J. Drallos and M.E. Riley, submitted to *J. Comp. Phys.*, June 1993.

² K.E. Greenberg, and G.A. Hebner, *J. Appl. Phys.*, June 15 (1993).

PB-5 Modeling the positive column of a fluorescent lamp without mercury* TIMOTHY J. SOMMERER *Corporate Research and Development, General Electric Company, P. O. Box 8, Schenectady, New York 12301*—We are investigating various discharge/phosphor systems with the goal of developing a mercury-free replacement for existing fluorescent lamps. The initial work centers on an Ar/Xe positive column discharge combined with a quantum splitting phosphor. This talk will outline the modeling issues and report results from fluid and kinetic/fluid hybrid models of the Ar/Xe positive column. The

fluid model is based on a "two-temperature" electron model of the Ar/Hg positive column [1], which includes all pertinent gas phase reaction and radiation transport mechanisms. Replacement of the "two-temperature" electron model with a kinetic description of the electrons allows one to accurately include important processes such as the excitation of high-lying Xe levels and Ar metastable levels.

*Work partially supported under the NIST Advanced Technology Program, Cooperative Agreement 70NANB3H1372.

1. J. T. Dakin and L. Bigio, *J. Appl. Phys.*, **63** 5270 (1988).

PB-6 CRITICAL DRIFT VELOCITY FOR STABLE POSITIVE COLUMN OF A LOW PRESSURE DISCHARGE, H.S. Maciel and G. Petraconi, *ITA/CTA, 12228-900, São José dos Campos-Brazil* - Plasma parameters including electron drift velocity (V_{de}) have been measured by means of electrostatic probes in a positive column of a mercury discharge operating with vapour pressure in the range of 10^{-4} - 10^{-3} torr and current in the range of 2.0 - 4.0 A. The plasma column is considered as a three-component, low pressure fluid, in which ionization and collisions play a significant role. The application of the generalized Hurwitz Criterion for stability is found to predict an electrostatic instability when the electron drift velocity exceeds 0.82 of the electron thermal velocity (V_{te}). Measurements of (V_{de}) were made by using the directional probe method of Maciel and Allen[1] and by means of a double probe technique suggested by Ariga[2]. The results confirm that above this critical value of V_{de} , strong oscillations set in and double layers are shown to form in the plasma column.

[1]-Maciel and Allen, *Journal of Plasmas Phys.*, **42**, 321 (1989).

[2]-Seichi Ariga, *Journal Phys. Society of Japan*, **31**, 4 (1971).

PB-7 The Effect of Elastic and Inelastic Angular Distributions on Discharge Simulations, W. N. G. HITCHON, G. J. PARKER, and J. E. LAWLER, Univ. of Wisconsin-Madison—A very detailed, self-consistent kinetic discharge model is used to examine the effect of various representations of collisional processes in determining the discharge model behavior. The effects of allowing anisotropy in elastic collisions instead of using the momentum transfer cross-section, the effects of allowing partial momentum conservation in inelastic collisions, and the effects of including a Coulomb collision operator are all described. Both dc and rf discharges are considered. It is shown that all of the approximations described above can make a profound difference to model predictions. This confirms that many discharge simulations have great sensitivity to the physical and numerical approximations. Our results reinforce the importance of using kinetic theory models with highly realistic approximations of various collisional processes.

PB-8 Excitation Processes in the Particle Beam Pumped Atomic Ar Laser Using He/Ar Mixtures. * Jong W. Shon, John M. Lape and Mark J. Kushner, Univ. of Illinois, Dept. of Elect. and Comp. Engr., Urbana, IL 61801 - The particle beam excited high pressure atomic Ar laser (3d \rightarrow 3s) using He/Ar gas mixtures operates on at least three infrared transitions (1.27 μm , 1.79 μm , and 2.4 μm) with efficiencies > 1%. The upper laser level of the 1.79 μm transition may be populated by three body recombination of Ar⁺ and Ar₂⁺, radiative decay, quenching of higher lying excited states, and dissociative recombination of HeAr⁺. The branching ratios for these processes in large part determine the dependence of laser perfor-

FRIDAY MORNING

mance on gas mixture and pressure. A computer model of the Ar laser using He/Ar mixtures has been developed to investigate excitation mechanisms and methods to optimize the laser's performance. The model contains 18 atomic levels in Ar to resolve gain on the cited transitions, and uses a Monte Carlo simulation to obtain excitation rates. Results from the model and comparisons to experiment for gain and laser oscillation in fission fragment and e-beam pumped plasmas will be discussed as a function of gas mixture, power and pressure.

* Work supported by Sandia National Laboratory.

SESSION QA: THERMAL PLASMAS AND PLASMA TORCHES II

Friday morning, 22 October 1993

Grand Salon A, 10:15-11:45

D.C. Schram, presiding

Invited Papers

QA-1 Characterization of Thermal Plasma Jets*

E. PFENDER, Dept. of Mechanical Eng. and ERC for Plasma-Aided Manufacturing, U. of Minnesota -

In the first part of this overview, the behavior of a typical plasma jet as used, for example, for plasma spraying will be reviewed, including the effects of arc behavior on the jet structure, transition to turbulence, gas entrainment, demixing effects, and the associated problems of measuring temperature and velocity fields using spectroscopy and enthalpy (pitot) probes. - In the second part, modeling attempts of plasma jets will be reported with emphasis on argon plasma jets in ambient argon.

* Work supported in part by NSF, ECD-87-21545

QA-2 Recovery of Aluminium from Dross in a Rotary arc furnace, M.G. DROUET, M.D. HANDFIELD, J. MEUNIER and C. LAFLAMME - An innovative technology for the treatment of aluminium dross is being implemented in industry. The technology is based on a rotary arc furnace using two graphite electrodes. A 650 kW pilot plant is made available for industrial customers to test their particular dross. A first unit of 1.5 MW is being installed to replace a gas-fired furnace. The new technology avoids massive additions of fluxing salts, it decreases the dusts entrained and the thermal losses due to the off-gas. As compared with the Alcan process which uses a 1.5 MW plasma torch, the proposed technology presents higher energy efficiency, better metal recovery and no explosion risk associated with water leakage from the plasma torch. Moreover, the investment and operating costs are substantially lower. The results from the 650 kW pilot plant tests and the commissioning of the industrial unit will be presented.

Contributed Paper

QA-3 Mechanisms of Electron re-Heating in Nitrogen Plasma Jet, Y. TAKAKURA, S. ONO and S. TEII, Musashi Inst. of Tech. Tokyo, JAPAN --

Results are reported for the heating of electrons in the down stream region of DC plasma jet. The electron temperature and electron density axial profiles have been measured by the electrostatic double probe method. The electron temperature ($\approx 1.5 \sim 0.5$ eV) once decreases along the gas flow axis but increases again at downstream region. This re-heating phenomena has been explained by the super-elastic collision between the electron and the vibrationally excited nitrogen molecules. The mechanism of the vibrational temperature re-heating has been confirmed by the spectroscopic measurement of the vibrational temperature of the nitrogen molecules exist in the plasma jet as well as the theoretical calculation. All data will be presented and discussed.

SESSION QB: SHEATHS AND BREAKDOWN

Friday morning, 22 October 1993

Grand Salon C, 10:15-12:15

J.F. Waymouth, presiding

QB-1 Two Different Types of Boundary Sheaths in Low Pressure Plasmas*

H.-B. VALENTINI, IPHT inc. Jena -

Using a steady-state two-fluid model and simple geometries it is shown that two types of boundary sheaths can exist in low pressure plasmas. Additionally to the well-known positively charged boundary layer where the electron drift nearly attains the sound speed, under certain conditions, e.g., by laser light produced plasmas^{1,2}, around a slightly positive plasma core a very weakly negative or quasi-neutral boundary region of large dimension can occur where the electron drift velocity remains small. The transition between both the types of mathematical solutions of the basic equations takes place relatively suddenly. Related phenomena as plasma expansion into vacuum and the contracted column are discussed. Various parameters as various Knudsen numbers and various charge to mass ratios are included.

*Work supported by Deutsche Forschungsgemeinschaft

¹I.M. Cohen, Phys. Fluids **8**, 2097 (1965)

²K.-U. Riemann, Phys. Fluids **B3**, 3331 (1991)

QB-2 A Kinetic Study of Sheath Propagation in Two Dimensions* E.R. KEITER and W.N.G. HITCHON, Engineering Research Center for Plasma-Aided Manufacturing, University of Wisconsin-Madison - Sheath propagation in Plasma Source Ion Implantation (PSII) is modeled using a two dimensional kinetic description, originally described in one dimension by Hitchon, et al.¹ The ion distribution function f_i is calculated as a function of

time, self-consistently with the electrostatic potential Φ in two spatial coordinates. The instantaneous and integrated fluxes of ions as functions of energy at the surface of the target and the sheath propagation rate are the main quantities of interest. Comparisons with the measured propagation rate are made, in the real geometry for different neutral pressures and electron temperatures. The variation in the ion fluxes with position on the target and with process parameters such as the applied voltage is also presented.

* Work supported by NSF grant #ECD-8721545.

¹ W.N.G.Hitchon, D.J. Koch, and J.B. Adams, J. Comp Phys., **83**, 79 (1989)

QB-3 Measurements and calculations of the sheath length in low pressure discharge, K. B. Liland, L. C. Pitchford (CNRS, CPAT, Toulouse), A. M. Pointu (LPGP Orsay) and M. Ganciu (IFTAR, Margurele, Bucharest, Romania). An experimental method has been developed to estimate the sheath length in a glow discharge at low pressure¹. We present here results from a 1-D fluid model with non local ionisation (Monte Carlo simulations). By smoothly increasing the voltage from a steady state to a higher voltage during some ns the responding current is calculated. The time integrated current is used in the calculation of the sheath length. The ratio between the transient capacitive voltage (voltage increase) divided by the integral of the current is equal to the capacitance between the ions at the sheath edge and the cathode. We find excellent agreement between the sheath length calculated from this method and that determined directly from the calculation of the electric field (5%).

1. Application to the sheath width measurement. M. Ganciu and A. M. Pointu, XXI ICPIG, 1993.

QB-4 Model Prediction of the Arc-Cathode Interaction of Free-Burning Arcs. *X. ZHOU, J. HEBERLEIN, and E. PFENDER, U. of Minnesota. A theoretical model has been formulated describing the influence of the arc condition and the cathode material on arc cathode erosion. A realistic, one-dimensional sheath model has been used supplemented by an integral energy balance of the ionization zone between the sheath and the arc, and by a differential energy balance of the cathode. The results of the calculations show that for high current applications the thermionic emission dominates in the removing of the energy flux from the cathode spot, and for these conditions the thermal design of the cathode plays a secondary role. In contrast, for low currents, the cooling of the cathode spot will be dominated by the thermal characteristics of the cathode material in the case of nitrogen and argon plasmas, but the cooling of the cathode spot will be affected by both the thermionic emission and the thermal design of the cathode or will even be dominated by the thermionic emission for hydrogen plasmas. The results are in reasonably good agreement with the experimental results.

*Work supported in part by NASA Lewis Research Center through grant No. NASA/NAG3-1332.

QB-5 Theory of the cathode spot in a vacuum arc, K.-U. RIEMANN, Inst. für Theoretische Physik, Ruhr-Universität Bochum, D-44780 Bochum, Germany. We consider the sheath region in front of the cathode of a vacuum arc. A previous theory of the boundary layer of a plasma in Saha ionization equilibrium is applied to the plasma ball in front of the cathode spot [1,2]. It results in a strong density decrease from the plasma ball to the sheath edge. This density decrease and an improved plasma energy balance is accounted for in a unified theory of the arc cathode starting from Ecker's existence diagram method [3] and indicating possible areas of arc spot operation in the T_e - j -plane, where T_e is temperature and j the current density of the cathode spot. Evaluating the analysis for the case of a copper metal vapor arc, we find an existence area which is essentially increased in comparison to Ecker's results. Due to this increased existence area, Ecker's 0- and 1-mode grow together for high very current densities.

[1] K.-U. Riemann, *J. Phys. D: Appl. Phys.* 25, 1432 (1992)

[2] K.-U. Riemann, *IEEE Trans. Plasma Sci.* 17, 641 (1989)

[3] G. Ecker in: *J.M. Lafferty (ed.) Vacuum Arcs — Theory and Application*, Wiley, New York 1980

QB-6 Dynamics of the Barium Emissions and the Electrode Temperature of a Fluorescent Lamp. K. MISONO* and J. T. VERDEYEN, Dept. of Electrical and Computer Engineering, University of Illinois 61801 - The time dependence of the emissions from neutral (5535Å) and ionized (4554Å) barium and the electrode temperature have been investigated using a square wave current source of variable frequency (6-3000 Hz). Although the hot spot temperature decreased during the anode cycle at low frequency, the emission from both species was virtually undetectable during that phase of the operation. Both Ba and Ba⁺ emissions were detected during the cathode cycle and increased with time. At higher frequencies (~600 Hz), most of the electrode heating occurs during the cathode cycle because of the disappearance of anode fall. The time averaged absolute temperature decreases during high frequency operation. A mathematical model based upon the continuity equations for Ba, Ba*, Ba⁺ and Ba⁺⁺ will be discussed and correlated with the experimental results.

*Visiting scholar from Toshiba.

QB-7 Application of Paschen's Law in HID Lamp Design. H. Gu and N. Brates, Osram Sylvania, Inc.

The implication of Paschen's law as it affects the design and operation metal halide discharge lamps is presented. Breakdown voltages, V_b , were measured for arc tubes with fixed electrode to starting probe distance "d" and various argon gas fill pressures "p". No conclusion could be drawn from the measurements carried out at room temperature due to small amount of mercury residue inside the arc tubes introduced by exhausting process. A correlation between V_b and product of

pd is obtained for the lamps started in a cold box at temperature of -22°C ($V_b = 241 + 11.8 \text{ pd}$, $R=0.88$, with pd range of 8-20 torr-cm). Because of different work function of the electrodes, the slope of the curve for these lamps is slightly smaller than that of classical curve for argon¹. Secondary ionization coefficient for thoriated tungsten electrode was computed and equals to 0.050 ± 0.022 . Optimum gas fill pressure is experimentally determined with consideration of minimum breakdown voltage and desired lamp performance.

¹ M. J. Druyvesteyn and F. M. Penning, *Review of Modern Physics* 12, 114 (1940)

QB-8 Gas Discharge Triggered by Cold Electron Sources.

S. LAUBE, M. FITAIRE, *A. TALSKEY, P. GARCIA, M. AGACHE, E. LEDUC, LPGP, Univ. Paris-Sud, France, *Univ. Masaryk, Brno, CS -

Presence of electrons is a necessary condition for electrical breakdown in a gas-filled gap. We report here experimental results on the influence of electron emitters on the breakdown voltage.

Two types of emitting systems have been used by applying high electric fields on an insulator: (a) a pseudo-cathode (PC) where a dielectric sheet (thickness=100 μm , diameter=35 mm) is sandwiched between a conducting plate and a grounded grid, (b) a MIM (Metal-Insulator-Metal) system where an oxide layer (thickness=10 nm) is sandwiched between two thin deposited layers of metal.

These two systems have been used to help to trigger gas discharges. The measurements show similar results: the breakdown voltage may be reduced to a limiting value near the extinction voltage; this behaviour is explained with the help of a probabilistic model.

SESSION RA: PLASMA-SURFACE INTERACTIONS

Friday afternoon, 22 October 1993

Grand Salon A, 13:30-15:45

D.B. Graves, presiding

RA-1 Interactions of Hyperthermal Fluorine Atoms with a Silicon Surface K. P. GIAPIS and T. A. MOORE, Division of Chemistry and Chemical Engineering, and T. K. MINTON Jet Propulsion Laboratory, California Institute of Technology - The precise profile evolution in the etching of features on semiconductors depends critically on the detailed interaction mechanisms of the etching species with the bombarded surfaces. While the reactions of directly impinging ions and atoms may dominate etching, the majority of these will scatter inelastically, and their second impingement on the sidewalls may affect anisotropy. We have undertaken the study of the inelastic and reactive scattering of energetic fluorine atoms with a silicon surface. A molecular beam of fluorine atoms, with energies between 2.5-6.0 eV, is produced by laser induced breakdown of a controlled amount of SF₆. The beam is directed at a Si target, which is placed at the center of rotation of a rotatable mass spectrometer detector. Both surface and detector rotate about the same axis, so scattered products and their flux can be determined as a function of the incident and final angles, θ_i and θ_f . New data show that inelastically scattered fluorine atoms lose >50% of their incident energy at the surface and that they scatter over a wide angular range. The fraction of incident energy lost increases when the incident energy is decreased. In addition, impulsive energy transfer is the same for the same included angle (θ_i and θ_f). The implications of these observations in the reduction of anisotropy during plasma etching of semiconductors will be discussed.

RA-2 Role of Low Energy Ion Bombardment in Plasma-Surface Chemistry: Molecular Dynamics Simulations of Silicon Etching M.E. BARONE, and D. B. GRAVES Department of

FRIDAY AFTERNOON

Chemical Engineering, University of California - We explore the role of low energy (<100 eV) ion bombardment in enhancing fluorine etching of silicon using molecular dynamics (MD) simulations. MD simulations are an ideal tool to understand the complex dynamics of surface and near-surface processes during the brief but intense collision cascade caused by the impact of a fast ion or neutral at a surface undergoing plasma processing. It is known that substantial etch rates of Si can be obtained using ion energies near threshold. Since the collision cascade is complete within a fraction of a picosecond, the role of the energetic species in enhancing etch rates has been difficult to determine. We examine the role of enhanced spontaneous etching, in which energetic species serve the purpose of creating partially fluorinated silicon, during the collision cascade, which later react with thermal F atoms, creating the etch product that desorbs spontaneously. Accuracy in simulating details of energy deposition and dissipation during the collision cascade is essential to capture the true chemistry and physics of this process. We examine the processes by which mass, momentum and energy are transported during the collision cascade. Video illustrations of events occurring during ion-assisted etching will be presented.

RA-3 Reactive Ion Etching of Silicon in CBrF₃ Plasma: Pressure and Power Effects on the Etching Characteristics, H. S. MACIEL and R. K. YAMAMOTO, ITA/CTA and LSI/PEE/EPUSP - The characteristics of the reactive ion etching of silicon have been investigated as a function of pressure and power in CBrF₃ plasma. The characterization was performed in a home-made RIE reactor using a 13.56 MHz RF generator. The pressure and power were varied between 50 and 300 mTorr, and 50 and 200 W, respectively, with gas flow rate fixed at 20 sccm. The silicon etch rate was 60 to 190 nm/min and the silicon to silicon oxide selectivity varied between 1:1 and 4:1. The silicon etch rate was observed to increase with pressure and power. The silicon etch profile degradation was observed under high pressure (because of a decrease of the mean free path of the impinging ions) and under high power (because of an increase of the ion bombardment energy). The silicon to silicon oxide selectivity increased with pressure and decreased with power. Best silicon etch profiles were obtained under the conditions of 50 mTorr and 50 W, and 100 mTorr and 100 W.

RA-4 Spatially Resolved Plasma and Wafer Surface Potential Measurements, T.J. Dalton and H.H. Sawin, Massachusetts Institute of Technology - Variations in both plasma and wafer surface potential have been measured on an Applied Materials Precision 5000 plasma etcher using a tuned langmuir probe. Surface potential variation caused by nonuniform plasma is an important cause of gate oxide breakdown during plasma etching of polysilicon gates. Surface potential variation is negligible in the absence of a magnetic field. The presence of a 100 Gauss field can induce surface potential variations of 15 volts or larger. The observed surface potential variations correlate with both magnetic field direction and plasma potential variations. A neural network analysis has been done to characterize the effect of process variables (rf power, pressure, magnetic field strength) on wafer surface potential variations for Ar and Cl₂ chemistries.

*Work supported by SEMATECH under contract 91-MC-503.

RA-5 Threshold Ion Energies in the Film Growth by Dual-Frequency Plasmas, L. MARTINU, J.E. KLEMBERG-SAPIEHA, O.M. KÜTTEL, A. RAVEH and M.R. WERTHEIMER, École Polytechnique, Montreal, Quebec, Canada - Ion bombardment which occurs concurrently with plasma-assisted film growth can greatly enhance the resulting film properties, even when deposition occurs

at low substrate temperature T_s. In the present work we use a dual-mode microwave/radio frequency (2.45 GHz/13.56 MHz) plasma to independently control the energy and flux of ions impinging upon a growing film surface. We have determined values of the threshold ion energy, E_{i,c}, and of the threshold ion/neutral flux ratios, (φ_i/φ_N)_c, which we identify by transition in the films' structure-related characteristics, such as density, microhardness, internal stress and electrical resistivity. Different [E_{i,c}; (φ_i/φ_N)_c] values have been found for various amorphous materials investigated, namely SiO₂:H [70eV, 0.26], SiN:H [170eV, 0.60] and a-C:H [80eV, 0.28]. We interpret these results in terms of various phenomena occurring during the growth process, namely surface mobility of precursor species, subplantation in hydrogen-rich surfaces, and of phenomena in the plasma sheath region.

RA-6 Nonmetallic Magnetic Hard Disks Using Plasma Source Oxygen-Implanted Iron-Doped Glass* J.H. BOOSKE, F.S.B. ANDERSON, E. WICKESBERG, R.F. COOPER,** J. JACOBS J.L. SHOHEET, L. ZHANG, and B. RATCHEV, Engineering Research Center for Plasma-Aided Manufacturing, University of Wisconsin-Madison--We describe a novel process to fabricate a thin non metallic magnetic medium with isolated, 10 nm-scale magnetic grains. The concept's objective is to fabricate magnetic hard disk substrates with high read-write spatial resolution with practical process timescales (hours). The technique involves oxidation of a ferrous-iron-doped magnesium-alumino-silicate glass, causing nucleation of MgFe₂O₄ ferrite spinel crystallites.¹ The oxidation reaction is driven by Plasma Source Ion Implantation (PSII) of oxygen into the iron-doped glass substrates. The work will determine whether PSII can repeat previous furnace-driven-surface-diffusion results¹ with faster process times, as well as whether one can regulate the size and spacing of the ferrite precipitate grains by controlling the oxygen ion fluence, dosage, and implant energy.

*Work Supported by the National Science Foundation under Grant ECD-8721545

** Dept. of Material Sciences & Engineering-Univ. of Wisconsin-Madison

¹ G.B. Cook, R.F. Cooper, and T. Wu, "Chemical Diffusion and Crystalline Nucleation During Oxidation of Ferrous Iron-Bearing Magnesium Aluminosilicate Glass," *J. Non-Crystalline Solids* **120**, 207-222 (1990).

RA-7 VUV-induced Oxidation of Polyethylene. A. Holländer, J. Klemberg-Sapieha, M. R. Wertheimer, Dept. Engineering Physics, École Polytechnique Montréal, Canada. Short wavelength radiation can play an important role during the surface treatment of polymers by low pressure plasma, but this fact is frequently overlooked. We have investigated the effect of vuv radiation (112 nm < λ < 180 nm) on polyethylene (PE) films as follows: The polymer, placed in an atmosphere of low pressure oxygen gas, was exposed to radiation from hydrogen-based plasmas. PE has a strong absorption below 160 nm with a maximum at 90 nm; Oxygen molecules absorb between 135 and 170 nm which results in the dissociation to ground state and excited atomic oxygen (AO). VUV emission of H₂/O₂ and He/H₂ plasmas lead almost exclusively to AO formation and PE excitation, respectively, while pure H₂ plasma results in both. It was found that VUV excitation of PE contributes greatly to the rate of oxidation, contrary to the reaction of the polymer with AO.

RA-8 Fast Expanding Plasma Beam Deposition of C and Si-Thin Layers, D.C. SCHRAM, J.W.A.M. GIELEN, A.J.M. BUURON, G.J. MEEUSEN, S.N. DOUMTCHENKO, P.D.

HAALAND and M.C.M. VAN DE SANDEN, Eindhoven Univ. Techn. - In the expanding plasma beam deposition method fast deposition (up to 100 nm/s) is achieved by effective transfer of ionization and dissociation to the injected monomers as C_nH_m , CO_2 , and SiH_4 from the high intensity Ar, or Ar/H thermal plasma source. The binding energy in the expanding argon, or argon/hydrogen plasma beam is transferred to the monomers by asymmetric charge exchange and dissociative recombination. Several deposition results on amorphous (a:C-H and a:Si-H) and crystalline (diamond) layers are presented. The role of radicals and ions and the influence of flow and recirculation patterns are discussed.

RA-9

Spectral Emission from Substrate Species in a Surface Discharge*

R. Schaefer, W.J. Schaefer Associates, Inc. - The surface discharge (SD) is a versatile plasma light source which has been used for many applications, ranging from pumping lasers to treating contaminated water. Spectra from SD light sources can differ from standard flashlamps due to the spectral contribution from the substrate material. In this paper spectral data is presented showing the variation of substrate spectral contributions from a SD on fused silica in argon and krypton at different electrical power densities. Emission lines over 200-400 NM associated with silicon and the rare gases are identified. As the power density is increased, the relative strength of the spectral contribution from the substrate increases relative to the contribution from the rare gas. It is shown using a simple model that the initial appearance of substrate spectral output correlates with the vaporization of substrate material.

*Work supported in part by the U.S. Dept. of Energy

SESSION RB: DIAGNOSTICS

Friday afternoon, 22 October 1993

Grand Salon C, 13:30-15:45

G.S. Selwyn, presiding

RB-1 Absolute hydrocarbon densities in a diamond growth DC discharge,* K. L. MENNINGEN, M. A. CHILDS, H. TOYODA, L. W. ANDERSON, AND J. E. LAWLER, University of Wisconsin. - A highly sensitive multi-element optical absorption technique is used to measure the absolute column density of methyl radicals and CH in a dc hollow cathode plasma-assisted diamond chemical vapor deposition (CVD) system with CH_4 and H_2 used as the input gases. The plasma gas temperature is determined at different spatial points using the H_2 emission spectrum. The temperature and radical density spatial maps provide clues to the chemical processes taking place in the discharge. Comparison with measurements made in a hot filament CVD system reveals some of the similarities and differences between the two deposition methods.

*Work supported by the Army Research Office.

RB-2 Electric Field Measurements by Laser Spectroscopy of H atoms: Time-resolved results in 30kHz discharges.

J.P. BOOTH, M. FADLALLAH, J. DEROUARD and N. SADEGHI Lab. de Spectrométrie Physique, Univ. Grenoble 1, France. - A new method for non-perturbative in-situ determination of electric fields in discharges has been developed, based on laser induced fluorescence of Rydberg state H atoms. The atoms are excited to the $n=2$ state by two photons at 243nm, then further excited to $n=6$ by one photon at 410nm, with detection of the $H\alpha$ emission, produced by radiative and collisional cascading. Analysis of the Stark splitting of the $n=6$ state, observed from the structure of the 2-6 excitation profile, allows the electric field to be determined. Results are presented for 30kHz, 1Torr H_2 discharges, with temporal (30ns) and spatial (0.5mm) resolution and detection of fields as low as 20V/cm. As well as the previously observed temporal asymmetry of the cathode sheath¹, we have measured fields of up to 100V/cm close to the electrode in the anodic half-cycle.

¹J.P. Booth, J. Derouard, M. Fadlallah, and N. Sadeghi, *J. Appl. Phys.* (to be published, 1993)

RB-3 Electric-Field Measurements in 13.56-MHz Helium Discharges, K. E. GREENBERG and G. A. HEBNER, Sandia National Labs

- In previous studies,^{1,2} Rydberg atom spectroscopy was used to measure electric fields in DC and 15-kHz helium discharges. Those studies utilized the optogalvanic effect to detect excitation of the Rydberg states. We have developed a variation of this technique that allows the measurement of electric fields in high-frequency (13.56 MHz) discharges and has much greater spatial resolution. These improvements arise from the detection of the Rydberg Stark manifolds by laser-induced fluorescence rather than by the optogalvanic effect. When helium Rydberg levels are excited by a laser, many other excited states are populated by collisional transfer and subsequent cascading processes; fluorescence from these other excited states can be used to monitor the excitation and structure of the Rydberg Stark manifolds. As an example, electric fields were measured in 0.5-Torr parallel-plate discharges by exciting the $n=11$ singlet manifold and monitoring fluorescence from the $1s2p \leftarrow 1s3d$ triplet transition.

¹D. K. Doughty and J. E. Lawler, *Appl. Phys. Lett.* **45**, 611(1984).

²B. L. Preppernau and B. N. Ganguly, *Rev. Sci. Instrum.* **64**, 1414(1993).

RB-4 Analysis of Transient Laser Optogalvanic Signals in a Capacitively Coupled Neon RF Discharge.*

R. R. ZINN, D. KUMAR, and S. P. MCGLYNN, Department of Chemistry, LSU, Baton Rouge, LA - Temporal profiles of pulsed-laser induced transient optogalvanic signals in several $1s_j \rightarrow 2p_k$ (Paschen notation) excitations in a 0.5 W, ~ 30 MHz rf discharge in ~ 5 torr neon have been analyzed. A recently developed method permits separation of two distinct components in the optogalvanic signals, one generated by laser-induced changes in the equilibrium ionization rates, and the other generated by a photoacoustic effect.¹ Curve-fitting software is used to deconvolute the two components into their various subcomponents. Significance of these components will be discussed. This analysis may enable us to predict temporal profile for other transitions in the same $1s_j \rightarrow 2p_k$ group.

*Work supported by grants from U. S. Department of Energy and the LSU Center for Energy Studies.

¹D. Kumar and S. P. McGlynn, *J. Chem. Phys.* **93**, 3899 (1990); *Chem. Phys. Lett.* **176**, 536(1991).

FRIDAY AFTERNOON

RB-5 Probes as Internal Surfaces in Bounded Plasmas*

H.-B. VALENTINI, E. GLAUCHE, D. WOLFF, D. KAISER**, M. HERMANN**, IPHT inc. Jena, **University Jena. Germany - Using a steady-state two-fluid model^{1,2} and coaxial and concentric geometries, single and double probes are treated as internal boundaries in bounded plasmas. Generation of charge carriers, elastic and charge exchange collisions and various charge to mass ratios are included. Boundary conditions are studied for various physical conditions². Results are given for number densities, drift velocities, the electric potential and the characteristics of probes. In particular, the dimensions of the regions of particle collections are exactly calculated for electrons and ions. An electromotive force can arise between walls of different curvature². Additionally, a mathematical description of the origin of the anode fall is elaborated.

*Work supported by Deutsche Forschungsgemeinschaft

¹R.N. Franklin, *Plasma Phenomena in Gas Discharges* (Oxford: Clarendon 1976).

²H.-B. Valentini, *J. Phys. D:Appl.Phys.* (1993) (is printing)

RB-6 Langmuir-Probe Measurements in Flowing Afterglow Plasmas.

R. JOHNSON and E. V. SHUN'KO, UNIVERSITY OF PITTSBURGH--Langmuir probes are used extensively to measure electron and ion densities in flowing afterglow experiments. Our recent experiments in flowing afterglows (electron densities from 10^8 to 10^{10}cm^{-3} , helium pressure of 1.6 Torr) with cylindrical Langmuir probes of different sizes (diameters of 10 and 25 μm) show, however, that the inference of ion densities from the observed ion-current vs. voltage characteristics is seriously flawed. The orbital-limited probe theory yields ion densities that are larger by factors of 10 to 20 than the electron densities! Furthermore, the collected ion currents do not scale linearly with probe area, as predicted by theory, but they are nearly independent of it! We conclude that the orbital-limited theory fails for ion collection because it ignores ion-atom collision in the probe vicinity. However, the collisionless theory seems to work fairly well for electrons. The measured discrepancies between the ion and electron collecting modes are far worse than indicated by early work in afterglow plasmas¹ at low pressures and confirm recent work in discharge plasmas by Sudit and Woods².

1 D. Smith and I.C. Plumb, *J. Phys. D* **6**, 196 (1973)

2. D. Sudit and R.C. Woods, Paper given at the 45th Gaseous Electronics Conference, and private communication

*This work was, in part, supported by NASA

RB-7 Quantitative Studies of Probe Surface Contamination in Reactive Gaseous Plasmas.

S.TEII, S.ONO, Musashi Institute of Technology, Tokyo Japan and K.SHINOHARA Nihon Koushuhwa Co. Ltd. Yokohama, Japan. Probe surface contamination and its influences on the probe measurement in reactive gaseous plasmas have been quantitatively studied by using the parameter C which is defined as the ratio of electron current to ion current of a probe. When the probe is contaminated, the parameter C, that is, the degree of probe cleanliness decreases and the probe curve becomes distorted. Experimental results show that for the case

of Ar+SiH₄ (0.04%) gas mixture discharge, the parameter C decreases to 80 % within 30 seconds after starting the measurement and the determined Te and Ne under this condition include error of approximately 27 % and 40 %, respectively. The recovery of parameter C can be achieved both by the method of ion bombardment and the current heating. The decreasing rate and recovering rate of parameter C depend on the kinds of gases as well as the applied bombardment voltage and heating current. Data will be presented and discussed.

RB-8 Measurement of Acoustic Spectrum in Electrodeless Microwave Powered Arcs.

W. P. LAPATOVICH and S. J. BUTLER, OSRAM SYLVANIA INC., Salem, MA - Acoustic effects in lighting related discharges have been studied as both desirable¹ and undesirable² phenomena. We describe a non-invasive technique for mapping the acoustic spectrum of small electrodeless microwave driven arcs. The acoustic resonances are excited by amplitude modulation of the microwave drive signal and are detected by both optical and electronic means. Optical detection consists of monitoring the displacement of the arc channel. Small modulation depths ($\approx 10\%$) are required to achieve macroscopic arc deflections. Electronic detection is more sensitive and can detect resonances at lower modulation depths which do not cause macroscopic arc deflection. This is accomplished by a sweeping the modulation frequency while monitoring the amplitude and phase of the envelope of the reflected microwave energy, using a phase locked tuned receiver. Resonant frequencies in the range of 15- to 500 kHz corresponding to longitudinal, azimuthal and radial modes were measured. Agreement of the observed spectra with theoretical predictions is good. The average speed of sound in the discharge vessel based on the spectra is approximately 430 ± 35 m/s.

¹V. D. Roberts, U. S. Patent 4,983,889 (1991)

²H. L. Witting, *J. Appl. Physics.* **49**(5), 2680. (1978)

RB-9 Phase Resolved Two-Dimensional Emission Profile of a LF Helium Discharge.

B. N. GANGULY and A. GARSCADDEN, Wright Laboratory, WPAFB OH- Time resolved two-dimensional plasma induced emission intensity of a low frequency (30-100 KHz), low pressure (1-3 torr) symmetric helium glow discharge has been measured using a phase locked gated (≈ 100 nsec) intensified CCD detector and a narrow band 587.5 nm interference filter. The entire interelectrode gap is imaged on the 18 mm photocathode; 512×512 pixels image resolution permits spatially and temporally resolved emission intensity profile measurement of the entire discharge volume. The emission intensity profiles under the measured conditions do not exhibit spatially asymmetric behavior^{1,2} during increasing and decreasing discharge current, although the emission intensities are not temporally symmetric about the voltage zero crossing. The conditions for spatial asymmetry have also been investigated.

¹ M. P. Alberta, H. Debontride, J. Derouard and N. Sadehi, *J. Phys. III France* **3**, 105 (1993).

² J. P. Boeuf and P. Belenguer, NATO Advanced Study Institute Series B **220**, 155, (Plenum, New York, 1990).

Postdeadline Papers—Program of the 46th Annual Gaseous Electronics Conference Montréal, Québec; 19–22 October 1993

SESSION D: POSTER SESSION

Tuesday afternoon, 19 October 1993

Grand Salon B, 15:45–17:30

J. Margot, presiding

DA: DIAGNOSTICS

DA-21 High Resolution Fourier Transform Spectroscopy of Discharge Generated Species in Supersonic Jets, J.W. BEVAN, Texas A&M University - Application of Fourier transform (FT) microwave and infrared spectroscopic techniques to discharge generated species in argon seeded supersonic jets is presented. Pulsed-nozzle FT microwave spectroscopic investigations of excited states up to 60^0_0 and 00^0_4 in OCS and 10^0_0 states of van der Waals dimers Y--HX (Y=Ar,Kr and X=F,Cl) generated in glow discharges will be reported. Rotation, distortion and quadrupole constants are precisely determined in observed excited states. Predissociative lifetime studies of the latter will be made using a time-of-flight adaptation of this microwave spectroscopic technique. Results from these investigations will be compared with theoretical predictions on 10^0_0 Ar-HCl. Extension of previous investigations to include high resolution Fourier transform absorption of hot bands in discharge generated species will also be considered.

SESSION J: POSTER SESSION

Wednesday afternoon, 20 October 1993

Grand Salon B, 15:45–17:30

M. Fréchette, presiding

JA: MODELING AND SIMULATION

JA-14 Simulation of the Plasma Chemistry of a Pulsed Corona Discharge in Dry and Humid Air* M. JACOB, W.L. MORGAN† and E.R. FISHER, Mich. Tech. Univ., Houghton, MI - Corona discharges are commonly used for modifying polymer surfaces to improve coatability, wetting properties, and adhesion. The wettability of polypropylene films is altered by surfaces chemistry involving oxygen containing functional groups. We have modeled the time dependent non-equilibrium plasma chemistry of a pulsed DC discharge in atmospheric pressure N_2 , O_2 , and H_2O mixtures in an effort to understand the radical formation chemistry and ultimately provide guidance in optimizing discharge parameters and gas mixtures for surface treatment. For this modeling we have used the general plasma chemistry code, KINEMA†, coupled with the electron Boltzmann solver, ELENDF†, and an air chemistry model comprising some 50 species and 300 reactions. We have been able to find reasonable operating conditions that maintain high production rates of species such as O and OH and minimize the formation rates of undesirable species such as O_3 and the nitrogen oxides. We have also investigated the effects of dissociation and formation of cluster ions on the threshold for breakdown.

* Work supported by the 3M Co., Minneapolis, MN.

† Kinema Research, P.O. Box 1147, Monument, CO 80132.

JA-15 Onset of Unstable Sheaths and Anomalous Transverse Ion "Temperature" near RF and DC Conducting Boundaries, J.H. WHEALTON, R.J. RARIDON, R.G. COWAN, J. NIEMEL, K. JAMESON and D.R. GAU, Fusion Energy Div., Oak Ridge National Lab. - Investigation of sheath structure and ion distribution functions at or near RF and DC conducting boundaries are examined. A self-

consistent ion-time-scale 2D and 3D hybrid plasma model is incorporated which solves the relevant subset of Maxwell's equations fully coupled to the ion Vlasov equation. The treatment evolves from previous steady state 3D plasma edge treatments¹ and from 3D ion-time-scale beam dynamics considerations.² One mode of sheath instability identified in the calculations is related to the Bohm sheath criteria. Structure of sheaths and ion distribution functions are studied for several situations relevant to semi-conductor processing, plasma ion implantation, and negative ion extraction. One notable finding is that even near planar boundaries, turbulence may give rise to significant transverse random motion of ions. This may have an impact on anisotropy ratios for semi-conductor processing.

¹ J.H. Whealton, R.W. McGaffey, and P.S. Meszaros, J. Comput. Phys., **63**, 20 (1986).

² J.H. Whealton, B.D. Murphy, R.J. Raridon, K.E. Rothe, W.R. Becraft and T.L. Owens, Phys. Rev. **A45**, 4036 (1992).

JD: MICROWAVE PLASMAS

JD-6 Results from a Recently Constructed Plasma Source for Diamond Deposition, J. KHACHAN, J.R. PIGOTT, M.J. WOUTERS, G.F. BRAND, I.S. FALCONER and B.W. JAMES, School of Physics, University of Sydney, Australia 2006 - An inexpensive and simple microwave-produced plasma source has recently been constructed for plasma-assisted chemical vapor deposition of diamond thin films. Microwave power from a 700 watts domestic microwave oven magnetron is fed into a water-cooled cylindrical stainless steel vacuum vessel. A methane/hydrogen gas mixture introduced into the vessel is excited by the microwaves to produce a well-defined plasma ball which does not interact with the walls of the vessel. Electric double probe and spectroscopic measurements on the plasma as well as intrinsic stress and point defect results in the film will be presented and discussed.

SESSION L: POSTER SESSION

Thursday morning, 21 October 1993

Grand Salon B, 10:15–12:15

G. Sauv , presiding

LB: ION TRANSPORT AND ION-MOLECULE COLLISIONS

LB-16 Plasma Characteristics of an RF H⁺ Source, S.J. COX, E. SURREY and A.J.T. HOLMES, AEA Technology, Culham, Abingdon, Oxfordshire, OX14 3DB, UK - Inductively coupled RF discharges are attractive for long life high efficiency operation and are being developed as sources for the production of intense H⁺ beams. At Culham, a cylindrical multicusp source has been built which incorporates an external 2 MHz RF drive and a magnetic filter. The hydrogen plasma produced by this device has been characterised extensively with Langmuir probes, using a detailed three-dimensional mapping technique. This has shown that the magnetic filter produces significant radial plasma density gradients which could lead to emittance growth when a beam is extracted from the source. In addition, the spatial distribution of the H⁺ density has been derived from probe data. This suggests that the negative ions are produced by a mechanism which optimises when the electrons temperature is in the narrow range 0.7–1.5 eV. Furthermore, there appears to be a strong relationship between plasma density and the negative ion density which stresses the importance of plasma confinement.

46th Annual Gaseous Electronics Conference: Author Index
46e Conférence annuelle sur l'électronique dans les gaz:
index des auteurs

- Abdallah, J., Jr. - BB-4
 Abouelaziz, H. - KB-2
 Abraham-Shrauner, B.
 JA-4
 Adams, D. - PA-6
 Agache, M. - LA-7, QB-8
 Akashi, H. - JC-3
 Akitsu, T. - DB-15
 Alexandrovich, B.M.
 NA-6
 Algatti, M.A. - DA-1
 Aliev, Yu.M. - EA-6
 Alle, D.T. - CB-1
 Alvarez, I. - NB-4
 Amorim, J. - DA-4
 Amouroux, J. - AB-4
 Anderson, F.S.B. - RA-6
 Anderson, H.M. - BA-5,
 DC-4
 Anderson, L.W. - CB-5,
 DA-3, RB-1
 Aragon, B. - HA-1
 Aramaki, E.A. - DA-1
 Arefi, F. - AB-4
 Armentrout, P.B. - LB-1,
 NB-7
 Arnal, Y. - AA-8, CA-1
 Ashtiani, K.A. - DB-4
 Augustyniak, E. - LC-2
 Awaya, Y. - NB-5
 Babin, F. - DA-18
 Bailey, D.S. - JD-4
 Baravian, G. - DA-4, LC-8
 Barbeau, C. - EA-1
 Bardsley, J.N. - FA-1,
 LA-14
 Barich, J.M. - KA-2
 Barnes, A.D. - JD-4
 Barnes, R.M. - NA-1
 Barone, M.E. - RA-2
 Barrios, E. - DB-13
 Bartschat, K. - CB-7
 Bashlov, N. - JF-1
 Basner, R. - MB-5
 Bayless, J.R. - LA-10
 Becker, K. - BB-5, MB-5
 Behl, D. - BA-5, DC-4
 Benjamin, N.M.P. - KA-4,
 KA-5
 Benson, J. - LA-11
 Beuthe, T.G. - AB-5
 Bevan, J.W. - DA-21
 Bhagwat, A.M. - DD-3
 Bhave, R.N. - KB-7
 Birdsall, C.K. - JE-2, JE-4
 Bisgaard, S. - DB-13
 Blayo, N. - AA-1
 Bletzinger, P. - MA-3,
 HA-2
 Blezius, J. - DB-19
 Boesten, L. - HB-3, MB-6
 Boeuf, J.P. - JA-3, LA-1
 Boffard, J.B. - CB-5
 Boily, S. - DA-7
 Bonham, R.A. - KB-5,
 LC-10
 Booske, J.H. - RA-6
 Booth, J.P. - CA-5, RB-2
 Bordeleau, S. - EA-1
 Borysow, J. - DA-19,
 LC-2
 Bose, F. - LD-5
 Boswell, R.W. - AA-4,
 CA-2, CA-5, DB-17,
 DB-18, JA-6
 Bouchelouh, N. - LA-4
 Boucher, C. - CA-6
 Boulos, M.I. - PA-2
 Bounasri, F. - DB-16
 Bowden, M.D. - CA-3,
 DA-20, DB-1
 Bozeman, S.P. - AA-7
 Braithwaite, N.StJ.
 HA-3, NA-4
 Brake, M.L. - DB-14
 Brand, G.F. - JD-6
 Brates, N. - QB-7
 Brennan, M.J. - CB-1
 Brown, M.D. - BB-7
 Brown, R.A. - JE-12,
 JE-17
 Bruce, M.R. - KB-5,
 LC-10
 Brunger, M.J. - CB-1
 Brycki, B. - NA-7
 Buckman, S.J. - CB-1
 Buie, M.J. - DB-14
 Bukowski, J.D. - LD-2
 Burkhardt, C. - LA-10
 Burrow, P.D. - HB-1
 Buteau, C. - AB-6
 Butler, S.J. - RB-8
 Buuron, A.J.M. - RA-8
 Cacheiro, R. - JB-2
 Cachoncinlle, C. - LA-6
 Caledonia, G.E. - DD-5
 Campbell, I. - LD-9
 Campbell, R.B. - JE-11
 Canosa, A. - KB-2
 Carter, J.G. - KB-4
 Cartwright, D.C. - BB-4
 Chaker, M. - DA-7, DB-9,
 DB-16
 Chalamala, B.R. - LB-13
 Champion, R.L. - LB-15
 Chang, J.S. - AB-5, JF-3
 Charles, C. - CA-2
 Chatain, F. - AA-8
 Chen, F.F. - AA-2
 Cheshire, R. - DA-6
 Chew, K.H. - DB-13
 Childs, M.A. - DA-3,
 RB-1
 Chindarkar, A.R. - DD-3
 Choi, S.J. - BA-2, BA-7,
 DC-1
 Choi, Y.W. - DA-20
 Christophorou, L.G.
 KB-4
 Chung, S. - MB-1
 Cisneros, C. - NB-4
 Clark, R.E.H. - BB-4
 Cocagne, J. - CA-1
 Coe, S.E. - JD-4, LD-7
 Colgan, M.J. - JE-14
 Collins, G. - DA-2
 Coonan, B.P. - LD-3
 Cooper, R. - KB-7
 Cooper, R.F. - RA-6
 Cosby, P.C. - NB-2
 Cowan, R.G. - JA-15
 Cox, S.J. - LB-16
 Csanak, G. - BB-4
 Cui, C.S. - BA-4
 Czarnetzki, U. - DA-5
 Dage, D.J. - JA-9
 Dahimene, M. - DB-14
 Dahiya, R.P. - LB-7
 Dakin, J.T. - KA-8
 Dalgarno, A. - LB-2
 Dalton, T.J. - RA-4
 Dalvie, M. - DC-3, JE-8
 Date, H. - EB-3
 Datskos, P.G. - KB-4
 Daugherty, J.E. - BA-3
 Daw, M.R. - LD-9
 De Graaf, M.J. - LB-7
 De Groot, J.S. - JA-7
 De Hoog, F.J. - MA-5
 De Mello Borges, C.
 JD-5
 De Regt, J.M. - LD-4
 De Souza, A.R. - DD-4
 de Urquijo, J. - NB-4
 Derouard, J. - AA-8, RB-2
 Deutsch, H. - MB-5
 Dias, F.M. - DA-11, JD-1
 Dillon, M.A. - LC-1,
 MB-6
 Dinneen, T.P. - FB-1
 Diposo, G.J. - LD-1, LD-8
 Djurovic, S. - HA-6
 Döbele, H.F. - DA-5,
 DA-6, DA-10
 Doughty, D.A. - JF-2
 Doumtchenko, S.N.
 RA-8
 Doverspike, L.D. - LB-15
 Doyle, J.R. - JA-9
 Doyle, R.A. - DA-12, JE-5
 Drake, R.P. - JA-7
 Drallos, P.J. - JB-4, PB-4
 Drobot, A. - EA-2
 Drouet, M.G. - QA-2
 Duffy, M.E. - KA-8
 Durandet, A. - CA-2,
 DB-10
 Dyer, M.J. - BB-6
 Economou, D.J. - HA-4,
 MA-8
 El Khakani, M.A. - DB-16
 Ellingboe, A.R. - CA-5,
 JA-6
 Endo, M. - DA-8
 Enriquez, L. - PA-6
 Ernie, D.W. - DA-15
 Ershov, A. - DA-19
 Fabiano, F. - CA-1
 Fadlallah, M. - RB-2

- Faehl, R.J. - DB-5
Falconer, I.S. - JD-6
Fedchak, J.A. - LB-15
Fellows, C.E. - JC-1, JC-2
Ferreira, C.M. - JD-1, MA-6
Fey, F.H.A.G. - LD-4
Fiala, A. - JA-3, LA-1
Fisher, E.R. - JA-14, LB-1,
Fitaire, M. - LA-7, QB-8
Flannery, M.R. - KB-1, LB-3
Fleddermann, C.B. - LA-9, PA-6
Flynn, C. - BB-1, CB-3
Foltin, M. - NB-3
Fortin, M. - DB-3
Foy, F.L. - HA-5
Fréchette, M.F. - LA-4
Friedman, J.F. - LB-4
Gagné, J.-M. - DA-18
Gahl, J.M. - PA-6
Gaillat, A. - NA-1
Ganciu, M. - JB-1, LA-6, QB-3
Ganguly, B.N. - HA-2, RB-9
Gao, R.S. - LB-5
Garcia, P. - QB-8
Garscadden, A. - A-11, BA-6, EB-2, LC-4, MB-4, RB-9
Gau, D.R. - JA-15
Geddes, J. - DB-20
Geddes, J.B. - DB-14
Gentile, A.C. - FA-3
Gernhäuser, R. - LB-6
Gerwin, R.A. - DC-3
Ghosh, A.K. - DB-19
Giapis, K.P. - RA-1
Gibble, K. - FB-2
Gibson, Jr., G.W. - AA-1, AA-5, EA-7
Gicquel, A. - EA-5
Gielen, J.W.A.M. - RA-8
Gil, T.J. - HB-6
Gilbody, H.B. - DB-20
Girshick, S.L. - PA-3
Glauche, E. - RB-5
Godyak, V.A. - NA-6, PB-1
Gogolides, E. - AB-6
Gomes, G.F. - DA-1
Gomet, J.C. - KB-2
Gorbatkin, S.M. - DB-11
Goree, J. - BA-4, DC-2
Goto, T. - DA-8, DB-12
Gotoda, H. - EB-5
Gould, P.L. - FB-1
Gourier, C. - MB-2
Graham, W.G. - DA-6, DA-12, HA-3
Granier, A. - DB-8
Gravelle, D.V. - PA-5
Graves, D.B. - BA-3, JA-12, KA-6, LD-2, RA-2
Greenberg, K.E. - HA-1, RB-3
Greuel, P.G. - DA-15
Grolleau, B. - DB-8
Grossman, M.W. - JF-4
Gu, H. - QB-7
Guarnieri, C.R. - JE-8
Gulick, S.L. - CA-6, DA-7
Gulley, R.J. - CB-1
Guo, J.M. - LA-12
Haaland, P.D. - RA-8
Haas, F.A. - NA-4
Hamani, H. - JA-2
Handfield, M.D. - QA-2
Hardy, K.A. - KB-3
Harvey, R.E.P. - DB-7
Hasegawa, H. - EB-3
Hasegawa, M. - LD-6
Heberlein, J. - QB-4
Hebner, G.A. - JC-4, RB-3
Helm, H. - BB-6
Hennad, A. - EB-7
Hermann, M. - RB-5
Hewett, D.W. - LD-1, LD-8
Higgins, B.D. - JA-6
Higgins, D.P. - DB-20
Higgins, M. - DA-6
Hiskes, J.R. - LC-9
Hitchon, W.N.G. - DB-4, DB-7, PB-2, PB-3, PB-7, QB-2
Hoekstra, R.J. - BA-2, KA-2, NA-2
Hoffmann, D. - FB-3
Holcomb, E. - LB-11
Holländer, A. - RA-7
Holmes, A.J.T. - LB-16
Homsí, W. - DA-16
Hooke, W.M. - AA-7
Hopkins, M.B. - DA-12, JE-5, LD-3
Hori, M. - DB-12
Huai, Y. - DA-7
Huang, F.Y. - AB-3
Hubert, J. - EA-1, EA-5
Huestis, D.L. - BB-6
Huppert, G.L. - JE-12, JE-17
Hwang, H.H. - BA-2, DC-1, HA-5
Hyman, E. - EA-2
Ibbotson, D. - AA-1
Iinuma, K. - LB-12
Ikegawa, M. - DB-2
Ikuta, N. - DD-1, EB-5, LB-8, LB-9, LB-10, LB-11, LC-5, LC-7
Ingold, J. - EB-1
Itoh, A. - AA-3, CA-8
Itoh, H. - DD-1, LC-5
Ivanov, A.I. - LA-13
Iyyengar, S.Y. - DD-3
Jacksier, T. - NA-1
Jacob, M. - JA-14
Jacobs, J. - RA-6
James, B.W. - JD-6
Jameson K. - JA-15
Jarnyk, M.A. - DB-18
Jelenkovic, B.M. - LA-5
Johnsen, R. - RB-6
Johnson, W.L. - KA-1
Johnston, T.W. - JA-7
Jolly, J. - DA-4
Jones, M.E. - DB-5, DC-3
Joyce, G. - JE-13
Kaiser, D. - RB-5
Kajiwara, T. - DA-5
Kakehi, Y. - DB-2
Kamon, M. - HA-1
Kaneda, T. - JF-3
Kassoff, J.M. - LC-11
Katsch, H.-M. - JE-6
Kawabata, T. - LB-9
Kawaguchi, M. - LD-6
Kayama, M.E. - DA-1
Keegan, D.M. - DA-17
Keinigs, R.K. - DB-5, DC-3
Keiter, E.R. - QB-2
Khacef, A. - LA-6
Khachan, J. - JD-6
Khairallah, Y. - AB-4
Khodr, C. - CA-6
Kickel, B.L. - LB-1, NB-7
Kieffer, J.C. - DA-7
Kilgore, M.D. - JA-12
Kim, H. - JA-6
Kimura, F. - DB-1
Kimura, M. - HB-3, LB-2, MB-6, NB-5
Kimura, T. - CA-3, DA-13, DB-1
Kitagawa, M. - CA-3, DB-1
Kitamori, K. - MA-7
Klemberg-Sapieha, J.E. - RA-5, RA-7
Knystautas, J. - KB-6
Kobayashi, J. - DB-2
Kobobel, D. - DA-2
Kolobov, V.I. - JA-3
Kondo, K. - EB-3, KA-7
Kono, A. - DA-8
Kornas, V. - DA-6
Kortshagen, U. - EA-6, JA-13, JE-10
Kravis, S. - NB-5
Krech, R.H. - DD-5
Kroesen, G.M.W. - MA-5
Krötz, W. - LB-6
Küttel, O.M. - RA-5
Kulander, K.C. - CB-6
Kuman, M. - JA-10
Kumar, D. - JE-16, MA-4, RB-4
Kumarakrishnan, A. - FB-1
Kunhardt, E.E. - LA-11
Kuroda, H. - KA-7
Kuroki, K. - LC-1
Kushner, M.J. - AB-3, BA-2, BA-7, DC-1, FA-3, FA-5, HA-5, JC-4, KA-2, KA-3, NA-2, PB-8
Kuthi, A. - LA-10
Laflamme, C. - QA-2
Lagarde, T. - AA-8, CA-1, DB-10
Lagus, M.E. - CB-5
Lamm, A.J. - KA-4, KA-5
Lampe, M. - JE-13
Lane, B. - EA-2
Lane, N.F. - LB-2, NB-5
Lapatovich, W.P. - RB-8
Lape, J.M. - PB-8
Larocque, R.Y. - LA-4
Laube, S. - LA-7, QB-8
Laurich, B.K. - LD-9
Lawler, J.E. - DA-3, PB-2, PB-3, PB-7, RB-1

- Le, V.H. - JF-1
 Leclair, L.R. - BB-7
 Leduc, E. - QB-8
 Lee, C. - JE-1
 Lee, E.T.P. - MB-1
 Lee, H. - NA-7
 Lee, J.T.C. - AA-1
 Lengsfeld III, B.H.
 CB-6, HB-6
 Leung, K.N. - DA-10
 Levin, A. - MB-5
 Lévesque, S. - DA-18
 Li, C. - EB-8
 Lichtenberg, A.J. - JE-3
 Lieberman, M.A. - JE-1,
 JE-2, JE-3
 Light, M. - AA-2
 Liland, K.B. - QB-3
 Lin, C.C. - CB-5, MB-1
 Lindsay, B.G. - LB-5
 Lister, G.G. - LD-7
 Little, L.M. - JC-5
 Liu, J.M. - JA-7
 Lorents, D.C. - DA-17
 Loureiro, J. - DA-4, MA-6
 Lymberopoulos, D.P.
 HA-4, MA-8
 Maciel, H.S. - PB-6, RA-3
 Maeda, M. - CA-3, DA-5,
 DA-20, DB-1
 Mahajan, S. - JB-2
 Makabe, T. - AA-3, AB-8,
 CA-8, KA-7
 Malhotra, R.M. - DA-17
 Mallouris, C.Z. - JA-9
 Manabe, Y. - CA-3, DB-1
 Mansky, E.J. - CB-4
 Margot, J. - AA-6, DA-7,
 DB-3, DB-9, DB-16, EA-1
 Mark, P. - JE-6
 Märk, T.D. - NB-3
 Martinez, H. - NB-4
 Martinu, L. - RA-5
 Massone, C.A. - JC-1,
 JC-2
 Matsuzawa, H. - DB-15
 Matte, J.P. - JA-7
 Maximov, A.V. - EA-6
 Mayberry, C.S. - LA-9
 McConkey, J.W. - BB-7
 McCullough, R.W.
 DB-20
 McCurdy, C.W. - HB-6
 McGlynn, S.P. - JE-16,
 MA-4, RB-4
 McKoy, V. - HB-2
 Mechlinska-Drewko, J.
 JA-8
 Meeusen, G.J. - RA-8
 Menendez-Barreto, M.
 LB-4
 Menningen, K.L. - DA-3,
 RB-1
 Meulenbroeks, R.F.G.
 LB-7
 Meunier, J. - QA-2
 Meytlis, V.P. - PB-1
 Meyyappan, M. - CA-4,
 JE-14
 Mi, L. - KB-5, LC-10
 Michael, D. - NA-3
 Michaud, S. - EA-1
 Miller, P. - HA-1
 Miller, T.A. - DA-9, EA-3
 Miller, T.M. - LB-4
 Minton, T.K. - RA-1
 Mirrashidi, P. - JE-4
 Misono, K. - LA-2, QB-6
 Mitchell, J.B.A. - KB-2
 Miyashita, H. - DB-15
 Miyazaki, K. - DA-5
 Mizuno, M. - DB-15
 Müller, K.G. - JE-6
 Modreanu, G. - JB-1
 Mohindra, V. - JE-12
 Moisan, M. - AA-6,
 DB-16, EA-4, EA-5, JD-2,
 JD-3, JD-5, PA-4
 Moore, J.H. - HB-4
 Moore, T.A. - RA-1
 Morgan, W.L. - JA-14
 Morris, R.A. - LB-4, NB-6
 Morrow, T. - DA-6
 Mota, R.P. - DA-1
 Motret, O. - LA-6
 Muraoka, K. - CA-3,
 DA-5, DA-20, DB-1
 Murnick, D.E. - JE-14,
 LB-6
 Musa, G. - LA-6
 Muta, H. - CA-3
 Muzart, J.L. - DD-4
 Nagorny, V.P. - JB-4
 Nagpal, R. - EB-2, JA-11,
 MB-4
 Naik, G.R. - DD-3
 Naumkin, F.Y. - LB-14
 Niazi, K. - JE-1
 Niemel, J. - JA-15
 O'Brien, T. - DA-12
 Oakes, D.B. - DD-5
 Ogawa, E. - DB-15
 Ohe, K. - DA-13
 Ohson, Y. - JF-3
 Okuda, S. - LB-8, LB-11
 Okumura, Y. - LC-6
 Okuno, K. - NB-5
 Olivier, M. - DB-19
 Olthoff, J.K. - AB-7, HA-
 6, JE-15, LC-11
 Ono, S. - JA-5, QA-3,
 RB-7
 Orel, A.E. - CB-6
 Orrman-Rossiter, K.G.
 DB-18
 Otorbaev, D.K. - LB-7
 Overzet, L.J. - JE-5
 Pack, J.L. - EB-6
 Pagan, C.J.B. - DA-1
 Paithankar, A.S. - DD-3
 Parish, J.W. - DD-2
 Parker, G.J. - DB-7, PB-2,
 PB-3, PB-7
 Pasquerault, D. - KB-2
 Patel, V. - NA-7
 Patrick, R. - LD-5
 Patteson, R. - HA-1
 Paulson, J.F. - LB-4,
 NB-6
 Pearce, K.D. - EA-3
 Pekker, L. - DB-6
 Pelletier, J. - CA-1,
 DB-10, LA-14
 Penetrante, B.M. - FA-1,
 LA-14
 Peres, I. - KA-3
 Perry, A.J. - AA-4, CA-2,
 DB-17
 Persing, H.M. - AA-4,
 AA-8, CA-2, DB-17,
 DB-18
 Peters, M. - FB-3
 Peterson, J.R. - KB-3,
 NB-2
 Petraconi, G. - PB-6
 Petrovic, Z.L.J. - JA-8
 Pevgov, V.G. - LB-14
 Pfender, E. - QA-1, QB-4
 Phelps, A.V. - AB-2, LA-5
 Piejak, R.B. - NA-6
 Pigott J.R. - JD-6
 Pitchford, L.C. - JA-3,
 LA-1, QB-3
 Plante, J. - KB-6
 Pochan, P. - HA-1
 Poinسیون, A. - JA-2
 Pointu, A.M. - JB-1, QB-3
 Poirier, D.A. - CA-6
 Ponce, D.M. - DA-10
 Ponce-de-Leon, L. DB-
 13
 Popovic, S. - LA-11
 Porteous, R.K. - CA-3,
 DB-1, JA-6
 Post, R. - EA-2
 Pouvesle, J.M. - LA-6
 Praburam, G. - DC-2
 Preppernau, B.L. - DA-9,
 EA-3
 Qi, X. - LB-3
 Qing, Z. - LB-7
 Quandt, E. - JE-6
 Radovanov, S.B. - HA-6
 Raeker, A. - CB-7
 Raridon R.J. - JA-15
 Ratchev, B. - RA-6
 Raveh, A. - RA-5
 Rees, J. - AB-7
 Rescigno, T.N. - CB-2,
 HB-6
 Rhallabi, A. - AB-6
 Rhoades, R.L. - DB-11
 Ricard, A. - EA-5
 Riemann, K.-U. - CA-7,
 QB-5
 Riley, M.E. - MA-2, PB-4
 Rimkus, K.A. - DD-2
 Roberts, J.T. - DA-15
 Rognlien, T.D. - LD-1,
 LD-8
 Romero, L. - HA-1
 Rowe, B.R. - KB-2
 Roy, D. - MB-2
 Roznerski, W. - JA-8
 Ruoff, R.S. - DA-17
 Sá, P.A. - MA-6
 Sadeghi, N. - AA-8, CA-5,
 RB-2
 Saeed, M. - BB-6
 Sakai, Y. - JC-3, LC-6
 Sasaki, N. - LB-12
 Satheesh Kumar, A. - BA-6
 Sato, H. - HB-3, MB-6
 Sauers, I. - AB-1, JB-2

- Sauvé, G. - EA-5, JD-2,
JD-3, PA-4
- Sawada, S. - LC-6
- Sawin, H.H. - AA-1, AA-5,
EA-7, JE-12, JE-17, RA-4
- Schaefer, R. - RA-9
- Schamiloglu, E. - LA-9
- Scheuer, J.T. - LD-9
- Schieber, J.D. - MA-8
- Schlüter, H. - EA-6
- Schmidt, M. - MB-5
- Schram, D.C. - LB-7,
LD-4, PA-1, RA-8
- Schweickart, D.L. - LC-4
- Sebastian, A.A. - LC-3
- Sekizawa, H. - DD-1
- Selwyn, G.S. - BA-1,
DC-3, JE-8
- Severens, R.J. - LB-7
- Shankar, S. - LA-3
- Shaw, D. - DA-2
- Sheldon, J. - KB-3
- Sheuer, J.T. - LD-9
- Shi, Z. - BB-2, BB-3
- Shimakura, N. - NB-5
- Shimamura, I. - NB-5
- Shimozuma, M. - EB-3
- Shimura, N. - AA-3, CA-8
- Shinohara, K. - DA-14,
RB-7
- Shivarova, A. - EA-6
- Shohet, J.L. - DB-4,
DB-13, FA-5, RA-6
- Shon, J.W. - JC-4, PB-8
- Shun'ko, E.V. - RB-6
- Siegel, R.B. - BB-5
- Singh, A. - DB-19
- Singh, B. - NA-7
- Slinker, S.P. - JE-13
- Smith, B. - HA-1
- Smith, G.J. - LB-5
- Smith, K.A. - LB-5
- Sobolewski, M.A. - JE-15
- Sommerer, T.J. - PB-5
- Soruco, D. - KB-5
- Speller, C.V. - DD-4
- Spence, D. - LC-1
- Spindler, H.L. - DB-14
- Srinivasan, M. - DD-3
- Srivastava, S.K. - HB-5
- St-Onge, L. - DB-9, EA-5,
JD-5
- Stalder, K.R. - DA-16,
DA-17
- Stansfield, B.L. - CA-6,
DA-7
- Stanton, A.C. - DC-4
- Stebbing, R.F. - LB-5
- Stewart, R.A. - KA-6
- Stoffels, E. - MA-5
- Stoffels, W.W. - MA-5
- Stricklett, K.L. - LC-11
- Stumpf, B. - BB-1, CB-3
- Sultan, G. - LC-8
- Sun, H.C. - NA-7
- Surendra, M. - DC-3, JE-8,
JE-18, MA-1
- Surowiec, R. - AB-7
- Surrey, E. - LB-16
- Suzuki, S. - DD-1
- Tagashira, H. - EB-3,
JC-3, LC-6
- Takagi, T. - HB-3
- Takahashi, K. - DB-12
- Takakura, Y. - QA-3
- Takebe, M. - LB-12
- Talsky, A. - QB-8
- Tan, K.Y.N. - FB-1
- Tan, W. - BB-2, BB-3
- Tanaka, H. - HB-3, MB-6
- Tarnovsky, V. - MB-5
- Teich, T.H. - FA-2
- Teii, S. - DA-14, JA-5,
QA-3, RB-7
- Tennyson, J. - MB-3
- Tepermeister, I. - AA-1
- Timofeev, N. - JF-1
- Tobiason, J. - FB-3
- Tossell, J.A. - HB-4
- Touzeau, M. - DA-4
- Toyoda, H. - DA-3, RB-1
- Toyoshima, T. - JF-3
- Tran Khanh, C. - EA-1
- Tremblay, B. - MB-2
- Tremblay, D. - MB-2
- Tsang, K. - EA-2
- Tserepi, A.D. - DA-9
- Turban, G. - AB-6, DB-8
- Turner, M.M. - JE-5,
LD-3, NA-5
- Tuszewski, M. - LD-9
- Tynelius-Diez, K. - DB-10
- Uchino, K. - CA-3, DB-1
- Ulrich, A. - LB-6
- Umezawa, T. - DA-14
- Underwood-Lemons, T.
HB-4
- Vacquié, S. - PA-5
- Vahedi, V. - JE-1, JE-2,
JE-3, JE-4, LD-1, LD-8
- Valentini, H.-B. - JA-1,
QB-1, RB-5
- Van Brunt, R.J. - AB-7,
HA-6, LC-11
- Van De Sanden, M.C.M.
LB-7, PA-1, RA-8
- Van Der Kamp, B. - NB-2
- Van Der Mullen, J.A.M.
LD-4, PA-1
- Van Der Zande, W.J.
LB-13
- Veerasingam, R. - JE-11
- Veltrop, R.G. - KA-5
- Vender, D. - JE-18, MA-5
- Ventzek, P.L.G. - BA-2,
KA-2, MA-7, NA-2
- Verdeyen, J.T. - JC-5,
LA-2, QB-6
- Viggiano, A.A. - LB-4,
NB-1, NB-6
- Vitello, P.A. - FA-1,
KA-6, LA-14
- Voshall, R.E. - EB-6
- Vuskovic, L. - BB-2,
BB-3
- Wada, H. - LC-5
- Wadehra, J.M. - LC-3
- Wagner, D. - DA-10
- Walker, T. - FB-3
- Wallace, C.D. - FB-1
- Wang, Y. - LB-14
- Watanabe, Y. - JB-3
- Waymouth, J.F. - LA-8
- Weatherford, C.A. - MB-7
- Wei, Z. - CB-3
- Wen, A.T. - MB-2
- Wertheimer, M.R. - RA-5,
RA-7
- Wevers, J. - LB-7
- Wheaton, J.H. - JA-15
- Whittaker, E.A. - NA-7
- Wicker, T. - KA-4
- Wickesberg, E.B. - FA-5,
RA-6
- Wieser, J. - LB-6
- Wilbanks, W. - PA-6
- Williams, J.S. - DB-18
- Williamson, Jr, W. - JB-4
- Winkler, D.C. - HB-4
- Winske, D. - DC-3
- Winstead, C. - HB-2
- Wolff, D. - JA-1, RB-5
- Woodsley, J.M. - DB-20
- Wouters, E.R. - LB-13
- Wouters, M.J. - JD-6
- Wroblewski, B. - LA-9,
PA-6
- Wroblewski, K. - PA-6
- Wu, C.H.J. - EB-8, JE-7,
JE-9, LA-12
- Wu, X.P. - JE-9
- Wurzberg, E. - DA-9
- Yamamoto, K. - LC-7
- Yamamoto, R.K. - RA-3
- Yaney, P.P. - DD-2
- Yang, S. - NA-4
- Ying, C.H. - BB-2, BB-3
- Yokoyama, R. - EB-5
- Yoneda, T. - DB-1
- Yoon, H.J. - DA-15
- Yoshida, M. - CA-3
- Young, A.T. - DA-10
- Young, F.F. - JE-7, JE-9
- Yousfi, M. - EB-7, JA-2
- Yu, B.W. - PA-3
- Yu, Z. - DA-2
- Zakrzewski, Z. - EA-4,
JD-2, JD-3, PA-4
- Zau, G.C.H. - EA-7
- Zethoff, M. - JE-10
- Zhang, L. - RA-6
- Zhang, X.L. - JD-1
- Zhidkov, A.G. - LA-13
- Zhou, X. - QB-4
- Zinn, R.R. - MA-4, RB-4
- Zissis, G. - JF-1

CUMULATIVE AUTHOR INDEX—Volume 38 (1993)

- Aamodt, R.E. — 2039, 2108
 Aarts, H. — 948
 Aas, T. — 1342
 Aashamar, K. — 1127
 Abbitt, John — 2259
 Abbott, D. — 935
 Abbott, S. — 1265
 Abboud, K.A. — 497
 Abdallah, J., Jr. — 2043, 2331
 Abdul-Razzaq, W. — 163
 Abdulsabirov, Ravil A. — 1760
 Abe, D. — 931
 Abe, Dave — 2119
 Abe, H. — 1899
 Abe, I. — 1316
 Abegg, R. — 1036, 1847
 Abegunarathna, S. — 1659
 Abel, C.E. — 1341
 Abel, G. — 2028
 Abel, P. — 970
 Abele, J.C. — 68
 Abeles, B. — 115, 165
 Abello, L. — 106
 Abernathy, C. — 377
 Abernathy, D.L. — 448, 799
 Abid, R. — 2232, 2305
 Abkemeier, K.M. — 814
 Abkowitz, M.A. — 110, 544
 Abokor, A.R. — 1667
 Abokor, A.Y. — 1063
 Abouelaziz, H. — 2357
 Abraham, David W. — 402
 Abraham, E.R.I. — 1168
 Abraham, M.M. — 469, 532
 Abrahams, A. — 1448
 Abrahams, E. — 330
 Abraham-Shrauner, B. — 1899, 2349
 Abrahamson, S. — 2259
 Abramian, A.K. — 1511, 1579
 Abrikosov, A.A. — 582
 Aburano, R. — 510
 Aburto, S. — 1613
 Aburto, X.S. — 1625
 Acacia, P. — 1101
 Aceto, S.C. — 2021, 2107, 2113
 Acevedo, R. — 1990
 Aceves, R. — 1615
 Achiam, Y. — 134
 Achutharaman, V.S. — 111, 520, 838
 Acioli, Paulo H. — 683
 Ackerman, G.D. — 1320, 2052
 Ackerson, J. — 1627
 Ackland, G.J. — 1578
 Aclander, C. — 1859
 Acosta, Darin E. — 917
 Acquah, J. — 1434
 Acrivos, A. — 2238, 2240, 2267
 Adair, Robert K. — 429, 972
 Adam, R. — 1063
 Adam, S.R. — 1364
 Adamas, F.P. — 1377
 Adame, Ralph — 743
 Adamic, K.J. — 422
 Adams, A. — 1685
 Adams, A.A. — 2171
 Adams, D. — 2372
 Adams, E. Dwight — 1027
 Adams, F.P. — 1377, 1388
 Adams, G.B. — 304
 Adams, G.S. — 914, 915
 Adams, James B. — 448
 Adams, J.H., Jr. — 933, 948
 Adams, Merrill — 115
 Adams, M.W.W. — 268
 Adams, P.M. — 160
 Adams, R.G. — 2045
 Adams, T.R. — 1101
 Adams, W. — 423
 Adams, W.W. — 194, 293, 408, 410, 414, 418, 421, 454, 482, 486
 Addo-Asah, W. — 966
 Adelberger, Eric — 972
 Adelman, T.L. — 382
 Adenwalla, S. — 131
 Adesida, I. — 54, 394
 Adimi, F. — 1817
 Adler, David — 467
 Adler, H. — 1905, 2031, 2037
 Adler, H.G. — 2036, 2037
 Adler, R.J. — 1401
 Adney, B.J. — 987
 Adney, J. — 1265
 Ado, Yu. M. — 986
 Adolf, D.B. — 417
 Adolphsen, C. — 1256, 1348
 Adomian, G. — 2167
 Adorno, A. — 1016
 Adourian, A.S. — 840
 Adrain, M. — 1628
 Adrian, R.J. — 2261, 2262
 Aeppli, G. — 223, 438, 439, 765
 Aeppli, Gabriel — 609
 Aeschlimann, M.A. — 1751, 1765
 Afeyan, B.B. — 1912, 1914
 Afeyan, Bedros B. — 1915
 Affatigato, M. — 735
 Affatigato, Mario — 2168
 Affleck, I. — 496
 Affleck, Ian — 496
 Afnan, Iraj B. — 1033
 Afshar-Rad, T. — 1886
 Agache, M. — 2360, 2375
 Agapov, O.A. — 1219
 Agard, D.A. — 489
 Agarwal, Vijendra K. — 1056
 Ager, J.W. — 508
 Ager, R. — 669
 Aggarwal, S.K. — 2279
 Agnolet, G. — 138
 Agosta, C.C. — 778, 826
 Agrawal, D.C. — 1615
 Agrawal, G. — 483, 659, 714
 Agrawal, V. — 985
 Agresti, D.G. — 114
 Agui, J.H. — 2262
 Aguilera-Granja, F. — 1631
 Aguirre, A. — 1841
 Ahearne, J.F. — 1981
 Ahenstroza, E. — 1303
 Aherns, L.A. — 1363
 Ahlborn, B. — 2191
 Ahle, L. — 1836, 1837
 Ahlers, G. — 469, 2266, 2267, 2305, 2306, 2317
 Ahlers, Guenter — 239, 469, 470
 Ahluwalia, D.V. — 1803
 Ahmad, I. — 1014, 1804, 1819, 1830, 1831, 1832, 1855
 Ahmed, A. Karim — 430
 Ahmed, Anwar — 2203
 Ahn, C. — 559
 Ahn, H. — 1668
 Ahn, S. — 2196
 Ahn, Saeyoung — 2000
 Ahrenkiel, P. — 374
 Ahrenkiel, R.K. — 689
 Ahrens, E.T. — 124, 439
 Ahrens, L. — 1266
 Ahrens, L.A. — 1266
 Ahrens, Thomas J. — 1486, 1561
 Ahrens, T.J. — 1486, 1494, 1580
 Aidun, Cyrus — 2206, 2222, 2290
 Aidun, J.B. — 1567, 1586
 Aiello, G.R. — 1211
 Aiello, G. Roberto — 1213
 Aiello, R. — 1200
 Aifer, E. — 179
 Ailion, D.C. — 384, 455
 Airoidi, A. — 2053
 Aitken, Martin — 197, 299
 Aizatsky, N.I. — 1316
 Aizawa, K. — 1324, 1543
 Ajimine, E.M. — 636
 Ajitanand, N.N. — 927, 1854
 Akahama, Y. — 1598
 Akai, K. — 1354, 1374, 1384, 1385
 Akasaki, Isamu — 1612
 Akashi, H. — 2352
 Akavoor, P. — 727
 Akbari, H. — 1197, 1220
 Akchurin, N. — 1197
 Akella, J. — 1569
 Akemoto, M. — 1402
 Åkerlund, C. — 729
 Akers, Lawrence — 2176
 Akhavan, R. — 2190, 2216, 2231
 Akhlaghpour, H. — 500
 Akimune, H. — 1052
 Akins, R.B. — 484
 Akis, R. — 755
 Akitsu, T. — 2340
 Akkara, J.A. — 539, 1628
 Akovali, Y.A. — 1014
 Akpati, H. — 966
 Akridge, Russell — 2176
 Aksay, Ilhan A. — 288
 Aksel, B. — 1261
 Aksevoll, K. — 2280
 Aktas, Y. — 1940
 Akulin, V.M. — 1778
 Akylas, T.R. — 2260
 Ala, T. — 1450
 Alahyari, A. — 2198
 Alarco, J.A. — 112
 Alavi, B. — 320, 779, 780
 Alavi, K. — 266, 316
 Albanesi, E. — 566
 Albano, Alfonso M. — 1638
 Alber, I. — 269
 Albergo, N. — 998, 999, 1815, 1828, 1853, 1854
 Albers, R.C. — 382, 457, 463
 Albert, M. — 676
 Alberti, S. — 1280, 1282, 1963
 Albessard, A.K. — 178
 Albridge, R. — 281, 508, 676, 735, 740, 2166
 Albridge, R.G. — 182, 474, 498, 2166
 Alcatraz Group — 1958
 Alcon, Robert R. — 1564
 Alcon, R.R. — 1498
 Alcubierre, M. — 1434
 Aldana, M. — 545
 Alde, D. — 2171
 Aldridge, S. — 190
 Alejaldre, C. — 2021
 Aleksandrov, A.V. — 1371
 Alekseev, I.S. — 1954
 Alekseev, V. — 1572, 1579
 Alekseev, V.A. — 1518
 Alerhand, O.L. — 447
 Alers, G.B. — 358, 394, 560
 Alexander, D. — 1980
 Alexander, J.M. — 1828
 Alexander, T.K. — 1805
 Alexander, W.M. — 1525
 Alexandrou, A.N. — 2239, 2282, 2303
 Alexandrov, V. — 1368
 Alexandrovich, B.M. — 2370
 Alexeff, Igor — 2003
 Aleynikov, A.N. — 2113
 Alfano, R.R. — 210, 258, 700, 1616, 1747
 Alfonso, C. — 567
 Alfonso, Dominic R. — 281, 573
 Alford, W.J. — 1715, 1721, 1767
 Alford, W.P. — 982, 1830
 Alfredsson, P. Henrik — 2207, 2221
 Algatti, M.A. — 2334
 Al-Halmoushi, F. — 1846
 Ali, N. — 818
 Ali, R. — 1089, 1102, 1163
 Aliabadi, Habibollah — 1663
 Aliaga, R. — 2088
 Ali-Arshad, S. — 2056
 Aliev, F.M. — 166, 767
 Aliev, Yu.M. — 2343
 Alikacem, N. — 86, 1022
 Alikev, V.V. — 2069
 Alimov, A.S. — 1368
 Alivisatos, A.P. — 807, 1614
 Alivisatos, A. Paul — 249
 Alivisatos, P. — 67
 Al-Jassim, M. — 374
 Alkhafaji, M.T. — 748
 Allahdadi, Firooz A. — 2193
 Allais, F. — 1925
 Allamandola, L.J. — 747
 Allan, D.C. — 674
 Allan, Doug — 1434
 Allan, Douglas C. — 687
 Allan, D.R. — 1532, 1533
 Allan, N.L. — 1582
 Allander, K.A. — 1849
 Allara, D.L. — 436, 539, 713
 Alle, D.T. — 2333
 Allen, C. — 1319
 Allen, C.K. — 1364
 Allen, Errol V. — 1762
 Allen, F.V. — 1974
 Allen, G. — 1040
 Allen, J.L. — 498
 Allen, J.W. — 274, 525, 642, 643
 Allen, L.J. — 1333
 Allen, P. — 330
 Allen, P.B. — 505
 Allen, R.E. — 335, 445, 447, 448
 Allen, Roland E. — 373
 Allen, Sean — 1745
 Allen, Shaune S. — 762
 Allen, S.J., Jr. — 233, 322, 474, 592, 704, 813
 Allen, S.L. — 1328, 1936, 2059, 2060
 Allen, S.M. — 154, 256
 Allender, D.W. — 1659
 Allendorf, Sarah W. — 1112
 Allenspach, P. — 177
 Alley, K.M. — 115
 Alley, R. — 1313, 1636
 Alley, R.K. — 1312, 1313, 1342
 Alley, W.E. — 2082
 Allik, Toomas H. — 1717
 Allison, David P. — 51
 Allison, D.P. — 118, 597
 Allison, J.E. — 262
 Allison, M.J. — 549, 1134
 Allison, P. — 1302, 1321, 1997
 Allison, Paul — 1303
 Allison, S. — 1225, 1229, 1308

- Allison, W. — 342
 Almagri, A.F. — 1978, 1979
 Almasan, C.C. — 170, 326, 749
 Almdal, K. — 604, 605, 657
 Alme, Marvin L. — 1553
 Almeras, P. — 642
 Almog, Y. — 2241, 2258
 Almoquera, L. — 2021
 Almog, Gilad — 1717
 Alonso, J. — 2021
 Alonso, J.C. — 507
 Alonso, J.R. — 1337
 Alonso, Marcelo — 2161
 Alonso, R.G. — 788, 789
 Alouani, M. — 382, 463
 Alp, E.E. — 113, 518
 Alphonso-Gibbs, John — 762
 Alrick, K.R. — 1499
 Alston, S. — 1159
 Altbir, Dora — 671
 Althofz, T. — 1818
 Altendorf, E. — 460
 Alterovitz, S.A. — 86
 Althoff, J.D. — 505
 Altick, P.H. — 1089
 Altick, P.L. — 1134, 1135
 Altman, A. — 1859
 Altobelli, S.A. — 2191, 2241
 Alton, G. — 1342
 Altshuler, B.L. — 230, 707
 Alvarez, Hidalgo R. — 121
 Alvarez, I. — 1103, 1160, 2371
 Alves, S. — 580, 1609
 Alvi, F.S. — 2202
 Alving, A.E. — 2299
 Aly, A. Abou — 743
 Alzayed, N. — 750
 Amador, C. — 1607
 Amann, J. — 942, 1684, 1818
 Amann, J.F. — 942, 1037
 Amann, Jim — 1684
 Amano, Hiroshi — 1612
 Amano, J. — 112, 1625
 Amar, A. — 138, 806
 Amar, J.G. — 380
 Amarasinghe, N. — 848
 Amato, A. — 79
 Amatucci, W.E. — 1887, 1966
 Ambegaokar, V. — 229
 Ambrazevičius, G. — 813
 Ambrose, R. — 1135
 Ambrose, V. — 1135
 Ambrose, Vinod — 1675
 Amendt, P. — 1884, 1885
 Amendt, P.A. — 1885
 Amer, N. — 84
 Amer, N.M. — 402
 Amidei, D. — 1039, 1204, 1205
 Amini, Behrouz — 1989
 Amiranoff, F. — 1218
 Amirthakumari, M. — 1551
 Amiry, A. — 1242, 1246
 Amirzadeh, J. — 125
 Amis, Eric J. — 409, 418
 Amisola, G.B. — 155, 341
 Amitay, M. — 2265
 Amman, M. — 640
 Ammosov, M.V. — 1735
 Amoretti, G. — 125
 Amorim, J. — 2335
 Amos, W. — 944
 Amouroux, J. — 2329
 Amrein, T. — 1611
 Amster, I.J. — 204
 Amundson, K.R. — 657
 Amusia, M. — 1151
 Amusia, M.Ya. — 1132
 An, T. — 1966
 Anami, S. — 1286, 1316, 1393, 1395
 Anamkath, H. — 1287
 Anantram, M.P. — 756
 Anaple, G. — 685
 Anashin, V. — 1263, 1367
 Anastasiadis, S.H. — 414
 Anbukumaran, K. — 1531
 Ancilotto, F. — 748
 Ancona, M.G. — 1440
 Andereck, Barbara — 557
 Andereck, Barbara S. — 1654
 Andereck, D. — 2316
 Anderegg, F. — 1971
 Anders, A. — 1406
 Anders, S. — 1406
 Andersen, David R. — 1746
 Andersen, D.R. — 745, 764
 Andersen, J.N. — 303, 781
 Andersen, J.U. — 522
 Andersen, K.H. — 137
 Andersen, N. — 1105
 Andersen, N.H. — 1626
 Andersen, O.K. — 305, 368, 643
 Andersen, P.M. — 527, 2173
 Andersen, Torkild — 911
 Anderson, B. — 982
 Anderson, B.D. — 982, 1034, 1841
 Anderson, C.C. — 69
 Anderson, C.E., Jr. — 1510, 1511, 1562
 Anderson, D. — 987, 1265, 1404
 Anderson, David V. — 1892
 Anderson, D.M. — 2188
 Anderson, D.T. — 2022, 2023
 Anderson, D.V. — 1436
 Anderson, E. — 1227
 Anderson, E.A. — 2313
 Anderson, E.E. — 507, 534, 829
 Anderson, F.S.B. — 2022, 2023, 2376
 Anderson, Gary T. — 1738
 Anderson, G.B. — 569, 570
 Anderson, H.M. — 2330, 2341
 Anderson, I.S. — 313
 Anderson, J. — 549, 1938
 Anderson, James H. — 602
 Anderson, J.B. — 167
 Anderson, J.D., Jr. — 2233
 Anderson, J.R. — 232
 Anderson, K. — 1317, 1320
 Anderson, L.W. — 1104, 2334, 2335, 2377
 Anderson, M.H. — 1093
 Anderson, M.U. — 1533, 1591, 1596
 Anderson, O.L. — 1502
 Anderson, P. — 244
 Anderson, P.W. — 271
 Anderson, R. — 1298
 Anderson, R.A. — 377, 843
 Anderson, R.H. — 87
 Anderson, R.J.M. — 746
 Anderson, R.O. — 274, 643
 Anderson, R.W. — 2203
 Anderson, S.A. — 1803
 Anderson, S.K. — 465
 Anderson, S.L. — 541, 2279
 Anderson, T. — 1294
 Anderson, W. — 1635
 Anderson, W.A. — 1109
 Anderson, W.S. — 1803
 Andersson, D.R. — 497, 498
 Andersson, L.R. — 1138, 1160
 Andersson, S. — 573
 Andersson, Thorvald — 1768
 Andivahis, L. — 1034, 1821
 Ando, A. — 2008
 Ando, Hiroaki — 1723
 Ando, M. — 1324
 Ando, Y. — 409, 714
 Andrady, A.L. — 602
 Andraka, B. — 80, 130
 Andraka, Th. B. — 177
 Andreadakis, M.C. — 1713
 Andreev, A.V. — 189, 523
 Andreev, V.A. — 1318
 Andreev, V.G. — 1385
 Andreev, V.V. — 1250
 Andrei, E. — 401
 Andreoni, Wanda — 440
 Andreopoulos, J. — 2262
 Andres, R. — 185
 Andres-Toro, Bonifacio — 1436
 Andrews, A.B. — 729
 Andrews, A.M. — 1724
 Andrews, C.C. — 706
 Andrews, H.R. — 1805
 Andrews, M.C. — 1218
 Andrews, W. — 1234
 Andreyev, A. — 1579
 Andriot, P. — 1491, 1499
 Androic, D. — 1818
 Androsov, V. — 1324
 Andry, P. — 540
 Anema, A. — 365
 Anerella, M. — 1290, 1291, 1341
 Anferov, V.A. — 986
 Angirasa, D. — 2198
 Angles D'Auriac, J.C. — 594
 Angot, T. — 650
 Angulo, F. — 1278
 Angulo, R.F. — 116
 Angus, J.C. — 515
 Anikumar, A.V. — 2226
 Anis, H.A. — 1732
 Anklesaria, E.M. — 1737
 Ankner, J.F. — 325, 572, 618
 Anlage, S.M. — 71, 330, 805, 838
 Annala, G. — 1207, 1269
 Annala, J. — 1252
 Anne, R. — 1339
 Annett, James F. — 88
 Anov, A.D. — 522
 Ansari, A. — 2190, 2216, 2231
 Ansart, J.P. — 1566
 Ansmann, Albert — 1776
 Antani, S.N. — 1968
 Anthony, D.G. — 2283
 Anthony, E.B. — 1088
 Anthony, J.M. — 1674, 1675, 1681, 1684, 1685
 Anthony, P. — 1034, 1821, 1826
 Anthony, T.R. — 521
 Anthouard, P. — 1301, 1302
 Antognazza, L. — 60
 Anton, G. — 1860
 Antoni, V. — 2012
 Antoniadis, J.A. — 2047
 Antoniadis, H. — 110
 Antonov, R. — 1811
 Antonsen, T., Jr. — 1282
 Antonsen, T.M., Jr. — 930, 931, 1938, 1943, 1963, 2003
 Antoun, T.H. — 1562
 Anwar, A.F.M. — 85, 177, 761, 762, 796
 Ao, P. — 170
 Ao, Ping — 240
 Aoki, H. — 178
 Aoki, K. — 1496, 1587, 1588
 Aoki, T. — 1367
 Aouidef, A. — 2315
 Apel, Walter — 137
 Apen, P. — 1915
 Apokin, V.D. — 1054
 Apollonov, V.V. — 1277, 1278
 Aponte, J.M. — 582
 Apparao, K.V.S.R. — 1662
 Appartaim, R.K. — 2045
 Applegate, J.M. — 1817
 Appleton, William — 550
 Appolonov, V.V. — 1998, 2116
 Aprahamian, A. — 1029, 1831
 Aprea, Matt — 1644
 Apruzese, J.P. — 2084
 Arabadjis, C.J. — 1035
 Arad, R. — 1895
 Aragon, B. — 2346
 Aragon, R. — 479
 Aragon, S.R. — 538
 Arai, Michio — 1714
 Arai, S. — 1338
 Arajs, S. — 534
 Arakaki, Y. — 1197
 Araki, M. — 1326, 1918
 Aramaki, E.A. — 2334
 Aranchuk, L.E. — 2122
 Aranda, F.J. — 539, 1719
 Arango, P. — 1278
 Arashi, H. — 1545
 Araujo, M. — 169
 Araya, R.A. — 969
 Arber, T. — 2090
 Arberg, Peter N. — 331
 Arbiq, G. — 1377
 Arbiq, G.M. — 1200, 1217, 1319
 Arbuzov, V. — 1397
 Arce, J.C. — 1118
 Arce, P. — 2310, 2318
 Archie, N. — 1260
 Arcioni, P. — 1329, 1374
 Ardouin, D. — 1810, 1828
 Aref, H. — 2273, 2274
 Arefi, F. — 2329
 Arellano, H.F. — 1830
 Arends, J. — 1860
 Arent, D.J. — 737
 Arestov, Yu.I. — 1054
 Arif, M. — 946
 Arima, Akito — 992
 Arinaga, M. — 1210, 1219
 Arjavalangam, G. — 367, 1716
 Arko, A.J. — 274, 275, 642, 643, 758
 Armale, R. — 2046
 Arman, M.J. — 2001
 Arman, M. Joseph — 2001
 Arman, Moe Joseph — 2002
 Armentrout, P.B. — 2361, 2371
 Arms, D. — 79
 Armstrong, C.M. — 1999, 2000
 Armstrong, D.J. — 1091
 Armstrong, D.S. — 913, 914
 Armstrong, D.W. — 2173
 Armstrong, R.W. — 1456, 1500, 1509, 1542
 Armstrong, T. — 579
 Arnal, Y. — 2328, 2332
 Arnason, S. — 559
 Arnaudon, L. — 1366
 Arnette, S.A. — 2235, 2299
 Arnold, C.B. — 2273
 Arnold, D. — 1385
 Arnold, F.E. — 411
 Arnold, G.B. — 761
 Arnold, N. — 1229
 Arnold, R. — 1034, 1821
 Arnold, W. — 1391, 1500
 Arons, J. — 2017
 Aronson, M.C. — 117, 130, 438
 Aronson, M.T. — 489
 Arovav, D.P. — 135, 176
 Arps, James H. — 2168
 Arps, J.H. — 787
 Arrale, A.M. — 1674, 1675, 1681
 Arrington, J. — 1821
 Arrington, Jeff E. — 1683

- Arroyo, C. — 1037
 Arroyo, C.G. — 985, 986
 Arsenin, Igor — 835
 Artacho, E. — 624
 Artemyev, A.I. — 1277, 1278, 2116
 Arthur, J. — 832
 Artiomov, A.S. — 1203
 Artoni, M. — 77
 Artru, X. — 1317
 Artun, M. — 2100
 Artusy, M. — 1316, 1404
 Arunasalam, V. — 2040
 Arutunian, E.B. — 265
 Arvanitidou, E.S. — 144
 Arveson, Paul T. — 2219
 Aryaeinejad, R. — 1806, 1858, 2170
 Asai, J. — 1820
 Asakawa, M. — 1838
 Asaki, T.J. — 2226
 Asakura, N. — 1918
 Asami, A. — 1316
 Asano, T. — 1510, 1520
 Asbury, C.L. — 2292
 Ascasibar, E. — 2021
 Aschenbach, B. — 1635
 Ascolese, M.R. — 935
 Ascoli, Edward P. — 2200
 Aselage, T.L. — 173, 749
 Asfaw, A. — 1152
 Ash, C.L. — 749
 Ashcroft, Neil — 284
 Ashcroft, N.W. — 601, 626
 Ashe, W.M. — 935, 1675
 Asherie, N. — 2055
 Ashery, D. — 1859
 Ashgriz, N. — 2208
 Ashizawa, H. — 1572
 Ashkenazi, J. — 638
 Ashraf, A. — 489, 546
 Ashtiani, K.A. — 2338
 Ashton, J.R. — 1288
 Ashurst, Wm T. — 2192
 Ashworth, T. — 407, 744
 Askebjerg, P. — 369
 Askenazy, S. — 327
 Askew, R. — 1895, 1940, 2004
 Aslan, N. — 2087
 Asmar, N.G. — 81, 815
 Asoka-Dumar, P. — 571
 Asoka-Kumar, P. — 82
 Asokamani, R. — 1544, 1551
 Aspnes, D.E. — 133, 452, 834
 Assang, A. — 1204
 Assdah, Amine — 670
 Asseev, A.A. — 1251
 Assink, R.A. — 1557
 Assmann, R. — 1366
 Asta, M. — 106
 Asta, Mark — 105
 Åström, J. — 1369
 Atanov, Yu.A. — 1521
 Athans, R. — 2212
 Athas, G. — 826
 Athas, G.J. — 826
 Atick, Joseph — 1462
 Atkins, E.T. — 92
 Atkins, W.H. — 1273
 Atkinson, J.B. — 1124, 1758
 Atlan, D. — 832
 Atlas, S.R. — 1438
 Atou, T. — 1513, 1568
 Atouf, A. — 1552
 Atroshenko, S. — 1486, 1540
 Atsavaprance, P. — 2222
 Attalla, A. — 313
 Attelan, S. — 2089
 Attenberger, S.E. — 2049, 2050
 Atzeni, S. — 1886, 2086
 Atzmon, M. — 207
 Au, Y. — 1021
 Auble, R.L. — 1857
 Aubrecht, G.J., II — 1658
 Aubry, N. — 2261, 2285
 Aubry, Nadine — 2196, 2267
 Audebert, P. — 1987
 Auerbach, A. — 84
 Auerbach, Assa — 304
 Auerbach, E. — 1224
 Auerbach, S.M. — 1630
 Aufderheide, M.B. — 913, 1009, 1638, 1802
 Augustyniak, E. — 2363
 Auld, E.G. — 1859
 Auray, P. — 1894, 2122
 Aurora, T.S. — 963
 Ausset, P. — 1378
 Aust, K.T. — 82
 Austin, J.C. — 740, 741
 Austin, M. — 1950
 Austin, M.E. — 2070
 Austin, R.H. — 1342
 Austin, Robert — 204
 Austin, Sam M. — 983
 Autera, J. — 1538
 Avaldi, L. — 1673
 Avci, R. — 510, 1855
 Avdonina, N.B. — 951, 1151
 Avendaño, J. — 686
 Averbukh, I. — 1367
 Averill, R. — 1212, 1261, 1295, 1296, 1368, 1405
 Averin, D.V. — 697
 Averitt, R.D. — 502
 Aversa, C. — 183, 1717
 Avery, P. — 2169
 Aves, P. — 1491
 Avignon, M. — 639
 Avnir, D. — 544
 Avouris, Ph. — 1614
 Awaji, N. — 1326
 Awaya, Y. — 2371
 Awschalom, D.D. — 132, 183, 528, 649, 765, 817
 Axe, J.D. — 252
 Aydemir, A.Y. — 1893, 1924, 1993
 Ayer, Z. — 1845
 Ayling, M.R. — 1491
 Aymon, J. — 1065
 Ayrat-Marin, R.M. — 1576
 Ayres, V. — 1895, 1940, 2004
 Ayub, S.M. — 770, 1002, 1825
 Ayvazian, H. — 1337
 Azaiez, F. — 1050, 1831
 Azbel, Mark Ya. — 239
 Azhar, A.M. — 1916
 Azhari, A. — 997, 1051, 1835
 Aziez, F. — 1049
 Aziz, Michael J. — 254
 Aziz, M.J. — 86
 Azlan, Ahmad — 1684
 Aznar, R. — 1622
 Azordegan, A. — 1669, 1675
 Azordegan, A.R. — 1669
 Azouz, I. — 2192
 Azuah, R. — 137
 Azuma, K. — 2057
 Azuma, O. — 1396
 Azuma, R.E. — 1802, 1841
 Azuma, Y. — 1092, 1125, 1149, 1150
 Azumi, M. — 1926, 2054
 Baang, S. — 2110, 2111
 Baar, D. — 60, 329
 Baar, D.J. — 189, 276
 Baartman, R. — 1347
 Baba, H. — 1384
 Babb, J.F. — 1118
 Babcock, Ken — 469
 Babenko, E. — 1217
 Babić, D. — 278, 841
 Babic, D.I. — 1741
 Babic, Dubravko I. — 1723
 Babin, A. — 2190
 Babin, F. — 2337
 Babonneau, D. — 1886, 2087
 Babu, B.R.J. — 2170
 Babu, B.R.S. — 1014, 1858
 Babu, K.S. — 1858
 Babushkin, A.N. — 1519, 1520
 Bacci, S. — 464
 Bach, B. — 935
 Bacher, A. — 1050, 1829
 Bacher, A.D. — 1052, 1830, 1845, 1846, 1847
 Bachman, D.A. — 1322
 Bachmann, K.J. — 1619
 Bachmann, K.T. — 985, 986, 1037
 Bachmor, R. — 1394
 Back, B.B. — 962
 Back, C.A. — 1915, 1934, 2043
 Back, D. — 829
 Backenstoss, G. — 1818
 Backstrom, G. — 1558
 Badano, L. — 1197
 Baddar, H. — 1042
 Badding, J. — 1598
 Baddorf, A.P. — 730
 Bader, S.D. — 164, 441, 442, 562
 Badgett, W. — 945
 Badnell, N.R. — 1156
 Badraxe, E. — 89
 Badresingh, D. — 225
 Badrinayanan, R. — 707
 Baer, M.R. — 1560
 Baetzold, R.C. — 345
 Baganoff, D. — 2233
 Bagatin, M. — 1980, 2012
 Bagdasarov, A.A. — 1954
 Baghaei, H. — 914, 915, 1830, 1846, 1847
 Baghei, H. — 1035
 Baglin, J.E.E. — 450
 Bagnato, V. — 1169
 Bagnato, V.S. — 1754
 Bagwell, P.F. — 708, 756
 Bagwell, Philip — 492
 Bahcall, J.N. — 1797
 Bahder, T.B. — 133, 473
 Bahns, J.T. — 1898
 Bahr, R. — 1935
 Bahr, R.E. — 1934
 Bahrdt, J. — 1329
 Bai, Bin — 61
 Bai, L. — 1945, 2007, 2032
 Bai, S.J. — 110, 411, 546
 Baier, T. — 1317
 Baier, V.N. — 1317
 Baierlein, Ralph — 963
 Baik, K.H. — 1301
 Bailak, George V. — 1759
 Bailey, Arthur E. — 479
 Bailey, C.E. — 791
 Bailey, D.S. — 2352
 Bailey, J. — 1140, 1266
 Bailey, J.B. — 266
 Bailey, J.E. — 2045
 Bailey, M. — 1132
 Bailey, Mike — 1444
 Bailey, M.W. — 1039
 Bailey, R. — 1228, 1365, 1366
 Bailey, W.F. — 1655
 Bailyn, Charles D. — 1046
 Baine, M. — 1994
 Baiod, R. — 986, 1293
 Bair, H.E. — 423
 Baishev, I.S. — 1267, 1317, 1404
 Baity, F.W. — 2068, 2069, 2106, 2107
 Bajaj, J. — 513
 Bajaj, K.K. — 336, 338, 400, 593, 686
 Bajard, M. — 1339
 Bajzer, Z. — 1835
 Bak, J. — 1286
 Bak, Per — 1045
 Bakaltchev, N. — 970
 Bakchinov, A.A. — 2236
 Baker, D.A. — 1981, 2083
 Baker, D.B. — 314, 626
 Baker, D.R. — 1936, 2062, 2070
 Baker, G.L. — 57
 Baker, Greg — 2283
 Baker, J.D. — 1127
 Baker, K.L. — 1912
 Baker, O.K. — 954, 1035
 Baker, R.N. — 1564
 Bakhtizin, R.Z. — 623, 624
 Bakhtizine, R.Z. — 726
 Bakshi, P. — 54, 755
 Baksht, R. — 1943
 Baktash, C. — 980, 1013, 1014, 1015, 1049, 1856, 1858, 2170
 Balachandar, S. — 2285, 2289
 Balachandran, U. — 1551
 Balakin, V.E. — 1316
 Balamuth, D.P. — 1841, 1857
 Balandin, V. — 1258, 1260
 Balantekin, A.B. — 1848
 Balasubramaniam, R. — 2287
 Balatsky, A.V. — 79, 230, 275, 330
 Balazs, Anna C. — 714
 Balázs, L. — 945
 Balbes, M.J. — 984
 Balchin, G.A. — 132
 Baldereschi, A. — 563
 Baldis, H. — 1934
 Baldin, H.A. — 1914, 1915
 Baldock, Denis — 2176
 Baldwin, A.R. — 1034, 1841
 Baldwin, S.P. — 941, 998, 1036, 1812, 1852
 Bale, D. — 2245
 Balet, B. — 1937
 Balev, O.G. — 593
 Balint, J.L. — 2270, 2302
 Baliyan, K.S. — 1156
 Balizer, E. — 481
 Balkanski, M. — 848
 Balkcum, A.J. — 2000, 2001
 Balko, B. — 1751
 Balko, B.A. — 1619
 Ball, G. — 1813
 Ball, G.C. — 1805
 Ball, M. — 987, 1197, 1245, 1257, 1265
 Ball, Mark — 1207, 1209
 Ball, Mark S. — 1358
 Ball, R. — 2188
 Ballester, J.L. — 1639
 Balleyguier, P. — 1392
 Ballone, P. — 1445
 Balogh, M.P. — 52
 Baloh, M.J. — 1042
 Balooch, M. — 735
 Balsa, Thomas F. — 2288
 Balsara, N.P. — 604
 Baltrusaitis, R. — 1215, 1303
 Baluta, G. — 1514
 Balzar, D. — 830
 Bamber, J. — 1965
 Banavar, Jayanth R. — 115
 Banavar, J.R. — 1023
 Band, A. — 1211

- Band, D. — 1638
 Band, D.L. — 1638
 Band, Y. — 1169
 Band, Y.B. — 1114, 1170
 Bandak, F.A. — 1456
 Banday, A. — 1065
 Banday, A.J. — 2165
 Bandis, C. — 676
 Bando, Y. — 247
 Bandrauk, A.D. — 1739
 Bandrauk, Andre D. — 1739, 1752
 Bandyopadhyay, A.K. — 1514
 Bane, K. — 1234, 1349, 1352, 1371
 Bane, K.L.F. — 1286, 1348
 Banerjee, Amitava — 512, 540, 1610, 1632
 Banerjee, A. — 1034, 1821
 Banerjee, S. — 2218, 2232, 2282
 Banerjee, A. — 1034
 Bang, Yunkyu — 228
 Banholzer, W.F. — 521
 Bankoff, S.G. — 2222
 Banks, A.J. — 2175
 Banks, David — 2297
 Banks, J. — 1453
 Bannister, M.E. — 1157
 Bansil, A. — 274
 Bansil, R. — 410, 418, 716
 Banyopadhyay, P.R. — 2217
 Bao, J. — 1040
 Bao, Minqi — 1124
 Bao, S. — 376
 Bao, W. — 438
 Bao, Z.X. — 151
 Baptiste, K. — 1398
 Baraff, G. — 265
 Baragiola, R.A. — 629, 740
 Barakat, F. — 680
 Barakat, M. — 944
 Baral, K.C. — 1284, 1359
 Baram, J. — 1611
 Baranov, Y. — 2055
 Baranova, N.B. — 1771
 Baranovsky, A.E. — 1301
 Baranowski, B. — 1509
 Baranowski, J.M. — 693
 Baravian, G. — 2335, 2365
 Barb, D. — 1514
 Barbara, B. — 607
 Barbe, D.F. — 697
 Barbeau, C. — 2343
 Barbee, T.W., III — 106, 1483, 1496, 1506
 Barbee, T.W., Jr. — 2044
 Barber, G.C. — 2107
 Barber, R.P. — 526
 Barberis, G.E. — 73
 Barbi, M. — 1052
 Barbiellini, B. — 1624
 Barbier, L.M. — 933
 Barbier, M. — 1317
 Barbieri, A. — 588, 627
 Barbosa, Marcia C. — 710
 Barboza-Flores, M. — 1615
 Bardayan, D.W. — 1829, 1830, 1855
 Bardfield, R.S. — 935
 Bardin, S. — 1254
 Bardin, T. — 1719
 Bardo, R.D. — 1595
 Bardsley, J.N. — 1983, 2345, 2361
 Bardy, J. — 1301, 1302
 Bares, P.-A. — 588
 Bareto, J. — 1852
 Barfield, A.F. — 1051
 Barfknecht, A.T. — 1624
 Barghouty, A.F. — 933, 1810, 1829, 1830
 Baribeau, J.-M. — 633, 678
 Barich, Joseph M. — 2356
 Barilo, S.N. — 74
 Baring, M.G. — 968, 969
 Barker, F. — 1802
 Barker, J.G. — 603
 Barker, P.H. — 1804
 Barker, R.C. — 763
 Barkhuff, D. — 1034
 Barkley, D. — 100
 Barlett, D. — 443, 619
 Barletta, W. — 1275, 1326, 1374
 Barletta, W.A. — 1270, 1366
 Barlow, D. — 1334
 Barlow, D.B. — 1220
 Barmore, B. — 1062, 1835
 Barnard, J. — 1303, 1994
 Barnard, J.J. — 1304, 1362
 Barnard, John J. — 1304
 Barner, J.B. — 688
 Barnes, A. — 508, 627, 676, 735, 740
 Barnes, A.D. — 2352
 Barnes, A.V. — 182, 281, 474, 498, 2166
 Barnes, C. — 332, 535, 755, 939
 Barnes, C.B. — 708
 Barnes, Cris W. — 2030, 2036
 Barnes, C.W. — 2110
 Barnes, D.C. — 1976, 2102
 Barnes, D.E. — 783
 Barnes, J. — 1452
 Barnes, M.J. — 1298, 1351, 1393, 1395, 1403
 Barnes, P. — 1231, 1380, 1381, 1384, 1385, 1406
 Barnes, P.A. — 566
 Barnes, P.D. — 1843
 Barnes, Ramon M. — 2369
 Barnes, R.G. — 314
 Barnes, S.E. — 821
 Barnes, T. — 496
 Barnes, Ted — 166
 Barnes, V.E. — 1037
 Barnes, W. — 920
 Barnett, D.M. — 1908
 Barnett, R.N. — 120, 1437
 Barnhill, H.H. — 2171
 Barocchi, F. — 1594
 Baron, A.Q.R. — 832
 Bar-on, E. — 1567
 Baron, R. — 1598
 Baronavskia, A.P. — 1778
 Barone, M.E. — 2375
 Baroni, S. — 181, 306, 620
 Barov, N. — 1277, 1278, 1285, 1323, 1997
 Barr, D. — 1202
 Barr, Stephen M. — 956
 Barr, W.L. — 2074
 Barranco-Luque, M. — 1301
 Barrat, J.L. — 169
 Barrera, R.G. — 217, 846
 Barreto, J. — 941
 Barreto, J.L. — 980
 Barrett, B.R. — 1051, 1822
 Barrett, S.A. — 1596
 Barrett, S.E. — 253, 277
 Barrette, J. — 1811
 Barrio, R. — 686
 Barrios, A. — 1088, 1102, 2164, 2166
 Barrios, E. — 2340
 Barron, Don — 956
 Barron, R.J. — 2067
 Barrow, S. — 926, 1811
 Barrow, S.P. — 926
 Barry, W. — 1308
 Barry, W.A. — 843
 Barsanti, M.L. — 2000
 Barsch, G.R. — 711
 Barschall, Henry — 971
 Barsotti, E., Jr. — 1345
 Barsun, H. — 2260
 Bart, S. — 944, 1859
 Bartalucci, S. — 1375
 Bartel, Timothy J. — 2241
 Bartelson, L. — 1381, 1403
 Bartelt, M.C. — 380
 Bartelt, N.C. — 342, 567
 Barth, W. — 1319
 Barticevic, Z. — 283
 Bartiromo, R. — 2109
 Bartlett, D. — 671, 2055
 Bartlett, R.J. — 642, 643, 758, 1149
 Bartoli, F.J. — 1747
 Barton, A.S. — 1140
 Barton, David V. — 1773
 Barton, J.J. — 364
 Barton, R. — 92
 Barton, S.W. — 487
 Barton, T.J. — 109, 211
 Bartosz, E. — 1037
 Barts, T. — 1353
 Bartsch, R.R. — 2048
 Bartschat, K. — 1101, 1104, 1105, 1136, 2334
 Bartynski, R.A. — 280, 287, 403
 Bar-Yam, Y. — 390, 514, 539
 Barzykin, V. — 765
 Basaran, O.A. — 2201, 2216
 Bashlov, N. — 2355
 Bashmakov, Yu.A. — 1250, 1259
 Basken, J. — 2007
 Baskey, J.H. — 814
 Basmaji, P. — 1754
 Basner, R. — 2369
 Basov, D.N. — 680
 Bass, C.R. — 2205
 Bass, J. — 534, 671, 734, 784
 Bass, J.M. — 82
 Bass, M. — 467
 Bassalleck, B. — 1843
 Bassani, J. — 269
 Bassat, J.M. — 124, 125
 Bassereau, P. — 421, 482
 Bassett, W. — 1525
 Bassett, W.A. — 1489, 1527, 1574
 Bassetti, M. — 1368
 Bassler, K.E. — 601
 Bassom, A.P. — 2233
 Bastasz, R. — 287
 Basten, M. — 1939
 Basten, M.A. — 1938, 1939, 2002
 Bastian, M.J. — 1088
 Bastide, J. — 724
 Basu, B. — 1944, 2115
 Batalla, E. — 692
 Batchelder, J.C. — 998, 1808, 1844, 1857
 Batchelor, D.B. — 1907, 2033, 2034, 2049, 2105, 2106, 2107, 2122
 Batchelor, K. — 1220, 1311
 Batcho, P.F. — 2194
 Batelaan, H. — 1141, 1155
 Bateman, F.B. — 1051
 Bateman, G. — 1919, 2078, 2125
 Bateman, Glenn — 2038
 Bateman, N. — 982, 983, 1841
 Bates, F.S. — 90, 91, 604, 605, 657
 Batha, S. — 2038, 2093
 Batha, S.H. — 1906, 1913, 2037, 2038
 Batishchev, O. — 1278
 Batishev, O.V. — 2051
 Batillo, F. — 1608
 Batlogg, B. — 212, 222, 496
 Baton, S.D. — 1912
 Batrouni, G. — 526
 Batrouni, George — 1450
 Batskich, G. — 1284
 Batskikh, G.I. — 1385
 Batson, P.E. — 678
 Battle, Mark O. — 1017
 Batuski, D.J. — 1646
 Batygin, Y. — 1235
 Baublitz, M. — 1002
 Baudat, P.A. — 182
 Bauer, B. — 1935
 Bauer, B.S. — 1912
 Bauer, E.T. — 1812
 Bauer, F. — 1484, 1527, 1528
 Bauer, G. — 179
 Bauer, Gregory H. — 138
 Bauer, J. — 913, 914
 Bauer, Thomas L. — 1675, 1676
 Bauer, Th. S. — 1817
 Bauer, W. — 940, 962, 1795, 1807, 1810, 1815, 1848, 1853
 Bauge, E. — 927, 1854
 Baugh, Delroy A. — 1753
 Baughman, R.L. — 220
 Baum, E.M. — 1832
 Baum, H.R. — 2240
 Bauman, R.P. — 1134
 Baumann, F.H. — 776
 Baumberg, J.J. — 649, 817
 Baumgärtel, G. — 225
 Baumgarten, L. — 831
 Baumung, K. — 1483, 1512, 1539
 Bautista, Manuel — 1128
 Bavizhev, M.D. — 1405
 Bawendi, M.G. — 548, 550, 573
 Bawendi, Mounqi — 301
 Baxter, A.M. — 1819
 Baxter, D.V. — 129
 Baxter, G.W. — 667
 Bayfield, James E. — 936
 Bayfield, J.E. — 1108, 1109
 Bai, Hu — 1567
 Bayless, J.R. — 2360
 Bayless, W.R. — 1625
 Bayley, J.M. — 2087
 Baylis, W.E. — 1161
 Bayliss, A. — 2227
 Baylor, L. — 2055
 Baylor, L.R. — 2020, 2057, 2065
 Bayly, B.J. — 2265, 2274, 2310
 Bayot, V. — 471
 Bazant, M.Z. — 2310
 Bazarko, A.O. — 985, 986, 1037
 Bazin, D. — 1842
 Bazylev, V.A. — 1276
 Bazylnski, D.A. — 317
 Bazzani, A. — 1249
 Be, S.H. — 1260
 Beadie, G. — 1718
 Beahm, L.P. — 933
 Beale, Paul D. — 529
 Beall, J.A. — 172
 Beall, James A. — 840
 Beals, D. — 1976
 Beamish, J.R. — 166, 386
 Beard, B.C. — 535
 Beard, K.B. — 984, 1034
 Bearden, I. — 1819
 Bearden, I.G. — 1014, 1049, 1819, 1832
 Bearzatto, C. — 1395
 Beasley, M.R. — 276, 330, 520, 559, 583, 636, 640, 694
 Beatty, D.P. — 1817
 Beaucage, G. — 142
 Beauchamp, K.M. — 693
 Beaudan, P. — 2281
 Beaudet, Yvon — 218
 Beaudoin, Y. — 1988, 2079
 Beaufait, J. — 1317

- Beaujean, R. — 948
 Beaulieu, L. — 1813
 Beausang, C. — 1831
 Beausang, C.W. — 981, 1049
 Beavis, D. — 1828, 1843
 Beazley, D. — 795
 Becchetti, F.D. — 1842
 Bechhoefer, John — 118, 402
 Bechtold, J. — 347
 Beck, B.R. — 1969, 1973
 Beck, D. — 1035
 Beck, Donald R. — 1097, 1126
 Beck, E. — 1817
 Beck, F. — 981
 Beck, J. — 1817
 Beck, K.M. — 1629
 Beck, Rainer D. — 786
 Beck, Tom — 203
 Becke, A.D. — 493
 Becker, J.A. — 1013, 1049, 1050, 1806, 1831, 1832
 Becker, K. — 1104, 1117, 2332, 2369
 Becker, R.S. — 148
 Becker-Szendy, R. — 1021
 Beckert, K. — 1336
 Beckmann, Peter A. — 1638
 Beckstead, J.A. — 2113
 Bedell, K. — 638
 Bedell, K.S. — 333, 439
 Bederson, Benjamin — 972
 Bednar, R. — 224
 Bednarczyk, C. — 487
 Bednarzyk, P.J. — 830
 Bedoch, J.P. — 1599
 Bedrossian, Peter — 509
 Beebe, Thomas P., Jr. — 51
 Beebe, T.P. — 598
 Beebe, T.P., Jr. — 535
 Beechy, D. — 1200
 Beedoe, S. — 1035, 1815
 Beekakker, Carlo — 492
 Beekakker, C.W.J. — 136
 Beene, J. — 1829, 1846
 Beene, J.R. — 1051, 1857
 Beer, H. — 1802
 Beer, M. — 2014
 Beer, M.A. — 2101
 Beetz, C.P. — 59
 Beg, F.N. — 2079
 Begelow, T.S. — 2107
 Begleiter, B. — 739
 Behl, D. — 2330, 2341
 Behler, S. — 1606
 Behr, J.A. — 997
 Behringer, E.R. — 497, 498
 Behringer, R.P. — 1007, 2191, 2240, 2306, 2307
 Behrman, E.C. — 513, 579
 Behrsing, G. — 1237
 Beichl, I. — 541
 Beideck, D.J. — 1152
 Beider, Clain — 1766
 Beierdorfer, P. — 2040
 Beiersdorfer, P. — 935, 951, 1124, 1152, 1157, 2040
 Beigelzimer, Ya. — 1517, 1578
 Beigman, I.L. — 1089
 Beise, E.J. — 1816
 Bekiranov, S. — 545
 Bekker, T. — 1895, 1940, 2004
 Belak, J. — 574, 1524
 Belak, James F. — 721
 Belanger, D.P. — 608
 Belbot, M. — 1841, 1842
 Belcinski, R. — 918
 Belder, G.F. — 486
 Belenky, G.L. — 633
 Belgya, T. — 1832
 Belikov, N.I. — 1054
 Belitz, D. — 134, 693
 Belkacem, A. — 1102, 1126, 1170, 1265
 Belkhir, Lotfi — 236, 279
 Bell, A.R. — 1916, 2041, 2079
 Bell, David E. — 2089
 Bell, D.E. — 1896, 2090
 Bell, E.W. — 1157
 Bell, G.L. — 2106
 Bell, I. — 1123
 Bell, J.B. — 2201
 Bell, J.D. — 2020
 Bell, L.D. — 402
 Bell, M. — 1948, 2032, 2034
 Bell, M.G. — 1905, 1906, 1907, 2032, 2033, 2036, 2037
 Bell, P.M. — 332
 Bell, R. — 2092, 2094, 2095, 2121
 Bell, R.A. — 1366, 1388
 Bell, R.E. — 2092
 Bellan, P.M. — 1889, 1895, 2007, 2057, 2114
 Bellanca, M.J. — 1155
 Bellermann, M. — 1097
 Bellinger, M. — 92
 Bellini, T.G. — 820
 Bellissard, J. — 584
 Bello, A. — 545, 741, 829
 Bellomo, G. — 1374, 1386
 Belloni, F. — 1374
 Bellorin, A. — 582
 Belmonte, A. — 2210
 Belogortsev, Andrey B. — 812
 Belomestnykh, S. — 1365, 1367, 1397
 Beloshenko, V.A. — 1543
 Beloshitsky, P. — 1368
 Belostotsky, S. — 1036
 Belov, V.P. — 1270, 1336
 Belova, N.G. — 1200, 1359
 Belugin, V.M. — 1385
 Belyakov, M.Y. — 1006
 Bemes, M. — 1342
 Bemis, C.E. — 2170
 Ben, S. — 949
 Benage, J.F., Jr. — 2112
 Benamotz, D. — 1582
 Bénard, P. — 124
 Benaroya, R. — 1261
 Benattar, R. — 2125
 Benavidez, J. — 1972
 Benck, E.C. — 935, 946, 1674, 1674, 1675, 1677
 Benczer-Koller, N. — 1048, 1831, 1844
 Bendeliani, N.A. — 1560, 1566
 Bender, S.C. — 1311
 Benedek, R. — 63, 309, 581
 Benedict, B.H. — 1818
 Benedict, U. — 1513, 1570
 Benek, Jack — 1459
 Benekek, R. — 64
 Benenson, W. — 1842
 Benes, S. — 1229
 Benesch, J.F. — 1375, 1383
 Benesh, Charles J. — 983
 Benesh, C.J. — 1017, 1823
 Benesh, G.A. — 66
 Bengé, R.D. — 1678
 Bengston, Roger D. — 1951
 Bengtson, R.D. — 1953
 Bengtson, Roger D. — 1948, 1950, 1951, 1952, 1953
 Bengtsson, J. — 1208, 1285, 1325, 1346
 Bengtsson, R. — 1014
 Benhadid, H. — 2187
 Benicewicz, B. — 348
 Benitez, E.L. — 108, 467
 Benitez, J. — 112
 Ben-Itzhak, I. — 1088, 1104
 Ben-Jacob, E. — 230
 Benjamin, N.M.P. — 2356, 2357
 Benjamin, R. — 2208
 Benke, T. — 1334
 Benmerrouche, N. — 1801
 Bannahmias, M. — 73
 Bannahmias, M.J. — 829
 Bennemann, K.H. — 225
 Benner, R. — 501, 502
 Benner, R.E. — 57
 Bennett, B. — 314
 Bennett, B.L. — 190
 Bennett, C. — 920
 Bennett, Charles H. — 491
 Bennett, C.L. — 1065
 Bennett, E.J. — 1655
 Bennett, G. — 1369
 Bennett, G.R. — 2082
 Bennett, J.R. — 1848
 Bennett, J.W. — 526
 Bennett, K. — 948, 989
 Bennett, L. — 2045
 Bennett, L.F. — 1200
 Bennett, L.H. — 125, 161, 816
 Bennett, L.S. — 1504
 Bennett, M. — 1265, 1810, 1837, 1843
 Bennett, P. — 1227
 Bennhold, C. — 915, 1859
 Bensimon, D. — 553
 Benson, A.K. — 2167
 Benson, D.J. — 1545, 1546
 Benson, J. — 2360
 Benson, S. — 1365
 Bentley, M. — 1095
 Bentley, M.A. — 981, 1049
 Benton, D.P. — 926
 Benvenuti, A.C. — 1641
 Benvenuti, C. — 1376
 Ben-Yeoshua, M. — 2284
 Benz, S.P. — 753
 Benz, W. — 1442
 Benza, V.G. — 644
 Benziger, J.B. — 1850
 Ben-Zvi, I. — 1220, 1234, 1311, 1326, 1330, 1341, 1378
 Berakdar, J. — 1148
 Berard, M. — 142
 Beratan, D.N. — 268
 Beraud, R. — 1831
 Berdichevsky, V. — 2312
 Berdoz, A. — 1836
 Berdoz, A.R. — 1036, 1847
 Berend, K. — 421
 Berenyi, D. — 1160
 Beretvas, A. — 1037
 Berezin, Alexander A. — 155, 792, 1003
 Berg, G. — 1829
 Berg, G.P. — 810, 1846
 Berg, G.P.A. — 1052
 Berg, J.S. — 1249
 Berg, R. — 480, 1005
 Berg, R.F. — 1006
 Berg, W. — 1287
 Berge, Lars I. — 470
 Bergeman, T. — 1154, 1155
 Bergeon, A. — 2187
 Berger, B.K. — 1450
 Berger, H. — 517, 642, 931
 Berger, L.L. — 489
 Berger, R.L. — 1914, 1915, 1934, 1935, 2012
 Bergersen, B. — 848
 Berggren, R.R. — 2083, 2124
 Bergink, M. — 1629
 Bergmann, G. — 176, 537
 Bergmann, K. — 1114
 Bergmann, M.J. — 812
 Bergmann, U. — 1201
 Bergquist, J.C. — 1140, 1142, 1145
 Bergstrom, J.C. — 915
 Bergstrom, P.M., Jr. — 1151, 1158
 Berhes, M. — 2260
 Berk, H.L. — 1944, 1947
 Berk, N.F. — 313, 325, 840
 Berker, A.N. — 601
 Berkooz, Gal — 2197
 Berkovic, Garry — 1778
 Berkovich, E. — 1004
 Berkovich, S. — 1004, 1436
 Berkowitz, S.J. — 172
 Berland, T. — 542
 Berliner, R. — 307
 Berlinsky, A.J. — 71
 Berlinsky, J. — 765
 Berman, Barry — 921
 Berman, B.L. — 1820
 Berman, L. — 365
 Berman, R. — 1094
 Berman, Richard — 1759
 Bermond, J.M. — 567
 Bermudez, V.M. — 675
 Bernabei, S. — 2049, 2091, 2092, 2093, 2094
 Bernal, L.P. — 2188, 2302
 Bernal, O.O. — 178
 Bernard, D. — 1218
 Bernard, J. — 1303
 Bernard, James E. — 233
 Bernard, M. — 1302
 Bernard, P. — 1376
 Bernard, P.S. — 2231, 2262
 Bernardini, M. — 1260
 Bernasconi, M. — 219
 Bernath, P.F. — 1727
 Bernazzani, P. — 145
 Bernes, A. — 421, 487, 603
 Bernhardt, P.A. — 1968
 Bernheim, R.A. — 1745
 Bernholm, J. — 52, 89, 309, 338, 440, 444, 622, 1620
 Bernier, P. — 1622
 Bernoff, Andrew J. — 2279, 2312
 Berns, H. — 396
 Bernstein, L.A. — 980, 1015, 1050, 1831
 Bernstein, R.H. — 985, 986, 1037
 Bero, C. — 487
 Beroud, Y. — 1375
 Berrah, N. — 1149
 Berrah-Mansour, N. — 1092
 Berrier-Ronsin, G. — 1860
 Berry, Guy C. — 191
 Berry, H.G. — 1120, 1125, 1139, 1140
 Berry, H. Gordon — 1758
 Berry, L.A. — 2122
 Berry, M.J. — 706, 840
 Berry, S.D. — 785
 Berry, Steve — 203
 Berryman, J.W. — 1171
 Berryman, Steven — 1661
 Bers, A. — 1908, 2108
 Bershatsky, P. — 1999
 Berthold, G. — 400
 Bertness, K. — 788, 789
 Bertness, K.A. — 737
 Bertozzi, Andrea — 2223
 Bertozzi, W. — 1034
 Bertram, L.A. — 2280
 Bertram, U.C. — 444
 Bertrand, F. — 1829, 1846

- Bertrand, F.E. — 1051
 Bertrand, P. — 1339
 Bertsch, D.L. — 988, 989, 1635
 Bertsch, George — 222, 440
 Bertsch, G.F. — 1847
 Bertsche, K.J. — 1335
 Bertulani, C.A. — 1639
 Berven, C. — 842
 Berz, M. — 1241, 1248, 1297
 Bespalov, P.A. — 2019
 Bessis, D. — 1159
 Besson, J.M. — 1530, 1533, 1583
 Betarbet, S.R. — 578
 Bethe, H. — 2017
 Bethe, H.A. — 2096
 Bethe, Hans — 924, 973
 Bethel, S.Z. — 1342
 Bethke, S. — 1203
 Bethune, D.S. — 152
 Betker, A.C. — 982
 Bettenhausen, M. — 1887
 Bettenhausen, Mike — 2105
 Betti, R. — 1914, 1946, 1962, 2118
 Betts, R. — 926
 Betts, R.R. — 926, 1808, 1845
 Betzig, E. — 806
 Beulertz, W. — 1860
 Beuthe, T.G. — 2329
 Bevan, J.W. — 2379
 Bewley, T. — 2197
 Bex, L. — 1339
 Beyermann, W.P. — 357
 Beylkin, Gregory — 1458
 Beysens, D. — 343
 BGO Group — 1844
 Bhagat, S.M. — 326, 805, 838, 839
 Bhagavatula, R. — 645, 752
 Bhagwagar, D.E. — 143
 Bhagwat, A.M. — 2342
 Bhalla, C.P. — 1089, 1102, 1129
 Bhandari, R. — 1254
 Bharadwaj, V. — 1206, 1219, 1269
 Bharucha, C. — 1121, 1777
 Bhasin, K.B. — 689
 Bhaskar, N.D. — 1120
 Bhat, C.M. — 1197, 1255, 1375, 1397
 Bhat, P.N. — 1638
 Bhat, R. — 132, 317, 452, 1713
 Bhat, T.R.S. — 2195
 Bhatia, A.K. — 1153, 1156, 1158
 Bhatnagar, V. — 2055, 2107
 Bhatt, Amit R. — 55
 Bhatt, A.R. — 269
 Bhatt, R.N. — 397, 476, 661
 Bhattacharjee, A. — 931
 Bhattacharya, Aniket — 167
 Bhattacharya, P.K. — 813
 Bhattacharya, S. — 212, 227, 383, 387, 636
 Bhawalkar, J.D. — 1686
 Bi, W.G. — 1743
 Biagini, M. — 1368
 Bialek, J. — 2050, 2096
 Bialynicki-Birula, I. — 962, 1062
 Bianchi, C. — 1383
 Bibette, J. — 47, 405, 435
 Bickham, S.R. — 521
 Bickley, M. — 1222
 Bidaux, E. — 2268
 Biedermann, C. — 1160
 Biefeld, Robert M. — 736
 Biegelsen, David K. — 677
 Biegelsen, D.K. — 1606
 Bieniek, R.J. — 1123
 Bieniosek, F. — 1317, 1320
 Bierbaum, V.M. — 1088
 Bieri, R. — 1305
 Bieser, F. — 998, 999, 1815, 1828, 1853, 1854
 Bieth, C. — 1339
 Biewer, T. — 1964
 Bigelow, J.M. — 54, 762
 Bigelow, N. — 1169
 Bigelow, N.P. — 1122, 1736, 1764, 1777
 Bigelow, R.A. — 1449
 Bigelow, T.S. — 2033, 2069, 2106
 Biglari, H. — 2034
 Biham, Ofer — 428, 799, 800
 Bijleveld, J. — 1212
 Bijlsma, M. — 1111
 Bilal, B.A. — 1509
 Bilalbegović, G. — 219, 260, 261
 Bilderback, D.H. — 518
 Bilic, D. — 990
 Billan, J. — 1236
 Billen, J. — 1334
 Billen, J.H. — 1375
 Biller, E.Z. — 1316
 Billesbach, D.P. — 407
 Billing, M. — 1317
 Billinge, S.J.L. — 388, 389
 Billowes, J. — 1029
 Billquist, P. — 1333
 Bilodeau, François — 1737
 Bilpuch, E.G. — 913, 1803, 1804, 2171
 Bimberg, D. — 531
 Bina, C. — 2276
 Binder, R. — 1753, 2120
 Binderbauer, Michl — 1976
 Bindra, K. — 1014, 1049
 Bindslev, H. — 2039
 Bing, Wu — 1331
 Binga, Tonya D. — 602
 Binggeli, N. — 674
 Binggeli, Nadia — 372
 Bingham, C. — 946
 Bingham, C.R. — 1818, 1819
 Bingham, R. — 1903, 1968, 2017, 2018, 2020, 2115
 Binns, W.R. — 949, 999, 1061
 Birch, Peggy — 1019
 Birch, W.R. — 652
 Birchall, J. — 1036, 1836, 1847
 Bird, D. — 1021
 Bird, G.A. — 2234, 2256
 Birdsall, C.K. — 1893, 2353
 Birge, Norman O. — 394, 743
 Birgeneau, R.J. — 124, 799, 818
 Biringen, S. — 2235, 2254, 2311
 Birman, Joseph L. — 77
 Birmingham, J.T. — 1618
 Birnbaum, I. — 1216
 Birnbaum, I.A. — 1311
 Birnbaum, Milton — 1717
 Birnir, B. — 646
 Biscari, C. — 1368
 Biscarini, F. — 598
 Bisenberger, M. — 1064
 Bisgaard, S. — 2340
 Bish, Eric S. — 2269
 Bishop, A. — 389
 Bishop, Alan R. — 837, 1447
 Bishop, A.R. — 53, 153, 158, 210, 258, 392, 460, 528, 584, 648
 Bishop, D. — 1393, 1395
 Bishop, D.J. — 520, 579, 692
 Bishop, G.G. — 794
 Bishop, Ken — 2224
 Bishop, Marilyn F. — 594, 696
 Bishop, S.G. — 531
 Biskamp, D. — 2121
 Bisoffi, G. — 1336
 Bisognano, J. — 1299, 1365
 Bisognano, J.J. — 1213, 1242, 1357, 1372
 Bisson, S.E. — 1767
 Bissuel, F. — 1592
 Bist, H.D. — 1615
 Bistirlich, J.A. — 942
 Bistransin, M. — 1096, 1672
 Biswas, A. — 92
 Biswas, D. — 133
 Biswas, R. — 372, 569, 629
 Bitsanis, I. — 193, 714, 1631
 Bitter, M. — 2040
 Bitto, H. — 1628
 Bitz, C.M. — 86, 385, 536, 819
 Bixio, A. — 1389
 Bizau, J.M. — 1139
 Bizek, H. — 1324
 Blachly, M.A. — 649
 Black, J.E. — 66, 308
 Black, J.F. — 1760
 Black, R.C. — 691
 Black, T.C. — 1845
 Blackburn, F.R. — 481, 742
 Blackely, J.M. — 567
 Blackman, J.A. — 82
 Blackmon, J.C. — 1845
 Blackson, J.H. — 425
 Blackstead, H.A. — 240, 387
 Blackstock, David T. — 1670
 Blackwelder, R. — 2251
 Blackwell, D.D. — 1897
 Blackwell, J. — 194
 Blagoev, K. — 755
 Blair, R.E. — 1037
 Blaisdell, G.A. — 2231
 Blaisten-Barojas, E. — 970, 1065
 Blake, D. — 747
 Blake, J.B. — 948
 Blake, J.R. — 2194
 Blakely, J.M. — 567
 Blaker, G. — 1401
 Blamire, Mark — 690
 Blancá Y. — 270
 Blanc-Benon, Ph. — 2260
 Blanchard, J. — 1900
 Blanchard, S. — 1816, 1817
 Blanchet, Graciela B. — 141, 669
 Bland, L.C. — 982, 1035, 1052, 1846
 Blank, M. — 2002
 Blank, V.D. — 1559, 1574
 Blann, M. — 1826
 Blanpied, G. — 1860
 Blanton, S.H. — 691
 Blasche, K. — 1373
 Blaskiewicz, M. — 1347
 Blatchley, Charles C. — 1646
 Blatt, R. — 1122
 Blatter, G. — 388
 Blayo, N. — 2327
 Bleaney, Brebis — 610
 Blechschmidt, J. — 575
 Bleeker, A. — 394
 Bleser, E. — 1266
 Bleser, E.J. — 1266, 1363
 Bless, S.J. — 1500, 1555
 Bletzinger, P. — 2347, 2367
 Blewett, John P. — 1308
 Blezius, J. — 2341
 Blind, B. — 1235
 Blinder, S.M. — 950
 Blinov, A.V. — 2018
 Bliss, D.W. — 1341
 Bliss, M. — 577, 578
 Bloch, C. — 1847
 Blochl, P.E. — 493
 Blockus, D. — 1203
 Blodgett-Ford, S.J. — 1091
 Bloeman, P.J.J. — 443
 Bloemen, H. — 989
 Bloemer, M.J. — 1723
 Bloëss, D. — 1376
 Blondel, A. — 1366
 Bloom, D. — 991
 Bloom, E.D. — 1316
 Bloom, S.D. — 913, 1802, 1822
 Bloomer, M.A. — 1833
 Bloomfield, L.A. — 2157
 Bloss, W.L. — 705
 Bludau, H. — 794
 Blue, C.T. — 260, 637
 Blum, H. — 1234
 Bluhm, R. — 1131
 Blum, E. — 1330
 Blum, E.B. — 1207, 1210
 Blum, K.I. — 448, 799, 818
 Blumberg, L. — 1361
 Blümel, R. — 1109
 Blush, L. — 1920, 2095
 Bluth, E.I. — 2292
 Blyth, R.I.R. — 642, 643, 758
 Blythe, P.A. — 2291
 Bo, Liu — 1331
 Boal, D. — 848
 Boatner, L.A. — 113, 280, 406, 532
 Boberg, P.R. — 933, 948
 Bobin, J.L. — 1322
 Bobkowski, R. — 1124
 Bobylev, V. — 1339
 Bobyleva, L. — 1368
 Bobys, M.P. — 2001
 Bocher, J.L. — 1886, 2087, 2125
 Bock, A. — 228, 1860
 Bock, R. — 804
 Bock, W.J. — 1530
 Boćkowski, M. — 1504, 1576
 Bockquillon, G. — 1527
 Bodansky, David — 666
 Bodart, J.R. — 2173
 Bode, M. — 737
 Bodegom, Erik — 645
 Bodek, A. — 985, 986, 1034, 1037, 1821
 Bödeker, P. — 618
 Boden, A. — 1368
 Bodenschatz, E. — 471, 668
 Bodner, S.E. — 2085
 Boebinger, G. — 826
 Boebinger, G.S. — 180, 223, 439
 Boedo, J. — 2058
 Boedo, J.A. — 2008
 Boehler, R. — 1477, 1488, 1532
 Boehly, T.R. — 2085
 Boehm, F. — 1798, 1854
 Boehme, R.F. — 241
 Boehmer, H. — 1973
 Boekema, C. — 569, 580
 Böer, K.W. — 513, 834
 Boercker, D.B. — 574
 Boerookhuizen, H. — 1201
 Boers, J.E. — 1251, 2048
 Boesten, H.M.J.M. — 1169
 Boesten, L. — 1099, 2348, 2369
 Boettcher, Christopher — 1012
 Boettinger, W.J. — 2295
 Boeuf, J. — 1315
 Boeuf, J.P. — 2349, 2358
 Boffard, John B. — 2334
 Boffi, Alberto — 267
 Bogachek, E.N. — 538
 Bogacz, S.A. — 1236, 1276, 1346
 Bogard, D.G. — 2217
 Bogatov, N. — 1291
 Bogaty, J.M. — 1333
 Bogdanov, A.L. — 129
 Bogdanovich, Snezana — 237
 Böge, M. — 1259
 Bogenberger, B. — 129

- Bogert, V.D. — 1268
 Boggavarapu, D. — 77
 Boggess, Thomas F. — 763, 764
 Boghosian, Bruce — 1045
 Bogicevic, C. — 1527
 Bogue, R. — 1457
 Boguslawski, P. — 622, 1620
 Bohanon, T.M. — 435
 Bohl, D.G. — 2246
 Bohl, T. — 1365
 Böhm, G. — 400
 Böhm, Markus — 595
 Bohn, C. — 1377
 Bohn, C.L. — 1334, 1365
 Bohn, R. — 375
 Bohn, R.G. — 507
 Bohnet, M.A. — 2112
 Bohr, J. — 323, 453
 Böhringer, M. — 157, 623
 Boikov, Yu. — 112
 Boily, S. — 2335
 Boissé, P. — 2079
 Boiteux, J.P. — 1213
 Boivin, M. — 1036
 Boivin, R. — 2039
 Boivin, R.L. — 1956
 Bojko, R. — 466, 752
 Bokor, Jeffrey — 1750
 Boland, John J. — 570
 Boldt, E. — 919
 Boley, M.S. — 374, 507, 1503, 1551, 1589
 Bolink, H. — 482
 Boliva, J. — 782
 Bolland, T.K. — 1658
 Bollens, R. — 1968, 2015
 Boller, J.R. — 2046
 Bollinger, J.J. — 1121, 1140, 1972, 1984
 Bollinger, L.M. — 1333
 Bolme, G.O. — 1273, 1318
 Bolton, P.R. — 1146
 Bolton, S.R. — 398, 765, 1742, 1744
 Bolton, T. — 985, 986, 1037
 Bombarda, F. — 1956
 Bommannavar, A.S. — 164
 Bonasera, A. — 1016
 Bonatsos, Dennis — 1615, 1628, 1629, 1639
 Bonavito, K.F. — 1064
 Bonavito, N.L. — 1064
 Bonča, J. — 758
 Bonche, P. — 1793
 Bond, C.L. — 2201, 2202
 Bond, Daniel A. — 507
 Bondar, M. — 1563
 Bondarev, B.I. — 1323, 1339
 Bondeson, A. — 2013
 Bondeson, Anders — 1943
 Bonesteel, N. — 659
 Bonesteel, N.E. — 329
 Bonetto, C. — 750
 Bonetto, F. — 2284
 Bonham, R.A. — 2358, 2365
 Boni, R. — 1287, 1375
 Bonifacio, R. — 1326
 Bonilla, L.L. — 812
 Bonin, K. — 2163
 Bonin, K.D. — 1125, 1153
 Boninsegni, M. — 166
 Bonitz, M. — 2120
 Bonn, D. — 297, 329
 Bonn, D.A. — 71, 189, 805
 Bonn, Jochen — 1044
 Bonnafond, C. — 1200, 1301, 1302
 Bonnaud, G. — 1987
 Bonnell, Dawn A. — 280
 Bonnet, J.E. — 728
 Bonnet, J.P. — 2247
 Bonnini, X. — 1891, 1892
 Bonoli, P. — 2068, 2107, 2108
 Bonoli, P.T. — 1958, 2049, 2108
 Bontuyan, Lizla S. — 1756
 Bonvin, E. — 1850
 Booi, P.A.A. — 753
 Bookout, B.D. — 517
 Boolchand, P. — 113, 461, 637, 685, 1551
 Boone, T. — 569
 Booske, J.H. — 1901, 1938, 1939, 2376
 Booth, C. — 461
 Booth, J.C. — 71
 Booth, J.P. — 2333, 2377
 Booth, M.F. — 276
 Booth, R. — 1986, 1987, 2082, 2117
 Boozer, A.H. — 1891
 Boozer, David — 1908
 Boppart, S.A. — 318
 Borba, D. — 1927
 Borcharding, F. — 985, 986, 1037
 Borchers, J. — 672
 Borchers, J.A. — 618, 785
 Borchers, Julie A. — 618
 Bordeleau, S. — 2343
 Bordoley, M. — 1211, 1224
 Bordry, F. — 1365, 1366
 Bordua, M. — 1265
 Borensztein, Y. — 728
 Borer, J. — 1220
 Borggreen, J. — 221
 Borhan, A. — 2301, 2309
 Borimsky, A.I. — 1514
 Boring, A.M. — 106, 742
 Borione, A. — 1020
 Boris, J.P. — 1460, 1524, 2189, 2205, 2221, 2233, 2271
 Boriskin, V.N. — 1316
 Borisov, N.S. — 1054
 Bork, R. — 1223, 1227
 Borkowski, L.S. — 524
 Borland, M. — 1249, 1312, 1367
 Borland, N.P. — 633
 Bormet, J. — 218
 Bornemann, Hans J. — 462
 Borodin, V.M. — 1110
 Borowik, P. — 1517
 Borrás, C. — 2109
 Borsa, F. — 262, 626
 Bortner, L.J. — 837
 Bortolotti, A. — 2091
 Borue, V. — 2259
 Borysow, J. — 2363
 Borysow, Jacek — 2337
 Bos, N.M. — 178
 Bosch, Robert A. — 1349
 Bose, F. — 2366
 Bose, S.K. — 799
 Bose, S.M. — 524
 Boshier, M.G. — 1166
 Boslough, M.B. — 1518, 1541, 1553, 1557, 1563
 Bosnar, D. — 1818
 Bosnyak, Clive P. — 291
 Bossert, R. — 1290
 Bossingham, R. — 942, 1170, 1265
 Bossy, H. — 942
 Bosted, P. — 1034, 1035, 1821
 Boswell, R.W. — 2327, 2332, 2333, 2340, 2341, 2349
 Boteler, J.M. — 1588
 Botelho, S. — 1819
 Botero, J. — 1158
 Botet, R. — 62
 Botija, J. — 2021
 Botkin, C. — 1762
 Botkin, D. — 398, 765
 Botman, J. — 1274, 1296, 1299, 1352, 1364, 1368, 1369, 1389
 Botseas, G. — 1644
 Bott, Michael — 341
 Bottaro, A. — 2237, 2250
 Bottcher, C. — 1091, 1153, 1438
 Botting, T. — 1813
 Bottomley, D.J. — 1775
 Bottoms, Charles L. — 1018
 Bottrell, G.J. — 1123
 Botts, James — 1641
 Bouchard, A.M. — 233
 Bouchelouh, N. — 2359
 Boucher, C. — 2027, 2028, 2333
 Boucher, Derrick — 843
 Boudard, A. — 1036
 Boudrie, R. — 1684
 Bougteb, M. — 1815
 Boukharouba, N. — 1051
 Boulais, K.A. — 1256
 Bouldin, C.E. — 385
 Boulos, M.I. — 2371
 Bounasri, F. — 2340
 Bounds, J.A. — 1849
 Bourbonnais, C. — 584, 1622
 Bourdié, E. — 729
 Bourgarel, M.P. — 1339
 Bourgeois, C. — 1831
 Bourham, M.A. — 1917, 1967, 2123
 Bourianoff, G. — 1240, 1244, 1246
 Bourne, N.K. — 1555
 Bourret, E.D. — 508
 Boussard, D. — 1214
 Boustie, M. — 1484, 1566
 Boutés, J.L. — 1383
 Bouwen, A. — 469
 Bouwen, August — 467, 478
 Bouzida, D. — 1462
 Bovenkerk, H.P. — 1581
 Bovet, C. — 1220
 Boviatzis, J. — 532
 Bowden, Charles M. — 1739
 Bowden, C.M. — 1723
 Bowden, M.D. — 2332, 2338
 Bowen, R.C. — 294, 511
 Bower, D.R. — 2196
 Bower, J.E. — 67
 Bower, W.W. — 2219
 Bowers, C. — 1803, 1804
 Bowers, J.E. — 211, 1741
 Bowers, John E. — 1723
 Bowers, Lester A. — 2001
 Bowers, Mark S. — 1721
 Bowersox, D.V. — 616
 Bowler, A. — 334
 Bowles, J. — 1965
 Bowles, T.J. — 913
 Bowling, B. — 1220, 1226
 Bowman, B. — 1638
 Bowman, C.T. — 2202
 Bowman, D. — 1795
 Bowman, D.R. — 941, 1813, 1828, 1853
 Bowman, J.D. — 914, 1036, 1803, 1804, 1836, 2171
 Bowman, R.C., Jr. — 313
 Bowyer, C. Stuart — 910
 Bowyer, S. — 1829
 Bowyer, S.M. — 1830, 1845, 1846, 1847
 Bowyer, T.W. — 1845, 1847
 Boxer, S. — 1627
 Boyce, J.B. — 389, 461, 569, 570
 Boyce, Mary C. — 717
 Boyce, R. — 1234, 1330
 Boyd, C. — 2174
 Boyd, D. — 2029
 Boyd, D.A. — 2029
 Boyd, J.K. — 1259
 Boyd, J.T. — 282
 Boyd, R.H. — 91
 Boyd, R.N. — 984
 Boyd, S.T.P. — 87
 Boyer, J.H. — 1021
 Boyer, L.L. — 576, 577
 Boyes, J. — 1200
 Boyette, Todd — 2175
 Boykin, V. — 1820
 Boyle, James J. — 1129
 Boyle, Michael E. — 1747
 Boynton, P. — 396
 Boysan, F. — 2304
 Bozack, M.J. — 566
 Bozeman, S.P. — 2328
 Bozler, H.M. — 87, 129, 322
 Bozoki, E. — 1209, 1238, 1364
 Bozovic, I. — 327
 Bozovic, Ivan — 247
 Bozov, F. — 112
 Bozzolo, G. — 66, 261
 Braams, B. — 2051, 2077
 Braams, B.J. — 1891, 1892, 1919, 1920
 Brabec, C.J. — 52
 Brabson, B. — 1197, 1245, 1257
 Bracco, G. — 2009
 Bracco, R. — 1329
 Brack, J.T. — 943
 Brackbill, J. — 1435
 Brackbill, J.U. — 1454, 1455, 1891, 2015
 Brackbill, U.U. — 2103
 Bradavic, I. — 826
 Bradford, D.C. — 826
 Bradley, D. — 527, 1661
 Bradley, D.D.C. — 211
 Bradley, D.K. — 1962
 Bradley, Donal D.C. — 48
 Bradley, E. — 1437
 Bradley, J., III — 1917, 1918
 Bradley, J.A. — 282, 473, 474, 687, 746
 Bradley, K.S. — 1913
 Bradley, R.A. — 437, 628
 Bradley, R.M. — 384
 Bradley, S. — 1368
 Bradshaw, J.L. — 592, 794
 Bradshaw, John L. — 1754
 Brady, F.P. — 998, 999, 1062, 1815, 1826, 1828, 1829, 1853, 1854
 Brady, J.F. — 2258
 Brady, M.J. — 465
 Brady, P. — 1817, 1828
 Braga, R.A. — 1806
 Brage, T. — 1119, 1128
 Braginski, A.I. — 636, 688, 752
 Brain, R. — 70, 458, 834
 Brainard, J.P. — 1896
 Brainerd, J.P. — 1650
 Braithwaite, M. — 1582
 Braithwaite, N.St.J. — 2347, 2369
 Brake, M.L. — 2340
 Brambilla, M. — 2068
 Bramlette, C.M. — 318
 Bramwell, S.T. — 649
 Brancher, P. — 2264
 Brand, G.F. — 2379
 Brand, J. — 1162
 Brandan, M.E. — 1813
 Brandeberry, F. — 1377, 1379
 Brandenburg, A. — 1461, 2239
 Brändle, H. — 785
 Brandon, S. — 1892
 Brandon, S.T. — 1969
 Brandon, W.D. — 1749

- Brandt, A. — 2254
 Brandt, D. — 1352
 Brandt, Howard E. — 966
 Brandt, M. — 56, 660
 Brandt, Neil — 940
 Branis, S. — 593
 Branis, Spiros V. — 338
 Brant, M.S. — 560
 Braças, B. — 2021
 Brar, B. — 531
 Brar, N.S. — 1500, 1555
 Brard, L. — 253
 Braren, Bodil — 1731
 Brasseur, J.G. — 2228, 2243
 Brasunas, J. — 689
 Braswell, D. — 1681
 Braswell, W.D. — 1801
 Brates, N. — 2375
 Bratton, C.B. — 1021
 Brau, C. — 1234
 Bräuchle, C. — 146
 Brauer, S. — 1397
 Braun, A. — 1252
 Braun, H.B. — 340, 811
 Braun, J.E. — 2242
 Braun, M.J. — 2249, 2264
 Braun, R. — 2295
 Braun, R.T. — 1063, 1825
 Braun-Munzinger, P. — 1025, 1036
 Braunstein, R. — 1608
 Bravar, A. — 1197
 Bravenec, R. — 1949
 Bravenec, R.V. — 1949, 1952
 Bravman, J.C. — 782
 Brawer, D.A. — 691, 692
 Bray, K.L. — 468
 Bray, K.N.C. — 2268
 Brazhkin, V.V. — 1557
 Brazier, K. — 988, 1635
 Breault, J.L. — 1021
 Breazeal, P.R.W. — 645
 Brecht, Stephen H. — 2018
 Brehmer, D.E. — 322
 Breidenthal, R.E. — 2253
 Breinig, M. — 1171
 Breining, A. — 825
 Breitenbach, J. — 1806
 Breitschwerdt, D. — 2016
 Breizman, B.N. — 1944, 2113
 Brener, I. — 1742
 Brener, N. — 533
 Brener, N.E. — 83
 Brennan, J.G. — 951, 1148
 Brennan, J.M. — 1209, 1266, 1363, 1398
 Brennan, K. — 648
 Brennan, M.J. — 2333
 Brennen, C.E. — 2241
 Brenner, Donald — 627
 Brenner, D.S. — 1845
 Brenner, D.W. — 796, 1536
 Brenner, H. — 2307
 Brenner, M.P. — 2223, 2275
 Brereton, G.J. — 2232, 2299
 Bres, M. — 1395
 Bressan, M. — 1329, 1374
 Bressler, W.J. — 113, 685
 Bressler, V.E. — 1300, 1340
 Bretherton, Francis P. — 1441
 Bretz, M. — 645
 Bretz, N. — 1907, 2035, 2037, 2039
 Bretz, Norton — 2036
 Breuel, B.D. — 2212
 Breuer, H. — 1052, 1817, 1818, 1846
 Breuer, Klaus — 117, 365
 Breuer, K.S. — 2197
 Breuer, M. — 1860
 Breun, B. — 2027
 Breun, R. — 1896, 2026
 Breun, R.A. — 1890
 Brewer, J.A. — 260
 Brewer, J.H. — 461
 Brewer, R.G. — 1140
 Brey, L. — 397
 Brian, D.C. — 1819
 Brian, E. — 1924
 Briand, P. — 1343
 Brianti, G. — 1407
 Briber, R.M. — 481
 Bricault, P. — 1339
 Briceno, G. — 387
 Bridger, J. — 471
 Bridges, F. — 389, 461
 Bridges, J. — 1226, 1231, 1249, 1381, 1386, 1393, 1399, 1407
 Briegel, C. — 1227
 Briel, Ulrich — 953
 Brient, C.E. — 1051
 Briere, Tina — 153
 Brieve, F.A. — 1830
 Briggs, D. — 2229
 Briggs, E.L. — 89
 Briggs, M. — 1638
 Briguglio, S. — 1944
 Brill, A.S. — 268, 2158
 Brillson, Leonard J. — 284
 Brindza, P. — 1317
 Briner, B. — 442
 Bringans, R.D. — 1606
 Brinke, G. Ten — 420
 Brinkgreve, P. — 1296
 Brinkman, M.J. — 1013, 1049, 1050, 1806, 1831, 1832
 Brinkmann, K.-T. — 926, 1812
 Brinkmann, R. — 1265
 Brinkmann, Reinhard — 957
 Brinkmann, W. — 995
 Brinkmeier, Michael — 131
 Brinkmöller, B. — 982
 Brister, Keith E. — 1595
 Bristol, R.L. — 68
 Brito, L. — 1639
 Britt, H.C. — 1816, 1833
 Brittain, D. — 1394
 Brizard, A. — 2100
 Brizard, A.J. — 2104
 Brizard, Alain — 1990
 Brizzolara, R.A. — 535
 Brkovic, A. — 1818
 Broach, R.W. — 458
 Broad, J.T. — 1105
 Brock, B.C. — 1533
 Brock, J.D. — 713, 774
 Brockman, P. — 764
 Brockmann, Peter — 1757
 Brodbeck, O. — 811
 Brodkey, Robert S. — 2298
 Brodsky, A. — 120
 Brodzinski, R.L. — 1800
 Broers, B. — 2163
 Brogle, R. — 2047
 Broglio, L. — 2091
 Bröhl, K. — 618
 Broholm, C. — 438, 765
 Broide, M. — 343
 Broido, D.A. — 755
 Brom, H. — 368
 Brom, H.B. — 175
 Bromberg, I. — 2010
 Bromberg, L. — 1922
 Bromborsky, A. — 931
 Brommer, K.D. — 367
 Bron, W.E. — 616, 1750
 Bronold, F. — 210
 Bronson, J. — 998
 Bronson, S.D. — 1649
 Brooks, A. — 2039
 Brooks, Harvey — 1023
 Brooks, J.S. — 778, 826
 Brooks, N.H. — 2058, 2059
 Brooks, T. — 1393
 Broomall, C. — 411
 Brorsson, G. — 112
 Brosens, F. — 289, 1609
 Broto, J.M. — 327
 Brouard, Mark — 1755
 Brouchous, D. — 2024, 2025, 2026
 Brouchous, D.A. — 2027
 Broude, C. — 1844
 Broughton, Jeremy — 53, 121
 Broughton, J.Q. — 166, 846
 Brouk, V. — 1214
 Broussard, Phillip — 693
 Broussard, P.R. — 242
 Browand, F.K. — 2272
 Browder, T.E. — 1001
 Brower, D. — 1950
 Brower, D.L. — 1948, 1953
 Brower, R. — 1453
 Brower, R.C. — 1435
 Browman, A. — 1332
 Browman, M.J. — 1344, 1376
 Brown, Alex — 1099
 Brown, B. — 395, 1266
 Brown, B.C. — 1293
 Brown, B.L. — 1635
 Brown, C. — 1669
 Brown, D. — 1203, 1280
 Brown, D.E. — 832
 Brown, D.R. — 2166
 Brown, E.F. — 2195, 2221
 Brown, G. — 233
 Brown, G.L. — 2197, 2313, 2317
 Brown, Gregory — 144
 Brown, G.S. — 832
 Brown, H.R. — 245, 545
 Brown, I. — 1406
 Brown, J.A. — 1842
 Brown, J.M. — 1478, 1491
 Brown, J.S. — 1651
 Brown, K. — 1254
 Brown, Karl — 1251
 Brown, M.D. — 1921, 2059, 2332
 Brown, M.R. — 2057
 Brown, N. — 1236
 Brown, P. — 1213
 Brown, P.J. — 45
 Brown, P.N. — 1920
 Brown, R. — 1221, 1321, 1896
 Brown, R.A. — 2354, 2355
 Brown, Reggie — 1908
 Brown, R.G. — 961
 Brown, R.H. — 255
 Brown, S.E. — 177, 320, 452, 453, 780
 Brown, Timothy — 1058
 Brown, V.R. — 1826
 Brown, W. Byers — 1582
 Brown, W.J., IV — 2210
 Browne, C.P. — 2175
 Browne, D. — 729
 Browne, D.A. — 759
 Browne, M. — 1313
 Browning, D.G. — 1644
 Browning, N.D. — 111
 Browning, P.W. — 1760
 Browning, Tyson R. — 1684
 Browning, V. — 734
 Browning, V.M. — 223
 Brownstein, K.R. — 1645
 Bru, B. — 1339
 Bruce, M.R. — 1672, 2358, 2365
 Bruch, L.W. — 651
 Bruch, R. — 1089, 1128, 1132, 1163, 1165
 Brug, James A. — 664
 Bruhwiler, David L. — 1235, 1363
 Brühwiler, P.A. — 559
 Bruinsma, R. — 545, 598, 657
 Bruinsma, R.F. — 599
 Brum, Jeffrey L. — 1761
 Brummell, N. — 2198, 2318
 Brumwell, F. — 1266
 Brun, Ph. — 727
 Brundage, J. — 928
 Brundobler, S.V. — 847
 Brune, C.R. — 983
 Brune, Douglas A. — 2220
 Brunger, M.J. — 2333
 Bruning, John — 912
 Bruno, J.D. — 473, 794
 Bruns, M. — 1860
 Bruns, W. — 1381, 1392
 Brusadin, A. — 2109
 Brusati, M. — 2055
 Brüttsch, E. — 1289
 Bruus, H. — 707
 Bruynseraede, Y. — 393, 670, 784, 1615, 1623
 Brwon, G. — 1290
 Bryan, D.C. — 933, 1812
 Bryan, J.W. — 1948
 Bryan, W.H. — 1155
 Bryant, F. Dudley — 1665
 Bryant, Garnett W. — 279, 1754
 Bryant, Gregg — 1730
 Bryant, G.W. — 133, 592, 697, 755
 Bryant, H. — 970, 1253
 Bryant, Paul H. — 340, 760
 Brycki, B. — 2370
 Bryden, W.A. — 446, 566
 Bryson, Steve — 1452
 Brzosko, J.R. — 2090
 Brzosko, J.S. — 2090, 2091
 Brzozowski, J.H. — 1980
 Bu, Lihe — 82
 Bu, Z. — 94
 Buan, J. — 188
 Buback, M. — 1565
 Bubeck, R.A. — 292, 411
 Bubelev, V.E. — 1105
 Bucchignano, J.J. — 465
 Buch, K.A. — 2204
 Buchan, N. — 1503
 Buchanan, C.D. — 1917
 Buchanan, D.A. — 82
 Buchanan, E. — 1358
 Buchanan, M. — 633, 706
 Buchanan, Mark — 1991
 Buchenauer, D.A. — 2059, 2060
 Buchgeister, M. — 73, 346
 Buchholtz, Louis J. — 87, 88
 Buchholz, David — 1009
 Buchholz, D.B. — 644
 Buchinger, F. — 946
 Buchmann, L. — 1008, 1802, 1844
 Buchner, B. — 659
 Buck, W.W. — 1821
 Buckingham, A. — 1890
 Buckley, J. — 932
 Buckley, R. — 270
 Buckman, S.J. — 2333
 Bucknam, Ralph E. — 2314
 Bucksbaum, P.H. — 200, 1720, 1736, 1751
 Buda, Franco — 673
 Budai, J.D. — 259, 260, 678
 Budd, H. — 1037
 Budd, H.S. — 985, 986
 Budhani, R.C. — 801
 Budker, D. — 1110
 Bud'ko, S.L. — 272, 346

- Budlong, J. — 1358
 Budnick, J. — 1197, 1245, 1257, 1295
 Budnick, J.I. — 816
 Budnik, F.W. — 1989
 Budny, R. — 1905, 1907, 2029, 2031, 2032, 2033, 2035, 2036, 2037
 Budny, R.V. — 1906, 1907, 2032, 2034
 Budny, R.W. — 2031
 Budwig, R. — 2226
 Budzinski, J. — 2208
 Budzko, A. — 1364
 Buell, W. — 1673
 Buerger, T. — 1843
 Buffinger, D.R. — 368
 Buga, S.G. — 1532
 Bugg, D.V. — 1845
 Bugg, W.M. — 2169
 Buhl, Margaret L. — 161
 Buhrman, R.A. — 60, 393, 403, 637, 751, 792
 Buic, M.J. — 2340
 Builta, L. — 1302, 1314
 Bukiet, Bruce — 2227
 Bukowski, J.D. — 2365
 Bulaevskii, L. — 1626
 Bulaevskii, L.N. — 580, 1626
 Buldum, A. — 185
 Bulfone, D. — 1222
 Bull, J. — 1317
 Buller, T.L. — 1390
 Bullis, W. Murray — 823
 Bullock, E. — 542
 Bulos, F. — 1316
 Bultman, N. — 1334
 Bulut, N. — 462, 584
 Bulyak, E. — 1250, 1324, 1357
 Bundis, E. — 2235
 Bundy, F.R. — 1581
 Bunker, A.E. — 766
 Bunker, B.A. — 182, 737
 Bunning, T.J. — 293, 408, 410, 482, 486, 1659
 Bunson, Paul E. — 563
 Bunting, C.A. — 2008
 Bunton, P.H. — 787
 Bunyatova, E.N. — 1054
 Bunyk, P.I. — 1448
 Buon, J. — 1222, 1260
 Buongiorno Nardelli, M. — 306
 Buratti, P. — 2009
 Burch, B. — 1813
 Burde, J. — 1013, 1049, 1050
 Burdett, Jeremy — 782
 Bures, M. — 2107
 Burgdörfer, J. — 1119, 1138, 1164, 1171
 Burgdörfer, Joachim — 1119
 Burger, J. — 1611
 Burger, M. — 1843
 Bürger, W. — 1825
 Burgett, W. — 1290
 Burghardt, W. — 723
 Burinov, V.F. — 1054
 Burk, B. — 105, 454
 Burkhardt, M. — 267
 Burke, A. — 1903
 Burke, David — 908
 Burke, K. — 498, 586, 628, 727
 Burkhalter, P.G. — 735, 1900
 Burkhardt, C.E. — 1139
 Burkhardt, H. — 1365
 Burkhardt, T.W. — 711
 Burkhart, C. — 2360
 Burkov, S.E. — 626
 Burkov, Sergei — 680
 Burla, P. — 1401
 Burlein, M.G. — 944
 Burleson, G.R. — 1816, 1817
 Burman, R. — 1040
 Burn, P.L. — 211
 Burnard, Matthew J. — 843
 Burnett, N.H. — 1770
 Burnham, B. — 1296
 Burnham, N.A. — 378
 Burns, A. — 238, 1210, 1308
 Burns, A.R. — 786
 Burns, C.A. — 138
 Burns, E. — 1640
 Burns, E.J.T. — 1896
 Burns, Jay — 1019
 Burns, J.B. — 1545
 Burns, J.E. — 811
 Burns, J.O. — 1646
 Burns, M. — 1300, 1314, 1997
 Burns, T.E. — 748
 Burnside, J.L. — 1670
 Burr, C.R. — 64
 Burrell, K.H. — 1936, 1937, 1958, 2059, 2061, 2062, 2063, 2064, 2070, 2071
 Burrell, K.H. — 1937
 Burris, H.R. — 1890, 1942
 Burrow, P.D. — 1099, 2347
 Burrows, David N. — 920, 994
 Burstein, Elias — 361
 Burtin, G. — 1221
 Burtin, P.A. — 1577
 Burton, B.P. — 407
 Burton, R.J. — 1377
 Busch, G. — 1342
 Buschert, J.R. — 374
 Buschow, K.H.J. — 161
 Buseck, David A. — 1732
 Bush, C.E. — 1906, 1907, 2029, 2034, 2037
 Bush, J.E. — 1841, 1857
 Bushaw, B.A. — 1131
 Bushman, A.V. — 1515, 1584
 Bushuyev, A. — 1397
 Busquet, M. — 1987, 1988
 Bussac, M.N. — 2077
 Bussard, Robert W. — 1977
 Bussard, R.W. — 1977
 Bussmann-Holder, A. — 392
 Bustamante, C. — 598
 Buteau, C. — 2329
 Butera, A. — 648
 Butler, Donald P. — 689
 Butler, D.P. — 688
 Butler, James — 494
 Butler, Joel — 923
 Butler, L.J. — 549, 1760
 Butler, P.A. — 1806
 Butler, P.B. — 2227
 Butler, S.J. — 2378
 Butler, W.H. — 256
 Butler-Moore, K. — 1806, 2170
 Butner, D.N. — 2112
 Butterworth, A. — 1226
 Button-Schafer, J. — 1034, 1821
 Button-Shafer, J. — 1034
 Buttram, M.T. — 516
 Buttrey, D.J. — 647
 Buttrey, Douglas J. — 45
 Buuron, A.J.M. — 2376
 Buyyala, P. — 1972
 Buzdin, A.I. — 801
 Bybee, C.R. — 1804
 Bychenkov, B.Yu. — 1916
 Bychenkov, V. — 1917
 Bychenkov, V. Yu — 2087
 Bychkov, V.V. — 1962
 Bychuk, Oleg — 710
 Byers, J.A. — 1921, 2015, 2016
 Byers, Jeff M. — 275
 Byers, Jeffrey D. — 1771
 Bykovetz, N. — 79, 106, 369, 817
 Bylander, D.M. — 219
 Byon-Wagner, A. — 1037
 Byrd, J.M. — 1212, 1308, 1347, 1351
 Byrd, R. — 948
 Byrd, R.C. — 982, 1830
 Byrne, A.P. — 1819
 Bystritskii, V. — 2090
 Bystritskii, V.M. — 1894, 1896
 Bywater, J.A. — 987
 Cable, J.R. — 549
 Cable, M.D. — 2084
 Cable, S. — 1992
 Cabrera, A.L. — 107, 286
 Caccia, Z. — 998, 999, 1815, 1828, 1853, 1854
 Cacciatore, C. — 85
 Cacheiro, R. — 2351
 Cachonille, C. — 2359
 Cadou, C. — 2258
 Cady, R. — 1394
 Cafolla, A.A. — 232
 Cage, M.E. — 179
 Cagin, Tahir — 64, 716, 795
 Cagnoux, J. — 1563, 1599
 Cahill, T.A. — 1825
 Cahn, S.B. — 997
 Cai, David — 528
 Cai, Hong — 1672
 Cai, H.Y. — 1529
 Cai, Lenore — 349, 350
 Cai, Q. — 2242
 Cai, Sui Xiong — 542
 Cai, S.X. — 110
 Cai, S-Y. — 930, 931, 1315, 1895, 2003
 Cai, T. — 1122
 Cai, Tianwu — 1764, 1777
 Cai, W. — 534
 Cai, Y. — 752, 1244, 1291, 1624
 Cai, Y.Q. — 1943
 Cai, Z. — 1132
 Cai, Zhi-Xiong — 801
 Caille, A. — 601, 767
 Cain, A.B. — 2219
 Cain, C.P. — 318
 Cairns, J. — 232
 Cairns, R.A. — 2108
 Calabrese, J.J. — 749
 Calabrese, R. — 1371
 Calado, A.R.T. — 1521
 Calamai, A.G. — 1152
 Calame, J. — 1280, 1281
 Calame, J.P. — 1999
 Calaprice, F.P. — 1803, 1850
 Calarco, J.R. — 1649, 1820
 Calderon, M. — 1264, 1374
 Caldwell, S.E. — 1916
 Caledonia, G.E. — 2342
 Calef, Daniel F. — 2300
 Calistri-Yeh, Mildred — 713
 Call, Charles J. — 2253
 Callahan, D.A. — 1305, 1305, 1365
 Callahan, D.L. — 787
 Callaway, J. — 83, 533, 759, 822
 Callcott, T.A. — 226, 320, 519, 1621
 Callegari, A.C. — 636
 Calleja, J.M. — 807
 Callen, J.D. — 1906, 1924, 1925, 1926, 2076, 2115, 2116
 Calles, A. — 522, 1622
 Calloway, D. — 1203
 Calo, A. — 1319
 Calvert, J. — 1265, 1393
 Calvin, M.D. — 1949
 Camacho, Carlos J. — 454
 Camacho, J.F. — 1917
 Camarero, R. — 1891
 Camas, J. — 1221
 Camberos, A. — 242
 Camblong, H.E. — 1610
 Camernon, J.M. — 1034
 Cameron, P. — 1211, 1394
 Cameron, R.A. — 989
 Cameron, R.E. — 1112, 1125
 Cameron, S. — 2090
 Cameron, S.M. — 1917
 Camilloni, R. — 1673
 Cammarata, R.C. — 65
 Camparo, J.C. — 1094
 Campbell, B. — 1386, 1406
 Campbell, D.J. — 2056
 Campbell, D.K. — 584, 725, 753
 Campbell, I. — 2366
 Campbell, J.A. — 743
 Campbell, J.C. — 1836
 Campbell, J.M. — 1650, 1652, 1806
 Campbell, Joe C. — 107
 Campbell, J.R. — 1036, 1847
 Campbell, J.W. — 471, 473
 Campbell, Myron — 975
 Campbell, P.M. — 183
 Campbell, R. — 2049
 Campbell, R.A. — 437
 Campbell, R.B. — 1661, 1898, 1920, 1921
 Campbell, Robert B. — 2354
 Campbell, V.B. — 1901
 Campeanu, R.I. — 1101
 Campi, D. — 85
 Campisi, I.E. — 1232, 1397
 Campman, K.L. — 528
 Campos, C.E. — 826
 Camps, E. — 1896
 Campuzano, J.C. — 226, 273, 274
 Canali, C.M. — 462
 Cancio, A.C. — 843, 1616
 Candler, G. — 2259
 Caneau, C. — 1713
 Canfield, P. — 124
 Canfield, P.C. — 73, 79, 124, 175, 223, 389, 438, 439, 525, 526, 642, 643, 644
 Cangli, Lui — 1539
 Canham, L.T. — 660
 Cannell, David S. — 164, 469, 470, 479
 Cannell, D.S. — 165, 469, 2266, 2267, 2306
 Canny, B. — 1496, 1576
 Canosa, A. — 2357
 Canright, Geoff — 166, 754
 Canright, G.S. — 135, 581
 Cansell, F. — 1521, 1530, 1571
 Canto, L.F. — 1823
 Cantor, Robert S. — 404
 Canto-Said, E.J. — 1772
 Cantwell, B.J. — 2281
 Cao, G. — 75, 731, 782
 Cao, H. — 1736
 Cao, J. — 699, 1751, 1765, 2220
 Cao, N. — 227
 Cao, Nian-Zheng — 2196
 Cao, Wenwu — 213
 Cao, X.L. — 282, 283
 Cao, X.W. — 346, 347
 Cao, Y. — 241, 311
 Cao, Yong — 310
 Caorlin, M. — 1905
 Cao.Y. — 312
 Capano, M.A. — 316
 Capasso, C. — 182
 Capel, Malcolm — 141

- Capjack, C.E. — 1913
 Caplan, H.S. — 915
 Caple, G. — 542
 Caporaso, G. — 1303, 1994, 1997
 Caporaso, George J. — 1304
 Caporaso, G.J. — 1304
 Cappannini, O.M. — 270
 Cappelletti, R.L. — 252, 744
 Cappi, R. — 1360
 Capraro, C.T. — 514
 Car, Roberto — 89, 140, 505, 721
 Caracappa, A. — 914, 915
 Caragianis, C. — 791
 Caraher, J.C. — 350
 Caraley, A.L. — 926, 1812
 Carbone, F. — 2261
 Carbotte, Jules P. — 330, 331
 Cardell, G. — 2264
 Cardinali, A. — 2094
 Cardman, Lawrence S. — 936
 Cardman, L.S. — 1372
 Cardona, M. — 76, 126, 157, 172, 521
 Caress, R.W. — 1849
 Carey, David C. — 1235
 Carey, T.A. — 982
 Carignano, M.A. — 414, 715
 Carini, J.P. — 129
 Carioli, M. — 1246
 Carleson, T. — 2226
 Carlin, N. — 1828, 1853
 Carlini, R. — 1201, 1317
 Carlini, R.D. — 2172
 Carlisle, J.A. — 727
 Carlisle, L. — 1335
 Carlos, W.E. — 621
 Carlson, A.L. — 2045
 Carlson, G. — 2273
 Carlson, Jean — 738
 Carlson, J.M. — 644, 739
 Carlson, R. — 1199, 1302
 Carlsson, A.E. — 209
 Carlsten, B. — 1280, 1281
 Carlsten, B.E. — 1257, 1311, 1371, 1395
 Carlsten, Bruce E. — 1940
 Carlsten, J.L. — 1736
 Carlstrom, T.H. — 2059
 Carlstrom, T.N. — 2061, 2062, 2063, 2064
 Carlton, R.F. — 1661
 Carman, D.S. — 1035, 1052, 1846
 Carmel, Y. — 931, 1283, 1938
 Carmelo, J.M.P. — 291, 583, 584, 753
 Carmi, Y. — 177
 Carnes, K.D. — 1088, 1104
 Carney, B. — 2175
 Carns, T.K. — 84
 Carolan, J. — 60
 Carolan, J.F. — 189, 326
 Carolan, P. — 2008
 Carolipio, E.M. — 2063
 Carolissen, R. — 451
 Carolos, W.E. — 791
 Carpenter, Bonnie N. — 2287
 Carpenter, D. Rae, Jr. — 2176
 Carpenter, J. — 1266
 Carpenter, M. — 511, 1831
 Carpenter, M.P. — 1014, 1049, 1793, 1819, 1830, 1831, 1832
 Carpenter, P.W. — 2289
 Carpenter, Rae — 2164
 Carpenter, R.T. — 1966
 Carpignano, F. — 2053
 Carr, E.C. — 792
 Carr, G.L. — 501
 Carr, J.A. — 1846, 1847, 1859
 Carr, R. — 1330
 Carr, Stephen H. — 605
 Carra, P. — 777
 Carraro, C. — 650
 Carraro, L. — 1980
 Carreau, M. — 401
 Carreras, B.A. — 1910, 1912, 1951, 2014, 2015, 2101
 Carrier, M. — 1065
 Carrington, A. — 222
 Carroll, C.E. — 1122
 Carroll, F. — 1234
 Carroll, J. — 1815
 Carroll, J.B. — 1852
 Carroll, J.J. — 1683, 1684
 Carroll, J.J., III — 1887, 1966
 Carroll, Roger D. — 85
 Carroll, T.L. — 340
 Carron, G. — 1352, 1389
 Carrubba, J. — 769
 Carson, J. — 1290
 Carson, L. — 1824
 Carswell, Allan I. — 1773, 1776
 Carter, A. — 1368
 Carter, Ernest L., Jr. — 672
 Carter, H.K. — 946, 980
 Carter, J.G. — 2358
 Carter, J.P. — 1904
 Carter, K. — 1948
 Carter, M.D. — 2049, 2105, 2106, 2107
 Carter, S. — 525
 Carter, S.A. — 438
 Cartier, E. — 82
 Cartwright, A.N. — 763, 764, 1769
 Cartwright, D.C. — 1106, 2331
 Cartwright, T. — 2007
 Caruthers, J.M. — 415, 424
 Carwardine, J. — 1323, 1334, 1338
 Cary, J. — 1345
 Cary, John R. — 1245, 1328, 1908, 1941
 Cary, J.R. — 2077
 Caryotakis, G. — 1232, 1399
 Casademunt, J. — 590
 Casanova, M. — 2087
 Casavant, D. — 1651
 Case, T. — 942
 Case, W.E. — 1727
 Casella, R. — 1400
 Casey, J.A. — 1956
 Casey, K.G. — 1598
 Cashmore, Roger — 1009
 Casillas, J. — 794
 Casper, D. — 1021
 Casper, T. — 2065
 Casper, T.A. — 1921, 2066, 2067, 2112
 Caspers, F. — 1202
 Casperson, Lee W. — 645, 1003
 Cassanello, Carlos — 753
 Cassel, R. — 1402
 Cassel, R.L. — 1404
 Cassidy, Daniel T. — 1735
 Castaneda, C.M. — 1825, 1826
 Castejon, F. — 2021
 Castellano, M. — 1286
 Casten, R.F. — 1832, 1845
 Casten, Richard F. — 937
 Castiglione, J. — 1042
 Castillo, F. — 2119
 Castillo, L. — 2210
 Castillo, T.R. — 591
 Castillo Alvarado, F.L. — 686, 686
 Castillo-Herrera, César Igor — 2085
 Castle, G.G. — 1949, 1950, 1954
 Castracane, J. — 2113
 Castro, J.J. — 522, 1622
 Castro, J.P. — 2109
 Castro, P. — 1308
 Castro Neto, A.H. — 291, 584, 600, 753
 Catanese, M. — 1020
 Catani, L. — 1286
 Catchen, G.L. — 407
 Catching, B. — 970
 Cates, G.D. — 1120, 1137, 1140
 Cattafesta, L.N. — 2195
 Catto, P. — 1922
 Catto, Peter J. — 1922
 Catto, Sultan — 965
 Cauble, B. — 2044
 Cauble, R. — 1484, 1539, 2082
 Caughman, J.B.O. — 2106
 Caussyn, D. — 987, 1245, 1265
 Caussyn, David D. — 1358
 Caussyn, D.D. — 986, 1197, 1245, 1257
 Cauz, C.A. — 2240
 Cava, R.J. — 222
 Cavallari, G. — 1376
 Cavanagh, M.D. — 111
 Cavanagh, R.R. — 1755
 Cavazos, T. — 1938
 Cavazis, B. — 1538
 Cebe, Peggy — 92, 141
 Cebrá, D. — 998, 999, 1815, 1828, 1853, 1854
 Ceccio, S. — 2188
 Cecere, M. — 1941
 Cechan, Tian — 1093
 CE25 Collaboration — 1846
 Cecil — 1521
 Ceder, G. — 106, 209
 Cederquist, H. — 1160
 Cederwall, B. — 1014, 1049, 1050, 1806, 1831
 Cekic, M. — 1978, 1979, 2024, 2025
 Celata, C. — 1995
 Celata, C.M. — 1265, 1304, 1995
 Çelik-Butler, Z. — 644, 688
 Celinski, Z. — 562
 Celler, A. — 982
 Celliers, P. — 1524, 1548
 Cellotta, R.J. — 669
 Cen, J. — 336, 400
 Cenacchi, G. — 2053
 Ceperley, D. — 176
 Ceperley, David — 167, 683, 1447
 Ceperley, David M. — 168
 Ceperley, D.M. — 1441
 Ceperley, Peter H. — 1004, 1005
 Cerda, Enrique — 2283
 Cerniglia, P. — 1210
 Cerny, J. — 1844, 1857
 Cerny, Joseph — 998, 1808
 Cerrina, F. — 182
 Cervantes, P. — 461
 Cesar, C.L. — 185, 1170
 Cesario, R. — 2094
 Cestone, V.C. — 242
 Cettolo, V. — 1318
 Cha, Min-Chul — 526
 Chabal, Y.J. — 624, 730
 Chabert, A. — 1339
 Chacon, A.D. — 942, 998, 999, 1815, 1828, 1853, 1854
 Chadda, Saket — 375
 Chadi, James — 82, 444
 Chadwick, M.B. — 1051
 Chae, Y.C. — 1242, 1249
 Chai, A. — 2310
 Chai, B.H.T. — 467
 Chaiken, A. — 338, 792, 990
 Chaikin, Paul — 607
 Chaikin, P.M. — 288, 343, 435, 778, 779, 780, 825
 Chaikovsky, S.A. — 1943
 Chakaborty, A.K. — 244
 Chaker, M. — 1987, 1988, 2079, 2335, 2339, 2340
 Chakoumakos, B.C. — 259, 260, 280, 802, 835
 Chakrabarti, A. — 658
 Chakrabarti, Amitabha — 144, 715
 Chakrabarti, K. — 741, 1608
 Chakrabarti, M. — 2296
 Chakrabarti, Suman — 2086
 Chakraborty, Bulbul — 154
 Chakravarti, S. — 760, 1859
 Chalamala, B.R. — 2363
 Challis, C.D. — 2056
 Chalmers, S.A. — 1724
 Chalmers, S.C. — 704
 Chalmers, Scott A. — 722
 Chamberlain, O. — 1203
 Chambers, D.H. — 2198
 Chambers, F.W. — 2242
 Chambers, Robert S. — 351
 Chambers, S.A. — 231
 Chambliss, D.D. — 118, 503, 613
 Chambon, B. — 1852
 Chameides, William L. — 429
 Champagne, F.H. — 2284
 Champion, M. — 1381, 1385
 Champion, Paul — 203
 Champion, Paul M. — 267
 Champion, P.M. — 266
 Champion, R.L. — 2363
 Chamption, M. — 1376
 Chan, C.F. — 1320, 2052
 Chan, Chun Fai — 1320
 Chan, C.K. — 2267
 Chan, C.T. — 153, 307, 440, 505, 794
 Chan, Daniel C. — 2285
 Chan, F.T. — 172, 260
 Chan, I.N. — 172, 260
 Chan, J. — 808
 Chan, K. — 1806
 Chan, K.D.c. — 1342
 Chan, L.P. — 826
 Chan, L.Y. — 2082
 Chan, M.H.W. — 240, 1022
 Chan, S.-K. — 407
 Chan, V. — 1936
 Chan, V.S. — 2065, 2104
 Chan, W.K. — 807
 Chan, Y. — 1830, 1850
 Chan, Y.C. — 1162
 Chan, Y.D. — 1804, 1829, 1855
 Chan, Y.N. — 172
 Chance, J. — 998, 999, 1815, 1828, 1853, 1854
 Chance, M. — 2091, 2093
 Chance, M.S. — 2050, 2096
 Chancey, C.C. — 631
 Chandler, Elaine A. — 2300
 Chandra, P. — 78
 Chandra, Suresh — 1717
 Chandramouli, M. — 1546
 Chandramouli, V. — 704
 Chandrasekhar, H.R. — 374, 507, 1503, 1551, 1589
 Chandrasekhar, Meera — 374, 507, 1503, 1551, 1589
 Chandrasekhar, N. — 111, 838
 Chandrasekhar, V. — 393
 Chanel, M. — 1202
 Chang, A.M. — 229, 691
 Chang, B. — 1091
 Chang, C.C. — 1034, 2316
 Chang, C.F. — 539
 Chang, C.H. — 1228, 1296
 Chang, Chun-Yen — 1757
 Chang, Chu Rui — 1361
 Chang, C.-L. — 316, 2251

- Chang, C.M. — 1618
 Chang, C.P. — 409
 Chang, C.R. — 1239, 1319, 1376, 1391
 Chang, C.S. — 265, 473, 2034, 2105
 Chang, C.-T. — 165, 165
 Chang, D.W. — 1135
 Chang, Edward S.H. — 1046
 Chang, H. — 54, 394
 Chang, H.-C. — 2310
 Chang, H.T.M. — 693
 Chang, Hyunju — 577
 Chang, I.C. — 477
 Chang, J. — 1828, 1836, 1837
 Chang, J.C. — 1139
 Chang, Jianlin — 164
 Chang, J.S. — 1403, 2329, 2356
 Chang, K.J. — 178, 783
 Chang, L.L. — 798
 Chang, M.C. — 841
 Chang, Peace — 1228
 Chang, R.P.H. — 53, 111, 205, 644
 Chang, S. — 1830, 1845, 1846
 Chang, S.R. — 1003
 Chang, T. — 2230
 Chang, T.N. — 1095, 1149
 Chang, T.Y. — 229
 Chang, Wayne H. — 513
 Chang, W.S. — 2249
 Chang, Y. — 503
 Chang, Y.-C. — 89, 163, 290, 323, 474, 531, 746, 843, 1616
 Chang, Z. — 1906, 1907, 2031, 2032, 2034, 2037
 Chang, Z.Y. — 2032
 Chang-Hasnain, C.J. — 1724
 Changsheng, Han — 1567
 Channell, P.J. — 1197
 Chant, N.S. — 1035, 1052, 1846
 Chao, A. — 1245, 1267, 1348
 Chao, A.W. — 986, 1197, 1245, 1257
 Chao, C. — 473
 Chao, E. — 2004, 2005
 Chao, Hsiehshin — 700, 1616
 Chao, Y. — 1243, 1286
 Chaparala, M. — 326, 779
 Chaplot, S.L. — 135, 270, 1557
 Chapman, B. — 1978
 Chapman, B.E. — 1978, 1979, 2122
 Chapman, K. — 2233
 Chapman, L. — 1227
 Chapman, M. — 1761
 Chappelier, J.C. — 1241
 Chapron, P. — 1498
 Chapuis, C. — 1638
 Char, K. — 60, 751, 836
 Charalambous, Melissa — 634
 Charatis, George — 928
 Charest, J.A. — 1528
 Chari, K. — 539
 Charity, R.J. — 941, 980, 1051, 1852, 1853
 Charles, C. — 2332
 Charles, R. — 1338
 Charlier, J.-C. — 674
 Charlson, E. — 2119
 Charlson, E.J. — 2119
 Charlson, E.M. — 2119
 Charlson, J. — 2119
 Charlton, L.A. — 1912
 Charnock, Forrest — 741
 Charrauau, G. — 1378
 Chartagnac, P. — 1546, 1592
 Chartier, M. — 941, 1853
 Chase, B. — 1213
 Chase, D.B. — 348
 Chase, S.J. — 501
 Chasteler, R.M. — 1846
 Chatain, F. — 2328
 Chatelier, M. — 2058
 Chatfield, D.C. — 1086
 Chatterjee, R. — 1953
 Chattopadhyay, S. — 1237, 1313, 1997, 2047
 Chattopadhyay, T. — 74
 Chaturvedi, L. — 1014, 1858
 Chaturvedi, P. — 1968
 Chaturvedi, Ram P. — 964
 Chaturvedi, R.P. — 1681
 Chau, C.C. — 425
 Chau, Henry H. — 1481
 Chau, R. — 130, 177
 Chaudhuri, S. — 756
 Chaudhury, M.K. — 350
 Chaussy, Jacques — 634
 Chautard, F. — 1248, 1317
 Chauvet, O. — 517
 Chavez-Pirson, Arturo — 1723
 Chavira, E. — 242
 Che, C.H. — 829
 Che, H.Y. — 1926
 Chechetenko, V. — 1324
 Chee, Chia Teck — 1055
 Cheek, R. — 157, 1671
 Cheetham, A.K. — 1728
 Chehab, R. — 1317
 Chekhlov, A. — 2215
 Chel, S. — 1378
 Chelikowsky, James R. — 372, 674
 Chelikowsky, J.R. — 620, 674, 1497
 Chelkowski, S. — 1739, 1752
 Chelkowski, Szczepan — 1739
 Chella, R. — 542
 Chemaly, M.G. — 1849
 Chemia, D.S. — 200
 Chemla, Daniel — 1772
 Chemla, D.S. — 398, 765, 1742, 1744, 1762
 Chen, A.-B. — 513, 687, 799
 Chen, A.C. — 531
 Chen, A.L. — 1498, 1622
 Chen, B. — 338, 1348
 Chen, C. — 1280, 1282, 1304
 Chen, CE — 1093
 Chen, C.F. — 1060, 2280
 Chen, Changfeng — 698, 726
 Chen, Chia-Chun — 369
 Chen, Chiping — 1939
 Chen, C.-J. — 1738, 1748
 Chen, C.M. — 1834
 Chen, C.P. — 239, 1022
 Chen, C.T. — 338, 496, 525, 642, 643
 Chen, C.-Y. — 2216
 Chen, D. — 568
 Chen, Ding-Chuan — 130
 Chen, D.M. — 616, 617
 Chen, Dongmin — 678
 Chen, D.P. — 759
 Chen, E. Youjun — 733
 Chen, Feng — 532
 Chen, F.F. — 1897, 2327
 Chen, G. — 1486, 1528, 1545
 Chen, G.C. — 419, 2166
 Chen, G.L. — 1617
 Chen, Guanhua — 725
 Chen, H. — 682, 1202, 1645, 1914, 1987, 1989, 2044, 2193
 Chen, Haibo — 2044
 Chen, Haydn — 510
 Chen, H.J. — 804
 Chen, H.S. — 152, 625
 Chen, In-Gann — 750
 Chen, J. — 93, 214, 225, 343, 370, 511, 694, 726, 812, 1135, 1649, 1965, 2017, 2018, 2044
 Chen, Jacqueline — 2213
 Chen, Jenny — 1225
 Chen, J.H. — 1574
 Chen, Jie — 150
 Chen, Jimmy — 716
 Chen, Jing — 1675
 Chen, Jing-Hong — 1735
 Chen, Jiong — 2044
 Chen, Jun — 583
 Chen, J.Y. — 1950, 2213
 Chen, K. — 645, 1450
 Chen, K.R. — 2013, 2054
 Chen, K.Y. — 172, 260
 Chen, L. — 1986, 2019, 2034, 2035
 Chen, L.-D. — 2227
 Chen, Lee-Wen — 800
 Chen, L.F. — 786
 Chen, Li — 557, 819, 845
 Chen, Liang — 124
 Chen, L.J. — 206
 Chen, L.Y. — 67
 Chen, M. — 1854
 Chen, M.C. — 517
 Chen, M.H. — 1124, 1125, 1126, 1151, 1156
 Chen, Michael M. — 2241
 Chen, M.-T. — 239
 Chen, P. — 282, 283, 1279, 1288
 Chen, Pisin — 1362
 Chen, Po-An — 1757
 Chen, P.S. — 1520
 Chen, Quark — 750
 Chen, Qun — 582
 Chen, Q.Y. — 171, 750
 Chen, R. — 190
 Chen, S. — 445, 935, 1244, 1344, 1667, 1674, 2193
 Chen, S.B. — 2219
 Chen, S.C. — 1282, 1283, 1310
 Chen, Shiyi — 1433, 2228, 2300
 Chen, S.-J. — 1972
 Chen, S.P. — 1618
 Chen, S.Q. — 459
 Chen, S.R. — 396
 Chen, T. — 220, 1122, 1355
 Chen, Tian-Jie — 344, 344
 Chen, T.L. — 2316
 Chen, T.P. — 122, 642, 699
 Chen, Wei — 815
 Chen, Wenyan — 171, 750
 Chen, W.M. — 1611
 Chen, X. — 160, 826
 Chen, X.F. — 345
 Chen, X.K. — 460, 595
 Chen, X.L. — 2079
 Chen, X.M. — 136, 473
 Chen, Xuesheng — 1612
 Chen, X.Y. — 982
 Chen, Y. — 588, 1294, 2094
 Chen, Y.C. — 696
 Chen, Yi-Hong — 138
 Chen, Y.-J. — 399, 802, 835, 1303, 1304, 1994, 1997
 Chen, Yuan — 2222
 Chen, Yu-Jiuan — 1996
 Chen, Y.W. — 706
 Chen, Z. — 841, 1126, 1160, 2310
 Chen, Zhifan — 1101
 Chen, Z.M. — 64
 Chen, Z.W. — 79, 106, 122, 817
 Chen, Z.Y. — 172, 173
 Cheng, A.Y. — 746
 Cheng, C.Z. — 2035, 2102
 Cheng, E. — 650, 1047, 1066
 Cheng, Hai-Ping — 573
 Cheng, J. — 1280, 1999
 Cheng, James — 1730
 Cheng, J.-P. — 85, 336, 337
 Cheng, J.Y. — 1580
 Cheng, K.T. — 1125, 1126
 Cheng, K.Y. — 531, 788
 Cheng, L.T. — 1714
 Cheng, S. — 1120, 1140
 Cheng, S.F. — 163, 817
 Cheng, S.-J. — 731
 Cheng, S.Z.D. — 93, 195, 483
 Cheng, W.-H. — 1245
 Cheng, Y. — 163, 733, 1208, 1399, 1406
 Cheng, Ying — 377
 Chengwei, Sun — 1539
 Cheong, S.W. — 73, 114, 124, 125, 175, 223, 224, 496, 525, 526, 648
 Chepin, James — 215
 Chepurinov, A.S. — 1368
 Cherepanov, V. — 765
 Cherkassky, V.S. — 2113
 Chern, Jyh-Long — 1736
 Chern, M. — 59
 Chernin, D. — 2003
 Chernin, David — 2074
 Chernobrovina, V. — 1513
 Chernoff, D.A. — 119, 185
 Chernoff, E.A.G. — 119
 Cherry, Michael — 2165
 Chervin, J.C. — 1496, 1576
 Chervinsky, John F. — 515
 Cheryakin, A. — 1367
 Cheshire, R. — 2335
 Chesnokov, Yu.A. — 1259
 Chester, G.V. — 69
 Chester, M. — 518
 Chester, M.J. — 519
 Chester, N.S. — 1293
 Chestnut, R. — 1225
 Chetty, N. — 742
 Cheuk, A. — 1548
 Cheung, E. — 1036
 Cheung, P.Y. — 2039
 Cheung, T.D. — 367
 Cheung, Y.W. — 293
 Chevallier, M. — 1317
 Cheville, R.A. — 502
 Chevrier, V. — 212
 Chew, K.H. — 2340
 Cheynis, B. — 1852
 Chhabildas, C. — 1486
 Chhabildas, L.C. — 1481, 1541, 1553, 1563
 Chi, C.-C. — 112, 458, 465
 Chi, Huichen — 115
 Chi, J. — 1493
 Chialvo, D. — 811
 Chialvo, Dante — 362
 Chiancone, Emilia — 267
 Chiang, J. — 988, 989
 Chiang, K. — 1953
 Chiang, K.-F. — 2262
 Chiang, Pi-Ren — 2086
 Chiang, S. — 503, 596, 597
 Chiang, T.-C. — 342, 510, 568, 727, 781
 Chiang, Whe-Yi — 1671, 1672
 Chiang, W.Y. — 1671
 Chiarelli, A.O.P. — 2280
 Chiarotti, G. — 219
 Chiaveri, E. — 1376, 1378
 Chibisov, M. — 1116
 Chicharro, R. — 2216
 Chida, K. — 1197
 Chidambaram, R. — 1514, 1515
 Chien, C.L. — 451, 732, 733, 785
 Chien, C.Y. — 1988
 Chien, L.-C. — 846
 Chien, R. — 768
 Chih-Ming, Ho — 2247, 2275
 Childers, R.L. — 2164

- Childress, J.R. — 785
 Childs, M.A. — 2335, 2377
 Chilukuri, Santaram — 1004
 Chimentì, R.J. — 270
 Chimentì, V. — 1265
 Chin, B. — 1956
 Chin, E. — 190
 Chin, J. — 1329
 Chin, Mee Koy — 1734, 1743
 Chin, R.P. — 573
 Chin, S.A. — 1441
 Chin, S.L. — 1735, 1740, 1749
 Chin, Y.H. — 1352, 1353
 Chindarkar, A.R. — 2342
 Ching, C.H. — 1348, 1900
 Ching, C.Y. — 2253
 Ching, Emily S.C. — 186
 Ching, W.Y. — 104, 565, 576
 Ching-Prado, E. — 1615
 Chinn, C.R. — 1052, 1834
 Chinnock, P.S. — 2283
 Chiou, B.S. — 72
 Chiou, T.C. — 1279
 Chipenko, T.Yu. — 1514
 Chirokikh, A. — 1934
 Chirokikh, A.V. — 1934
 Chisholm, M.F. — 111
 Chittenden, J.P. — 2087
 Chiu, Chui-Jih — 55
 Chiu, G.S. — 2111
 Chiu, S.C. — 1936, 2065, 2068, 2104, 2105
 Chizmeshya, A.V.G. — 310
 Chklovskii, D.B. — 397
 Chmielewski, A.G. — 1226
 Cho, A. — 317, 398
 Cho, A.Y. — 633, 1742
 Cho, D. Sivco A. — 765
 Cho, E.-J. — 643
 Cho, H.-J. — 1607
 Cho, J. — 1202
 Cho, Jaewon — 571
 Cho, J.H. — 325
 Cho, Kihyeon — 1053
 Cho, Kilwon — 482
 Cho, M. — 1286, 1326
 Cho, M.H. — 1286, 1402
 Cho, S. — 825
 Cho, Victoria A. — 1753
 Cho, Y. — 1255, 1266
 Cho, Y.S. — 1301, 1607
 Choe, W. — 2004, 2005
 Choi, B.H. — 627, 1301, 1322
 Choi, Duk-In — 2075
 Choi, E.-J. — 74
 Choi, H. — 915, 2197
 Choi, Han-Yong — 305
 Choi, H.C. — 1147
 Choi, J. — 1345
 Choi, J.J. — 2000
 Choi, J.-Y. — 1316
 Choi, M.Y. — 803
 Choi, P. — 2087, 2088, 2120
 Choi, Seung J. — 2330, 2331, 2341
 Choi, S.S. — 844
 Choi, W.C. — 2243
 Choi, Wooyoung — 2237
 Choi, Y. — 761, 1515, 1849
 Choi, Y.W. — 2338
 Choi-Feng, C. — 181, 1589
 Chojnacki, E. — 1223, 1276, 1314, 1376
 Chomaz, J.M. — 2252, 2264, 2290
 Chong, C.K. — 2001
 Chong, C.Y.R. — 2243
 Choo, A.G. — 282, 283, 565
 Choo, J. — 1672
 Chopelas, A. — 1489
 Chopra, D.R. — 514, 1670, 1682
 Choptuik, M. — 1448
 Choquette, K.D. — 399, 760
 Chou, A.E. — 2110, 2111
 Chou, H. — 124, 307
 Chou, Henry — 308, 406
 Chou, L.-K. — 497
 Chou, M.Y. — 208, 219, 313, 448
 Chou, P.J. — 1349
 Chou, S. — 836
 Chou, S.Y. — 394, 698, 707
 Chou, W. — 1209, 1263, 1267, 1353, 1362, 1376
 Choudhary, K.M. — 335
 Choudhuri, P. Ghosh — 2314
 Choudhury, D. — 2304
 Choudhury, D.C. — 1016
 Choudhury, N. — 135, 270
 Chouffani, K. — 952
 Chourasia, A.R. — 514, 1670, 1682
 Chow, Carson C. — 1245
 Chow, C.C. — 1908
 Chow, D. — 813
 Chow, D.H. — 531, 814
 Chow, G.M. — 221
 Chow, Kwok W. — 2245
 Chow, Lee — 2168
 Chow, P.C. — 235, 252
 Chow, T.S. — 343, 605
 Chowdhuri, S.Z. — 171
 Chowdhury, Ataur R. — 163
 Chowdhury, P. — 221
 Choyke, W.J. — 565, 566
 Choyke, Wolfgang J. — 564
 Chraplyvy, Andrew — 1763
 Chrien, R. — 1303, 1843, 1859
 Chrien, R.E. — 944, 1817, 2110
 Chrisey, D.B. — 735, 1778
 Christ, Norman — 938
 Christen, D.K. — 260, 272, 802, 830, 835
 Christensen, C. — 1956
 Christensen, K. — 1300, 1334
 Christensen, K.M. — 1619
 Christensen, N.E. — 270, 306, 445
 Christensen, O.B. — 340
 Christenson, Peggy — 2074
 Christian, E.R. — 933
 Christian, W. — 1454
 Christiansen, C. — 1201
 Christiansen, M. — 1223
 Christides, C. — 252
 Christie, S.L. — 2209
 Christie, W. — 1815, 1828
 Christophorou, L.G. — 2358
 Chrzan, D.C. — 66, 790, 1438
 Chrzanowski, J. — 125
 Chu, B. — 142, 293, 412
 Chu, Benjamin — 197, 243
 Chu, C. — 1250, 1294
 Chu, C.M. — 986, 1054
 Chu, C.S. — 708
 Chu, C.W. — 104, 123, 170, 241, 346, 347, 461, 532, 615, 838
 Chu, D. — 475
 Chu, Daniel Y. — 1722, 1734
 Chu, Fuming — 106
 Chu, G. — 837
 Chu, H. — 761
 Chu, H.T. — 1655, 1663
 Chu, J.W. — 346
 Chu, M.S. — 1925, 2061, 2065, 2067
 Chu, S.I. — 1091, 1128, 1146
 Chu, Steven — 1763
 Chu, S.Y. — 999, 1823
 Chu, T.K. — 2094
 Chu, T.S. — 2002
 Chu, W.K. — 85, 171, 213, 750, 835, 844
 Chu, W.T. — 1337
 Chuang, Shun L. — 764
 Chuang, S.L. — 200, 473, 647, 1715
 Chuang, T.J. — 573
 Chuaqui, C.E. — 1760
 Chubar, O. — 1220, 1221, 1332
 Chubarov, O.V. — 1368
 Chubukov, A. — 647
 Chubukov, A.V. — 228
 Chudinov, A.N. — 1739, 1771
 Chudnovsky, E.M. — 606
 Chugun, T. — 1205
 Chui, S.T. — 472
 Chui, T. — 139
 Chukhovskii, F.N. — 517
 Chukkapalli, G. — 2317
 Chumakov, A.I. — 832
 Chun, K. — 394
 Chun, S.K. — 84
 Chun, S.Y. — 1052
 Chung, David Y. — 809
 Chung, H. — 915
 Chung, H.K. — 2086
 Chung, J.N. — 2278
 Chung, K.H. — 1301, 1322
 Chung, K.T. — 1118, 1126
 Chung, O.H. — 779
 Chung, S. — 2368
 Chung, W. — 1014, 1049
 Chung, Y. — 1132, 1200, 1208, 1209, 1210, 1239, 1243
 Chunhua, Bai — 1493
 Chunyan, Wang — 1539
 Chunyu, S.T. — 1943
 Chupp, T.E. — 913, 1085
 Chupp, W. — 1322
 Chupp, W.W. — 1994
 Church, Eugene L. — 912
 Church, M. — 1251
 Churchill, A.C. — 808
 Churchill, R.J. — 2003
 Church-Well, S. — 1035
 Chutjian, A. — 1156
 Chuu, D.S. — 842
 Chuvatin, A.S. — 1894, 1943, 2089, 2122
 Chuvilo, I.V. — 1273
 Cianciolo, V. — 1000, 1810
 Ciapala, E. — 1213, 1226
 Ciarlette, D. — 1249, 1274
 Ciccotti, Giovanni — 778
 Cicerone, Marcus T. — 349
 Cicerone, M.T. — 742
 Cichy, M.A. — 253, 369
 Cieplak, Marek — 115
 Cieplak, Marta Z. — 171
 Cieplak, M.Z. — 731
 Cima, G. — 1950, 1952, 1954
 Cima, Michael J. — 807
 Cimbala, John M. — 2305
 Cinquini, Luca — 1038
 Ciocca, M. — 1139
 Ciofi, C. — 112
 Cipolla, S. — 1133
 Cirac, J.I. — 1122
 Ciraci, S. — 185, 304, 582
 Cisneros, C. — 1103, 1160, 2371
 Citrin, D.S. — 400, 807
 Citriniti, J.H. — 2234
 Ciullo, G. — 1371
 Civalè, L. — 122, 802, 835
 Cizewski, J.A. — 980, 1015, 1049, 1050, 1831
 Cizewsky, J.A. — 1013
 Claassen, J.H. — 693
 Claaborn, G. — 1206
 Claeson, T. — 112
 Claessen, R.C. — 274
 Clapp, P.C. — 674
 Clark, A.F. — 836
 Clark, A.H. — 293
 Clark, B. — 1840
 Clark, B.C. — 1860
 Clark, B.F. — 2045
 Clark, B.K. — 1094
 Clark, C.W. — 841, 1145, 1146
 Clark, D. — 1253, 1263, 1335
 Clark, D.J. — 1335, 1808
 Clark, H.L. — 918
 Clark, J.B. — 1500
 Clark, J.F. — 216
 Clark, K.P. — 466
 Clark, M. — 1165
 Clark, M. Collins — 2001
 Clark, M.W. — 1163, 1813
 Clark, N.A. — 187, 404, 534, 536, 600, 767, 768, 820
 Clark, R. — 1049, 1054, 1831, 1842, 2081, 2089, 2124
 Clark, R.E.H. — 1905, 2331
 Clark, R.M. — 981
 Clark, Robert B. — 961
 Clark, R.W. — 2084
 Clark, S. — 981, 1225
 Clark, W.G. — 368, 779, 780
 Clark, William — 1161
 Clarke, A.S. — 68
 Clarke, C.J. — 488
 Clarke, D. — 496
 Clarke, J. — 519, 520, 637, 691, 835
 Clarke, J.A. — 1325, 1361, 1365
 Clarke, R. — 130, 443, 619, 671
 Clarke, S. — 981, 2317
 Claro, F. — 218, 283
 Clauberg, Horst — 1741
 Claudet, S. — 1301
 Claus, J. — 1297
 Claus, R. — 1213
 Clausen, B. — 1826
 Clausen, B.L. — 1817, 1820
 Clauser, J.F. — 1122, 1135, 1762
 Claussen, B.L. — 944, 1846
 Clay, H.W. — 1261
 Clay, W. — 1263, 1264
 Clayhold, J.A. — 80
 Clayman, B.P. — 521
 Clayton, C. — 1311, 1342
 Clayton, C.E. — 1285, 1901, 1988, 1997, 2073, 2084
 Clayton, Christopher E. — 1309
 Clayton, T. — 1291, 1405
 Clayton, W.B. — 914, 915
 Clegg, T.B. — 2166
 Clem, J.R. — 122, 459
 Clemen, L.L. — 565
 Clemens, B.M. — 1610
 Clement, M. — 1404
 Clement, S. — 2056
 Clendenin, J. — 1636
 Clendenin, J.E. — 1312, 1313, 1342
 Clerc, F. — 1527
 Clerc, G. — 1395
 Cleveland, B. — 1040
 Cleveland, Charles L. — 202
 Clifford, Loren R. — 325
 Clift, B.E. — 1333
 Clifton, R.J. — 1500, 1529
 Cline, D. — 1368, 1806, 1808, 1857
 Cline, D.B. — 1279
 Cline, R.A. — 935, 1121, 1141, 1168
 Cline, T. — 1638
 Cline, T.L. — 1638
 Clinton, T. — 639
 Clinton, T.W. — 73
 Clogston, A.M. — 1612

- Clothiaux, E. — 1157
Clough, A.S. — 488
Clough, Roger — 656
Clougherty, D.P. — 651
Clout, P. — 1273
Clozza, A. — 1265
Cluggish, B. — 1972
Clune, T. — 2306
Coacolo, J.C. — 1360
Coad, J.P. — 1919
Cobb, J.K. — 1294
Cobb, J.L. — 125
Cobble, J.A. — 1913, 2083
Cobden, D.H. — 537
Coblentz, D. — 1589
Cocagne, J. — 2332
Cochran, F. — 2089
Cochran, J.F. — 562
Cockayne, Eric — 742
Cocke, C.L. — 1089, 1102, 1108, 1163
Cocke, C. Lewis — 1103
Cocoletzi, G.H. — 399
Coda, S. — 1937, 2063, 2064
Cody, Jeffrey G. — 1768
Coe, S. — 1988
Coe, S.E. — 2352, 2366
Coffe, G. — 327
Coffey, C.S. — 1599
Coffey, D. — 153, 582
Coffey, K.R. — 161, 733
Coffey, L. — 582
Coffey, R.L. — 1925
Coffey, S.K. — 1974
Coffing, C.L. — 1808
Coffing, D.L. — 1812
Coffman, Daniel M. — 917
Coggeshall, S.V. — 1916
Cohen, B.I. — 1914, 1921, 1935, 2015, 2016
Cohen, C. — 350
Cohen, J. — 2265, 2304
Cohen, J.D. — 630
Cohen, Marvin — 340
Cohen, Marvin L. — 104, 105, 305, 461, 505, 621, 832, 834
Cohen, M.H. — 216, 799
Cohen, R.E. — 390, 407, 460, 564, 575, 1488, 1507
Cohen, R.H. — 1911, 1921, 1924, 2016, 2103
Cohen, R.J. — 785
Cohen, S. — 1253
Cohen, S.A. — 2051, 2111
Cohn, D.R. — 1903, 2039
Cohn, J.L. — 127
Colby, Ralph H. — 145
Colchester, R.J. — 1221
Colchin, R.J. — 2008, 2021
Colclough, M.S. — 60, 751
Cole, B. — 185, 1240, 1244, 1246, 1811
Cole, J.D. — 1806, 1858, 2170, 2247
Cole, M. — 133, 1311, 1377
Cole, Milton W. — 651
Cole, M.W. — 650, 1023
Cole, R. — 1273
Cole, R.C. — 705
Colegrove, T. — 1132
Colella, R. — 517, 625
Coleman, C.C. — 808
Coleman, G.N. — 2311
Coleman, J.J. — 282
Coleman, J.S. — 2166
Coleman, J.W. — 2109
Coleman, Lawrence A. — 959
Coleman, L.B. — 541
Coleman, M.M. — 143
Coleman, P. — 78, 500, 1377
Coleman, P.D. — 1344, 1388, 1399
Coleman, Piers — 499
Coleman, R.V. — 117, 183, 452
Coles, B.R. — 130
Colestock, P. — 1345, 1346, 1359
Colestock, P.L. — 1269, 1346, 1350, 1371
Colgan, M.J. — 2355
Colglazier, E. William, Jr. — 666
Collaboration, Diamas — 676, 677
Collazo, I. — 2033
Collazo-López, I. — 2033
Collet, G.J. — 1312
Collet, P. — 1395
Collier, P. — 1228, 1365
Collins, C.B. — 1682, 1683, 1684, 1686, 1726
Collins, C.L.A. — 1125
Collins, G. — 2335
Collins, Gary S. — 61, 162, 220, 261
Collins, G.L. — 420
Collins, G.W. — 168, 572
Collins, J. — 1197, 1245, 1257, 1293, 1905
Collins, J.M. — 632
Collins, John — 1612
Collins, J.R. — 1628
Collins, L.A. — 796, 1100, 1128, 1147
Collins, L.R. — 2213, 2278
Collins, R.A. — 1949
Collins, R.L. — 769, 770, 967, 968, 1677, 1682
Collins, R.T. — 661
Collmar, W. — 968, 989
Colombo, L. — 517
Colón, J.E. — 264
Colonna, N. — 1812, 1828, 1853
Colton, E. — 1346
Colton, Richard J. — 378
Colton, R.J. — 796
Colucci, D. — 415
Coluzza, C. — 182, 474, 642
Colvin, V.L. — 807, 1614
Comas, J. — 1769
Combis, P. — 1538
Combs, C.M. — 1334, 1378
Combs, S.K. — 2065
Commins, E.D. — 1110, 1111
Commisso, R.J. — 1989
Compaan, A. — 375, 507
Componenti, Ansaldo — 1389
Composto, R.J. — 91, 294, 420, 488
Compton, D.A. — 2217
Compton, R.N. — 152, 1087
Comsa, George — 341
Conaway, William E. — 1112
Conciauro, G. — 1329
Concus, P. — 2309
Condat, C.A. — 169
Condé, H. — 1338
Conde, M.E. — 1313, 2047
Cone, R.L. — 469
Conetti, S. — 2168
Cong, L. — 516, 646
Cong, Y.S. — 316
Coniglio, A. — 245, 545, 1438
Conley, J.F. — 376
Conlon, B.P. — 2221
Conn, R. — 2008
Conn, R.W. — 1892, 1896, 1912, 1918, 1920, 1946, 2008, 2058, 2063, 2095
Connally, P. — 460
Connelly, J. — 942, 1818
Conner, S.E. — 1134
Connolly, R. — 1273
Connor, K. — 1951
Connor, K.A. — 1951, 2021
Connor, W. — 2008
Connors, A. — 968, 989
Conrad, Ed — 2162
Conrad, J. — 1900
Conrad, J.R. — 1890
Conradi, M.S. — 314, 626
Conradson, S. — 389
Conradson, S.D. — 389, 390
Conroy, David — 152
Constantinou, C.P. — 1598
Conte, M. — 1197, 1258
Conti, R.S. — 1111
Conticchio, L. — 1818
Conticchio, L.F. — 1805
Contreras-Puente, G. — 321, 686
Conway, G.D. — 2005, 2006, 2110
Conway, P. — 1214
Conwell, E.M. — 109, 158, 159, 211
Conzett, H.E. — 914, 1816
Cook, D.C. — 161, 162
Cook, D.R. — 2104
Cook, M.D. — 1564
Cook, R.L. — 435, 574
Cook, Robert L. — 1726
Cook, S. — 1673
Cook, William H. — 1556
Cooke, D.W. — 190, 580
Cooke, J.F. — 82
Cooke, L. — 1813
Cooke, W. — 314, 569
Cooke, W.E. — 1094, 1095, 1139
Cooker, M. — 2245
Cooley, J.C. — 438
Coombes, R. — 1290
Coon, S.A. — 916, 1063
Coonan, B.P. — 2365
Cooper, A.S. — 224, 496, 525, 526
Cooper, B.H. — 342, 497, 498
Cooper, B.R. — 64, 208, 308, 310, 758, 759
Cooper, D. — 1830
Cooper, E.D. — 1860
Cooper, F.M. — 1649
Cooper, J. — 1091, 1093, 1758
Cooper, John — 1098
Cooper, J.R. — 222
Cooper, R. — 1215, 1346
Cooper, R.F. — 2376
Cooper, R.K. — 1344
Cooper, S.G. — 962
Cooper, S.L. — 76, 93, 132, 142, 194, 226, 228, 282, 293, 350, 413, 798
Cooper, W.S. — 1320, 2052
Cooperstein, G. — 2074
Coosemans, W. — 1366
Copeland, R. — 2163
Copeland, R.A. — 1092
Copeland, Randal D. — 2163
Copi, C. — 1812
Copley, J.R.D. — 252
Coplin, K.A. — 312
Coplin, Kimberly — 663
Coppi, B. — 1944, 1946, 2037, 2052, 2053, 2055, 2076, 2115
Coppins, M. — 2090
Copty, N. — 1053
Corbató, S.C. — 1021
Corbett, J. — 1209, 1242
Corbett, W. — 1238, 1239, 1324
Corcoran, S. — 590
Cordaro, J. — 513
Cordes, D. — 1089, 1128, 1132, 1165
Cordes, J.G. — 2167
Cordey, J.G. — 1937, 2055
Cordrey, I.L. — 1090
Coriasso, C. — 85
Cork, C. — 1329
Corke, T.C. — 2196, 2236
Corkill, Jennifer L. — 621, 832
Corkum, P.B. — 1749, 1752, 1770
Corlett, J.N. — 1308, 1347, 1351
Cormier, T.M. — 2170
Corn, Robert M. — 1772
Cornacchia, M. — 1242, 1246
Cornelis, K. — 1352, 1365
Cornelison, D.M. — 542
Cornelius, A. — 439
Cornelius, W.D. — 1318, 1337, 1343, 1394, 1398
Corneliusson, M.F. — 2094
Cornell, E.A. — 1144
Cornetti, D.S. — 204
Corngold, Noel — 1970
Coronado, M. — 1928, 2022, 2023
Coroneus, J. — 780
Coroniti, F. — 2013
Corrada-Emmanuel, A. — 2230
Corrales, L.R. — 573
Corredoura, P. — 1213, 1214, 1371
Cort, B. — 324
Cortelezzi, L. — 2276
Cortez, E. — 1671
Corti, S. — 2057
Cosby, P.C. — 1092, 2370
Cosstick, K. — 1520
Costa, S. — 998, 999, 1815, 1828, 1853, 1854
Costales, J.B. — 1816, 1833
Coster, D.P. — 2077
Cota, E. — 756
Coté, A. — 2028
Cote, C.Y. — 1988
Côté, R. — 392
Cotel, A.J. — 2253
Cottam, Russell — 1891
Cottet, F. — 1535, 1566
Cottingham, W.B. — 1318
Cottingham, D. — 920, 1066
Cottle, P.D. — 1832
Cottrell, G.A. — 2054
Cotts, E.J. — 206, 207, 1606
Cotts, P.M. — 144
Cotts, R.M. — 314
Couairon, A. — 2290
Couchell, G.P. — 1650, 1652, 1806
Coulter, J.Y. — 1626
Coulter, K.P. — 913, 997, 1804, 1855
Coulter, Y. — 160
Courant, E.D. — 986, 1240
Couchinoux, R. — 1547, 1555
Court, G.R. — 987
Courteuisse, S. — 1571
Courtens, E. — 503
Covault, C.E. — 1020
Coverdale, C.A. — 2080
Covington, A.M. — 1163
Covington, B.C. — 108, 703
Covington, M. — 581
Cowan, D.L. — 826
Cowan, P. — 1150
Cowan, P.L. — 1125, 1149
Cowan, R.D. — 1150
Cowan, R.G. — 1921, 2379
Cowan, T.E. — 1813, 1969, 1973
Cowen, J.A. — 534, 694
Cowles, Daniel C. — 1125
Cowley, Steve — 1926
Cowperthwaite, M. — 1561, 1563
Cowsik, R. — 923
Cox, C. — 190
Cox, D. — 2078, 2125
Cox, D.E. — 124, 252, 253
Cox, D.L. — 168, 753, 757, 758
Cox, Donald P. — 910
Cox, Edward C. — 1665

- Cox, M.S. — 1668
Cox, S. — 314, 569
Cox, S.J. — 2379
Cox, S.M. — 2224
Crabtree, G.W. — 170, 171, 345, 347, 597, 635, 802
Craciun, Floriana — 62
Craddock, G.G. — 1912, 1923
Cragg, A. — 125
Craig, D. — 927, 940, 941, 998, 1815, 1828, 1852, 1854
Craig, J.L. — 1948
Craig, K. — 815
Craig, R.A. — 577, 578
Craig, S. — 1214
Crain, J. — 1545, 1578
Cramb, D.T. — 1628
Cramer, J.G. — 1810, 1824
Cramer, M.S. — 2250
Cramer, Peter G. — 1458
Cramer, R.K. — 2164
Cramer, S.P. — 268
Cranberg, L. — 927
Cranberg, Lawrence — 964, 995
Crandall, K. — 1305
Crandall, K.R. — 1361, 1388
Crandell, D.A. — 1054
Crane, J.K. — 1770
Crane, M. — 1225, 1227
Crane, P. — 2262
Crane, R.L. — 194, 410, 414, 421, 454, 482
Crannell, H. — 942, 1684, 1818
Crary, D.J. — 949
Crasemann, B. — 1151
Craven, W.A. — 1950
Cravey, W.R. — 1305
Crawford, A. — 1397
Crawford, B.E. — 2171
Crawford, C. — 1359, 1380, 1381
Crawford, G.P. — 767, 819, 846
Crawford, H.J. — 932, 949
Crawford, J.F. — 1338, 1917, 1918
Crawford, K. — 1227, 1266
Crawford, M.K. — 124
Craxton, R.S. — 1886, 1934, 2085
Craxton, S. — 1935
Creager, W.N. — 616, 617
Creamer, Amanda — 2224
Creighton, J.A. — 270
Cremaldi, L. — 1037
Cremer, M.A. — 2243
Crepeau, R. — 631
Crespi, V.H. — 104
Crespi, Vincent H. — 104, 105, 305, 461
Cresswell, A. — 339
Cresswell, A.J. — 1806
Cresto, P.C. — 1531
Creswick, R.J. — 654
Creton, C. — 545
Crews, L. — 281, 2166
Crimp, M. — 534
Cripps, G. — 2084
Crissman, J.M. — 545
Crissman, John M. — 606
Crist, C. — 1221
Crist, C.E. — 1200, 1201, 1217, 1218
Crocker, N. — 1978
Crockett, Dale — 1949
Crockford, G. — 1221
Croft, M. — 225
Crofton, J. — 566
Croke, E.T. — 86
Croll, S.G. — 410
Cromack, K.R. — 311
Cromer, K. — 1847
Crommie, M.F. — 184
Cronin, James — 1031
Cronin, J.W. — 1020
Cronqvist, M. — 927, 940, 1854
Crook, R.A. — 415
Crooker, B. — 326
Crooker, B.C. — 73, 80, 797
Crookham, H.C. — 266, 621
Crooks, R.M. — 378
Crooks, S.M. — 1972
Crosbie, E. — 1249, 1324
Crosbie, E.A. — 1249
Crosley, David R. — 1727
Cross, J.O. — 385
Cross, L. — 928
Cross, William — 665
Crosson, E.R. — 1064, 1845
Crottinger, J.A. — 1912, 2016, 2077, 2103
Crouch, David D. — 1940
Crouch, I.G. — 1555
Crouch, R. — 1205
Crow, J.E. — 72, 75, 79, 731, 782, 2168
Crowe, C.T. — 2278
Crowe, K. — 942
Crowell, B. — 1830
Crowell, P.A. — 240, 1022
Crowell, Paul — 1048
Crowley, T.P. — 1951
Crume, E.C., Jr. — 1928
Crutchfield, James P. — 1462
Cruz, C.J. — 544
Cruz-Cruz, Luis — 109
Cryer, S.A. — 2275
Csanak, G. — 1106, 1147, 1964, 2331
Csavinszky, P. — 1646
Cubaynes, D. — 1139
Cubitt, R. — 579
Cucharro, J. — 689
Cucinotta, F.A. — 1063
Cucinotta, Francis A. — 1834
Cudzilo, S. — 1593
Cuevas, C. — 1319
Cuff, L. — 506
Cui, B. — 2025, 2026
Cui, C. — 1516
Cui, C.S. — 1965, 2330
Cui, G. — 59
Cui, H.L. — 234, 398
Cui, J. — 748
Cukauskas, E.J. — 387
Culbertson, J.C. — 839
Culbertson, R.L. — 1053
Cull, Brian — 652
Cullen, D. — 1049
Cullen, D.M. — 1049, 1856
Cullen, J.R. — 562, 817
Cullum, Jane — 1459
Culver, J.P. — 1754
Culwick, B. — 1400
Cumming, Andrew — 709
Cumming, A.W. — 1632
Cummings, A.C. — 947, 948, 949
Cummings, J.C. — 2015, 2099
Cummings, J.R. — 947, 948, 999, 1061
Cummins, H.Z. — 263, 264, 590
Cuneo, C.J. — 1714
Cuneo, M.E. — 1302
Cunningham, B.A. — 631, 632
Cunningham, David L. — 1767
Cunningham, J.E. — 697, 764
Cunningham, K.L. — 1614
Cunningham, R.A. — 1806
Cunningham, R.W. — 1658
Curbow, J. — 1383
Curien, D. — 981
Curley, J.D. — 847
Curran, D.R. — 1562, 1566, 1596
Curro, J.G. — 244, 715
Curro, John G. — 1631
Curry, B.P. — 1253
Curry, J.J. — 1889
Curti, F.G. — 287
Curtin, M. — 1393, 1398
Curtin, W.A. — 789, 1611
Curtis, B. — 2015
Curtis, L.J. — 1120, 1140, 1152
Curtis, S. — 1245
Curtis, S.A. — 1197
Curtiss, L.A. — 269
Cuthbertson, J.W. — 2058, 2059, 2060
Cuttillo, A.G. — 455
Cutler, P.H. — 579
Cutler, R. — 1357
Cutler, R.I. — 1377, 1398
Cuza, R.A. — 968
Cwilich, Gabriel — 383, 1637
Cybulska, E.W. — 1819
Cybyk, B.Z. — 2233
Cygan, R.T. — 1518, 1557
Cygnus, M. — 85
Cyr, M.N. — 2239
Czajkowski, M. — 1124
Czarnetzki, U. — 2335
Czechanski, J. — 1553
Da, X.D. — 1163
Dabbagh, G. — 1622
Dabberdt, W. — 2195
Dabiri, D. — 2287
Dabrowski, B. — 72, 171, 173, 188, 226, 241, 273
Dabrowski, J. — 1223, 1224, 1400
Daclon, F. — 1260, 1262
Da Cruz, M.T.F. — 1804, 1829, 1830, 1855
Dadali, A.A. — 1508
Daemen, L. — 1612
Daemen, L.L. — 1626
Dagata, J. — 518
Dagata, J.A. — 232
Dagel, D.J. — 2350
Dagenhart, J. Ray — 2233
Dagnall, P.J. — 981, 1049
Dagotto, E. — 277, 496, 594
Dagotto, Elbio — 595
Dahi, H. — 2023
Dahimene, M. — 2340
Dahiya, J.N. — 1043
Dahiya, R.P. — 2362
Dahl, J.P. — 1098
Dahl, L.S. — 987
Dahlberg, D. — 371
Dahlberg, E.D. — 124, 317, 990
Dahlberg, E. Dan — 323, 733, 838
Dahlburg, J.P. — 1886, 1961, 1962
Dahleh, M.D. — 2193
Dahlerup-Petersen, K. — 1401
Dahm, A.J. — 177, 800
Dahm, W.J.A. — 2194, 2205, 2255, 2269, 2286
Dahmen, K. — 790
Dahmen, Uli — 213
Dahn, J.R. — 56, 57, 65, 157, 209, 256, 458
Dai, C.-A. — 419
Dai, G.H. — 104
Dai, G.X. — 1813
Dai, H. — 63
Dai, Hai-Lung — 1730, 1775
Dai, H.J. — 604
Dai, H.Y. — 1021
Dai, Jian-ming — 1735
Dai, K.H. — 295, 409, 482
Dai, N. — 283, 398
Dai, P. — 650, 747
Dai, Peihua — 237, 238, 239
Dai, X.-H. — 407
Dai, Z. — 117, 452
Daido, H. — 1943
Dailey, James — 2086
Daily, T. — 1040
Dainelli, A. — 1336
Dakin, J.T. — 2357
Dalal, N. — 151, 184
Dalal, N.S. — 406
Dalberth, M.J. — 1088
Dal Corso, A. — 181
Dalgarno, A. — 1093, 1098, 1113, 1118, 1123, 1139, 1148, 1162, 2361
Dalhed, H. — 1942
Dalichaouch, Y. — 130, 170, 274, 326, 387
Dallas, T. — 1676
Dalton, T.J. — 2376
Dalvi, M.C. — 658
Dalvie, M. — 1901, 2341, 2354
Daly, C. — 379, 827
Daly, Mark — 1064
Daly, P.J. — 1832
Daly, R. — 1201, 1229
Daly, W.H. — 423
Dam, C. — 94
D'Ambrumenil, N. — 821, 822
Dame, T.M. — 989
Damm, R. — 1394
Dan, K. — 1540
Danared, H. — 1335
Danby, G.T. — 1296
Danby, J.M.A. — 1460
Dandekar, D.P. — 1505, 1511, 1586
Dandrea, R.G. — 158
Dandrea, Robert — 622
Dang, Le Si — 530
Dang, T. — 411
D'Angelo, A. — 914, 915
D'Angelo, N. — 1966
Dangor, A.E. — 2079, 2087
Daniel, A.V. — 1806
Daniel, E.S. — 70, 834
Danielewicz, P. — 941, 1847
Daniels, S.W. — 2088
Daniels, W.B. — 575
Daniels, William B. — 1503, 1532
Danielson, J.R. — 1938
Danilov, V. — 1352
Danly, B.G. — 1280, 1282, 1310, 1963
D'Anna, L. — 1669, 1675
Danner, G.M. — 779, 780
Danson, C.N. — 2079
Dantsker, E. — 637
Dantsker, G. — 691
Dantzig, J. — 1060
Da Providencia, J. — 1639
Darbar, A. — 1953
Darbyshire, A.G. — 2317
Dardenne, Y. — 1828
Dardenne, Y.X. — 942
Darici, Y. — 437
Dark, M.L. — 467
D'Arrigo, A. — 1842
Darrow, C. — 2079, 2080
Darrow, C.B. — 2080
Darrow, D. — 1907, 2031, 2039
Darrow, D.S. — 2034, 2037
Darwin, M. — 122, 212
Das, A.K. — 2167
Das, Bigyani — 2314
Das, B.N. — 672
Das, P.c. — 89

- Das, R.K. — 1064
 Das, T.P. — 114, 153, 174, 268, 269, 564, 848
 Dasbach, D. — 1390
 Dasch, C.J. — 52
 Daschbach, J. — 1775
 Dasgupta, A. — 1157, 2081
 Dash, J.G. — 666, 746, 747
 Da Silva, L. — 1539, 2044
 Da Silva, L.B. — 1539, 1915, 1915, 1934, 2044
 DaSilva, L.V. — 2044
 Daskaloyannis, C. — 1615, 1628, 1629
 Das Sarma, S. — 379, 381, 679, 1614
 Das Sarma, Sandar — 380
 Das Sarma, Sankar — 53
 Dasu, S. — 1034, 1821
 Daswani, Jyoti M. — 1515
 Datars, A.E. — 234
 Date, H. — 2344
 Datskos, P.G. — 2358
 Datta, Debasis — 1126
 Datta, S. — 641, 756, 760, 761, 1617
 Datta, T. — 125
 Datte, P. — 1200, 1219
 Datz, S. — 1113, 1162
 d'Aubigne, Y. Merle — 530
 Dauelsberg, L. — 1299
 Dauelsberg, Larry B. — 1298
 Daugherty, J.E. — 2330
 Daulton, T.L. — 681
 Daumont, I. — 2315
 D'Auria, G. — 1383, 1393
 D'Auria, J. — 1271, 1844
 D'Auria, J.M. — 1843
 Dauvergne, J.-P. — 1341
 Davanloo, F. — 1682, 1686
 Davara, G. — 2012, 2088
 Davenport, James W. — 1613
 Davenport, J.W. — 207, 215
 Davey, S.T. — 1726
 David, G. — 1036
 David, J. — 1538
 Davidenko, A.M. — 1054
 Davids, C. — 1049
 Davids, C.N. — 1014, 1818, 1819, 1844
 Davids, P.S. — 53, 153
 Davidson, B. — 241
 Davidson, B.N. — 309
 Davidson, D.B. — 1445
 Davidson, E.R. — 1458
 Davidson, J. — 676, 735
 Davidson, J.L. — 2166
 Davidson, N. — 1144
 Davidson, R.C. — 1304, 1973
 Davidson, R.M. — 915
 Davidson, Ronald C. — 1997
 Davies, B.J. — 1123, 1124
 Davies, C. — 2289
 Davies, F.W. — 1562
 Davies, G. — 843
 Davies, L. — 1830
 Davies, Robert — 498
 Davis, A.J. — 949
 Davis, A.M.J. — 2223
 Davis, B.F. — 980, 1052
 Davis, C.A. — 1036, 1836, 1847
 Davis, Charles, E. — 2001
 Davis, C.M. — 768
 Davis, C.R. — 736
 Davis, D.D. — 92
 Davis, E. — 314, 569
 Davis, E.D. — 962
 Davis, H. — 1988
 Davis, H.A. — 1988, 2048, 2117
 Davis, H.L. — 365
 Davis, J. — 1542, 1586, 2081, 2089, 2124
 Davis, Jay — 907
 Davis, J.C. — 87, 88, 138
 Davis, K.B. — 1141
 Davis, Kendall — 1650
 Davis, K.J. — 1342
 Davis, L.C. — 214, 262, 344, 345
 Davis, M.F. — 272, 836
 Davis, Michael — 102
 Davis, P. — 1285, 1311, 1323, 1342, 1359, 1997, 2073
 Davis, P.G. — 1941
 Davis, R. — 341, 1040
 Davis, R.C. — 2160
 Davis, Robert H. — 2188, 2201
 Davis, R.S. — 946
 Davis, S. — 2196
 Davis, S.H. — 2188, 2222, 2279, 2280
 Davis, S.S. — 2248
 Davis, T.F. — 456
 Davis, W.M. — 2094
 Davis, Wyatt — 2253
 Davison, N.E. — 1036, 1847
 Davoli, I. — 160
 Davoren, C.M. — 1818
 Daw, M.R. — 2366
 Daw, M.S. — 66
 Daw, Murray — 219
 Dawes, Judith M. — 1738
 Dawes, M.L. — 207
 Dawson, D. — 409
 Dawson, J. — 1219, 1903, 1968
 Dawson, J.F. — 1649
 Dawson, J.M. — 1964, 1975, 2015, 2017, 2018, 2020, 2103, 2109, 2115
 Dawson, R. — 1335
 Day, G.W. — 767
 Day, M. — 1892
 Day, M.A. — 270
 Day, P. — 748
 Dayo, A.J. — 379
 Dayton, J. — 1895
 Dayton, P.A. — 699
 Deadrick, F. — 1303, 1994
 Deak, J. — 122, 212, 459
 de Alcantara Bonfim, O.F. — 175, 594
 De Amici, G. — 1065
 Dean, D.J. — 2170
 de Andrada, E.A. — 399
 De Andrade, M.C. — 130, 170, 274, 326, 327, 387
 Deane, A.E. — 2221
 DeAngelis, D. — 1820
 DeAnni, A. — 513
 Dearnaley, Geoff — 450
 Deaven, D.M. — 305, 588
 Deb, S.K. — 1521
 de Barbaro, P. — 985, 986, 1034, 1037, 1821
 Debiak, T. — 987, 1216, 1322, 1333, 1377
 Deboer, J. — 1049, 1050
 de Boissieu, M. — 625
 De Boissieu, Marc — 625
 DeBoo, J.C. — 1937, 1938, 2061, 2065
 deBrauw, Alan — 1908
 deBrion, S. — 520
 Debrunner, P.G. — 119, 162
 de Bruyn, J.R. — 589
 DeCair, S.D. — 927
 DeCarli, P.S. — 1562, 1562
 De Castro, S.G.C. — 780
 Decaux, V. — 1157, 2040
 Dececco, P. — 935
 DeChiara, P. — 2091
 Deck, F.J. — 1110
 Deckelbaum, Lawrence I. — 1766
 Decker, C. — 1279
 Decker, C.D. — 2080, 2081
 Decker, F.-J. — 1217, 1221, 1256, 1360, 1361, 1366, 1371, 1371
 Decker, G. — 1204, 1208, 1209, 1210, 1243, 1274
 DeckerF.-J. — 1209
 Deckers, R. — 1274
 Deckman, H.D. — 115
 Deckman, H.W. — 165, 270, 314, 518
 Decman, D.J. — 1855
 Décoste, R. — 2029, 2071
 De Coster, C. — 1822
 Décote, R. — 2057
 Decowski, P. — 1828
 Decyk, V. — 1971
 Decyk, V.K. — 2015, 2103
 Dederichs, P.H. — 176
 Dee, Gregory T. — 90
 Deeter, G. — 409
 DeFacio, B. — 187
 De Fontaine, D. — 106, 209
 de Fontaine, Didier — 105
 DeFord, J. — 1997
 Deford, J.F. — 1353
 DeForge, D. — 1548
 Defrance, G. — 981
 Degen, C. — 1210
 Degen, M. — 2316
 Degenhardt, R. — 1297
 de Gennes, P.G. — 192
 Degiorgi, L. — 104, 774
 De Giorgi, M. — 1384
 Degnan, J.H. — 1896, 1974, 2012, 2090
 De Graaf, M.J. — 2362
 DeGraff, J. — 1856
 DeGrassie, J.S. — 2065, 2068, 2069, 2107
 DeGroot, J. — 1935
 De Groot, J.S. — 1913, 1917, 2090, 2349
 Degtiarenko, P. — 1034
 Degtyarenko, P. — 1034
 DeHaven, R. — 1332, 1387
 De Heer, W.A. — 1605
 Dehen, J. — 1319
 Dehmer, J.L. — 1092, 1150, 1760
 Dehmer, P.M. — 1092, 1150, 1760
 Dehnard, D. — 943, 982
 Dehning, B. — 1366
 De Hoog, F.J. — 2367
 DeHope, W.J. — 2001
 Deissler, R.G. — 2229
 Deissler, R.J. — 2290, 2292
 Deisz, J.J. — 828
 Deitinghoff, H. — 1319
 Deitrich, F. — 1034, 1821
 Dejbakhsh, H. — 998
 Dejean, J.P. — 1491
 de Jong, M. — 987
 de Jong, M.S. — 1377, 1388
 De Jong, W. — 1614
 De Kinder, Jan — 467, 478
 Dekker, Nynke H. — 814
 Dekker, Peter — 1738
 Dekkers, E. — 1296
 Dekorsy, T. — 315
 De Laet, C.T.A.M. — 1817
 Del Alamo, J.A. — 707
 De la Luna, E. — 2096
 De Lamare, J. — 1402
 Delamater, N. — 1884
 Delamater, N.D. — 1885
 Delameter, N.D. — 2043
 DeLaney, D.B. — 1054, 1055
 Delaney, M.E. — 1620
 Delaroché, J.P. — 1063
 Delassus, P.T. — 541
 Delaunay, M. — 1343
 Delayen, J. — 1249, 1272, 1377
 Delayen, J.R. — 1334, 1365
 Delbar, Thierry — 1008
 Del Castillo-Mussot, M. — 847
 del-Castillo-Negrete, D. — 1909
 Delchamps, S.W. — 1290
 Delcourt, B. — 1222
 Deleo, Gary G. — 576, 843
 Deleone, C.J. — 594
 Deleplanque, M.-A. — 1013, 1014, 1049, 1050, 1050, 1805, 1806, 1831
 Delettrez, J.A. — 1962, 1987
 Delevi, V.G. — 1514
 Delfyett, P.J. — 1713
 Delgass, W.N. — 294
 Delheij, P.P.J. — 1847, 2171
 Delhez, J. — 1352, 1368, 1369
 Delikaris, D. — 1341
 Delin, K.A. — 328, 804, 837
 Delis, D. — 1812
 Delis, D.N. — 1853
 Delisi, Donald P. — 2312
 Deliyaniakis, N. — 1937
 Dell, G.F. — 1242
 De Llano, M. — 524
 Delmas, G. — 145
 Delmere, Ch. — 1220
 Delo, C. — 2272, 2313
 Deloncle, I. — 1049, 1831
 Delong, L. — 643
 DeLong, Matthew C. — 787
 Delos, J.B. — 707, 1091, 1143
 De los Santos Jones, H. — 349
 Delouise, L.A. — 628
 de Lozanne, A.L. — 596, 692
 del Pozo, L. — 1640
 Delsart, P. — 1301, 1302
 Deluca, J. — 459
 Deluca, J.A. — 830
 De Lucia, F.C. — 1662
 De Lucia, S. — 982, 1051, 1830
 Delville, J. — 2247
 De Martini, F. — 1741
 De Mascureau, J. — 1200, 1301, 1302
 De Masi, W. — 1384
 De Matteis, F. — 468
 Demczyk, B.G. — 130
 DeMejo, L.P. — 511, 511, 795
 De Mello Borges, C. — 2353
 de Menezes, D. — 1378
 Demers, D.R. — 1952
 Demers, Y. — 2028
 Demeyer, A. — 1852
 Demidov, B.A. — 1494
 Demille, D. — 1110, 1111
 Demirel, Levent — 350
 Demkov, A.A. — 320, 335, 506
 Demmel, E. — 1394
 Demokritos, N.C.S.r. — 1628
 Demont, P. — 416
 deMoraes, M.M.W. — 1052
 de Moraes, N.S. — 2080
 Demos, P.T. — 1377
 Dempsey, Jed — 396
 Demroff, H.P. — 1283, 1683
 Demsky, M.I. — 1301
 Demuren, A.O. — 2192, 2246
 Demuth, Joseph — 197, 300
 Denard, J.-C. — 1215
 Denavit, J. — 2082
 Dendy, R.O. — 2018, 2054
 Denary, T. — 2233
 Deng, D.P. — 1394
 Deng, Hang — 1641

- Deng, J.K. — 1014, 1015
Deng, L. — 313
Deng, Peizhen — 1721
Deng, Q. — 425
Deng, W. — 1493
Den Hartog, D.J. — 1978, 1979, 2117
Den Hartog, P. — 1334
Deniaud, P. — 2304
Denison, A.B. — 395
Deniz, A.V. — 2085
Denker, John S. — 491
Denlinger, Jonathan D. — 514
Denney, P. — 1215, 1273, 1393, 1397
den Nijs, Marcel — 798
Dennis, B.S. — 393, 807
Dennis, K.W. — 783
Dennis, L.C. — 2172
Dennis, T.J.S. — 252
Dennison, J.R. — 115, 498, 748
Dentamaro, A.V. — 1727
Denton, C.S. — 1668
De Obaldia, E. — 172, 459
De Obaldia, Elida — 172
Deol, R.S. — 1503
De Pablo, Juan J. — 545
Depaola, B.D. — 1110, 1157
Depew, J. — 2226
Depoala, F. — 1386
Deppe, Dennis — 195
Deppe, J. — 848, 1624
DePristo, A.E. — 260, 261
Deptuck, D. — 1803, 1855
D'Erasmo, G. — 1853
Derbenev, Ya.S. — 986
Derderian, T. — 378
DeReggi, A. — 481
De Regt, J.M. — 2366
Derenchuk, V. — 1197, 1245, 1257, 1321
De Resseguier, T. — 1535
De Rijk, G. — 1365
de Rijk, W. — 1670
Dermer, C.D. — 919
de Rooy, J.C.J.M. — 175
DeRose, Paul — 1730
Derouard, J. — 2328, 2377
Derov, John S. — 70
Derrick, Malcolm — 1057
Derry, G.N. — 781
Derutyer, Hank — 1385
Deruyter, H. — 1230, 1288, 1381, 1391
Derwent, P. — 1039, 1204, 1205
Desai, D. — 1171
Desai, Niraj S. — 709
Desai, Rashmi C. — 541, 710
DeSalvo, R. — 1772
Deschepper, D. — 1836
Descouts, P. — 1628
Deserio, R. — 2176
Desforges, B. — 1365
Desgranges, C. — 1608
Desgranges, L. — 1608
Desgreniers, S. — 1597
Desideri, D. — 2012
De Silva, I.P.D. — 2254
DeSilva, A.W. — 1890
DeSilva, U. — 2241
DeSimone, J. — 540
DeSimone, J.M. — 142
Desirena, B. Flores — 398
Desjarlais, M.P. — 2045
Deslattes, R.D. — 951
De Soto, S.M. — 825
De Souza, A.R. — 2342
Desouza, F.A. — 2298
De Souza, R.T. — 941, 941, 1808, 1812, 1828, 1828, 1852, 1853
de Souza Cruz, F.F. — 1052
Despe, O.D. — 1224
Dessau, D.S. — 226, 274, 275
Destler, W.W. — 1301, 1902, 1999, 2048
Desvilletes, L. — 1436
Detch, John — 793
Detienne, D. — 501
Dettlefsen, D. — 1132
Detragiache, P. — 2053
De Urquijo, J. — 1103, 1160, 2371
Deutsch, C. — 1996, 2079
Deutsch, Claude — 1996
Deutsch, H. — 1117, 2369
Deutsch, J.M. — 631
Deutsch, Joshua M. — 427
Deutsch, M. — 646, 800, 1797
Deutscher, N.F. — 180
Dev, G. — 237
Dev, Gautam — 237
Devanand, K. — 94, 423
Devanarayanan, S. — 78, 281
Devane, G. — 181, 1589
Devaty, R.P. — 565, 566
Devegvar, P. — 466
Devendorf, G.S. — 1582
Deveney, E.F. — 1163
Deveraux, T.P. — 228
Devia, A. — 1278
Devier, B. — 1655
Devin, A. — 1200, 1301, 1302
De Vita, A. — 281
Devlin, M. — 1806, 1808, 1819, 1857
Devlin, T. — 1054
Devlin, Thomas — 975
Devore, R.G. — 1140
Devore, C.R. — 1463, 1988, 2248
Devoret, M.H. — 1623
Devred, A. — 1290
Devreese, J.T. — 289, 321, 337, 402, 505, 1587, 1609
DeVries, G.J. — 1320, 2052
DeVries, K.L. — 656
DeVries, K.M. — 1101
de Vries, M.S. — 152
Dewa, H. — 1334
Dewalt, L. — 603
Dewalt, L.E. — 658
DeWeerd, A.J. — 1848
Dewey, J. — 515, 516
Dewey, M. — 946
Dewey, M.S. — 913, 951
DeWitt, H.E. — 169
Dewitt, J.G. — 644
Dexheimer, S.L. — 502
Dey, J. — 1255, 1397
Dey, S. — 270
DeYoung, P.A. — 1812, 1828
Dezarn, W.A. — 997
De Zela, F. — 1131
Dhallé, M. — 1623
Dhanak, M.R. — 2230
Dhar, L. — 168
Dhar, S. — 699
Dharan, C.K.H. — 424
Dharma-Wardana, M.W.C. — 698, 833, 1539
Dhere, A. — 92
Dhinojwala, A. — 190
Dhoot, S. — 658, 713
Dhuga, K.S. — 944
Di, Wei — 699
Diack, M. — 152
Diamond, P.H. — 1910, 1911, 1912, 1923, 1992, 2017, 2123
Diamond, R.M. — 1013, 1014, 1049, 1050, 1791, 1805, 1806, 1831
Diamond, W.T. — 1405
Dianoux, A.J. — 157, 159
Dias, F.M. — 2336, 2352
Dias, Frédéric — 2199
Diaz, M. — 741
Diaz Bejarano, J. — 991, 1040
Di Bartolo, Baldassare — 1612
Dicarlo, D. — 382
Dicarlo, D.A. — 382
DiCarlo, J. — 274, 275
DiCicco, D. — 1736
Dick, D. — 501, 502
Dick, J.J. — 1564
Dick, R. — 1561
Dickens, B. — 481
Dickey, C. — 1403
Dickhoff, W.H. — 1835
Dickinson, J.T. — 207, 351, 736, 786, 790
Dickinson, P.H. — 463
Dickson, Mark — 945
DiDelez, J.P. — 1317, 1860
Didenko, A. — 1367
Didwania, A.K. — 2237
Diebold, D. — 1888, 2025, 2026, 2027
Diebold, D.A. — 2025, 2026
Diebold, G. — 1810
Diebold, G.E. — 1837, 1843
Diebold, U. — 452
Diebold, Ulrike — 451, 793
Diederich, A. — 455
Diedrich, D. — 549
Diehl, E. — 1021
Diehl, R. — 948, 968, 989
Diehl, Renee D. — 302, 748, 799
Dieleman, D.J. — 623, 679
Dierker, S. — 845
Dierker, S.B. — 165, 671
Diesso, M. — 2051
Dietrich, D.D. — 1163
Dietrich, F. — 1034
Dietrich, F.S. — 1846
Dietrich, P. — 1749
Dietrick, Kevin M. — 375
Dietz, D. — 1896
Diffalah, M. — 416
Digel, S.W. — 989
Dignam, M.M. — 551, 704, 760, 1756
Digregorio, J.F. — 834
DIII-D Group — 2068
DIII-D Physics Group — 2071
DIII-D Team — 1935, 1936, 2061, 2062
Dikansky, N. — 1367
Dikansky, N.S. — 1371
Dikmen, C. — 704
Dill, Ken — 1433
Dilley, N.R. — 129
Dillingham, T.R. — 542
Dillon, M. — 2363
Dillon, M.A. — 2369
DiMarco, J. — 1290, 1387
DiMaria, D.J. — 82
Dimas, Athanassios — 2216
DiMasi, E. — 117
Di Massa, G. — 1202
Dimic, V. — 1585
Dimiduk, D.M. — 261
Dimitrov, D. — 371
Dimits, A.M. — 2015, 2016
Dimonte, Guy — 1961
Dimotakis, P.E. — 2201, 2202, 2214, 2263, 2313
Dinardo, N.J. — 334, 726
Dinator, M.I. — 1632
Dinavahi, S.P.G. — 2265
Ding, B.J. — 1587
Ding, B.Z. — 1534, 1535
Ding, C. — 2275
Ding, D.K. — 485, 546
Ding, H. — 226, 273, 274
Ding, H.-Q. — 392, 585, 1453, 1458
Ding, J. — 1510, 1512, 1537, 1593
Ding, Jing — 1537
Ding, Y.G. — 307
Ding, Y.J. — 1754
Ding, Y.W. — 109
Dingus, B.L. — 988, 989, 1635
Dinius, J. — 941, 1853
Dinkel, J. — 1404
Dinneen, T.P. — 1170, 2346
Dinov, Konstantin — 1097
Dinova, K. — 1331
Dion, R.P. — 351
D'Iorio, M. — 45, 471, 473
Dipeso, G.J. — 1899, 2365, 2366
D'Ippolito, D.A. — 2034
DiPrete, D.P. — 1832
Direktovitch, Y. — 830
Dirk, C.W. — 538, 543
Dirubio, C.A. — 498
Di Salvo, Francis J. — 1575
Dishoek, Erwine F. — 939
Disko, Mark — 422
Dissanayake, A. — 265, 746
DiStefano, Rosanne — 960
Distel, U. — 1040
Ditmire, T. — 1770
Dittrich, T. — 756
Dittrich, T.D. — 2043
Dittrich, T.R. — 2083
DiTusa, J. — 439
Ditusa, J.F. — 439
Di Venera, A. — 235, 1617
Djavić, B. — 1329, 1330
DiVincenzo, David — 497
Di Vita, A. — 2055
Dixit, S. — 1915
Dixit, S.N. — 1961, 2085
Dixon, G.J. — 1714
Dixon, J.A. — 2162
Dizhur, E.M. — 1577
Djafari-Rouhani, B. — 384
Djalali, C. — 1860
Djaoui, A. — 2043
Djemil, T. — 2078
Digregorio, J.F. — 834
Djurović, S. — 2347
Djuth, F.T. — 1968
Dlogikh, G.V. — 1578
Dlott, Dana D. — 1548
D'Mello, Michael — 1453
Dmitrašinović, V. — 1639
Dmitrieva, I. — 1291
Dmowski, W. — 389
Do, K. — 559
Do, S.H. — 1322
Doane, J.W. — 767, 819, 846
Dobbe, N. — 1201
Dobbing, J.A. — 2107
Dobeck, L.M. — 1756
Dobeck, N. — 1286
Döbele, H.F. — 2335, 2335, 2336
Döbereiner, H.-G. — 405, 598
Doble, N. — 1404
Dobromyslov, A.V. — 1578
Dobrosavljević, V. — 661
Dobrowolska, M. — 283, 374, 398
Dobrzynski, L. — 384
Doczy, M. — 2024, 2025, 2026
Dodge, J.S. — 74
Dodge, W.R. — 1858
Dodson, G. — 1034, 1314
Dodson, G.W. — 1816
Doebbeling, H. — 1818
Doener, R. — 2095

- Doering, Charles R. — 2270
Doerner, M.A. — 1812
Doerner, R. — 1896, 2058
Doerr, T.P. — 411
Doery, M. — 1154, 1155
Doezema, R.E. — 82
Dogan, F. — 457
Dogan, N.S. — 704
Dohi, A. — 1211
Döhler, G.H. — 337, 1769
Doi, M. — 1338
Doke, T. — 949
Doktycz, M.J. — 118
Dolan, P.J., Jr. — 328
Dolbiklin, B. — 915
Dolinsky, A.V. — 1270, 1336
Dolique, J.M. — 1360
Doll, G.L. — 52, 792
Doll, Jim — 202
Domaradzki, J.A. — 2209, 2244, 2270, 2285
Dombeck, T. — 1290
Dombrowski, R. — 1219
Dombsky, N.M. — 1843
Domier, C.W. — 1888, 2110
Domiguez, R.R. — 2100
Domiguez, I. — 1103
Domiguez, R.R. — 1937, 2065
Dominguez-Lerma, M.A. — 469, 2266
Domke, M. — 682, 1147
Don, D. — 1599
Donahue, J. — 1253
Donald, A.M. — 293
Donald, Athene M. — 245
Donald, M. — 1240
Donaldson, A.R. — 1288, 1404
Donangelo, R. — 1823
Dong, C.-Z. — 341
Dong, D.W. — 1850
Dong, G.S. — 728
Dong, J.Q. — 1992
Dong, Q.-Y. — 226, 320, 519
Donglu-shi — 276
Doniach, S. — 463, 835
Donley, James P. — 294
Donley, J.P. — 244
Donnelly, D.W. — 703
Donnelly, Russell J. — 138
Donnelly, T. — 518
Donovan, David P. — 1773, 1776
Donovant, M.J. — 1337
Dontevieux, G. — 2089
Donzelli, O. — 153, 174
Doolen, Gary D. — 2228
Dooling, J. — 1334, 1338
Dooling, T. — 1818
Doose, C. — 1292
Dopazo, César — 2253
Dorantes-Dávila, J. — 1608
Doren, D. — 448
Dorfán, J.M. — 1366
Döring, J. — 1857
Döring, K. — 1262
Dorland, W. — 2014, 2101
Dorning, J.J. — 1991
Dorshow, Richard B. — 651
Dortwegt, R. — 1261
Dory, R.A. — 2020
Dosanjh, P. — 60, 189, 276, 326
Dostow, J. — 996, 997
Dotrong, M. — 546
Dotson, Lori — 1607
Dou, L. — 1100
Dougá-Jabon, V. — 1323
Dougherty, B. — 1854
Dougherty, T.P. — 168
Dougherty, W.M. — 918
Doughty, C. — 212, 806, 838
Doughty, D.A. — 2356
Douglas, D. — 1226, 1286, 1299
Douglas, M.A. — 1684
Douglas, M.R. — 1974
Douglass, John — 318
Douié, F. — 1894, 2122
Douillard, Gerald — 2314
Doutchenko, S.N. — 2376
Dovbnya, A. — 1324
Dovbnya, A.N. — 1316, 1358
Doverspike, L.D. — 2363
Dow, J.D. — 231, 240, 446, 622
Dow, John D. — 336, 509
Dow, K. — 1034, 1295, 1300, 1368
Dowben, P.A. — 286, 672, 699, 781
Dowell, D.H. — 1342
Dowell, F. — 424, 844
Dowell, M.L. — 1816
Dowlen, K.E. — 481
Dowling, Eric M. — 1733
Dowling, Jonathan P. — 1739, 1762, 1764
Dowling, J.P. — 1723
Downer, M. — 1309
Downer, M.C. — 1668, 1670, 1998
Downey, J. — 635
Downing, B. — 1021
Downing, J. — 1302
Doyle, E.J. — 1937, 2061, 2062, 2063, 2064, 2069
Doyle, J.M. — 185, 1170
Doyle, J.R. — 2350
Doyle, R. — 2336
Doyle, R.A. — 2353
Dozier, W.D. — 422, 483, 659, 714
Draayer, J.P. — 1029
Drabeck, L.M. — 172
Drabold, D. — 742
Drabold, D.A. — 568
Drabold, David — 494
Drabold, David A. — 448
Drachman, R.J. — 1153
Dracoulis, G.D. — 1819
Dragoset, R.A. — 341
Dragovitsch, P. — 2172
Drain, D. — 1852
Drake, G.W.F. — 1096, 1127
Drake, J.B. — 1900, 2015, 2169
Drake, J.F. — 1923, 1926, 1927, 1929
Drake, J.M. — 591, 1804
Drake, J.R. — 1980
Drake, R.P. — 1912, 1913, 1917, 1934, 1935, 2349
Drake, T.E. — 1805
Drillos, P.J. — 2351, 2373
Draper, C.H. — 1896
Draper, J. — 1050
Draper, J.E. — 1013, 1014, 1049, 1050, 1805, 1806, 1831
Dravid, V.P. — 53
Drchal, V. — 216, 799
Dreger, Z.A. — 1503
Dregia, S.A. — 61
Dreher, K. — 1289
Dreher, P. — 653, 1444
Drehman, A. — 331
Dremin, A.N. — 1520
Dressel, M. — 825
Dresselhaus, G. — 204, 205, 368, 501, 502, 839
Dresselhaus, Mildred — 202
Dresselhaus, M.S. — 205, 368, 501, 502
Dressler, R.A. — 2358
Dreszer, P. — 1611
Dreval, V.V. — 1954
Drew, H.D. — 74, 75, 126, 238, 805
Drew, H. Dennis — 74
Drew, M.M. — 1283
Drews, A.R. — 242
Drickamer, H.G. — 1502, 1503
Driehuys, B. — 1120, 1140
Drigert, M.W. — 1049, 1832
Dris, Irene M. — 2314
Driscoll, C.F. — 1933, 1971, 1972, 2230
Driscoll, R.B. — 968, 1041
Dritschel, David — 2297
Dritschel, D.G. — 2259, 2297
Drobot, A. — 1344, 2343
Drost, A. — 178
Drouet, M.G. — 2374
Drouin, G. — 94
Drozhdin, A.I. — 1267, 1317, 1404
Drueding, T.W. — 1649
Drukier, A.K. — 689
Drumheller, J.E. — 595
Drumheller, John E. — 648
Drummond, James R. — 1759, 1767
Drummond, J.D. — 1825
Drummond, J.R. — 1094, 1760
Drummond, W.E. — 1950
Drury, M. — 1378
Drzaic, Paul — 1654
D'Souza, Mark — 321
Du, G. — 159, 238, 311, 662
Du, Ning-Yi — 1124
Du, N.-Y. — 1124, 1139
Du, P. — 1628
Du, Q. — 652, 1771
Du, Rose — 2294
Du, R.R. — 235
Du, W.M. — 263, 264
Du, X. — 127
Duan, H. — 123, 171
Duan, H.M. — 271, 689
Duan, J. — 794
Duan, Wenshan — 1525
Dubey, Girija S — 186
Dubey, Rajendra R. — 1834
Dubin, D.H.E. — 1972
Dubinskii, Mark A. — 1760
Dubner, W.S. — 485
DuBois, D.F. — 1913, 1935, 1987, 1991
Dubois, J. — 826
Dubois, Olga — 1685
DuBois, R.D. — 1133
Dubowski, J.J. — 531, 1572
Dubson, M.A. — 1620
Dubunos, S.V. — 1615
Ducar, B. — 1204, 1205
Duchene, G. — 981
Duck, P.W. — 2220
Duck, R. — 2008
Duckeck, Günter — 1641
Duffy, M.E. — 2357
Duffy, T.S. — 477, 1483, 1486, 1494
Dugan, G. — 1372
Dugashvilli, I.V. — 1910
Duggan, J.L. — 1669, 1675, 1681, 1684, 1685
Duggan, P. — 1094
Duggan, Philip — 1759
Duh, J.C. — 2292
Duine, P.A. — 744
Dukan, S. — 523
Duke, C.B. — 622, 649
Duke, Dennis — 1440
Dukic, Z. — 1585
Dulieu, A. — 2087, 2125
Dulieu, O. — 1169
Dulligan, M. — 1630
Dum, R. — 1122
Dumas, G. — 2318
Dumas, P. — 730
Dumberry, M. — 1891
Dumitrescu-Zoita, C. — 2088
Dummer, D. — 689
Dunbar, A. — 1394
Dunbar, E. — 1504
Dunbar, L. — 967
Duncan, D.I. — 1145, 1749
Duncan, F.D. — 1859
Duncan, J.H. — 2188, 2260
Duncan, L.M. — 1968
Duncan, M. — 204
Duncan, M.A. — 2157
Duncan, R.V. — 139, 234, 528, 1607
Duncan, Walter M. — 823
Dunford, R.W. — 1120, 1140
Dunham, D. — 830
Dunham, Scott — 844
Dunham, W.R. — 114
Dunifer, G.L. — 370
Dunlap, B.I. — 286
Dunlap, D.H. — 234, 530
Dunlap, J. — 2095
Dunlap, J.L. — 2094
Dunlop, J. — 1837
Dunmore, F. — 126
Dunmore, F.J. — 75
Dunn, A. — 1204, 1205
Dunn, G.H. — 1157
Dunn, J. — 1986, 1987, 2082, 2117
Dunn, Jim — 1986
Dunn, M. — 1127
Dunn, Robert C. — 1762
Dunn, T.J. — 1734
Dunnam, C. — 1215, 1286
Dunne, J. — 1034, 1821
Dunne, M. — 1886
Dunning, A. — 2045
Dunning, F.B. — 1130, 1131, 1155, 1164
Dunsmuir, J. — 288
Dunsmuir, J.H. — 288
Dünweg, B. — 1438
Duong, H.H. — 2030, 2063
Duong, L.H. — 2284
Duong-Van, M. — 529
Duprat, J. — 1049, 1831
Dupree, R. — 175, 731
Dupuy, C. — 182
Duquette, D.W. — 1149
Dura, J.A. — 235
Duraiappah, Lokesh — 1952
Durán, C.A. — 692
Durán, Carlos A. — 690
Durand, M. — 1499
Durandet, A. — 2332, 2339
Durant, J.L., Jr. — 1650
Durray, S.J. — 111
Durbin, M.K. — 435, 436
Durbin, P.A. — 2305
Durell, J. — 1794
Durell, J.L. — 1807
Durian, D.J. — 289, 709
Durkin, A.P. — 1323, 1339
Durkin, D. — 1969
Durodie, F. — 2069
Durochoux, P. — 1638
Dürr, H. — 730
Durrani, C.M. — 293
Durst, R. — 2007, 2037
Durst, R.D. — 1907, 2027, 2035, 2038
Durusoy, H.Z. — 276
Duryea, J. — 986
Duryea, J.W. — 986, 1054
Dutka, J. — 2303
Dutt, S. — 1197, 1245, 1257, 1362
Dutt, S.K. — 1248

- Dutta, C.M. — 1161, 1165
Dutta, M. — 132, 133, 284, 532
Dutta, Mitra — 55, 133
Dutta, P. — 435, 436, 572
Dutta, S.B. — 997
Dutts, S. — 1245
Duvail, J.L. — 733
Duval, M. — 1339
Duval, M-A. — 914, 915
Duxbury, Phil — 214
Duxbury, P.M. — 115, 220, 802, 1457, 1620
Duyar, C. — 1013, 1014, 1049, 1050, 1805, 1806, 1831
Dvorak, Mark D. — 1746
Dvorak, M.D. — 745
Dvornikov, V.A. — 1378
Dwason, J.M. — 2099
Dwek, E. — 1639
Dwinell, R. — 1265
Dworzecka, M. — 1454
Dwyer, J. — 932
Dwyer, S. — 1290
D'Yachkov, M. — 1347
Dyar, M.D. — 928
Dye, J.L. — 480
Dye, R.C. — 160
Dye, S.T. — 1021
Dyer, M.J. — 1146, 2332
Dykaar, D.R. — 1720
Dykes, D.M. — 1361, 1365
Dykes, J.W. — 103, 252
Dylla, H.F. — 1230, 1262
Dymnikov, A. — 1363
Dynes, R.C. — 526, 527
Dyshkant, A.S. — 1259
Dyson, P.L. — 1757
Dzemidzic, M. — 1037
Dziura, T.G. — 1719, 1724
Dzuba, V. — 1110
Dzurak, A.S. — 696
- Eades, W.D. — 703
Eaglesham, David J. — 567
Earl, Marie — 956
Earley, L. — 1302
Early, E.A. — 327, 836
Early, R. — 1296, 1367
East, A.J. — 421
East, G. — 1197, 1245, 1257
Eastman, C.E. — 658
Easwar, N. — 544
Eaton, J.K. — 2217, 2278
Eaton, L. — 1393
Eaton, L.E. — 1215
Eaton, William A. — 558
Ebbesen, Thomas W. — 202
Eberhardt, D.S. — 2010
Eberly, J.H. — 1138
Ebert, P. — 2174
Ebert, Ph. — 333, 334
Ebey, P.S. — 747
Ebihara, K. — 1301
Ebner, C. — 188, 752, 795
Eby, R.K. — 423
Ecelberger, S.A. — 446
Echternach, P.M. — 129, 322
Eckart, M.E. — 1986
Ecke, R.E. — 590, 2209, 2210, 2305, 2317
Ecke, Robert — 470, 668
Eckelmann, Helmut — 2298
Eckerlebe, H. — 143
Eckstein, J. — 520
Eckstein, James N. — 58
Eckstein, J.N. — 327
Eckstein, Y. — 830
- Economou, D.J. — 2347, 2368
Eddleman, J.L. — 1974, 2013
Eddy, M. — 459
Edel, G. — 1860
Edelstein, A.S. — 221
Edelstein, N.M. — 532
Eden, J.G. — 1728
Eden, J.R. — 1355
Eden, T. — 1034
Eder, D. — 2044
Eder, D.C. — 2099
Ederer, David — 248
Ederer, D.L. — 226, 320, 519, 1621
Edgell, D.H. — 2027
Ediger, Mark D. — 347
Ediger, M.D. — 349, 409, 481, 742
Edison, N.S. — 1894, 1943, 2089, 2122
Edmans, D. — 2113
Edmond, John — 565
Edmonds, P. — 1948
Edmonds, P.H. — 1948, 1954
Edrich, D. — 2112
Edwall, D.D. — 513
Edwards, A.H. — 1613
Edwards, B.F. — 470, 1637, 2276, 2277, 2310
Edwards, C. — 1817
Edwards, C.M. — 165, 943, 982
Edwards, D.A. — 1240
Edwards, D.O. — 1042
Edwards, G. — 120, 1830
Edwards, H. — 1198, 1381
Edwards, J. — 488
Edwards, J.S. — 1816
Edwards, M. — 1145
Edwards, M.E. — 405
Edwards, P.P. — 175
Edwards, W. Farrell — 1030
Eehmann, K.K. — 1730
Eesley, G.L. — 447
Efetov, K.B. — 332, 536
Effler, L. — 142
Efimov, S. — 1250, 1368
Efimov, V. — 1810
Efremov, D.V. — 1301
Efremov, V.P. — 1494
Efros, A.L. — 662, 1617
Efros, A.L. — 168
Efros, B. — 1517, 1578
Eftekhari, A. — 845
Efthimion, P. — 2031
Efthimion, P.C. — 1906, 2031, 2036, 2037, 2093
Egami, T. — 388, 389, 390
Egami, Takeshi — 684
Egan-Krieger, G.v. — 1225
Egelhoff, W.F., Jr. — 161
Eggert, J.H. — 255, 477, 1482
Eggert, K. — 2300
Eggert, Sebastian — 496
Eggleston, D.L. — 1972
Egolf, David A. — 2273
Eguiluz, A.G. — 140, 828
Egyed, Zoltán — 1053
Ehrhart, G. — 113
Ehrlich, A.C. — 734
Ehrlich, A.C., ' — 453
Ehrlich, C. — 1531, 1558
Ehrlich, J.E. — 1766
Ehrlich, L.W. — 1445
Ehrlich, R. — 1385, 1454
Ehrlich, S.N. — 650
Ehst, David A. — 1918
Eibschütz, M. — 113, 648
Eichhorn, G. — 1755
Eichmann, U. — 1140
Eickhoff, H. — 1253, 1336
- Eidelman, Yu. — 1259
Eigler, D.M. — 184
Eilers, H. — 1615
Eiles, T.M. — 1623
Eilliott, J. — 1828
Einav, S. — 2294
Einevoll, G.T. — 182, 284
Einfeld, D. — 1241, 1324
Einstein, Theodore — 613
Einstein, T.L. — 541, 567, 2161.
Eiro, A.M. — 1064
Eisen, N. — 1212, 1213, 1635
Eisenberg, M. — 1437
Eisenstein, J.P. — 591, 770
Eisenstein, R.A. — 1800
Eisenthal, Kenneth — 1771
Eisenthal, K.B. — 432
Eisner, E. — 2006, 2007
Ekberg, J.O. — 1140
Ek Dahl, C. — 1215, 1303
Ekedahl, A. — 2055
Ekenberg, T. — 944
Ekenberg, U. — 764
Ekkens, T.B. — 213, 596
Eklund, P.C. — 204, 205, 368, 501, 502, 2158
Ekpenuma, Sylvester N. — 1677, 2160
Ekstrom, C. — 1761
Elagöz, S. — 130, 619
Elam, W.T. — 672
Elayi, A. — 1317
El-Azm, A.H. — 743
El-Batanouny, M. — 218, 395, 438, 649
Elbaum, C. — 817
Elbaum, M. — 261, 436
Elber, Ronald — 204
Elbert, J.W. — 1021
Elder, K.R. — 153, 1452
Elert, M.L. — 796
Elfimov, A.G. — 2103, 2104
Elfimov, G.A. — 2024
Elg, Alf-Peter — 1765
Elghobashi, S. — 2212, 2281
Elgowainy, A. — 2208
El-Hady, Nabil — 2190
Elia, R. — 1203
Elias, P. — 1498
Elie, L.D. — 344
Eliezer, J.M. Martinez-Val — 1996
Elfimov, E.G. — 2024
Eliger, Mark D. — 197
Elisev, V. — 1913
El-Kareh, Ardith W. — 2200
El-Kateb, S. — 1830
El Khakani, M.A. — 2340
El-khoshkany, N.M. — 743
Elkins, J. — 1393
Elkonin, B.V. — 1378
Ellingboe, A.R. — 2333, 2349
Ellingson, R.J. — 1729
Elliot, J. — 1815
Elliott, Daniel — 1730
Elliott, D.S. — 1093
Elliott, G.S. — 650, 2235, 2299
Elliott, J. — 998, 999, 1815
Elliott, J.B. — 1853, 1854
Elliott, J.L. — 1341
Elliott, S. — 935, 1124, 1157, 2040
Elliott, S.J. — 1947
Elliott, S.R. — 913, 951
Elliott, T.S. — 1283, 1283, 1683
Ellis, D.E. — 458, 675
Ellis, D.G. — 1152
Ellis, R.F. — 2070
Ellis, R.J. — 2083
Ellis, S. — 1335
- Ellis, Thomas S. — 143
Ellis, W. — 287
Ellis, W.P. — 576
Ellison, Adam J.G. — 684
Ellison, Donald C. — 2041
Ellison, J. — 1257
Ellison, J.A. — 1254, 1361
Ellison, M. — 986, 1197, 1245, 1257
Ellison, Michael J. — 1358
Ellison, T. — 987, 1116, 1197, 1245, 1257, 1265, 1321
Ellison, Timothy J.P. — 1207, 1209, 1358
Ellison, T.J.P. — 986
Ellison, M. — 1245
Ellzey, Janet L. — 2247
Elmaani, A. — 927, 940, 1815, 1854
Elman, B. — 132
Elmer, P. — 996
Elmgren, K. — 1338
Elminyawi, Imam — 217
Elmore, Keith — 1684
Elofsson, Per A. — 2221
Elouadrhiri, L. — 1034
Elrick, B.M. — 584
Elsaesser, D.W. — 264
Elsayed, H.E. — 437
Elsayed-Ali, H.E. — 1750, 1751, 1765
Elsberry, K. — 2285
Elsener, K. — 1197, 1404
Elser, V. — 766, 847
Elser, Veit — 742
Elsholz, A.J. — 1974
Elster, Ch. — 1052, 1062, 1449, 1834, 1835
Elston, S.B. — 1160
Elsz, B.K. — 1117
Elvira, D. — 1054
Ely, J.T.A. — 769
Elza, B.K. — 1117
Emediato, L.G.R. — 1819
Emerson, John — 1611
Emerson, J.P. — 188
Emery, G.T. — 1014, 1847
Emery, L. — 1208, 1348
Emery, M.H. — 1961
Emery, V.J. — 600
Emin, D. — 517
Emin, David — 1626
Emler, C. — 603, 1654
Emma, P. — 1289
Emma, P.J. — 1202, 1237, 1238, 1239, 1256, 1257, 1258
Emmert, G.A. — 1899, 2109
Emrich, H.J. — 1820
Empack, Frank — 358
Encinosa, Mario — 1441
Enden, G. — 2293
Endicott, M. — 792
Endo, K. — 1401
Endo, M. — 2335
Endo, S. — 1545, 1574
Endo, T. — 1550
Endoh, Y. — 124
Enegren, T. — 1334, 1378, 1379, 1383
Engblom, W.A. — 2232
Enge, H. — 1295
Engebretson, Amy K. Bylsma — 463
Engel, B.N. — 618
Engel, Brad N. — 371, 694
Engel, E. — 88
Engel, G.E. — 290
Engel, L.W. — 179, 471
Engelage, J. — 932, 949
Engelbrecht, J. — 587, 639
Engels, O. — 1319
England, A. — 2092, 2093, 2095, 2121

- England, A.C. — 2021
 England, T.R. — 1652, 1806
 Englert, S.E. — 1896, 1974
 Englert, T.J. — 1896, 2090
 English, A.D. — 348
 Enguan, Zhang — 1316
 Enomoto, A. — 1199, 1286, 1309, 1316
 Enomoto, Y. — 259
 Enriquez, L. — 2372
 Ent, R. — 1821
 En'Yo, H. — 1843
 Enzweiler, R. — 461
 Eom, C.B. — 74, 204, 520
 Eom, Change-Beom — 159
 Ephron, D. — 640
 Eplee, R. — 920
 Epler, J.E. — 232
 Eppell, S.J. — 543
 Epperlein, E.M. — 1934, 1962, 1987, 2014
 Eppley, K. — 1395
 Epps, Anthony — 1022
 Eprez-Sandoz, R. — 451
 Epstein, A.J. — 58, 110, 159, 238, 311, 312, 533
 Epstein, R. — 1885
 Erb, U. — 82
 Erd, C. — 1054, 1842
 Erdei, J.E. — 1661
 Erdman, K. — 1335
 Erdman, P.S. — 1148
 Erdt, W.K. — 1301
 Eremets, M.I. — 1531
 Eres, D. — 678
 Eres, Gyula — 1613
 Erg, G. — 1405
 Erhan, S. — 425
 Erichsrud, S. — 579
 Erickson, J. — 1273
 Erickson, R.P. — 562
 Eriksson, L.G. — 2055
 Eriksson, O. — 106, 742
 Erkoc, S. — 185
 Erlebacher, G. — 2265, 2311
 Erlich, D.C. — 1596
 Ermer, D.R. — 190, 602
 Ermilov, E.A. — 1378
 Ernie, D.W. — 2337
 Ernst, D. — 1905, 2032, 2037
 Ernst, D.J. — 1834
 Ernst, D.R. — 1907, 2037
 Ernst, Jesse A. — 1001
 Ernst, W.E. — 1741
 Erokhov, V. — 1397
 Ershov, Alexander — 2337
 Ershov, I. — 1563
 Erskine, D.J. — 1487, 1511
 Erskine, J.L. — 363, 370, 649, 1670
 Ertl, G. — 436, 794
 Erwin, Daniel A. — 1718
 Erwin, R.W. — 672, 785
 Erwin, S.C. — 305, 357
 Esarey, E. — 1278, 1279, 1331, 1942, 1998, 2081
 Esbensen, H. — 1827
 Escamilla-Esquivel, A. — 321
 Escobar, Ismael — 363
 Escudero, R. — 242, 522, 1613, 1625
 Esin, S. — 1217
 Esipchuk, Yu.V. — 2069
 Esipov, Sergei E. — 530, 645
 Esipov, Sersei E. — 810
 Eskes, H. — 225, 585, 699, 700
 Esmaeeli, A. — 2189
 Esmond, J.R. — 1148
 Esparza, E.D. — 1536
 Espindola, Rolando P. — 1743
 Espinosa, H.D. — 1505
 Espy, A. — 982
 Espy, M. — 943, 1817
 Espy, S.L. — 498
 Esser, H.G. — 2007
 Essiam, D. — 1811
 Essler, F.H.L. — 392, 1622
 Essmann, U. — 1445
 Estabrook, K. — 1912, 1915, 1934, 1935
 Estabrook, K.A. — 1915, 1934
 Estabrook, K.G. — 1913, 1914, 1915, 1917, 2090
 Estle, T. — 314, 569
 Estrada, Javier A. — 125
 Estrada, T. — 2021
 Estreicher, S.K. — 843, 1671, 1676
 Estrera, J.P. — 157, 1671
 Etchegoin, P. — 521
 Etemad, S. — 75, 212
 Etemadi, Babak — 1118
 Ethier, S. — 1987
 Ethridge, C. — 1632
 Ethridge, E.C. — 829
 Etlicher, B. — 1894, 1943, 2089, 2122
 Ettedgui, E. — 699
 Ettema, A.R.H.F. — 117, 598
 Etters, R.D. — 1495
 Eugster, C.C. — 707
 Euringer, H. — 2007, 2058
 Evans, D. — 1319
 Evans, E. — 405
 Evans, J.S. — 1065
 Evans, J.W. — 380, 711
 Evans, K. — 1208, 2114
 Evans, K., Jr. — 1209, 1243
 Evans, K.O. — 119, 2158
 Evans, K.R. — 593, 745, 1655
 Evans, L. — 1275
 Evans, L.R. — 958
 Evans, M.D. — 186
 Evans, Morgan D. — 2168
 Evans, R.W. — 2111
 Evans, T.E. — 1925, 2059, 2060, 2096
 Evans-Lutterodt, K. — 567
 Evans-Lutterodt, K.W. — 569
 Evensen, H.T. — 2038
 Everett, M. — 1311, 1988, 1997, 2084
 Everitt, B. — 672
 Evers, R.C. — 546
 Eversole, S. — 1302
 Everson, M.P. — 402
 Everson, R. — 2274
 Evert, T.E. — 409
 Evertz, H.G. — 1452
 Evrard, August — 1452
 Evrard, R. — 285
 Evrensel, Cahit — 2293
 Evstigneev, A. — 1405
 Ewart, L. — 1586
 Ewing, D. — 2234, 2285
 Eyharts, P. — 1301, 1302
 Eyink, K.G. — 316
 Eyl, P. — 1301, 1302
 Eyler, E.E. — 947, 970, 971, 1120, 1148, 1737
 Eylon, S. — 1303, 1322, 1994, 1995
 Fabbiano, G. — 1635
 Faber, M. — 1825
 Fabiano, F. — 2332
 Fabre, C. — 1527
 Fabre, D. — 1521, 1571
 Fabricius, K. — 594
 Fabrikant, I.I. — 1099, 1110, 1139
 Fabris, A. — 1318, 1383, 1393
 Fabris, D. — 1813, 1852
 Fabris, R. — 1403, 1405
 Facci, J.S. — 544
 Facco, A. — 1378
 Factor, B. — 420, 713
 Fadl, Ali Abul — 686
 Fadlallah, M. — 2377
 Fadley, C.S. — 364, 504
 Fadner, W. — 920
 Fadner, Willard L. — 920, 921, 947, 1005
 Fadnis, A.N. — 129
 Faehl, R. — 1280, 1281, 1900
 Faehl, R.J. — 1395, 2048, 2117, 2338
 Faenov, A.Ya. — 1987, 2082
 Faessler, Amand — 1858, 2170
 Faeth, G.M. — 2272
 Fafard, S. — 703
 Fahey, Kevin Patrick — 940
 Fahmie, M. — 1224
 Fai, G. — 999, 1062, 1847, 1848
 Failon, G. — 1395
 Fain, S.C., Jr. — 395, 649
 Fainberg, Ya. — 1278
 Fairchild, C.E. — 1757, 1758
 Fairchild, S.B. — 454
 Fairfield, D.H. — 2018
 Faith, J. — 2003
 Fajans, J. — 1969, 1970, 1973
 Falabella, F. — 1632
 Falck, J.P. — 227
 Falco, Charles M. — 164, 371, 515, 694
 Falco, C.M. — 618
 Falcone, R.W. — 518
 Falconer, I.S. — 2379
 Falcony, C. — 507
 Falicov, L.M. — 363, 733
 Fall, T. — 2027
 Fallahi, Mahmoud — 1713
 Fallis, Mark — 219
 Fallon, P. — 981, 1014, 1049, 1050, 1793, 1806, 1831
 Faltens, A. — 1303, 1304, 1994, 1995, 1996, 2117
 Falvo, M. — 2168
 Family, F. — 380
 Family, Fereydoon — 2165
 Fan, C.X. — 750
 Fan, J. — 630
 Fan, J.D. — 523, 524, 712, 811
 Fan, Jiawen — 261
 Fan, J.Y. — 1228
 Fan, M. — 1250, 1294, 1335
 Fan, Supin — 2008
 Fan, X. — 2251
 Fanciulli, M. — 621
 Fang, B.S. — 364
 Fang, L.Z. — 1066
 Fang, M.M. — 749
 Fang, M.P. — 115, 116
 Fang, T.D. — 1663
 Fang, T.M. — 1649
 Fang, X. — 1131
 Fang, Z. — 1129
 Fanget, A. — 1493
 Fant, K.S. — 1288
 Fanwick, P. — 80
 Farach, H.A. — 1520
 Farengo, R. — 2079, 2109
 Farhat, B. — 930
 Farias, R.H.A. — 1390
 Farid, Behnam — 290
 Farid, M. — 177
 Farkas, Z.D. — 1230, 1288, 1395, 1396
 Farkhondeh, M. — 1034, 1295, 1299, 1300, 1405, 1820
 Farkondeh, M. — 1368
 Farley, John W. — 1125, 1153
 Farmer, B.L. — 408, 412, 423, 485, 486
 Farmer, J.W. — 238, 826
 Farneth, W.E. — 124
 Farnham, D.L. — 946, 947
 Faroog, A. — 2238
 Farrell, D.E. — 276, 635
 Farris, L.P. — 1831, 1832
 Farris, R. — 544
 Farris, C.W., II — 603, 1654
 Farrow, R.F.C. — 323, 733, 785
 Fartash, A. — 615
 Fasanello, T. — 1215
 Fasano, C.G. — 2163, 2171
 Fasel, Hermann F. — 2236
 Fasoli, A. — 1932
 Fathauer, R.W. — 156, 402
 Fathe, Laurie — 1731
 Fathizadeh, M. — 1400
 Fatietdes, N. — 1049
 Fauchet, Philippe M. — 156
 Fauchet, P.M. — 128, 686
 Fauerbach, M. — 1842
 Faught, E. — 1223
 Faugier, A. — 1365
 Faulstich, P.S. — 1014
 Fausch, T. — 689
 Faus-Golfe, A. — 1368
 Favire, F. — 1713
 Favreau, R.F. — 1609
 Fawcett, E. — 766
 Fawley, W.M. — 1304, 1327, 1995
 Faxas, M. — 1088, 2164
 Fay, P.J. — 2159, 2160
 Fayache, M. — 1823
 Fayne, Walter R. — 2001
 Fazely, A. — 943
 Fazio, M. — 1280, 1281
 Fazio, Michael V. — 1940
 Fazio, M.V. — 1395
 Fazleev, N.G. — 476, 800
 Feagin, James — 960
 Feagin, James M. — 1098
 Fedchak, J.A. — 2363
 Fedder, J.A. — 1969
 Fedele, R. — 1244
 Feder, J. — 542
 Feder, K. — 206
 Federici, J. — 200
 Federici, J.F. — 240
 Federman, S.R. — 1152
 Federov, M.V. — 1998, 2116
 Fedorov, Boris A. — 119
 Fedorov, Boris B. — 119
 Fedorov, M.V. — 1277
 Fedorov, V. — 1291
 Fedotov, U.S. — 1405
 Fedotov, Yu.S. — 1251
 Fedro, A.J. — 226, 277
 Fedutenko, E. — 1904, 2118
 Feenstra, R. — 260, 272, 802
 Feenstra, R.M. — 231
 Feffer, P. — 1638
 Fehn, U. — 929
 Fehr, M. — 1148
 Fei, X. — 750, 1120
 Feibelman, Peter J. — 65
 Feibelman, P.J. — 89, 1434
 Feidenhans'l, R. — 323
 Feigelman, M.V. — 388
 Feigerle, Charles S. — 2176
 Fein, L.A. — 572
 Feild, C.A. — 122
 Feinauer, A. — 1609
 Feinberg, B. — 1170, 1204, 1265
 Feines, F. — 1021
 Feinstein, J. — 2002

- Feit, M.D. — 529, 1678
 Fejer, Martin — 1729
 Fejer, M.M. — 74
 Felch, K. — 2002
 Felcher, G. — 562
 Felcher, G.P. — 659
 Felder, R.J. — 113
 Feldman, A.E. — 1062, 1835
 Feldman, D.W. — 1311
 Feldman, G. — 915, 1820, 1858
 Feldman, J. — 477
 Feldman, J.L. — 441, 574, 1624
 Feldman, L.C. — 84
 Feldman, Uri — 1931
 Feldmann, J. — 551
 Feldmann, W.L. — 581
 Felix, C.L. — 815
 Felker, Peter M. — 1731
 Feller, M. — 367, 1154
 Feller, Steven — 197
 Feller, Steven A. — 262
 Fellman, J.F. — 294
 Fellows, C.E. — 2351
 Felson, W. — 528
 Fendrich, J. — 635
 Feng, Da Hsuan — 1838
 Feng, D.H. — 1807, 1808
 Feng, H.H. — 272, 347, 782, 783
 Feng, J. — 1535, 2241
 Feng, J.-P. — 389
 Feng, J.Q. — 2201, 2216
 Feng, M. — 1625
 Feng, P. — 1169
 Feng, R. — 1529
 Feng, Shechao — 1614
 Feng, Y. — 473, 540
 Feng, Y.C. — 1578
 Feng, Y.P. — 450, 518
 Feng, Z. — 375, 507
 Feng, Z.C. — 108, 532, 566, 2225
 Feng, Zhong — 1018
 Feng Fan, Cun — 716
 Fenglei, Huang — 1493
 Fenichel, Henry — 528
 Fenimore, P.W. — 534
 Fenker, H. — 1317
 Fenner, D.B. — 74, 75, 126, 805
 Fenstermacher, M. — 1328
 Fenstermacher, M.E. — 1328, 2059, 2060
 Fenton, E.W. — 841
 Feranchak, B.T. — 1755
 Ferconi, M. — 848
 Ferguson, D. — 917
 Ferguson, D.W. — 1662
 Ferguson, M. — 1401
 Ferguson, S.M. — 1160, 1804, 1826
 Ferguson, S.W. — 1328, 1967
 Ferioli, G. — 1221
 Ferioli, G.F. — 1197
 Fermigier, M. — 2187
 Fernandez, E. — 1911
 Fernández, J.C. — 1913, 2083, 2124
 Fernandez, J.F. — 169, 700
 Fernandez, R. — 703, 1719, 1724
 Fernandez, V.M. — 2271
 Fernandez-Baca, J.A. — 307, 534
 Fernandez-Guasti, M. — 1740
 Fernandez Nodarse, F. — 1226
 Fernando, A.S. — 816
 Fernando, G.W. — 207, 674
 Fernando, H.J.S. — 2253, 2254
 Fernow, R. — 931
 Fernsler, R.F. — 2047
 Fero, M. — 1203
 Ferrando, P. — 949
 Ferrante, J. — 66, 261, 970
 Ferrante, John — 512, 1610
 Ferrari, M.J. — 519, 835
 Ferrari, R. — 180
 Ferrario, M. — 1286, 1345, 1384
 Ferreira, C.M. — 2352, 2367
 Ferrell, T.L. — 118
 Ferrenberg, Alan M. — 1450
 Ferrer, Jaime — 328, 463
 Ferrett, T.A. — 1092
 Ferrio, K.B. — 1753
 Ferris, J. Chris — 965
 Ferris, Kim F. — 564
 Ferron, J.R. — 1935, 1936, 2061, 2065, 2066, 2069, 2121
 Ferrone, F.A. — 267
 Ferry, D.K. — 85, 180, 516
 Ferry, J. — 987, 1265
 Fert, A. — 733, 784
 Fertig, H.A. — 1614, 1617
 Ferziger, J.H. — 2229, 2233, 2261
 Feschenko, A. — 1217
 Fessatidis, V. — 234, 398, 401
 Fessenden, T. — 1303, 1994
 Fessenden, T.J. — 1305
 Fessler, J.R. — 2278
 Fetter, A.L. — 754
 Fetterman, H.R. — 1607
 Fettes, Lewis J. — 422
 Fettes, L.J. — 294, 417
 Fews, A.P. — 2079
 Fey, F.H.A.G. — 2366
 Feyerherm, R. — 79
 Fiala, A. — 2349, 2358
 Fichtel, C.E. — 988, 989, 1635
 Fick, B.E. — 1020
 Ficklin, D. — 1402
 Fiddy, M.A. — 1645
 Fiedler, H.E. — 2207, 2246, 2287
 Fieguth, T.H. — 1316
 Field, Bob — 50
 Field, J.E. — 1555
 Field, M. — 696
 Field, S.B. — 640
 Fielding, S.J. — 2008
 Fields, D.E. — 1828
 Fierro, J. — 988
 Fierro, J.M. — 988, 989
 Fietz, W.H. — 1550
 Fife, A.A. — 125
 Figliozzi, P. — 1981
 Fiig, T. — 1626
 Fiksel, G. — 1977, 1978
 File, D. — 1895
 Files, L.A. — 813
 Filimonov, M. — 1205
 Filinov, V.S. — 1453
 Fillion, A. — 540
 Filippas, A.V. — 1952
 Filter, Jonathan — 1616
 Filtz, M. — 1381, 1388
 Filuk, A.B. — 2045
 Fina, L.J. — 412, 419, 713
 Fincham, A.M. — 2254, 2272
 Fincher, C.R., Jr. — 669
 Findikoglu, A. — 71
 Findikoglu, A.T. — 838
 Fine, K.S. — 1971, 2230
 Finegold, Leonard X. — 354
 Fineman, B.J. — 926, 1812
 Finger, L.W. — 255
 Finger, M.H. — 989
 Fink, C.L. — 1253
 Fink, G. — 1062
 Fink, M. — 1672, 1673
 Finkbeiner, S. — 56
 Finkel, Robert W. — 965, 2175
 Finken, K.H. — 2008, 2058
 Finkenthal, D.F. — 1936, 2071
 Finkenthal, M. — 1956, 1957, 2027
 Finlay, W.H. — 2191
 Finlayson, T.R. — 307
 Finley, C.W. — 970
 Finley, D. — 1269
 Finley, D.A. — 1372
 Finley, David — 1269
 Finley, J.P. — 549
 Finn, J. — 1981
 Finn, J.M. — 1034, 1040, 1910, 1927, 2017
 Finnemore, D.K. — 171
 Fennis, M.W. — 308
 Finotello, D. — 240, 819, 1023, 1660, 1663
 Fiore, C.L. — 1956
 Fiore, E.M. — 1853
 Fiore, L. — 1853
 Fiorentini, G. — 1276
 Fiorito, R. — 1215, 1218, 1331
 Fiory, A.T. — 369, 395, 580
 Firebaugh, J. — 1227, 1274
 Firestone, M. — 1208, 2068, 2112
 Firestone, M.A. — 2112
 Firjahn-Andersch, A. — 1319
 Firlej, L. — 1622
 First, P.N. — 285
 Fisch, Miachel R. — 1654
 Fisch, N.J. — 2052, 2093
 Fischbeck, H.J. — 671, 1637
 Fischer, A. — 507
 Fischer, C. — 1221, 1362
 Fischer, C. Froese — 1119, 1130
 Fischer, G.E. — 1288, 1366
 Fischer, J. — 1299
 Fischer, J.E. — 157, 159, 252, 253, 369, 1625
 Fischer, K. — 1401
 Fischer, P. — 1775
 Fischer, R. — 1942
 Fischer, R.P. — 1963
 Fischer, S.M. — 1831
 Fischetti, M.V. — 81
 Fisher, A. — 1310, 1331, 1941, 1942, 2047, 2048, 2090, 2114
 Fisher, D.L. — 1670, 1992, 1998
 Fisher, D.S. — 580, 739
 Fisher, Ellen R. — 2361
 Fisher, E.R. — 2379
 Fisher, Mani — 2197
 Fisher, M.P.A. — 277
 Fisher, R.A. — 188
 Fisher, R.K. — 2030
 Fisher, S.S. — 2221
 Fisher, Y. — 1987
 Fishler, Ya. — 1401
 Fishman, G. — 1638
 Fishman, G.J. — 989, 1635, 1638
 Fishman, R.S. — 475
 Fisk, H.E. — 985, 986, 1037
 Fisk, Z. — 73, 79, 124, 125, 175, 223, 389, 438, 439, 528, 642, 643, 648
 Fisk, Zachary — 609
 Fistul, M.V. — 329
 Fitaire, M. — 2360, 2375
 Fittinghoff, D.N. — 1146
 Fitzgerald, D. — 1206, 1253, 1346, 1373
 Fitzgerald, E.A. — 84
 Fitzgerald, G. — 682
 Fitzgerald, John J. — 602, 604
 Fitzgerald, R.J. — 464
 Fitzgerald, S.A. — 743
 Fitzpatrick, G.L. — 966
 Fitzpatrick, J. — 2059, 2067
 Fitzsimmons, J.R. — 1546
 Fix, J. — 1326
 Fixler, S.Z. — 1311
 Fixsen, D. — 920, 954, 1066
 Flack, K.A. — 2217
 Flambaum, V. — 1110, 1111
 Flanders, B.S. — 1034, 1035, 1052, 1817, 1846
 Flannery, M.R. — 2357, 2361
 Flannery, W., S. — 2304
 Flannigan, J. — 1223
 Flanz, J. — 1261, 1295, 1296, 1368
 Flanz, J.B. — 1212, 1224
 Flatt, S. — 1777
 Flatté, Michael E. — 275
 Flatté, Michael E. — 589
 Fleck, B. — 2318
 Fleck, R. — 1390
 Fleddermann, C. — 1938
 Fleddermann, C.B. — 2360, 2372
 Fleischer, S.B. — 502
 Fleischman, J.R. — 968
 Fleischmann, R. — 234
 Fleming, R.M. — 104, 204, 1622
 Fleming, S. — 131
 Flensberg, K. — 1623
 Fleshler, S. — 345, 347, 635, 802
 Fleszar, A. — 828
 Fletcher, K.A. — 1845
 Fletcher, R.S. — 1021
 Flibotte, S. — 981, 1805
 Fliflet, A.W. — 1963, 1964
 Flinn, G.P. — 467
 Flinn, J.E. — 207
 Flinn, P. — 342
 Flocken, J. — 408, 655
 Flom, Steven R. — 1747
 Flora, R. — 1227
 Florencio, J. — 594
 Flores, I. — 949
 Flores, R. — 1043
 Florez, L.T. — 233, 393, 807, 1617
 Florizone, R.E.J. — 1820
 Fluegel, B. — 1742
 Fluss, M.J. — 224, 225, 226
 Flynn, C. — 1105, 1106, 2334
 Flynn, Connor — 2331
 Flynn, C.P. — 672, 791, 818
 Flynn, M.F. — 846, 1661
 Flynn, T. — 1380
 Flynn, W.G. — 1990
 Fochs, S. — 1941
 Fochs, S.N. — 2001
 Foelsche, H.W. — 1297
 Foerster, C. — 1263
 Foerster, E. — 2043
 Fogaccia, G. — 1946
 Fogelman, C.H. — 2107
 Fogle, C. — 1021
 Foiles, S.M. — 451
 Foldeaki, M. — 830
 Foley, M. — 1345, 1378
 Folkerts, L. — 1159, 1160, 1164, 1165
 Folks, William R. — 406, 819
 Follstaedt, D.M. — 571, 787
 Folsé, R.F. — 2174
 Foltin, M. — 2370
 Foltyn, S.R. — 160
 Fomel, B. — 1349
 Fomin, M. — 1397
 Fonck, R. — 2029
 Fonck, R.J. — 1907, 1960, 1978, 1979, 2007, 2027, 2029, 2035, 2037, 2038, 2117
 Fonden, T. — 403
 Foner, S. — 325
 Fong, B. — 1324
 Fong, C.-Y. — 183, 219, 279, 477, 622, 754, 755
 Fong, K. — 1392
 Fong, Peter — 964, 2159
 Fong, W. — 1818

- Fonseca, Luis — 597
Fonstad, C.G. — 813
Fontana, J. — 1277
Fonte, R. — 998, 999, 1815, 1828
Fontes, C.J. — 1157
Fontes, E. — 623
Foord, M. — 2082
Foord, M.E. — 2012, 2088
Foote, J.H. — 2061
Foote, M.C. — 688
Foran, B. — 117
Forbes, D. — 282
Forbes, J.W. — 1547, 1564
Forbes, S. — 2287
Forbes, S.A. — 981
Forbush, Michael — 918
Force, R. — 1265
Ford, A.L. — 1132
Ford, L. — 1638
Ford, L.A. — 1638
Ford, Mark L. — 2187
Forest, C. — 2066, 2069
Forest, Cary B. — 2072
Forest, C.B. — 2065, 2066, 2068, 2069, 2105
Forest, E. — 1240, 1243, 1249
Forgan, E.M. — 579
Fork, D. — 520, 569
Fork, D.K. — 522
Fornal, B. — 1049, 1832
Fornes, R.E. — 412
Forrest, D. — 989
Forrest, D.J. — 968
Forrest, Stephanie — 1441
Forrey, R.C. — 1127
Forrey, Robert C. — 1127
Forro, L. — 127, 272, 517, 642
Forslund, David — 1434
Forsman, A. — 1524
Forsman, J.W. — 1094, 1760
Forster, J.S. — 1805
Förster, S. — 605
Forsyth, P.D. — 981, 1049
Fort, D.A. — 729
Fortgang, C.M. — 1220, 1318
Fortier, N. — 125
Fortin, M. — 2338
Fortna, J.D.E. — 1152
Fortner, J. — 269
Fortner, Jeffrey — 738
Fortov, V.E. — 1483, 1494, 1515, 1584
Fortson, E.N. — 1111, 1115, 1121
Fortune, H.T. — 942, 943, 944, 1816, 1817, 1830
Foss, J.F. — 2246
Foss, Judith K. — 2247
Fossan, D.B. — 980, 981, 1856
Foster, C. — 982, 1051
Foster, C.A. — 2057
Foster, C.C. — 1841
Foster, C.M. — 407
Foster, D. — 1948
Foster, G.W. — 1037
Foster, M. — 1950
Foster, M.D. — 411, 1660
Foster, M.R. — 2294
Foster, M.S. — 1948, 1954
Foster, Theodore D. — 2292
Fotiadis, LEMONIA — 513
Fouaidy, M. — 1378
Foudas, C. — 985, 986, 1037
Fougeron, C. — 1378
Foulkes, W.M.C. — 167, 1620
Fourquette, D.C. — 2202
Fourkas, John T. — 1758
Foust, C.R. — 2065
Fowkes, W.R. — 1399
Fowler, A.B. — 128
Fowler, Michael — 278
Fowler, M.M. — 913
Fowler, R.H. — 2021, 2023
Fowler, T.K. — 1924, 2061, 2067
Fowler, W.B. — 570, 1268, 1293
Fowler, W. Beall — 570, 574
Fox, D. — 941, 1824, 1853
Fox, J. — 1212, 1213, 1307, 1635
Fox, J.D. — 929
Fox, K. — 970
Fox, W. — 1334, 1385
Foxon, C.T. — 402
Foy, Florence L. — 2347
Foygel, M. — 517
Frachet, V. — 1538
Fradkin, Eduardo — 135, 600, 753, 757
Fradkin, M.A. — 324
Francavilla, T.L. — 387, 460
France, R.H., III — 984
Franceschetti, A. — 620
Franceschetti, D.R. — 848
Francis, A.H. — 648
Franck, A. — 1294
Franck, Carl — 290, 709, 950
Franck, J.P. — 188, 386, 461
Franck, U. — 1508
Franco, J.G. — 1227
Franczak, B. — 1373
Frandsen, P. — 1301
Frandsen, P.K. — 1341
Frank, Alan M. — 1481
Frank, C. — 535
Frank, Curtis W. — 189
Frank, D.J. — 578
Frank, J. — 595
Frank, M.R. — 965, 1821
Frankel, I. — 2241, 2258
Frankel, K.A. — 1810
Frankel, R.B. — 317
Frankel, S.H. — 2213
Frankle, C.M. — 1805, 2171
Frankle, S. — 1206, 1253, 1346
Franklin, G. — 514, 624, 1843
Franklin, G.E. — 623
Franklin, W. — 1830, 1845, 1846
Franson, J.D. — 1761
Frantz, Peter — 714
Franz, A. — 1132, 1134
Franz, J. — 1843
Franz, J.R. — 319
Franz, William T. — 1056
Franzen, S. — 1627
Franzen, W. — 395, 649
Franzini, P. — 984
Franzke, B. — 1271, 1336
Fraser, G.T. — 1724, 1753
Frayse, N. — 2275
Frazier, D.O. — 1715
Frazier, Donald O. — 1735
Frazier, G.A. — 813
FRC Group — 1948
Frechet, J.M.J. — 482
Frechette, M.F. — 2359
Fredd, E. — 2107
Frederickson, A.R. — 1650
Frederiksen, Richard D. — 2194
Fredian, T. — 1954
Fredrickson, E. — 1907, 2032, 2034
Fredrickson, E.D. — 2031, 2032, 2034, 2037
Fredrickson, E.G. — 1906
Fredrickson, G.H. — 90
Fredrickson, Glenn H. — 294, 350
Freed, J. — 631
Freed, K.F. — 549
Freedman, S.J. — 913, 1803, 1804, 1855
Freeland, J. — 442, 617
Freeman, A.J. — 89, 219, 261, 275, 449, 452, 675, 830
Freeman, J. — 1037
Freeman, M.R. — 339, 401
Freer, M. — 926, 1806, 1818, 1845
Freericks, J.K. — 523
Freidberg, J.P. — 1946, 1976, 2118
Freim, J. — 1546
Freitas, J.A., Jr. — 565, 621, 676
Frekers, D. — 982
Frenkel, A. — 127
Frenkel, A.I. — 456, 457
Frenkel, A.L. — 2222
Frenkel, D. — 163
Frenkel, D.M. — 228
Frensley, W.R. — 761
Frensley, W.R. — 761
Frerking, Eric — 1961
Fretwurst, J.C. — 228
Freund, F. — 1608, 1616
Freund, H.P. — 1963, 2003
Frey, E.C. — 85
Frey, M.T. — 1130
Frey, T. — 112
Freyre, A. — 1043
Freysz, E. — 652, 1771
Frias, R. — 1265
Fric, T.F. — 2247
Frick, B. — 262, 744
Fridberg, A. — 2238
Friddell, K.D. — 1342
Fridell, Erik — 1765
Fried, B.D. — 1887
Fried, G.A. — 395
Friedland, Lazar — 1913
Friedman, A. — 1209, 1238, 1303, 1305, 1330, 1994, 1995
Friedman, J.F. — 1103, 2361
Friedman, Joel — 267
Friedman, Johnathan R. — 239
Friedman, M. — 1939, 1940
Friedman, Peter — 1654
Friedman, P.G. — 968
Friedman, W. — 1795, 1853
Friedrich, Breislav — 1752
Friedrich, J. — 942
Friedrich, K.A. — 437, 628
Friedrich, L. — 751
Friedrichs, C. — 1376, 1377
Friedrick, John — 960
Friend, R.H. — 211
Friesel, D. — 1197, 1245, 1321
Friesel, M. — 1577
Friesen, Mark — 1623
Friessel, D. — 1257
Frietze, Nathan — 1460
Frikke, E. — 178
Frisch, J. — 1313, 1636
Frisch, J.C. — 1312, 1313, 1342
Frisch, M.A. — 241
Frischholz, H. — 1213, 1398
Frisken, B.J. — 164
Fritsch, J.P. — 1820
Fritsche, C. — 1221
Fritz, Gilbert G. — 690
Fritz, I.J. — 702
Fritz, J. — 1482
Fritz, J.N. — 1499, 1528, 1585
Fritze, M. — 806, 815
Frodyrna, M. — 1034, 1821
Frogacs, G. — 632
Frohn, J. — 612
Frohne, V. — 1163
Frois, B. — 1035
Froissard, P. — 2055
Fröjdth, P. — 711
Frosch, Reinhart — 1045
Frost, J.E.F. — 696, 697
Frost, R. — 1437
Frost, R.T. — 1003
Froumin, N. — 1611
Froyen, S. — 788, 789
Fruchtman, A. — 1993
Frueholz, R.P. — 1094
Fry, C.G. — 415
Fry, J.L. — 476, 800, 1632
Fry, John L. — 442
Frye, Joan M. — 196
Frysinger, Glenn S. — 1732
FTU Team — 2009
Fu, C.L. — 208
Fu, C-Y.S. — 417
Fu, G-Y. — 1945, 1946, 2035
Fu, Haiying — 746
Fu, L.P. — 239, 373, 532
Fu, S. — 1333, 1401
Fu, Sizu — 2044
Fu, Xu — 1018
Fuchs, H.D. — 521
Fuchs, P. — 442
Fuchs, V. — 2108
Fuciarelli, D.A. — 2208
Fuelling, S. — 1089
Fuentes, B.E. — 1160
Fuentes, Manuel — 757
Fuenzalida, V. — 107
Fuerst, C.D. — 816
Fugitt, J. — 1232, 1382, 1392
Fuh, K.C. — 1720
Fuhrer, M.S. — 104, 617, 1622
Fujihisa, H. — 480, 1597
Fujii, T. — 2054
Fujii, Y. — 480, 1597
Fujikawa, B.K. — 1804, 1855
Fujimura, K. — 2198
Fujioka, H. — 1587
Fujishima, A. — 454
Fujishiro, I. — 1520, 1533
Fujishiro, K. — 410
Fujita, H. — 1334
Fujita, I. — 324, 740
Fujita, M. — 1614
Fujita, T. — 2053
Fujita, Y. — 1208
Fujiwara, K. — 1481
Fujiwara, M. — 1052
Fujiwara, N. — 497
Fujiwara, S. — 1481, 1492, 1588, 1591
Fukai, Y. — 1502, 1513, 1574
Fukuchi, T. — 1152, 1905, 1967
Fukuda, K. — 2171
Fukuda, S. — 1395
Fukuda, T. — 2053
Fukui, Tatsuo — 1714
Fukumoto, A. — 622
Fukumoto, N. — 1975, 2057
Fukunaga, O. — 1549, 1587
Fukunishi, Y. — 2208, 2251
Fukuoka, K. — 1513, 1568
Fukushima, E. — 2191, 2241, 2257
Fukushima, K. — 259
Fukuyama, A. — 1926
Fukuyama, Hiroshi — 86, 87
Fulbright, J. — 2175
Fulcher, L.P. — 965
Fulde, P. — 695
Fuller, C.J. — 79, 106, 122, 817
Fuller, E. — 157
Fuller, George M. — 1058
Fuller, G.G. — 421
Fuller, G.M. — 1802
Fuller, R.J. — 1163
Fuller, S.E. — 376

- Fuller-Mora, W.W. — 392, 460
Fullerton, Eric E. — 164, 562
Fullett, K. — 1346, 1358
Fülling, S. — 1089, 1132, 1163
Fulton, B.R. — 926
Fulton, Roger A. — 918
Fulton, T. — 466
Funakoshi, Y. — 1356
Funamori, N. — 1519
Fung, s. — 1828
Fung, S.Y. — 999, 1836, 1837
Funk, D.S. — 1728
Funk, L. — 1334
Funk, L.W. — 1334, 1376, 1391
Funk, W. — 1337, 1361
Funsten, H.O. — 1965
Fuoss, Paul — 723
Fuoss, P.H. — 324
Furdyna, J. — 374, 1503
Furdyna, J.K. — 132, 182, 283, 374, 398, 401, 512, 530, 649, 746, 765, 796, 797, 817, 1516
Furic, M. — 1818
Furlanetto, M.R. — 1650
Furman, M.A. — 1355
Furneaux, J.E. — 814, 815
Furnish, M.D. — 1486, 1562
Furnstahl, R.J. — 1824
Furtak, T.E. — 366, 781, 834
Furth, H. — 2052
Furton, D.G. — 1636
Furukawa, K. — 1316
Furuta, H. — 1520
Furuya, H. — 244
Füssel, A. — 175
Fuzino, S. — 259
Fye, R.M. — 499, 1453
Fyfe, D.E. — 1463, 1962
Fyrrillas, M.M. — 2310
- Gabay, M. — 636
Gabella, W. — 1197, 1245, 1257, 1368
Gabella, W.E. — 1246
Gabl, E.F. — 1900
Gabori, P. — 195
Gaboury, S.R. — 511
Gabrielse, G. — 1115
Gabrielse, Gerald — 977
Gabrys, B. — 293
Gabrys, J.W. — 633
Gacsi, Z. — 980
Gadani, G. — 2113
Gadeberg, M. — 2055
Gad-El-Hak, M. — 2217, 2263
Gadzuk, J.W. — 628, 841
Gaedke, R. — 1675
Gaeta, Z.D. — 1774
Gafer, M.R. — 743
Gaffney, C. — 224
Gafney, H.D. — 339
Gage, J. — 1463
Gagliano, E. — 464
Gagliano, E.R. — 639
Gagliardi, C. — 998
Gagliardi, C.A. — 982
Gagliardi, P. — 1389
Gagné, J.-M. — 2337
Gahl, J. — 1917, 1918, 1938
Gahl, J.M. — 2372
Gai, M. — 984, 1007
Gai, W. — 1276, 1314
Gaier, T. — 1639
Gaifullin, B.N. — 1615
Gaigalas, A.K. — 632
Gaillard, Mary K. — 994
Gaillat, Ana — 2369
- Gaines, Irwin — 976
Gaines, J. — 507
Gaines, J.M. — 375
Gaisser, T.K. — 934, 985, 1021
Gajdeczko, B. — 2263
Gajewski, W. — 1021
Gajewski, D.A. — 130, 177
Galambos, J. — 2005, 2051
Galambos, J.D. — 2050
Galambos, J.P. — 2112
Galbraith, D.L. — 1967
Galdrikian, B. — 646
Gale, D. — 1974
Gale, S.J. — 1049
Galeener, Frank L. — 792
Galehouse, Daniel C. — 1002
Galehouse, D.C. — 1661
Galiatsatos, V. — 348
Galicia, G.G. — 597
Galín, J. — 1828
Galindo-Uribarri, A. — 1805, 1813, 1857
Galinsky, V.L. — 1994
Gall, B. — 1049, 1831
Gallagher, J.W. — 1105
Gallagher, K. — 1489, 1580
Gallagher, M.C. — 231
Gallagher, P. — 716
Gallagher, P.D. — 418
Gallagher, T.F. — 1109, 1145, 1749, 2163
Gallagher, Thomas F. — 1774
Gallagher, W.J. — 636, 688
Gallamore, L. — 941, 1852
Gallant, J. — 962
Gallant, Y. — 2017
Gallardo, J. — 1310
Gallardo, J.C. — 1311, 1316, 1363
Galler, G. — 1860
Galli, Giulia — 89
Galligan, J.M. — 155, 341
Gallo, A. — 1375
Gallot, Y. — 604
Galloway, C. — 1288
Galloway, H. — 112
Galluccio, F. — 1244
Galovich, C.S. — 921
Galperin, B. — 2215
Galt, David — 689, 840
Galvez, E.J. — 1097, 1131
Galvin, M.E. — 603
Galvin, Robert M. — 550
Galyaev, N.A. — 1259
Gamal, Yosr E.E.-D. — 1761
Gamble, F.T. — 1662
Gambogi, J. — 1730
Gambogi, Joan E. — 1725
Gammel, G. — 1322, 1333
Gammel, J.T. — 585, 663
Gammel, J. Tinka — 639
Gammel, P. — 223
Gammel, P.L. — 520, 579, 692
Gammon, D. — 474
Gammon, R. — 480, 1005
Gan, C.L. — 2217
Gan, K.K. — 577, 676, 677
Gan, N. — 926, 1812
Gan, Yaodong — 92
Gance, G.M. — 206
Ganciu, M. — 2351, 2359, 2374
Gandhi, A. — 2311
Gandhi, J.V. — 540
Ganduglia-Pirovano, M. Veronica — 216
Gandy, R. — 2022
Gandy, R.F. — 1952, 2022, 2073
Ganem, J. — 467
Ganesan, K. — 455
- Ganetis, G. — 1290, 1341
Gang, F.Y. — 2075, 2123
Gang, Hu — 405
Ganga, K. — 1066
Gangopadhyay, A. — 402
Gangopadhyay, S. — 832, 947, 971, 1120, 1669, 1670, 1671, 1676, 1737
Ganguli, G. — 1912
Ganguly, A.K. — 1999, 2000, 2120
Ganguly, B. — 2347
Ganguly, B.N. — 1655, 2378
Gannon, J. — 1262, 1290
Ganzz, Andrea — 213
Gao, F. — 1625
Gao, H. — 1821, 2023
Gao, Huajian — 1611
Gao, J. — 244, 416, 1091, 1379
Gao, L. — 170, 241
Gao, R.S. — 2361
Gao, S. — 1357
Gao, W. — 229, 230
Gao, W.B. — 1014, 1015
Gao, Xiang — 2008
Gao, X.Z. — 1593
Gao, Y. — 458, 544, 699, 1751, 1765
Gao, Y.S. — 1000
Gao, Z. — 603, 658
Garabedian, P. — 2024
Garate, E. — 2047, 2048
Garate, Eusebio P. — 1940
Garavaglia, T. — 1266, 1361, 1362
Garay, R. — 410
Garber, M. — 1290, 1330, 1341
Garbinski, P.A. — 633
Garbulsky, G.D. — 209
García, M. — 507
García-Calderón, Gastón — 762
Garcia, A. — 913, 1804, 1829, 1830, 1849, 1855
Garcia, A.L. — 1457
Garcia, Alberto — 834
Garcia, A.R. — 117, 1608
Garcia, E.A. — 814
Garcia, L. — 2021
Garcia, L.A. — 982
Garcia, P. — 2375
Garcia, R. — 2224
Garcia, R.C. — 1218
Garcia, R. Chacon — 991
Garcia-Sciveres, Maurice — 1018
Garcia-Solis, E.J. — 927
Gardelle, J. — 1288
Garden, C. — 1312, 1636
Garden, C.L. — 1312, 1313, 1342
Gardner, C. — 1266
Gardner, Chester S. — 1776
Gardner, C.J. — 1363
Gardner, D.R. — 1439
Gardner, J.A. — 107, 508
Gardner, J.H. — 1886, 1961, 1962
Gardner, John A. — 175, 508
Gardner, K.H. — 93, 141, 142, 348, 418
Gardner, L.D. — 1116
Gardner, W.L. — 2106
Garetz, B.A. — 604
Gareyte, J. — 1247
Garfunkel, E. — 793
Garg, Anupam — 130, 340
Garg, Nandini — 1557
Garg, U. — 980, 1052, 1819, 1832
Garino, G. — 915
Garland, Carl — 557
Garland, C.W. — 818
Garland, E.S. — 2000
Garland, J.C. — 170, 224, 749, 804, 838
Garland, J.W. — 1618
- Garmire, Elsa — 1731
Garmire, Gordon P. — 920
Garner, J. — 581
Garner, S.E. — 1849
Garner, Timothy — 1753
Garnett, R. — 944
Garnier, Francis — 57
Garno, J.P. — 235
Garoby, R. — 1360
Garofalo, A. — 2006, 2007
Garoff, S. — 652, 710
Garoff, Stephen — 979
Garrard, T.L. — 999, 1061
Garren, A. — 1368
Garren, A.A. — 1240
Garren, D.A. — 2017
Garrett, J. — 1827
Garrett, J.D. — 1013, 1014, 1015, 1049, 1856
Garrett, P.D. — 91
Garrett, R. — 1749
Garrison, Barbara J. — 497
Garrison, K. — 503, 649, 672
Garrison, T.J. — 2235
Garscadden, A. — 2330, 2344, 2350, 2364, 2368, 2378
Garstein, E. — 830
Garstenauer, Michael — 2234
Garstka, G. — 2007, 2061
Garstka, G.D. — 2121
Gartman, M. — 1948
Gartman, M.L. — 1953
Gary, J.W. — 1640
Gary, S. Peter — 2042
Gaška, R. — 842
Gaskell, P.H. — 490
Gaskill, D.K. — 566
Gaspar, J.A. — 77, 381
Gasparini, F.M. — 239, 1022
Gatchell, D.W. — 1014
Gates, D. — 2006, 2007
Gates, Vanessa L. — 463
Gath, B. — 1329
Gatignon, L. — 1404
Gatski, T.B. — 2206, 2262, 2266, 2286, 2297, 2311
Gatti, A. — 1111
Gatto, R. — 2076
Gattu, R. — 1290
Gatzke, M. — 1109, 2163
Gau, D.R. — 2379
Gaudiana, R. — 194
Gaughan, K. — 629
Gaulin, B.D. — 155, 479, 766
Gaus, A. — 1090, 1162
Gauthier, J.C. — 1987
Gauthier, L. — 2076
Gauthier, M. — 1624
Gauvreau, J.-L. — 2028
Gauzzi, Andrea — 1623
Gavaler, J.R. — 260, 806
Gavazzi, G. — 587
Gaver, D.P. — 2293
Gavrilov, E.M. — 1987
Gavrilov, F.F. — 1520
Gavrilov, N. — 1397
Gavrilov, V. — 1034
Gavriljuk, A.N. — 1536
Gay, T.J. — 1117
Gayet, Ph. — 1301
Gaylord, T.K. — 285
Gazes, S.B. — 926
Ge, Weikun — 266, 530
Gealy, M.W. — 1133
Gearhart, C.C. — 1835
Gearhart, R. — 1034, 1821
Geary, James — 2074
Geballe, T.H. — 60, 74, 520, 559,

- 751, 782
 Geddes, J. — 2341
 Geddes, J.B. — 2340
 Gedik, Z. — 185, 304, 582
 Gee, M. — 2013
 Geer, L.Y. — 1061
 Geesaman, D.F. — 1800
 Gehlsen, M.D. — 90, 605
 Gehrels, Neils — 1056
 Gehring, J. — 927, 1806
 Gehring, P.M. — 406, 479
 Geier, S. — 176
 Geigenmüller, U. — 803
 Geigenmüller, U. — 803
 Geil, P.H. — 195, 414, 421, 487
 Geindre, J.P. — 1987
 Geisel, T. — 234
 Geisik, C. — 1320, 1321
 Geissel, H. — 1841
 Geist, W. — 1812
 Gekelman, W. — 1887, 1928, 1965
 Gelbart, W.Z. — 1317
 Gelbke, C.K. — 941, 962, 1828, 1853
 Gelbke, K. — 1024
 Gelderloos, C.J. — 1828
 Gelerinter, E. — 349, 1660
 Gelfand, B.Y. — 136, 396
 Gelfand, Martin — 356
 Gelfand, M.P. — 304, 725
 Gelfand, N. — 1269, 1294
 Gelfand, N.M. — 1268
 Geller, J. — 1400
 Geller, M.R. — 234
 Gelletly, W. — 1856
 Belmont, B. — 621
 Gemander, M. — 1860
 Gemme, G. — 1374, 1386
 Gemmell, D.S. — 1120, 1125, 1140
 Genack, A. — 547
 Genack, A.Z. — 367
 Gencten, A. — 731
 Gendrich, P. — 2287
 Genesio, F. — 1376
 Genio, E. — 2173
 Genre, R. — 1317
 Gentieu, P. — 1066
 Gentile, Ann C. — 2345
 Gentile, N.A. — 1638, 1640, 1802
 Gentle, K.W. — 1949, 1950
 Gentry, Bruce M. — 1773
 Gentry, R.V. — 1067
 Gentry, W. Ronald — 548
 Gentsch, M.L. — 1682
 Gentzlinger, R. — 1299
 Genzer, J. — 488
 Geoghegan, M. — 488
 Geohegan, David — 669, 1726
 Geohegan, D.B. — 1900
 George, A. — 75
 George, J. — 396
 George, M. — 1199
 George, S.A. — 631
 George, T. — 156
 George, T.F. — 62, 592, 828
 George, W.K. — 2210, 2234, 2285
 Georges, Antonie — 639
 Georges, P. — 1314
 Georghakis, G.A. — 633
 Georgiadis, J. — 2306, 2307
 Gerace, William J. — 1032
 Gerardi, G.J. — 155
 Gerasimov, A. — 1345, 1371
 Gerber, C. — 945
 Gerber, Christian — 1030
 Gerber, C.J. — 1636
 Gerber, K.A. — 2085
 Gerdau, E. — 113
 Gerdes, D. — 1039
 Gerig, R. — 1248, 1359
 Gering, James A. — 1019
 Gerjuoy, Edward — 996
 Gerlich, D. — 255
 Germani, J. — 1810
 Germann, T.C. — 1127
 Germer, T.A. — 1755
 Gernhäuser, R. — 2362
 Gerritsen, J. — 826
 Gerritsma, G.J. — 637
 Gershenson, M.E. — 129, 322
 Gerstman, B. — 267
 Gerstman, B.S. — 319
 Gerward, L. — 1513
 Gerwin, R.A. — 2341
 Gerz, C. — 934, 1142, 1778
 Gerzевske, H. — 1219
 Geschonke, G. — 1213
 Geselbracht, M.J. — 117, 1608
 Geserich, H.P. — 76
 Geshkenbein, V.B. — 69, 388
 Gettelfinger, G. — 2093
 Getting, I.C. — 1528, 1558
 Gettinger, C. — 205
 Gettlefinger, G. — 2093
 Gewirth, Andrew — 359
 Ghaemi, H. — 527
 Ghahramani, E. — 687
 Ghaisas, S.V. — 379, 381
 Ghamaty, S. — 528
 Ghandehari, Kouros — 576, 577, 1522, 1575
 Gharib, M. — 2222, 2264, 2282, 2287, 2303, 2308
 Ghaskadvi, R. — 435
 Ghebremichael, F. — 543
 Ghia, K.N. — 2205, 2256
 Ghia, U. — 2205
 Ghiner, A.V. — 1754
 Ghiorso, A. — 1832
 Ghiron, K. — 188
 Ghosal, S. — 2189
 Ghose, S. — 135, 270
 Ghosh, A. — 997, 1290, 1341
 Ghosh, A.K. — 1291, 2341
 Ghosh, Himel — 1891
 Ghosh, P.M. — 630
 Ghosh, Ruby N. — 697
 Giacoletti, J.A. — 1744
 Giacone, R.E. — 1914
 Giacuzzo, F. — 1260
 Giaever, G.N. — 542
 Giaever, I. — 542, 630
 Giamarchi, T. — 496
 Giammanco, F. — 2044
 Gianakon, T.A. — 1925
 Giancarlo, Leanna C. — 1740
 Giancola, Anthony J. — 1442
 Giannelis, E.P. — 217
 Giannella, R. — 2056
 Giannelli, R.A. — 1817
 Giannini, M. — 1260, 1405
 Giannozzi, P. — 306, 620
 Giapintzakis, J. — 331
 Giapis, K.P. — 2375
 Giardina, G. — 1842
 Giardino, G. — 1322
 Gibart, P. — 266
 Gible, Kurt — 2346
 Gibbons, J.F. — 1620
 Gibbons, M.R. — 1892
 Gibbons, P.C. — 681
 Gibbons, T.T. — 1129
 Gibbs, D. — 437
 Gibbs, Doon — 338
 Gibbs, H.M. — 77
 Gibbs, K.G. — 1020
 Gibbs, W.R. — 1818
 Gibbs, Zane P. — 594, 696
 Gibney, T. — 2093
 Gibney, T.R. — 2094
 Gibson, A. — 564, 620
 Gibson, Andrew S. — 1759
 Gibson, B.F. — 1063
 Gibson, C.H. — 2215
 Gibson, E.F. — 943
 Gibson, G.W. — 2343
 Gibson, G.W., Jr. — 2327
 Gibson, J.M. — 394, 515
 Gibson, J. Murray — 775
 Gibson, K. — 2008
 Gibson, N.D. — 1123
 Gibson, R.B. — 1916
 Gibson, T.L. — 1101, 1669
 Gicquel, A. — 2343
 Giddings, T. — 2247
 Gider, S. — 528
 Gidley, D. — 141, 349, 413
 Giebultowicz, T.M. — 323, 797
 Giedd, R.E. — 540
 Giegultowicz, T.M. — 431
 Gielen, J.W.A.M. — 2376
 Gielen, L. — 1623
 Gierman, S.M. — 1342
 Giese, Clayton F. — 548
 Gieseke, T.J. — 2271, 2302
 Giesen, U. — 1844, 2175
 Giesing, K. — 1956
 Giessen, B.C. — 750
 Giglio, M. — 47
 Giguet, E. — 1280
 Gil, T.J. — 1099, 1117
 Gil, Tomasz J. — 2348
 Gilad, S. — 1816
 Gilbenbach, R.M. — 1348
 Gilbert, B. — 2315
 Gilbert, R.A. — 316
 Gilbert, R.D. — 412
 Gilbody, H.B. — 2341
 Gilbreath, Charmaine — 353
 Giles, Roscoe — 1045
 Gilfoyle, G. — 1828
 Gilgenbach, R.M. — 1282, 1348, 1900, 1982, 2002, 2074
 Gilgenbach, Ronald M. — 2001
 Gilkes, M. — 998, 999, 1815, 1828
 Gilkes, M.L. — 1853, 1854
 Gill, Douglas M. — 1725
 Gill, D.R. — 1859
 Gill, R.E. — 414
 Gill, S. — 1824
 Gillan, M.J. — 281
 Gilland, J. — 1896
 Gillespie, D.J. — 453, 734
 Gillespie, George H. — 1237
 Gillespie, G.H. — 1337
 Gillham, John K. — 606
 Gilliam, D.M. — 913
 Gillie, J.K. — 292
 Gillier, R. — 1264
 Gilligan, J. — 2120
 Gilligan, J.G. — 2123
 Gilligan, J.M. — 1140, 1142
 Gilliland, D.J. — 282
 Gilliland, G.D. — 282, 473, 474, 746
 Gillispie, G.D. — 1738
 Gilman, E.S. — 794
 Gilmor, Jeffrey R. — 145
 Gilman, Frederick — 1009
 Gilman, J.J. — 306, 444, 1542, 1599
 Gilman, R. — 943
 Gilmer, G.H. — 1620
 Gilmer, J.W. — 484
 Gilmore, J. — 2039
 Gilmore, M. — 1888
 Gilpatrick, J. — 1202, 1211, 1212
 Gilpatrick, J.D. — 1220, 1273
 Giltner, D.M. — 1120
 Gil-Villegas, A. — 1740
 Gim, Y. — 690, 806
 Giménez, A. — 803
 Ginatempo, B. — 216
 Ginder, J.M. — 344
 Ginder, John — 614
 Gindrup, T. — 225
 Gingras, Michel J.P. — 165, 476
 Ginkel, J.F. — 1053
 Ginley, D.S. — 345
 Ginocchio, J. — 993
 Ginsberg, D.M. — 76, 188, 226, 277, 331, 635, 692
 Ginsburg, D.M. — 1625
 Ginsparg, P. — 1463
 Ginzburg, V.V. — 768
 Giordana, A. — 232, 566
 Giordano, G. — 914, 915
 Giordano, N. — 129, 649
 Giorgiutti, F. — 2223
 Giorni, A. — 1852
 Giovannozzi, E. — 2109
 Giovannozzi, M. — 1247, 1249
 Girard, A. — 1343
 Girimaji, S.S. — 2244
 Girit, I.C. — 1803, 1855
 Giron-Sierra, Jose M. — 1436
 Girshick, S.L. — 2372
 Girvin, S.M. — 239, 277, 278, 462, 526, 766, 801
 Gisler, G. — 1434
 Gist, G.A. — 1668
 Giuliani, G.F. — 329
 Giuliani, J. — 2081, 2089, 2124
 Giuliani, J., Jr. — 2013
 Giuliani, J.L., Jr. — 1895
 Girgiu, C. — 1514
 Givargizov, E.I. — 1619
 Givi, P. — 2213, 2229, 2281
 Givler, R.C. — 2241
 Gizon, A. — 981
 Gizon, J. — 981
 Gjaja, I. — 1350
 Glab, W.L. — 1096, 1108, 1123, 1131, 1672
 Gladd, N.T. — 1893, 2018
 Gladkaya, I.S. — 1560, 1566
 Gladkike, P. — 1324
 Gladkikh, P. — 1243, 1368
 Gladyshev, V. — 1830, 1847
 Gagola, B. — 926, 927
 Glander, G.S. — 727
 Glarum, S. — 496
 Glaser, E.R. — 86, 266, 621
 Glaser, M.A. — 187, 536
 Glashauser, C. — 1830
 Glasmacher, T. — 962, 1828, 1857
 Glasner, M. — 1448
 Glass, G.A. — 951, 1148
 Glass, H.D. — 1293, 1295
 Glass, Jennifer L. — 1996
 Glasser, A.H. — 1892, 1947
 Glassford, K.M. — 674
 Giastra, M. — 273
 Glatz-Reichenbach, J. — 602, 604
 Glauche, E. — 2378
 Glaunsinger, W.S. — 1607
 Glauser, M. — 2206, 2233, 2247, 2262
 Glaviano, M. — 1229
 Glazman, L.I. — 277, 464, 465, 466
 Glazov, A. — 1391
 Gledenov, Yu. M. — 983
 Gleeson, J.T. — 405, 599
 Glembocki, O.J. — 232
 Glembocki, Orest J. — 788

- Glendinning, S. — 2085
 Glendinning, S.G. — 1539, 1961
 Glenister, R. — 695
 Glenister, R.L. — 695
 Glenn, J.W. — 1266
 Glessner, William — 702
 Glezer, A. — 2204, 2275, 2284
 Glezer, E. — 1743
 Glick, A.J. — 697
 Glick, D. — 2166, 2168
 Glinesky, M.E. — 2080
 Glock, H.-W. — 1285, 1287, 1288
 Glöckle, W. — 1063, 1172
 Gloeckle, Walter — 921
 Glorieux, Pierre — 1744
 Glosli, J. — 574
 Glosli, J.N. — 456
 Glosser, R. — 157, 1612, 1671
 Glotzer, S.C. — 245, 545, 716, 1438
 Glover, A.L. — 1901
 Glover, M.E. — 1967
 Gluckman, B.J. — 471, 2273, 2301
 Gluckstern, R.L. — 1245, 1327, 1350, 1370
 Glushac, B.L. — 1513
 Glyde, H.R. — 137
 Glynn, A. — 145
 Glyttsis, E.N. — 285
 Gmachl, C. — 283
 Gmitter, T. — 807
 Gnade, B. — 1675, 1681, 1684, 1685
 Gnanadesikan, A. — 2254
 Go, Jungsug — 1724
 Gobba, Wafaa A. — 797
 Goble, Robert — 978
 Godbey, D.J. — 86
 Godbole, Rohini — 1059
 Goddard, J.D. — 2237
 Goddard, R.J. — 194
 Goddard, W.A. — 585
 Goddard, William A., III — 725
 Godden, D. — 1334, 1338
 Goderre, G. — 1252, 1355
 Goderre, G.P. — 1207
 Godfrey, G.L. — 1316
 Godin, T.J. — 280
 Godwal, B.K. — 1514, 1521, 1559
 Godwin, M.A. — 1846, 1858
 Godwin, Robert P. — 1987
 Godwin, R.P. — 1316
 Godyak, V.A. — 2370, 2372
 Godz, A.S. — 393
 Goeckner, F. — 1051
 Goeckner, F.C. — 1051
 Goeckner, M.J. — 1890
 Goedecker, Stefan — 381
 Goetz, J. — 1955, 1956, 1957
 Goetz, J.A. — 1957
 Goetze, K. — 1223
 Goff, W.E. — 290
 Goforth, M. — 930
 Goforth, Terry L. — 1158
 Goforth, T.L. — 1105
 Gofron, K. — 226, 273, 274
 Gogolides, E. — 2329
 Gogorth, T.L. — 1105
 Goh, F. — 1670
 Gohil, P. — 1937, 2059, 2063, 2066
 Gohshi, Y. — 1588
 Gokhale, M.P. — 504
 Golberg, S.M. — 1962
 Gold, S. — 1402
 Gold, S.H. — 1279, 2000
 Goldbart, P. — 230, 465, 709
 Goldberg, B.B. — 179, 527
 Goldberg, D.A. — 1379
 Goldberg, Fred — 1032
 Goldberg, H. — 190
 Goldberg, V. — 1811
 Goldburg, W. — 166
 Goldburg, W.I. — 187
 Golden, Jeffrey — 2004, 2119
 Golden, R. — 933
 Goldenberg, Barbara — 446
 Goldenberg, Barbara L. — 675
 Goldenfeld, N. — 465, 709
 Goldfain, E. — 986
 Goldfarb, Ronald B. — 664
 Goldfield, E.M. — 1446
 Goldfinger, R. — 2033
 Goldfinger, R.C. — 1907, 2033
 Goldhaber, M. — 1021
 Goldhar, J. — 1943
 Goldin, L. — 1338
 Golding, Brage — 394, 560
 Golding, T.D. — 235
 Goldman, A. — 626
 Goldman, A.M. — 111, 123, 330, 466, 520, 693, 752
 Goldman, Carla — 155
 Goldman, D. — 2274
 Goldman, J.R. — 1750
 Goldman, K.I. — 1835
 Goldman, M. — 1394
 Goldman, M.A. — 1298
 Goldman, M.V. — 1903, 1912, 2019
 Goldman, S.P. — 1126, 1166
 Goldman, S.R. — 1916
 Goldman, T. — 1823
 Goldman, V.J. — 471, 697
 Goldner, Lori S. — 934, 1142, 1778
 Goldring, G. — 1844
 Goldschmidt, D. — 830
 Goldshtik, M. — 2273, 2296
 Goldsmith, G. — 284
 Goldsmith, J.F.M. — 1767
 Goldstein, A. — 310
 Goldstein, David — 925
 Goldstein, D.B. — 2090, 2217, 2232
 Goldstein, H.F. — 2317
 Goldstein, J.A. — 1968
 Goldstein, M.E. — 2288, 2289
 Goldstein, Raymond — 825
 Goldstein, R.E. — 591, 2209
 Goldstein, Richard — 558
 Goldstein, R.J. — 2239
 Goldstein, W.H. — 1456, 1986, 2082
 Goldstein, William — 1986
 Goldston, R.J. — 2048, 2049
 Golightly, W.J. — 1941
 Gollub, J.P. — 471, 790, 2223, 2273, 2301
 Golosnoy, I.O. — 1514
 Golovato, S. — 1958
 Golovato, S.N. — 1958, 2107
 Golovchenko, J.A. — 515, 522, 623
 Golovchenko, Jene A. — 678, 800
 Golovkov, M. — 1811
 Golston, R.J. — 2037
 Golub, J.E. — 131, 646, 705
 Golubeva, N. — 1258
 Golubeva, N.G. — 790
 Golubovic, Leonardo — 543, 600
 Golubyatnikov, G.Yu. — 1886
 Gomberg, H.J. — 928
 Gomberoff, K. — 1993
 Gomes, A.S.L. — 1718
 Gomes, G.F. — 2334
 Gomes da Costa, P. — 158, 211, 1439
 Gomet, J.C. — 2357
 Gomez, J. — 1034, 1533, 1821
 Gomez, M.A. — 410
 Gomez, R. — 1613, 1625
 Gomez del Campo, J. — 1054, 1842
 Gomez-Jpulido, Juan A. — 1436
 Gonçalves Da Silva, C.E.T. — 1234, 1247, 1255
 Goncharov, A.F. — 1543, 1572
 Gondhalekar, A. — 2057
 Gong, C. — 1064
 Gong, J.P. — 212, 582
 Gong, T. — 128, 686
 Gong, W. — 1815
 Gong, W.G. — 1828, 1829, 1837
 Gong, Y. — 117, 183
 Gong, Z. — 564, 1488
 Goñi, A.R. — 393, 807
 Gonichon, J. — 1282, 1283, 1310
 Gonin, M. — 1813, 1852
 Gonin, M.D. — 1833
 Gonis, A. — 256, 308, 309, 831
 Gonthier, P. — 1852
 Gonthier, P.L. — 927, 969
 González de la Cruz, G. — 214
 González Trotter, D.E. — 1825
 Gonze, X. — 381, 674
 Good, B. — 261
 Good, Brian S. — 512, 540, 1610, 1632
 Goodall, D.H.J. — 2008
 Goodby, J. — 845
 Gooding, R. — 307
 Goodkind, J.M. — 137, 138, 290
 Goodman, A.L. — 962
 Goodman, C.D. — 913, 982, 1051, 1830
 Goodman, Keith W. — 699
 Goodman, M.C. — 1798
 Goodman, M.L. — 2078
 Goodman, Richard E. — 1665
 Goodnick, S.M. — 810, 842
 Goodnick, Stephen — 842
 Goodnick, Stephen M. — 764
 Goodrich, John W. — 2218
 Goodrich, K.C. — 455
 Goodrich, P.J. — 1989
 Goodson, D.Z. — 1127
 Goodstein, D.L. — 748
 Goodwin, D.G. — 573, 1982
 Goodwin, J.E. — 1294
 Goodwin, R.T., III — 2249
 Goodwin, T.J. — 73, 783, 829
 Goodwing, T.J. — 829
 Goodzeit, C. — 1290
 Googin, J.M. — 1901
 Goonewardene, A. — 781
 Goovaerts, Etienne — 467
 Gopalan, R. — 1969, 1973
 Gopalkrishnan, R. — 2203
 Gopinath, Bindu — 78
 Gopinathan, M. — 1160
 Goplen, B. — 2003
 Goplen, Bruce — 1894, 2004
 Gorbatkin, S.M. — 2339
 Gorczyca, I. — 445
 Gorczyca, T.W. — 1091, 1156
 Gordán, Susana — 1986
 Gordon, D. — 1997
 Gordon, J.E. — 188
 Gordon, M.S. — 1828
 Gordon, S.P. — 518
 Gordon, W.L. — 419, 422, 484
 Gorecka, Ewa — 819, 845
 Goree, J. — 1965, 2330, 2341
 Goremchkin, E.A. — 178
 Goren, Y. — 1334, 1351, 1377, 1378, 1379, 1380
 Gorini, G. — 1318
 Gorkiewicz, D.W. — 52
 Gor'kov, L.P. — 753, 765
 Görlich, W. — 1386
 Görling, A. — 88, 89
 Gorman, B.M. — 654
 Gormezano, C. — 2055
 Gornik, E. — 283, 400
 Gornik, Erich — 248
 Gorniker, E. — 1397
 Goronkin, Herb — 336
 Görres, J. — 983, 1841, 1844, 2175
 Gorringer, T.P. — 913, 914
 Gorshkov, A.V. — 1954
 Gorshkov, O.N. — 836
 Gorshunov, B. — 75
 Gortel, Z.W. — 847
 Gosele, U. — 660
 Goss, L.P. — 2259
 Gossard, A.C. — 81, 233, 380, 528, 704, 706, 814, 815, 840
 Goto, S. — 2121
 Goto, T. — 497, 2335, 2340
 Gotoda, H. — 2344
 Gottardi, N. — 2055
 Gottstein, G. — 1577
 Gou, S. — 2245
 Goujon-Durand, S. — 2304
 Goulard, B. — 1437
 Gould, C.M. — 87
 Gould, C.R. — 1063, 1805, 1846, 2171
 Gould, H. — 1170, 1460
 Gould, Harvey — 1265
 Gould, P.L. — 1170, 2346
 Gould, Roy W. — 1970
 Goulding, R.H. — 2068, 2106, 2107
 Goulian, M. — 598
 Gourber, J.-P. — 1236
 Gourdin, W.H. — 256
 Gourier, C. — 2368
 Gourlay, S. — 1290
 Gourley, P.L. — 97, 815
 Gove, H.E. — 929
 Gover, B.N. — 549, 1134
 Governale, Michael — 578
 Govil, I.M. — 1337
 Govindan, T.R. — 474
 Gower, E. — 1398
 Goyette, T.M. — 1662
 Gozani, Joseph — 1774
 Gozdz, A.S. — 1713
 Gozin, I. — 1284
 Gozzo, F. — 474, 642
 Grabbe, A. — 512
 Grabbe, S. — 1089
 Grabelsky, D.A. — 989
 Graber, J. — 1380
 Graber, T. — 1090, 1170
 Grabert, H. — 328
 Grabow, M. — 372
 Grabow, Marcia H. — 1433
 Grabowski, C. — 1938
 Grabowski, J.J. — 1969
 Grabowski, W. — 2199
 Grabowski, Z.W. — 1832
 Grachev, O.A. — 1054
 Grady, B.P. — 293
 Grady, D.E. — 1505
 Graf, M. — 1955
 Graf, M.A. — 1957
 Graf, M.J. — 386
 Graf, T. — 525
 Grafe, Alan — 1158
 Graff, S.M. — 2175
 Grafstrom, P. — 1404
 Gragson, D.E. — 437
 Graham, A.P. — 342
 Graham, Gilbert R. — 1012
 Graham, J.D. — 1896, 1974
 Graham, L.A. — 1121, 1777
 Graham, R.A. — 1495, 1504, 1533, 1591, 1592, 1596
 Graham, R.L. — 549
 Graham, T.A. — 2009

- Graham, T.V. — 2160
 Graham, W.G. — 1116, 2335, 2336, 2347
 Graham, W.R. — 451
 Grahm, H.T. — 763, 813
 Gram, P. — 1818
 Gramagna, F. — 1813
 Granatstein, V. — 1280
 Granatstein, V.L. — 1281, 1310, 1999
 Grandjean, F. — 161
 Granetz, R.S. — 1954, 1955, 1956, 1957
 Granick, Steve — 145, 349, 350, 714
 Granier, A. — 2339
 Grannan, E.R. — 476, 644
 Grannan, Eric R. — 684
 Grannick, S. — 432
 Grant, Edward — 1730
 Grant, J.R. — 2271
 Grant, M.W. — 623, 679
 Grant, R.G. — 161, 162
 Gras, J.J. — 1221
 Grasmück, A. — 1820
 Gratz, A.J. — 574, 1479
 Grau, M. — 1211
 Graupner, R.K. — 843
 GravéI. — 554
 Gravelle, D.V. — 2372
 Graves, D.B. — 2330, 2350, 2357, 2365, 2375
 Graves, John S. — 373
 Graves, W.S. — 1219, 1360
 Graw, G. — 1064
 Gray, D. — 2008
 Gray, D.S. — 2008, 2058
 Gray, E. — 1387
 Gray, G.T., III — 1480, 1481, 1511, 1562, 1568
 Gray, J.A. — 1650
 Gray, K.E. — 459, 519, 583
 Gray, Kenneth E. — 720
 Gray, L.G. — 1130
 Gray, M. — 2075
 Gray, M.G. — 2015
 Gray, S.K. — 1446
 Graybeal, J.M. — 127, 465, 466, 521
 Grayce, C.J. — 144
 Grayson, M. — 80
 Grayson, M.A. — 415
 Graziani, Mark — 1128
 Greaves, R.G. — 1933, 1973
 Grebe, H.A. — 1540
 Greber, I. — 2193
 Grebogi, C. — 2194
 Greedan, J. — 680
 Greeff, C. — 846
 Greeff, C.W. — 586, 1661
 Greeley, J.N. — 1755, 1756
 Green, A.A. — 2171
 Green, D. — 1037
 Green, K. — 1385
 Green, K.D. — 1020
 Green, M.E. — 631
 Green, P.F. — 90
 Green, P.V. — 1064, 2171
 Green, P.W. — 1036, 1836, 1847
 Greenberg, K. — 2346
 Greenberg, K.E. — 2377
 Greenblatt, M. — 117, 365
 Greene, A. — 1290, 1341
 Greene, B.I. — 200, 792, 1720
 Greene, C.H. — 1091, 1124, 1149
 Greene, Chris H. — 1096, 1150, 1151
 Greene, G. — 946
 Greene, G.J. — 2040
 Greene, G.L. — 913, 951
 Greene, J.M. — 1909, 2065
 Greene, J.P. — 1804, 1855
 Greene, K.L. — 2064
 Greene, L.H. — 581
 Greene, M.D. — 781
 Greene, Raymond G. — 476, 1570, 1571, 1572, 1575
 Greene, R.L. — 212, 223, 272, 274, 387, 388, 438
 Greene, S. — 942
 Greene, S.V. — 1038
 Greenfield, C.M. — 1937, 2036, 2061, 2062
 Greeniaus, L.G. — 1847
 Greenly, J.B. — 2045, 2048
 Greenly, J.G. — 2046
 Greenough, J.A. — 2201
 Greenside, Henry S. — 2273
 Greenspan, H.P. — 2309
 Greenwald, M. — 1954, 1957, 1958
 Greenwill, J.I. — 1528, 1533
 Grega, L.M. — 2218
 Gregg, M.R. — 686
 Gregorian, L. — 2012, 2088
 Gregory, B. — 2028
 Gregory, B.C. — 2028, 2057
 Gregory, C. — 1157
 Gregory, N.K. — 1818
 Gregory, W. — 1314
 Greiner, F. — 1907
 Greiner, L. — 949
 Greiter, M. — 137, 271, 391
 Greiter, Martin — 237
 Grek, B. — 2031, 2033, 2037, 2038, 2069
 Grek, G.R. — 2236
 Grelick, A. — 1216, 1287
 Grenier, J. — 1288
 Gres, V.N. — 1219
 Gressett, J.D. — 1685
 Grest, Gary S. — 658
 Greuel, P.G. — 2337
 Greven, M. — 124
 Grewe, T. — 2008
 Greyber, Howard D. — 969
 Greytak, T.J. — 185, 1170
 Greywall, M. — 2205
 Gribakin, G. — 1111
 Gribble, R.J. — 1900
 Gribov, I.V. — 1368
 Gribushin, A. — 1037
 Griem, H. — 1956
 Griem, H.R. — 1943, 1957, 2088
 Grier, David — 196
 Grier, D.G. — 709
 Grieser, M. — 1336
 Griffin, A. — 126, 392
 Griffin, D.C. — 1156
 Griffin, G.D. — 118
 Griffin, H.C. — 1842, 1849
 Griffin, J. — 1255
 Griffin, James E. — 1256
 Griffin, Owen M. — 2203
 Griffin, R.G. — 319
 Griffioen, K. — 1034, 1821
 Griffioen, K.A. — 1841
 Griffith, J.E. — 555
 Griffith, J.W. — 107, 508
 Griffiths, C.O. — 133, 282
 Grigereit, T.E. — 648
 Grigor'ev, Yu. — 1368
 Grigoriev, S.V. — 1894, 1896
 Grigoropoulos, C.P. — 735
 Grigorov, N.L. — 948
 Grigsby, J. — 1656, 1659
 Grillo, A. — 1225
 Grim, G. — 1828
 Grim, Gary P. — 1053
 Grima, P. — 1530
 Grimes, S.M. — 1051
 Grimm, T. — 1390
 Grimm, T.L. — 1344
 Grimsditch, M. — 407, 521, 562, 575, 1594
 Grimvall, G. — 506
 Grinberg, A.A. — 705
 Griniov, V.G. — 1543
 Grinstein, F.F. — 2189, 2204
 Grinstein, G. — 497
 Grippe, J. — 1323, 1377, 1394, 1398
 Grischkowsky, D. — 200, 763
 Grisham, L.R. — 1906
 Grishanov, B. — 1367
 Grishin, V.N. — 1054
 Grobe, R. — 1749
 Grober, R.D. — 238, 806
 Grodzins, Lee — 907
 Grodzinski, P. — 446
 Groebner, R.J. — 1937, 2061, 2062, 2063, 2070, 2071
 Grof, Y. — 942
 Groh, D. — 791
 Groh, K. — 540
 Grolleau, B. — 2339
 Gromme, T. — 1225
 Grønbech-Jensen, Niels — 837
 Gronlund, C.A. — 265
 Groom, D.E. — 1037
 Gros, C. — 588, 820
 Grosjean, D.E. — 740
 Grosman, D. — 207
 Gross, C.J. — 980, 1856
 Gross, D.A. — 953
 Gross, G. — 1404
 Grossberg, P. — 1308
 Grossman, A. — 1920
 Grossman, A.A. — 1920
 Grossman, M.W. — 2356
 Grossmann, Frank — 289
 Grossmann, J.M. — 1988, 1989
 Grossmann, W. — 2106
 Grotberg, J.B. — 2293
 Grote, D. — 1303, 1994, 1995
 Grote, D.P. — 1305, 1995
 Groupe d'Etude des Cavités Supraconductrices — 1375
 Grove, D.J. — 1556
 Grove, J.E. — 989
 Grover, R. — 186, 1554
 Grozny, I. — 1910
 Grua, P. — 1301, 1302
 Grubb, S.G. — 1747
 Grubin, H.L. — 474, 842
 Grudzien, D. — 1205
 Grulke, E.A. — 541
 Grumbach, Matthew P. — 505
 Grumbine, D.W., Jr. — 847
 Grun, J. — 1890, 1942
 Grunau, D.W. — 2300
 Grünberg, P. — 618
 Grundbacher, R. — 54, 394
 Grüneberg, H. — 1289
 Grüner, G. — 104, 825
 Gruner, S.M. — 405, 599
 Grusell, E. — 1338
 Grützmacher, D.A. — 85, 85, 812
 Gruzinov, A.V. — 1923, 2017
 Gružinskis, V. — 634
 Gruzza, B. — 335
 Gryanik, V.M. — 2271
 Gryaznevich, M. — 2008
 Gryko, J. — 447, 448
 Grzegory, I. — 1504, 1549, 1576
 Gu, B.-Y. — 708
 Gu, Dong-Feng — 541
 Gu, G.D. — 1624
 Gu, Guojiang — 64
 Gu, Guoliang — 254, 1566, 1594
 Gu, H. — 2375
 Gu, S.Q. — 630
 Gu, T. — 1035, 1052, 1846
 Gu, Y. — 267, 2044
 Gualtieri, E. — 927, 940, 941, 998, 1815, 1828, 1852, 1854
 Guan, H.W. — 190
 Guan, J. — 437
 Guan, K. — 1529
 Guan, Z.F. — 1617
 Guan, Z.S. — 1534
 Guang-quan, Zhou — 1537
 Guardala, N.A. — 951, 1148
 Guarnieri, C.R. — 2354
 Guasp, J. — 2021
 Guazzelli, Elisabeth — 2257
 Gubanov, V.A. — 83, 135, 275, 452, 675
 Gubanova, O. — 675
 Guber, F.F. — 943, 1817
 Gubernatis, J.E. — 227, 754, 758
 Gu Cheon, Byung — 1038
 Güdel, Hans U. — 1725
 Gudenov, A.L. — 1089, 1132
 Gudmundson, Fredrik — 1765
 Guedes, G.P. — 1227
 Guenther, R.A. — 384
 Guerra, John M. — 546
 Guerrero, A. — 641
 Guertin, R.P. — 170
 Guery, J.F. — 1600
 Guess, Tommy — 1611
 Guethlein, G. — 2082, 2117
 Guethlein, Gary — 1986
 Guevara-Rodríguez, F. — 1631
 Guezennec, Y.G. — 2243, 2271, 2276, 2302
 Guha, S. — 171, 501
 Guharay, S. — 1319
 Guharay, S.K. — 1364
 Gui, M. — 1813, 1852
 Guichard, L. — 2247
 Guidee, Ph. — 1395
 Guidi, V. — 1371
 Guido, L.J. — 763
 Guigli, J. — 1398
 Guignard, G. — 1347, 1352, 1362
 Guilhem, D. — 1918, 2058
 Guillemette, J. — 1845
 Guim, I. — 711
 Guimaraes, P.S.S. — 233
 Guinea, F. — 277
 Guinet, D. — 1852
 Guiochon, G. — 152
 Guirguis, Raafat — 1582
 Guirlet, R. — 1218, 2058
 Guk, I. — 1368
 Gulacsi, M. — 333
 Gulden, K.H. — 1769
 Gulec, K. — 2023
 Gulen, S. — 2212
 Gulick, S. — 2335
 Gulick, S.L. — 2333
 Gullemette, J.F. — 1825
 Gulley, M. — 1253
 Gulley, R.J. — 2333
 Gülmaz, E. — 982
 Gulo, A.M. — 259
 Gumbs, G. — 187, 397, 706
 Gumplinger, P. — 913
 Gunaratne, G.H. — 836
 Günzer, S.E. — 516
 Gundersen, H. — 1639
 Gundersen, M. — 1315, 1358
 Gundlapalli, R. — 2216
 Gunn, J. — 2027
 Gunnarsson, O. — 305, 368, 643
 Gunnesin, B. — 294

- Gunshor, R.L. — 356, 507, 1589
 Günther, C.C.A. — 654
 Günther, Ch. — 1350
 Güntherodt, H.-J. — 1606
 Gunton, J.D. — 470
 Guo, D. — 57
 Guo, F.-Y. — 57
 Guo, H. — 550, 628
 Guo, Hong — 1617
 Guo, Jing-Ming — 2360
 Guo, L.J. — 707
 Guo, M. — 1534
 Guo, Muyu — 476
 Guo, S.C. — 1944
 Guo, X.Q. — 1157
 Guo, Z. — 167, 1371
 Gupta, A. — 59, 259, 325, 418
 Gupta, R. — 637, 1141, 1155, 1247, 1290, 1291, 1341
 Gupta, Rajan — 1438, 1459
 Gupta, S. — 714
 Gupta, Satish C. — 1515, 1569
 Gupta, Tapan K. — 1644
 Gupta, V. — 1017
 Gupta, Y.M. — 1518, 1529, 1558, 1588, 1598
 Guptasarma, P. — 326
 Gurd, D.P. — 1227
 Gurevich, A. — 1625
 Gurevich, V.L. — 1609
 Gurney, B. — 784
 Gurol, H. — 1341
 Gurr, Henry S. — 2176
 Güsewell, D. — 1301
 Guss, W.C. — 2002
 Gust, W. — 1577
 Gustafson, R. — 1037
 Gustafson, T.K. — 55, 289, 621
 Gustafson, T.L. — 312
 Gustafsson, T. — 279, 280, 437, 793
 Gustavsen, R.L. — 1498, 1560
 Gustavsson, H.-G. — 2038
 Gustin, E. — 469
 Guth, J.R. — 65
 Gutierrez, C. — 990
 Gutierrez, D.A. — 160, 705
 Gutierrez-Lemini, D. — 415
 Gutierrez-Tapia, C. — 1901
 Gutkin, M.Yu. — 1535
 Gutleben, C.D. — 559, 587
 Gutmark, E. — 2204, 2258
 Gutscher, W.D. — 1393
 Gutzwiller, Martin C. — 1012
 Guy, A. — 1808
 Guy, F. — 1361
 Guy, F.W. — 1200, 1201, 1217, 1220, 1239, 1319, 1334
 Guyot-Sionnest, P. — 361
 Guzdar, P.N. — 1913, 1923, 1926, 1929
 Guzik, T.G. — 932, 949
 Gwinn, E.G. — 81, 380, 645, 815
 Gwinner, G. — 997
 Gwo, S. — 182, 596
 Gyax, F.N. — 79
 Gygi, François — 1627
 Gyr, M. — 1197, 1254
 Gyure, M.F. — 245, 545, 716, 1438

 Ha, Z.N.C. — 754
 Haakenaasen, R. — 522
 Haaland, P. — 418
 Haaland, P.D. — 414, 2376
 Haan, S.W. — 1962
 Haar, R.R. — 1116, 1160
 Haas, B. — 981
 Haas, B.M. — 1818

 Haas, Brian L. — 2234
 Haas, C. — 117, 598, 620
 Haas, F.A. — 2369
 Haas, J. — 1818
 Haas, S. — 594
 Haas, Stephan — 595
 Haas, T.W. — 316
 Haase, D.G. — 1805, 1846, 2171, 2175
 Haase, G. — 1063
 Haaser, R. — 1219
 Haass, M. — 1621
 Habenschuss, A. — 93, 481
 Haber, C. — 1204, 1205
 Haber, I. — 1304, 1305, 1362, 1365, 1995
 Haberern, K.W. — 507
 Haberichter, W. — 1219
 Häberle, P. — 279, 437
 Habib, F. — 125
 Habib, Y. — 1955
 Habibollahzadeh, D. — 89
 Habs, D. — 1336
 Habs, Dietrich — 910
 Hackett, C.M. — 2295
 Hackmann, A. — 455
 Haddad, E. — 2028
 Haddad, O. — 2120
 Haddix, G. — 2173
 Haddock, C. — 1261
 Haddon, R.C. — 104, 152, 369, 560, 825, 826, 1622
 Hädicke, E. — 143
 Hadjipanayis, G.C. — 673, 784, 832
 Hadley, G.R. — 1724
 Hadley, P. — 752
 Hadzioannou, G. — 410, 414, 418, 420, 482
 Hadziloznno, G. — 486
 Haebel, E. — 1376, 1380
 Haerberli, W. — 996, 997
 Haegel, N.M. — 56
 Haenni, D. — 1223
 Hafen, E. — 1020
 Hafen, E.S. — 1837
 Haffad, A. — 1159
 Haffmans, A. — 1097, 1109
 Haffner, C. — 559
 Hafich, M.J. — 737
 Hafizi, B. — 1279, 1328, 1331, 1941, 2000, 2116, 2124
 Hafner, J. — 1675
 Haftel, M.I. — 793
 Hagan, DJ. — 1772
 Hagan, W.K. — 1337
 Hagberg, E. — 1813, 1844
 Hageali, M. — 1404
 Hagedoorn, H. — 1296, 1299, 1352, 1364, 1368, 1369, 1389
 Hagel, K. — 1795, 1813, 1852
 Hagelberg, F. — 848
 Hagen, J.P. — 2312
 Hagen, M.E. — 534
 Hagen, S.J. — 223, 387, 460
 Haggerty, D. — 676
 Häglund, J. — 506
 Haglund, R.F. — 2164
 Haglund, R.F., Jr. — 735, 787
 Haglund, Richard F. — 2168
 Hagmann, S. — 1089
 Hagopian, V. — 1037
 Hahn, C. — 533
 Hahn, T.S. — 1911
 Hahn, A. — 1204
 Hahn, Alan — 958
 Hahn, H. — 1859
 Hahn, Inseob — 87
 Hahn, John F. — 1768

 Hahn, K. — 1345, 1995
 Hahn, R.v. — 1336
 Hahn, S.K. — 377
 Hahn, Terry D. — 2004
 Haider, N. — 379
 Haider, Q. — 1016
 Haight, R. — 624
 Haight, R.C. — 1051, 1820, 1826
 Haight, Richard — 1751
 Haine, Volkar — 101
 Haines, J. — 1552
 Haines, M.G. — 2087
 Haines, T.J. — 1021, 1040
 Hairapetain, G. — 2073
 Hairapetian, G. — 1311, 1323, 1342, 1359, 1997
 Haire, R.G. — 1545
 Haj-Hariri, H. — 2187, 2250, 2309
 Hajj, M.r. — 2252
 Hajsaid, M. — 2119
 Hakakha, H. — 2298
 Håkansson, K.L. — 1618
 Hakkinen, R.J. — 2235
 Halas, N.J. — 205, 502, 616
 Halbach, K. — 1234, 1246, 1329, 1330, 1335, 1340
 Halbert, M. — 1014, 1015, 1829, 1846
 Halbert, M.L. — 980, 1858
 Halbleib, J.A. — 1302
 Haldane, F.D.M. — 237, 754
 Haldane, Frederick — 495
 Haldane, Frederick D.M. — 198
 Haldar, Pradeep — 346
 Halder, N.C. — 265
 Hale, Jeff — 322
 Hale, S. — 998
 Halevi, P. — 62, 77, 78, 384, 398
 Halka, M. — 1253
 Hall, B. — 1773
 Hall, Dennis G. — 1722
 Hall, F. — 1948
 Hall, J. — 1197, 1398
 Hall, J.L. — 1094
 Hall, John — 1733
 Hall, L.M. — 1974
 Hall, M.M. — 1736
 Hall, P. — 2289, 2291
 Hall, R.E. — 929
 Hall, T. — 1295
 Hallen, H.D. — 403, 691
 Haller, E.E. — 238, 1855
 Halliday, D.A. — 211
 Hallin, E.L. — 915
 Halling, H. — 1399
 Halling, M. — 1204, 1260, 1270
 Halliwell, J. — 1265
 Hallman, T. — 1815
 Hallmark, V.M. — 596, 597
 Hallock, G. — 1950
 Hallock, G.A. — 1953
 Hallock, R.B. — 86, 327, 1022, 1028
 Halperin, B.I. — 46, 136, 396, 497
 Halperin, W.P. — 116, 174, 580, 1027
 Halpern, D. — 2293
 Halpern, T. — 995
 Halpern, Teodoro — 1011
 Halpin-Healy, T. — 670, 701, 835
 Halsey, T.C. — 343, 700
 Halstead, D.M. — 260, 261
 Haltermann, Beth — 956
 Halverson, P.G. — 1021
 Halvorson, K.E. — 742
 Halzen, Francis — 1032
 Ham, F.S. — 513, 844
 Ham, K.-M. — 461
 Hama, S. — 1860
 Hamada, Noriaki — 53

 Hamaguchi, C. — 283, 400
 Hamamoto, I. — 1014
 Hamani, H. — 2349
 Hamann, D.R. — 166
 Hamaya, N. — 1597
 Hambourger, P.D. — 65, 322
 Hamdeh, H.H. — 161
 Hamed, A. — 204, 205
 Hameiri, E. — 1947
 Hamel, G. — 1530, 1533
 Hamelin, J. — 2299
 Hamer, A. — 1850
 Hamers, R.J. — 568, 1762
 Hamian, A. — 1036, 1836
 Hamilton, B. — 987, 1197, 1245, 1257, 1265
 Hamilton, Brett J. — 1207, 1209, 1358
 Hamilton, J. — 1829
 Hamilton, J.H. — 1014, 1015, 1806, 1858, 2170
 Hamilton, Lisa — 1458
 Hamilton, R.B. — 1667, 1668, 1669
 Hamley, I.W. — 604
 Hamm, Ch. — 1384
 Hamm, Marianne — 953
 Hamm, R.A. — 633, 833
 Hammache, M. — 2303
 Hammack, William S. — 254, 681
 Hammack, W.S. — 1497
 Hammann, J. — 475
 Hammel, B. — 1884, 2043
 Hammel, B.A. — 2011, 2043
 Hammel, P.C. — 96, 124, 175, 439
 Hammel, S.M. — 1637
 Hammer, D.A. — 2088
 Hammer, D.X. — 318
 Hammer, J. — 2080, 2204
 Hammer, J.H. — 1974, 2053
 Hammett, G. — 1907
 Hammett, G.W. — 2014, 2033, 2034, 2101
 Hammond, E.C.Jr. — 990
 Hammond, R. — 559
 Hammond, T. — 1761
 Hammons, B.E. — 702
 Hammouda, B. — 405, 715
 Hamster, H. — 518
 Han, B.J. — 423
 Han, C.C. — 310, 486
 Han, Charles C. — 243
 Han, D. — 1064
 Han, H.S. — 1292
 Han, J. — 91, 455, 1617
 Han, Li — 1576
 Han, M. — 2314
 Han, P.D. — 228
 Han, S.H. — 326
 Han, X.L. — 1134, 1154
 Han, Z.P. — 175
 Hanaki, H. — 1286, 1316, 1393
 Hanaki, Koji — 966
 Hanayama, Y. — 1526
 Hance, B.G. — 417
 Hancock, Edward — 917
 Hancock, R.D. — 2204
 Hancock, S. — 1360
 Hand, L. — 1317
 Handfield, M.D. — 2374
 Handler, R.A. — 2197, 2217, 2231
 Handzy, D. — 941, 1841
 Handzy, D.O. — 1853
 Haney, S. — 2050
 Haney, S.W. — 2016, 2050, 2051, 2053, 2077
 Hanfland, M. — 255, 477, 1476
 Hanft, R. — 1290
 Hanggi, P. — 225, 756

- Hangst, Jeffrey — 936
 Hanisch, R.J. — 1646
 Hanke, W. — 828
 Hanley, P. — 2285
 Hanlon, L. — 968
 Hanna, B. — 1252
 Hanna, C.B. — 561, 754
 Hanna, S.M. — 1380, 1391
 Hannachi, F. — 1049, 1831
 Hannaford, P. — 1757
 Hannahs, S.T. — 778, 779
 Hanne, G.F. — 1104, 1116
 Hanneken, J.W. — 848
 Hannelton, S. — 318
 Hannon, J. — 395
 Hannon, J.P. — 519
 Hannuschke, S. — 927, 940, 941, 998, 1815, 1828, 1852, 1854
 Hanold, K. — 1812, 1828, 1842, 1853
 Hanratty, T.J. — 2262
 Hans, R. — 917
 Hansberry, E. — 1393
 Hansborough, L.D. — 1320
 Hansen, Charles — 1442
 Hansen, F.Y. — 650, 747
 Hansen, G. — 184
 Hansen, J.D. — 2111
 Hansen, J.E. — 1095
 Hansen, J.-O. — 1821
 Hansen, K.C. — 1973
 Hansen, L.F. — 1826
 Hansen, L.V. — 1527, 1532
 Hansen, S. — 1397
 Hansen, W.L. — 238, 1855
 Hansma, Helen G. — 51
 Hanson, D.L. — 1302, 1533
 Hanson, D.M. — 1092
 Hanson, G. — 2021
 Hanson, G.R. — 2033, 2034, 2096
 Hanson, James D. — 2052
 Hanson, James E. — 1462
 Hanson, J.D. — 2022, 2023
 Hanson, M.E. — 779, 780
 Hanson, R.K. — 2202
 Hanson-Parr, D. — 2258
 Hanzawa, A. — 2278
 Hao, F. — 1132, 1163
 Hao, Qiao — 1624
 Hao, Y. — 64
 Hao, Y.G. — 310
 Hao, Z. — 459, 524
 Haque, M.A. — 1160
 Harada, T. — 1519
 Harakeh, M.N. — 1052
 Harbers, G. — 1092
 Harbison, J.P. — 233, 393, 807, 1617
 Harbola, M.K. — 139
 Harbour, P.J. — 2056
 Harcourt, Ramsey — 2292
 Hardaker, S. — 545
 Hardek, T. — 1207, 1211, 1346
 Hardekopf, R. — 1266
 Harder, A. — 1856
 Hardgrove, J. — 2085
 Harding, A.K. — 969, 1635
 Harding, D.J. — 1293
 Harding, L.B. — 1446
 Hardner, H.T. — 619
 Hardy, J.C. — 1844
 Hardy, J.R. — 407, 408, 655, 1664
 Hardy, K. — 1088, 2164
 Hardy, K.A. — 1102, 2163, 2166, 2358
 Hardy, R.J. — 270
 Hardy, W. — 60, 329
 Hardy, W.N. — 71, 189, 227, 276, 326, 460, 805
 Hare, D.E. — 479
 Hare, E.W. — 1773
 Harfenist, S. — 1830
 Harfensit, S. — 1831
 Harfoush, F.A. — 1252, 1293, 1346
 Hargis, P.J., Jr. — 1767
 Haridas, P. — 1837
 Harigae, Kenichi — 1550
 Harihar, P. — 1645
 Hariharan, A. — 91, 143
 Hariharan, S.I. — 2218
 Haritonidis, Joseph H. — 2251
 Harkay, K. — 1344, 1346, 1371
 Harken, Dean R. — 1746
 Harker, S. — 461
 Harkewicz, R. — 1333
 Harkness, S.D. — 59
 Harlow, R.L. — 124
 Harmans, C.J.P.M. — 1614
 Harmer, P. — 1227
 Harmin, D.A. — 1096
 Harmon, B.A. — 989
 Harmon, B.N. — 383
 Harms, B. — 2162
 Harms, E. — 1269, 1358
 Harnett, C.K. — 705
 Haro-Poniatowski, E. — 1740
 Harp, G. — 830
 Harp, G.R. — 323, 733, 785
 Harrell, M.J. — 86
 Harrington, H.L. — 1832
 Harrington, Joel E. — 1757
 Harris, A.B. — 253
 Harris, A.L. — 624
 Harris, Alexander L. — 361
 Harris, D. — 212, 1884
 Harris, D.B. — 1885
 Harris, D.C. — 224, 749, 838
 Harris, E.B. — 804
 Harris, F.W. — 195
 Harris, J. — 1445, 1859
 Harris, J.H. — 2020, 2021, 2094, 2096
 Harris, J.J. — 402
 Harris, J.M. — 223, 388
 Harris, J.S., Jr. — 691
 Harris, J.W. — 1837
 Harris, K. — 1402
 Harris, K.A. — 181
 Harris, S.E. — 1107
 Harris, T.D. — 238, 624, 806
 Harris, V.G. — 672
 Harris, William C. — 550
 Harrison, A. — 411
 Harrison, Christopher — 709
 Harrison, J.A. — 796
 Harrison, J.F. — 577, 683
 Harrison, J.G. — 2173
 Harrison, Michael J. — 648
 Harrisopulos, S. — 1049
 Harshman, D.R. — 580, 826
 Harstad, E. — 1539
 Hart, C.B. — 699
 Hart, D.P. — 2203
 Hart, G.W. — 1943, 1973
 Hart, R. — 1226
 Hart, R.M. — 367
 Harte, J.A. — 1915
 Harte, John — 429
 Härtel, C. — 2270
 Hartemann, F.V. — 1941, 2000, 2001
 Hartford, Edward J. — 264
 Hartford, E.H., Jr. — 60, 160, 1625
 Hartge, J. — 272
 Hartigan, Patrick M. — 959
 Hartill, Donald L. — 909
 Hartland, Gregory V. — 1730
 Hartley, J. — 1969
 Hartley, J.H. — 1813, 1973
 Hartley, R. — 1326
 Hartman, C.W. — 1974, 2013, 2053
 Hartman, R.C. — 988, 988, 989, 1635
 Hartman, S. — 1285, 1286, 1311, 1323, 1342, 1348, 1997, 2073
 Hartman, S.C. — 1941
 Hartmann, D.A. — 1909
 Hartmann, Dieter — 2165
 Hartmann, U. — 378
 Hartung, W. — 1353, 1354, 1380, 1381
 Hartwell, G.J. — 2022
 Harvey, J.A. — 522
 Harvey, J.D. — 1763
 Harvey, J.F. — 57, 155
 Harvey, R. — 2092
 Harvey, R.E.P. — 2339
 Harvey, R.W. — 2051, 2068, 2069, 2076, 2105
 Harvey, W.B. — 1316
 Harwit, Alex — 703
 Hasbun, J. — 80
 Hasbun, J.E. — 2160
 Hascicek, Yusuf S. — 346
 Hase, T. — 112
 Hasebe, N. — 949
 Hasegawa, H. — 2344
 Hasegawa, J. — 1942
 Hasegawa, M. — 2366
 Hasegawa, T. — 212, 295, 454, 582, 1453, 1605
 Hasegawa, Y. — 1614
 Haselton, H.H. — 1901
 Hasen, Joel — 259
 Hasenberg, T.C. — 764
 Hash, David B. — 2234
 Hashimoto, Y. — 1338
 Hashizume, T. — 231, 403, 617, 623, 624, 726
 Hasinger, G. — 1635
 Hasinoff, M. — 913
 Haskins, P.J. — 1554, 1564
 Hasko, D.G. — 696
 Hass, K.C. — 344
 Hass, M. — 1831, 1844
 Hassam, A.B. — 1925, 1945
 Hassan, H.A. — 2234
 Hassanein, Ahmed — 1918
 Hasselbach, K. — 79, 609
 Hasselbrink, Eckart — 1764
 Hassenzahl, W. — 1329
 Hassenzahl, W.V. — 1329
 Hassold, G.N. — 1461
 Hastings, J.B. — 518
 Hastings, J.M. — 279
 Hatae, T. — 2054
 Hatakoshi, G. — 1729
 Hatamian, S. — 1111
 Hatay, F.F. — 2311
 Hatch, D.M. — 711
 Hatch, Dorian M. — 408
 Hatch, J.A. — 2083
 Hatcher, R. — 2096
 Hathaway, K.B. — 163
 Hatsuda, T. — 1838
 Hatsugai, Y. — 397
 Hatta, Shinichiro — 373
 Hatton, P.D. — 1545, 1578
 Hatton, V. — 1365
 Hattori, K. — 2122
 Hattori, T. — 1318, 1338
 Hau, L. — 522
 Hauer, A. — 1885
 Hauer, A.A. — 1885
 Hauer, Allan — 1884
 Hauger, A. — 1815, 1853, 1854
 Hauger, J.A. — 1849
 Haung, H. — 1245
 Hauptfeld, S. — 1020
 Hauschild, K. — 981, 1856
 Hauser, M. — 400
 Hauser, M.R. — 809
 Hauser, P. — 935
 Häusermann, D. — 1590
 Haushalter, R.C. — 526
 Hauviller, C. — 1261
 Havener, C.C. — 1159, 1160, 1164
 Havens, W.W., Jr. — 972
 Havey, Mark D. — 1745
 Havlin, Shlomo — 169
 Havranek, J.J. — 1896
 Hawk, C. — 1055
 Hawker, Debra T.L. — 2201
 Hawkins, Bruce — 1454
 Hawkins, S.A. — 1305
 Hawley, J.C. — 413, 420, 424
 Haworth, D.C. — 2206
 Haworth, M. — 1200
 Haworth, M.D. — 1334, 1378
 Hawrylak, P. — 755, 764, 1757
 Hawryluk, R. — 1905
 Hawryluk, R.J. — 1882
 Haxton, W. — 1040
 Haxton, W.C. — 1799
 Hayakawa, S. — 1588
 Hayase, K. — 2122
 Hayashi, K. — 259
 Hayashi, R. — 1565
 Hayashi, S. — 1367
 Hayden, C.C. — 1167
 Hayden, D.B. — 2051
 Hayden, S.M. — 129
 Hayder, M.E. — 2218
 Haydock, R. — 564
 Haydock, Roger — 563, 620
 Hayes, T. — 1398
 Hayes, T.M. — 216, 266, 781
 Hayes, T.R. — 633
 Haynes, B. — 1395
 Haynes, W. — 1281
 Haynes, W. Brian — 1940
 Hayot, F. — 1043
 Hays, A. — 211
 Hays, G.N. — 1767
 Hays, J.M. — 374
 Hays, T. — 1354
 Hayter, John B. — 2172
 Hayward, E. — 1858
 Hayward, J. — 324
 Hayward, T.D. — 1390
 Hazell, I. — 1092
 Hazeltine, R.D. — 1922, 1928, 1993
 Hazelton, Drew R. — 346
 He, Anming — 1291
 He, Chun — 1745
 He, Da-Ren — 759, 811
 He, G. — 1824
 He, H. — 231, 2043, 2051, 2079
 He, K.X. — 1715, 1735
 He, L.-W. — 1139
 He, P. — 619
 He, Song — 180, 398
 He, W. — 644
 He, W.S. — 750
 He, X.T. — 1909
 He, Y. — 679
 He, Yan — 319, 1437
 He, Y.H. — 1537
 He, Y.-L. — 370, 794
 He, Z. — 2119
 He, Zhen-Hong — 1534
 He, Z.X. — 1149
 Heading, D.J. — 2082
 Heagy, J.F. — 1637
 Heald, S. — 458
 Heald, S.M. — 224, 451

- Healey, D. — 1836
 Healey, D.C. — 1847
 Heaney, M.B. — 214
 Heard, J. — 1951
 Heard, J.W. — 1951
 Hearn, A.C. — 1449
 Hearne, G.R. — 1536
 Heaven, M.C. — 1727
 Hebard, A. — 239
 Hebard, A.F. — 104, 204, 369, 1022
 Hebboul, S.E. — 224
 Heberer, D.P. — 411
 Heberlein, J. — 2375
 Hebert, J. — 1320
 Hebert, J.E. — 1220
 Hebner, G.A. — 2377
 Hebner, Gregory A. — 2352
 Hecht, M.H. — 402
 Heckel, Blayne R. — 924
 Heckel, B.R. — 1121
 Hecker, N. — 522
 Heckman, V.R. — 1103
 Heczko, O. — 1546
 Hedderich, R. — 1624
 Hedemann, M.A. — 1484
 Hedge, S.M. — 686
 Hedrick, C.L. — 2014, 2101
 Heefner, J.W. — 1222, 1227
 Heeger, A.J. — 58, 158, 205, 211, 311, 312, 502, 616
 Heese, R. — 1287
 Heffelfinger, G. — 1462
 Heffelfinger, Grant — 1446
 Heffernan, Daniel M. — 1064
 Heffner, R.H. — 79, 131, 439, 726
 Heffron, Bob — 451
 Hefflin, E.G. — 1641
 Hefli, J. — 55, 289
 Hegde, S. — 686
 Hegemann, T. — 1116
 Hegmann, F.A. — 127
 Hegna, C.C. — 1925, 1926, 2115
 Hegseth, J. — 2310
 Heidbrink, W.W. — 1938, 2036, 2063, 2067
 Heiden, C. — 688
 Heifets, S. — 1243, 1354
 Heifets, S.A. — 1354
 Heil, Brian G. — 739
 Heiland, W. — 787
 Heilbronn, L. — 1815
 Heilweil, E.J. — 1755
 Heimann, D. — 236, 815
 Heimann, P.A. — 1147
 Hein, M. — 805
 Heine, E. — 1201
 Heine, V. — 796
 Heiney, P.A. — 253, 653
 Heinonen, O. — 601, 841
 Heinrich, B. — 125, 371, 562, 832
 Heinrichs, H. — 1385
 Heinrichsmeier, M. — 828
 Heintz, U. — 984
 Heintzelman, G. — 1836
 Heinz, T.F. — 361, 1765
 Heinzen, D.J. — 935, 1111, 1121, 1141, 1168
 Heisz, J.M. — 400
 Hekking, Frank — 464
 Helbing, K. — 1860
 Held, G. — 627
 Helfand, E. — 657
 Helfrich, J. — 131
 Helfrich, K.R. — 2223
 Helgesen, G. — 338
 Hellberg, C. Stephen — 695
 Hellborg, R. — 1152, 1244, 1363
 Heller, E.J. — 683, 1143
 Heller, Eric — 203
 Heller, Kenneth — 923
 Hellerqvist, M.C. — 223
 Hellerstein, Nathaniel — 355
 Hellman, E.S. — 60, 160, 1625
 Hellman, Frances — 339
 Hellström, M. — 1842, 1844
 Hellums, J.R. — 761
 Helm, H. — 1092, 1146, 2332
 Helm, R. — 1237, 1240, 1242
 Helman, J.S. — 847
 Helmer, R. — 982, 1847
 Helmerson, K. — 934, 1169
 Helminger, P.A. — 1662
 Helmkamp, B.S. — 759
 Helmlé, M. — 1622
 Helser, A. — 1406
 Hembree, C.E. — 82, 814, 815
 Hemker, R.G. — 256
 Hemley, R. — 1523
 Hemley, R.J. — 255, 477, 575, 1483
 Hemmat, M. — 2301
 Hemmer, F.M. — 1298
 Hemmer, P.R. — 1122
 Hemmick, T. — 1036, 1851
 Hemmick, T.K. — 1037, 1061
 Hemminger, J.C. — 178
 Hemstreet, L.A. — 183, 622
 Hender, T.C. — 2008
 Henderson, D. — 120, 927, 1014, 1806
 Henderson, D.J. — 1818, 1819
 Henderson, G.N. — 285
 Henderson, R. — 982
 Henderson, R.D. — 2303
 Hendrick, L.D. — 2163, 2164
 Hendricks, John — 954
 Hendricks, Kyle J. — 2001
 Hendrickson, B. — 1462
 Hendrickson, J.E. — 480
 Hendrickson, L. — 1308
 Hendrickson, Scott — 1328, 1941
 Henesian, M.A. — 1961
 Henestroza, E. — 1303, 1322, 1994, 1995, 2117
 Hengehold, R.L. — 264, 686
 Henins, I. — 1900, 2048
 Henke, H. — 1284, 1381, 1392
 Henley, C.L. — 626, 766
 Henley, E.M. — 1824, 1838
 Henley, Ernest — 972
 Hennad, A. — 2344
 Henneke, Michael R. — 2247
 Henning, D. — 1317
 Henning, P.F. — 731
 Henninger, R. — 1539
 Henningson, Dan S. — 2289
 Henrich, V.E. — 576, 642
 Henrich, Victor E. — 281, 576, 699
 Henrichsen, K. — 1366
 Henrickson, L.E. — 697
 Henriksen, P.N. — 1655, 1660, 1662
 Henriksen, H. — 1854
 Henriques, R.T. — 1622
 Henry, D. — 2187
 Henry, E.A. — 1013, 1049, 1050, 1792, 1806, 1831, 1832
 Henry, J. — 1978
 Henry, R.G. — 980, 1014, 1029, 1049, 1819, 1830, 1831, 1832
 Henry, R.L. — 266
 Henry, W. — 1948
 Hensel, F. — 1552
 Hensley, D.C. — 980
 Hentschel, H.G.E. — 63
 Henzler, M. — 718
 Heo, Eun-Gi — 2075
 Hepburn, John W. — 1730
 Hepburn, J.W. — 1147
 Herbert, Th. — 2207, 2251
 Herbst, C.A. — 435, 574
 Herbst, J. — 1948
 Herbst, J.F. — 816
 Herbut, I.F. — 237
 Herczeg, Peter — 964
 Hereil, P.L. — 1493
 Heremans, J. — 401
 Heremans, J.J. — 236, 756, 840
 Hergenrother, J.M. — 464
 Herko, S. — 507
 Herkommer, A.M. — 1778
 Herlach, F. — 402
 Herman, F. — 443, 561
 Herman, I.P. — 478
 Herman, J.W. — 437
 Herman, S. — 1770
 Hermann, A.M. — 123, 125, 171, 271, 345, 689, 830
 Hermann, B.A. — 459
 Hermann, H. — 2034, 2094
 Hermann, M. — 2378
 Hermanson, J. — 334
 Hermansson, B. — 1448
 Hermina, Wahid — 2241
 Hermiz, K. — 1910
 Hermon, Z. — 230
 Hermsen, W. — 989
 Hermsmeier, B. — 830
 Hernandez, J. — 263, 264
 Hernandez, J.V. — 1924
 Hernandez, R. — 550, 1629
 Hernandez-Calderon, I. — 478
 Hernandez-Garcia, E. — 2306
 Herndl, H. — 2175
 Herr, S. — 1204
 Herr, W. — 1197, 1254, 1356
 Herrema, J.K. — 410
 Herrera-Gomez, A. — 1151
 Herrick, D.M. — 933, 1812, 1819
 Herring, C. — 569
 Herring, J.R. — 2239, 2269, 2282
 Herrmann, H. — 2039
 Herrmann, M. — 1847
 Herrmann, N. — 1024, 1796
 Herrmann, R.F.W. — 1741
 Herron, I. — 2224
 Herron, N. — 124
 Herrup, D. — 1204, 1205, 1269
 Herrup, D.A. — 1207
 Herschbach, D.R. — 1127
 Herschbach, Dudley — 1752
 Hershcovitch, A. — 1036
 Hershfield, S. — 640
 Hershgold, S. — 685
 Hershkowitz, N. — 1888, 1896, 1926, 2024, 2025, 2026, 2027, 2104, 2107
 Hershkowitz, Noah — 1888
 Herskind, B. — 1792
 Hertel, I.V. — 1105
 Hertel, T. — 794
 Hertenberger, R. — 1064, 1854
 Hertz, John — 1456
 Hertz, P. — 989
 Hertzberg, J. — 2230
 Herwig, K.W. — 650, 747
 Herz, P.R. — 1322, 1897
 Herzfeld, J. — 319, 455
 Herzhaft, Benjamin — 2257
 Herzog, A.V. — 527
 Heskett, D. — 287, 334, 365, 729
 Hess, A.C. — 564
 Hess, B.C. — 57
 Hess, Bret C. — 616
 Hess, D.W. — 78, 500
 Hess, G.B. — 747
 Hess, H.F. — 691, 692
 Hess, K. — 55
 Hess, W. — 1918
 Hess, W.R. — 2058
 Hessel, V. — 712
 Hessels, E.A. — 1097, 1110, 1737, 1761
 Hessen, B. — 765
 Hessinger, Uwe — 514
 Hetherington, W.M. — 1779
 Hetherington, W.M., III — 1755
 Hetsroni, G. — 2218, 2282
 Hettel, R. — 1209
 Hettinger, J.D. — 459
 Hetzel, R.E. — 476
 Heuberger, W. — 1503
 Heuer, R. — 1216, 1234, 1326
 Heuer, R.H. — 1311, 1326
 Heuer, W. — 1755
 Heuken, M. — 285
 Hewett, D. — 1303, 1892, 1994
 Hewett, D.W. — 1303, 1304, 1899, 2365, 2366
 Hewitt, K. — 523
 Hewitt, T. — 1716, 1720
 Hey, J. — 1860
 Heydari, H. — 1256
 Heyde, K. — 1822
 Heyraud, J.C. — 567
 Heyvaert, I. — 670, 750
 Hiamang, S. — 967
 Hibbeln, B.A. — 1655
 Hibbert, I. — 1856
 Hibbert, I.M. — 981, 1807
 Hibma, T. — 794
 Hickman, A.P. — 1162
 Hickok, R.L. — 1951
 Hicks, J. — 1321
 Hicks, Janice M. — 1771
 Hicks, J.C. — 639
 Hicks, K. — 944, 1859
 Hicks, R. — 1034, 1035, 1821
 Hicks, Sally F. — 1818
 Hidaka, Y. — 124
 Hidalgo, C. — 2021
 Hidalgo, R. — 750
 Hide, R. — 2254
 Hider, M.H. — 827
 Hidmi, H.I. — 1103, 1171
 Hietarinta, J. — 1449
 Higashi, G.S. — 569
 Higgins, B.D. — 2349
 Higgins, D.P. — 2341
 Higgins, M. — 2335
 Higgins, M.J. — 383, 636
 High, Linnea — 963
 Higinbotham, William A. — 938
 Higman, Kumiko — 2086
 Higo, T. — 1356, 1387
 Higuchi, H. — 2203
 Hijirida, D. — 2052
 Hikata, A. — 817
 Hikichi, L. — 1225
 Hilaire, A. — 1197
 Hilberg, D. — 2287
 Hilborn, Robert C. — 960, 1746
 Hilfer, R. — 116, 433
 Hilko, B. — 2044
 Hill, D.C. — 2207
 Hill, D.N. — 1936, 2049, 2059, 2060, 2061
 Hill, E. — 680
 Hill, J. — 1393
 Hill, J.C. — 1049, 2296
 Hill, J.P. — 338, 608
 Hill, K. — 1905, 1907, 2030, 2031
 Hill, Kenneth — 1766
 Hill, Kenneth O. — 1737
 Hill, K.M. — 987

- Hill, K.W. — 1905, 1906, 2037, 2040
Hill, N. — 1314
Hill, N.A. — 2267
Hill, N.W. — 522
Hill, R.B. — 2231
Hill, Reginald J. — 2296
Hill, R.N. — 1127
Hill, Robert Nyden — 1127, 1153
Hill, S.F. — 1361, 1365
Hillebrecht, F.U. — 831
Hillenius, S.J. — 776
Hillenkamp, F. — 2164
Hiller, M. — 1381
Hilleret, N. — 1376
Hillesdon, A. — 2306
Hillis, D.L. — 1936, 2058, 2059, 2071
Hilsberg, S. — 1948
Hilton, D. — 785
Himel, T. — 1214, 1308
Himm, J. — 2188
Himmer, Phil — 819
Himpel, F.J. — 369, 443, 561
Hinaus, B.M. — 241, 328
Hinch, B.J. — 342
Hinders, M.K. — 1649
Hindi, H. — 1212, 1213, 1635
Hindi, M.M. — 510, 1804, 1829, 1830, 1854, 1855
Hinds, Edward A. — 955
Hines, M.A. — 624
Hines, W.A. — 779, 780
Hinkel-Lipsker, D.E. — 1914, 2080
Hinks, D. — 131, 388
Hinks, D.G. — 173, 242, 390, 460
Hinks, D.J. — 171
Hinkson, J. — 1208, 1308
Hinnefeld, J.D. — 1841
Hinrichs, B.E. — 119
Hinsley, N.A. — 1551
Hinshaw, G. — 1065
Hinshaw, Gary — 1057
Hinshelwood, D.D. — 2046
Hinshelwood, D.D. — 1989, 2046
Hinson, D. — 649
Hinton, F.L. — 1937, 2064, 2076
Hintz, N.M. — 1050, 1052, 1829
Hioe, F.T. — 1122
Hipp, Michael — 1778
Hipple, R. — 1994
Hippo, K.W. — 395, 451, 572
Hira, A.S. — 1681, 1682
Hirai, H. — 1527
Hirakawa, K. — 80, 236
Hiramatsu, S. — 986, 1301
Hiramoto, K. — 1250
Hirano, K. — 1199
Hirao, Y. — 1333, 1401
Hirata, K. — 1356
Hiroe, T. — 1481
Hirooka, Y. — 1918
Hirose, A. — 2005, 2006, 2029, 2057, 2076, 2110, 2125
Hirota, J. — 1250
Hirsa, A. — 2212, 2283
Hirsch, A. — 998, 999, 1815, 1828
Hirsch, A.S. — 1815, 1849, 1853, 1854
Hirschfeld, P.J. — 130, 524
Hirschko, Eugene C. — 317
Hirschmugl, C.J. — 730
Hirschorn, E.S. — 342, 510, 568
Hirshfield, J.L. — 1276, 1999, 2124
Hirshman, S. — 1922, 2092, 2093, 2121
Hirshman, S.P. — 1906, 2038, 2093
Hirst, D.B. — 1763
Hirth, John — 60
Hishida, K. — 2278
Hishiunuma, T. — 1502
Hiskes, J.R. — 2365
Hissink, C.E. — 482
Hitchcock, A.P. — 451
Hitchon, W.N.G. — 1172, 2338, 2339, 2372, 2373, 2374
Hites, M.H. — 2261
Hitomi, S. — 1571
Hitt, D.L. — 2225
Hitti, B. — 314, 569
Hitz, D. — 1343
Hiwatari, Y. — 1453
Hixson, R.S. — 1481, 1511, 1585
Hjalmarson, H.P. — 474, 516
Hjelm, R.P. — 604
Hjort, E. — 998, 999, 1815, 1828, 1853, 1854
Hlubina, R. — 588, 821
Hmurcik, L.V. — 217
Ho, Antony Y. — 1908
Ho, C. — 1223, 1276
Ho, Chih-Ming — 2234
Ho, D. — 1305
Ho, D.D.-M. — 1969
Ho, G.H. — 338
Ho, J. — 549
Ho, J.C. — 72, 123, 346, 347
Ho, K.M. — 153, 208, 307, 372, 440, 505, 794
Ho, K.S. — 703
Ho, L.T. — 686
Ho, M.M. — 987
Ho, Seng-Tiong — 1722, 1734, 1741, 1743
Ho, W. — 1764
Ho, Y.L. — 1981, 2034, 2106
Ho, Z.Z. — 1718
Hoag, H.A. — 1230, 1288, 1314, 1381, 1391
Hoagland, D.A. — 144, 486
Hoagland, David A. — 420
Hoang, G.T. — 2108
Hobart, K.D. — 86
Hobday, D. — 1948
Hoblit, S. — 914, 915
Hobson, A. — 1055
Hochstrasser, R.M. — 1754
Hodapp, T. — 2062
Hoddeson, Lillian — 611
Hodgdon, J.A. — 684
Hodgson, Donald F. — 409
Hodgson, J.A. — 1388
Hodgson, Keith — 150
Hodgson, R.J.W. — 971
Hoerberling, R. — 1280
Hoeflich, J. — 1213
Hoehn, M. — 1373
Hoekstra, J. — 214
Hoekstra, Robert J. — 2330, 2356, 2369
Hoen, S. — 185
Hof, M. — 933
Hofer, D. — 1064
Hoff, H.A. — 242
Hoff, R. — 1831
Hoff, Raymond — 1768
Hoff, Raymond M. — 1767
Hoff, R.W. — 1818
Hoffart, A. — 1818
Hoffberg, M. — 1229
Hoffenberg, R.S. — 2172
Hoffert, W.J. — 1394, 1398
Hoffman, C.A. — 235
Hoffman, D.J. — 1907, 2032, 2033, 2049, 2068, 2106, 2107
Hoffman, K.R. — 1615
Hoffman, R.D. — 1802
Hoffman, S.A. — 518
Hoffmann, C. — 189, 713
Hoffmann, D. — 1169, 2346
Hoffmann, F.M. — 730
Hoffmann, G.W. — 1860
Hoffmann, L. — 1624
Hoffmann, R. — 1317
Hoffman-Rothe, P. — 1860
Hoffstätter, G.H. — 1241
Höfler, A. — 1226, 1286, 1769
Hofler, A.S. — 1210
Hofman, J. — 1352
Hofmann, A. — 1242, 1352, 1366
Hofmann, L. — 2251
Hogan, B. — 1280, 1281, 1999
Hogan, J. — 1918, 2124
Hogan, J.T. — 1936, 2058, 2059, 2071
Hogan, M. — 1356, 1997
Hogen-Esch, Thio — 92, 409
Hogrefe, R. — 1292
Hogstrom, Kenneth R. — 1673
Hohage, Michael — 341
Hohenemser, C. — 648
Hohimer, J.P. — 1713
Hohl, D. — 1445
Hohler, V. — 1506
Höhne, J. — 1844
Höhr, A. — 544
Høibråten, S. — 943, 1816, 1818
Hoines, L. — 534
Hojvat, C. — 1037
Hokin, S. — 1978, 1980
Hokin, S.A. — 1978, 1979
Holberg, Jay B. — 909
Holcomb, Donald F. — 960
Holcomb, E. — 2362
Holcomb, J.W. — 1857
Holcomb, M. — 943, 1818
Holcomb, M.D. — 944
Holden, J.M. — 204, 501
Holden, M. — 502, 2079
Holdener, F. — 1374
Holder, S.L. — 2167
Holdsworth, P. — 765
Holdsworth, P.C.W. — 649
Holian, Brad Lee — 1457
Holladay, W.G. — 2167
Holland, D. — 1965
Holland, D.L. — 2018
Holländer, A. — 2376
Hollenberg, J.B. — 2076
Holley, Jeffrey — 1649
Hollier, M. — 932
Holloway, A. — 751
Holloway, James Paul — 1894
Holly, D. — 1978
Holly, D.J. — 1979
Holm, Elizabeth A. — 61
Holman, G.T. — 1591
Holman, G.T., Jr. — 1596
Holmes, A.B. — 211
Holmes, A.J.T. — 2379
Holmes, N.C. — 186, 1484, 1490, 1548, 1596, 1598
Holmes, S.D. — 1268
Holmquist, T.J. — 1509
Holody, P. — 734
Holody, P.R. — 671
Holt, J.A. — 1237
Holt, R.A. — 1112, 1125
Holt, R.J. — 997
Holt, W.H. — 1500, 1509
Holtan, Dewey — 549
Holthaus, M. — 551
Holtom, Gary — 1762
Holtrop, K. — 2067
Holtrop, K.L. — 2062
Holtz, M. — 1479, 1489, 1676
Holtzapple, R.L. — 1289, 1360, 1371
Holtzberg, F. — 70, 122, 458, 802, 834, 835
Holzscheiter, M.H. — 1976
Holzwarth, N.A. — 88
Holzwarth, N.A.W. — 320
Homer, L. — 2188
Homes, C.C. — 227
Homma, H. — 113, 181
Homs, W. — 2337
Homsy, G.M. — 2238, 2275, 2301
Honabarger, D. — 1300, 1314
Honcik, C. — 1673
Honda, K. — 700
Hone, D. — 165
Hone, Daniel — 539
Honea, E.C. — 67
Honeycutt, J.D. — 716
Honeycutt, J. Dana — 1631
Hong, B. — 1061
Hong, C. — 1683, 1684
Hong, C.M. — 827
Hong, D.C. — 217, 244, 589
Hong, Hawoong — 510
Hong, J.M. — 229, 230, 401
Hong, J.T. — 1021
Hong, M.P. — 1899
Hong, R.-D. — 687
Hong, S. — 305
Hong, Tao — 100
Hong, Y. — 157, 1671
Honig, J.M. — 80, 438, 438
Honkan, A. — 2262
Honnell, G. — 1631
Honsberg, U. — 489
Hood, Randolph Q. — 733
Hooke, W.M. — 2328
Hooper, E.B. — 1328, 1921, 1967
Hoover, T.J. — 1484
Hopkins, M.B. — 2336, 2353, 2365
Hopkins, P.F. — 233, 380, 706, 814, 815
Hopkins, P.H. — 81
Hopkins, Vern — 1042
Hopkinson, M. — 1766
Hor, P.H. — 104, 170, 173, 204, 205, 272, 346, 347, 782, 783
Horan, D. — 1266, 1401
Horbatsch, M. — 1101
Horen, D. — 1829
Horen, D.J. — 1857
Hori, M. — 2340
Hori, Y. — 1264, 1287
Horie, Y. — 1504, 1540, 1541
Horing, N.J.M. — 234, 398, 401
Horioka, K. — 1942
Hörmandinger, G. — 597
Horn, D. — 1813
Horn, P.M. — 1195
Horn, R.G. — 512
Horne, Rudy L. — 529
Horne, S. — 1954
Horne, S.F. — 1954
Hornor, G.S. — 788, 789
Hornung, H.G. — 2232
Horowitz, C. — 1821
Horowitz, C.J. — 913
Horowitz, Gilles — 49
Horowitz, Paul — 611
Horsch, P. — 228, 583, 584, 695
Horsfield, Andrew — 284
Horton, C.W. — 1952
Horton, R.D. — 1888, 2058
Horton, R.H. — 2111
Horton, T.E. — 2273
Horton, W. — 1910, 1924, 1992, 2054, 2075, 2100
Horvat, V. — 1813
Horvath, D. — 935

- Horwitz, J.S. — 735, 1778
 Horwitz, N. — 1036
 Hosea, J. — 1905
 Hosea, J.C. — 1907, 2032, 2033, 2033, 2034
 Hosea, Kiki — 1156
 Hoshino, K. — 2008
 Hosogane, N. — 1918
 Hossain, T.J. — 1669
 Hossain, T.Z. — 1825
 Hosseini, S.M. — 346
 Hotta, A. — 1035
 Hotzelmann, R. — 162
 Hou, C.L. — 235, 1617
 Hou, H.Q. — 282, 531
 Hou, J.G. — 104, 105, 617
 Hou, L. — 122
 Hou, Lifang — 212
 Hou, T. — 2272
 Hou, Y.T. — 703
 Houck, J. — 1531
 Houck, T. — 1276, 1277, 1345
 Houghton, A. — 587
 Houghton, D.C. — 678
 Houlberg, W. — 2049
 Houlberg, W.A. — 2049, 2050
 Houlihan, F.M. — 190
 Hourani, E. — 1317, 1860
 Houser, B. — 457, 1552
 Houston, J.E. — 378, 556
 Houston, Paul L. — 1756
 Houston, P.L. — 1756
 Howald, A.M. — 2059, 2060
 Howard, D. — 1265, 1393
 Howard, I.A. — 68, 544
 Howard, J.K. — 161, 733
 Howard, R.E. — 298
 Howell, C.R. — 1062, 1064, 1825
 Howell, D. — 534
 Howell, F.L. — 406
 Howell, J.W. — 1325
 Howell, R.H. — 224, 225, 241
 Howells, W. Spencer — 684, 738
 Hower, N. — 1296
 Howes, A.P. — 175
 Howes, Ruth — 353
 Howle, L. — 2307
 Howse, M. — 1948
 Hoyer, E. — 1329
 Hoyt, E. — 1636
 Hoyt, E.W. — 1312, 1313
 Hoyt, J.L. — 1620
 Hozhabri, N. — 266
 Hren, J.J. — 1619
 Hricovini, K. — 728
 Hriljac, J.A. — 829
 Hristov, H. — 141
 Hrnecir, D. — 1612
 Hrubesh, L. — 1022
 Hrynkiv, L. — 2028
 Hseuh, H.C. — 1264
 Hsi, W.C. — 941, 1853
 Hsia, R. — 2110
 Hsiao, B.S. — 93, 142, 418, 657
 Hsiao, C.C. — 351, 416, 602
 Hsieh, B. — 110
 Hsieh, B.R. — 210, 211, 258, 544
 Hsieh, C. — 2065
 Hsieh, H. — 1287
 Hsieh, K.C. — 531, 788
 Hsieh, Peter — 750
 Hsieh, Peter Y.-K. — 750
 Hsieh, S. — 1092
 Hsieh, W.T. — 178, 783
 Hsing, W. — 1884, 1915
 Hsiung, H. — 480
 Hsu, Bert — 1656
 Hsu, C.-C. — 424
 Hsu, C.T. — 1922, 1928, 2121
 Hsu, D.S.Y. — 734
 Hsu, F.H. — 2173
 Hsu, H.H. — 1035
 Hsu, I. — 1202, 1219
 Hsu, Julia — 210
 Hsu, J.W.-P. — 211
 Hsu, K.T. — 1367
 Hsu, K.-Y. — 2259
 Hsu, Shaw L. — 413, 420
 Hsu, Shih-Ying — 129, 693
 Hsu, T. — 1315
 Hsu, T.C. — 71, 594, 1956
 Hsu, William Y. — 373
 Hsu, Y.Y. — 1133
 Hsuan, H. — 2031, 2040
 Hsue, Chen-Chiung — 1228
 Hsue, Chen-Shiung — 1349
 Htwe, W. — 1090, 1162
 Hu, A.G. — 1587
 Hu, B. — 109, 512, 796
 Hu, Ben Yu-Kuang — 53
 Hu, C.D. — 290
 Hu, Chia-Ren — 803
 Hu, D.Q. — 510
 Hu, G. — 2101, 2102
 Hu, G.Y. — 641, 697
 Hu, H. — 2241
 Hu, H.C. — 2316
 Hu, Howard H. — 2267
 Hu, Hsuan-Wei — 349
 Hu, J. — 319, 635
 Hu, J.B. — 1555
 Hu, J.L. — 1991
 Hu, J.Z. — 255, 1516, 1545, 1575
 Hu, Ning — 418
 Hu, Q. — 637, 813
 Hu, R. — 112, 566
 Hu, Rui-Zhong — 684
 Hu, W. — 91
 Hu, X. — 677
 Hu, X.C. — 1852
 Hu, X.-D. — 982
 Hu, X.H. — 616
 Hu, X.L. — 177
 Hu, Y. — 1940, 1948, 2305, 2317
 Hu, Y.T. — 94, 95
 Hu, Yuchou — 470
 Hu, Yuming — 762
 Hu, Y.Z. — 1753
 Hua, P.-F. — 1051
 Hua, Susan Z. — 450
 Huai, Y. — 2335
 Huan, Shi — 1493, 1537, 1592
 Huang, A. — 1021
 Huang, C.C. — 188, 534, 535, 536
 Huang, D. — 397, 706
 Huang, David — 339
 Huang, E. — 1455, 2103
 Huang, F. — 369
 Huang, Fenglei — 1537
 Huang, Fred Y. — 2328
 Huang, H. — 448, 728, 1197, 1245, 1257, 1258, 1815, 1948
 Huang, H.T. — 2207
 Huang, Hu — 1764
 Huang, J. — 1637, 1968, 2276, 2277
 Huang, J.C. — 818
 Huang, Jianhong — 562
 Huang, J.Y. — 573
 Huang, Kanglin — 714
 Huang, K.F. — 1720, 1723
 Huang, L.K. — 2027
 Huang, M.J. — 2243
 Huang, M.-T. — 1110
 Huang, M.X. — 326, 805, 838, 839
 Huang, M.-Z. — 104
 Huang, P. — 2241
 Huang, Q. — 583
 Huang, S. — 461
 Huang, S.H. — 1529
 Huang, S.L. — 2195
 Huang, T. — 403, 409
 Huang, T.C. — 1720
 Huang, Tian-Sen — 1977
 Huang, T.T. — 1617
 Huang, W. — 982
 Huang, Wei — 768
 Huang, X. — 2278
 Huang, Xiao Z. — 1447
 Huang, X.-P. — 1971, 2230
 Huang, X.R. — 764
 Huang, X.Z. — 158, 258
 Huang, Y. — 403, 620, 1315, 1356, 1359
 Huang, Y.-J. — 513
 Huang, Y.Y. — 562
 Huang, Z.-H. — 628
 Huang, Z.J. — 123, 532
 Huang, T.C. — 1723
 Huba, J.D. — 1969, 1988, 2017, 2019
 Hubbard, A. — 1956, 1958, 2049
 Hubbard, A.E. — 1956
 Hubbard, D. — 1054
 Hubbard, M. — 188
 Hubbard, R. — 1939, 1940
 Hubbard, R.F. — 2047
 Hubel, H. — 1831
 Huber, C.A. — 186, 217
 Huber, G. — 1035
 Huber, Gary A. — 2220
 Huber, G.M. — 1052, 1846
 Huber, Greg — 1462
 Huber, John L. — 814
 Huber, T.E. — 186, 217
 Hubert, H. — 350
 Hubert, J. — 2343
 Hubin, W.N. — 1658
 Hudgens, Jeffrey W. — 1761
 Hudson, E. — 365, 682, 1147
 Hudson, L. — 627
 Hudson, S.D. — 410, 657, 845
 Huehn, T. — 1039
 Huennekens, J. — 1093
 Huerre, P. — 2252, 2264, 2290
 Huestis, D.L. — 1092, 1146, 2332
 Huey, H. — 2002
 Huff, T. — 365
 Huffman, J. — 1035, 1052, 1846
 Huffman, P.R. — 1063, 1805, 1846
 Huggins, K. — 483
 Hughes, Anthony — 1638
 Hughes, E. — 1203
 Hughes, E.A. — 1361, 1365
 Hughes, G. — 598
 Hughes, H.P. — 808
 Hughes, I.G. — 1162, 1164, 1165
 Hughes, J.L. — 1640
 Hughes, J.R. — 981, 1049, 1050, 1806, 1831, 1832, 1856
 Hughes, M.H. — 1924, 1945
 Hughes, R.C. — 287
 Hughes, T. — 1199, 1997
 Hughes, Thomas P. — 1442
 Hughes, Vernon — 957
 Hughes, W.M.C. — 740, 741
 Hugill, J. — 2008
 Hui, K. — 601
 Hui, M. — 1393
 Hui, P. — 1816, 1817, 1830
 Hui, P.P. — 942, 943, 1818
 Hui, Y.C. — 804
 Huizenga, J.R. — 1812
 Hulbert, G.W. — 2013
 Hulbert, S.L. — 280
 Hulet, R. — 1168
 Hulet, R.G. — 1141, 1168
 Hulett, L.D., Jr. — 682
 Hull, S. — 1533
 Hulse, R. — 2040
 Hulse, R.A. — 1905, 2036
 Hulse, G. — 1376, 1377, 1379, 1390
 Hülsmann, P. — 1285, 1288
 Hülsmann, Peter — 1287
 Hultgren, L.S. — 2252, 2288
 Hults, L. — 314
 Hults, W.L. — 174
 Humm, D.C. — 1152
 Humphreys, D.A. — 2067, 2068
 Humphreys, T. — 2206
 Humphries, D. — 1329
 Humphries, Jeff — 115
 Humphries, S. — 1303
 Humphries, S., Jr. — 1396
 Hundley, M.F. — 79, 223
 Hung, C.-Y. — 260, 746
 Hungerford, D. — 1948
 Hungerford, E. — 1859
 Hungerford, E.V. — 944
 Hunt, A.W. — 232
 Hunt, B.D. — 688
 Hunt, Brian — 690
 Hunt, D. — 1265
 Hunt, M.O., Jr. — 142
 Hunt, N.E.J. — 195, 633
 Hunt, S. — 1222
 Hunter, B.A. — 241, 242, 460
 Hunter, Geoffrey — 1737
 Hunter, J.E., III — 121, 456
 Hunter, Larry R. — 1746
 Hunter, L.R. — 1115, 1637
 Hunter, S.D. — 988, 989, 1635
 Huntley, D.A. — 2279
 Huo, Peter Pengtao — 92
 Huo, W.M. — 1099, 1118
 Huo, Y. — 397
 Huo, Yuping — 2014
 Huppert, G.L. — 2354, 2355
 Huppert, H.E. — 2276
 Hur, J. — 1315, 1402, 1403
 Hurd, J. — 1357
 Hurd, J.W. — 1200, 1201, 1217, 1239, 1319, 1334, 1361
 Hurh, P. — 1202, 1219, 1358
 Hurlburt, N. — 2318
 Hurley, B.J. — 2309
 Hurley, D.L. — 1849
 Hurley, K. — 1635
 Hurricane, O. — 2013
 Hurricane, O.A. — 1925
 Hurst, B. — 1813
 Hurst, G. Samuel — 2166
 Hurwitz, P. — 1951
 Hurwitz, P.D. — 1949
 Hurych, Z. — 335, 729
 Husain, Hyder S. — 2273
 Husk, D.E. — 108, 467
 Husmann, D. — 1241
 Hussain, F. — 2213, 2214, 2273, 2296
 Hussain, Z. — 365, 1147
 Hussein, Hussein J. — 2204
 Hussein, M.H. — 1815
 Hussey, B.W. — 59, 259
 Hussey, Thomas W. — 2089
 Hussey, T.W. — 1894, 1974, 2090
 Huston, J. — 1037
 Hutcheon, D.A. — 1859
 Hutcheon, R.M. — 1377
 Hutcherson, R. Kenneth — 1890
 Hutchinson, I.H. — 1956
 Hutchinson, D. — 1225
 Hutchinson, D.P. — 2113
 Hutchinson, I. — 1954, 1956, 1958
 Hutchinson, I.H. — 1884, 1954, 1955

- Hutchinson, J. Andrew — 1717
 Hutchison, R.J. — 2085
 Hutson, R. — 1206, 1253, 1346
 Huttel, Y. — 335, 727, 729
 Hütten, A. — 1546
 Hutter, Jeffrey L. — 118, 402
 Hutter, R. — 1036
 Hutton, A. — 1198
 Hüwel, L. — 1093
 Huyer, S.A. — 2271
 Huysmans, G. — 1927
 Hwa, Luu Gen — 743
 Hwa, T. — 580, 739, 836
 Hwang, C.-S. — 1406
 Hwang, C.Y. — 447
 Hwang, D. — 2029
 Hwang, D.Q. — 1888, 2058, 2111
 Hwang, G.J. — 1296
 Hwang, H. — 526
 Hwang, Helen H. — 2330, 2341, 2347
 Hwang, H.Y. — 222
 Hwang, Ing-Shouh — 800
 Hwang, J.-L. — 2299
 Hwang, K. — 601
 Hwang, Lih-Wen — 808, 1572
 Hwang, S.J. — 282, 374, 531
 Hwang, T. — 1219
 Hwang, Un-Hak — 1900
 Hwang, Y.S. — 2004, 2005
 Hwu, Y. — 642
 Hyatt, A. — 2066
 Hyatt, A.W. — 1936, 2062
 Hybertsen, Mark S. — 56
 Hyde, H.W. — 1715
 Hyde, T.A. — 154
 Hyde-Wright, C. — 1034, 1821
 Hyde-Wright, C.E. — 1034
 Hyer, R.C. — 316, 514
 Hylgaard, P. — 763
 Hylin, E.C. — 2266, 2304
 Hylton, T.L. — 161, 733
 Hyman, E. — 2343
 Hyman, Mac — 1449
 Hyman, M.C. — 2244
 Hynes, J. — 2212
 Hyodo, K. — 1324
 Hyun, J.K. — 1558
- Iachello, F. — 992
 Iachibana, H. — 1605
 Iafrate, Gerald J. — 55
 Iafrate, G.J. — 139, 833
 Iannacchione, G.S. — 819, 1660
 Ibbotson, D. — 2327
 Ibbotson, R. — 1806, 1808, 1857
 Ibbotson, R.W. — 1819
 Ibrahim, A.K. — 743
 Ichige, M. — 949
 Ichihashi, T. — 107
 Ichinokawa, T. — 832
 Idrees, M. — 1673
 Idzerda, Y.U. — 338
 Idziak, S.H.J. — 653
 Ieiri, T. — 1210, 1347
 Igarashi, Z. — 1393
 Igawa, N. — 1519
 Ignat, D. — 2091, 2092, 2093
 Ignat, D.W. — 2091, 2094
 Ignatchenko, O.A. — 1519
 Ignatiev, A. — 272
 Igo, G. — 1815
 Ihloff, E. — 1212, 1261, 1295, 1296, 1368
 Ihm, D.W. — 77
 Iijima, T. — 1843
 Iima, M. — 1896
 Iinuma, K. — 2363
- Iinuma, M. — 2171
 Ikegami, K. — 1321
 Ikegawa, M. — 2338
 Ikezawa, M. — 1331
 Ikezi, H. — 2068, 2069
 Ikuta, H. — 454, 582
 Ikuta, N. — 2342, 2344, 2362, 2364
 Ilegems, M. — 182
 Ilgisonis, V.I. — 1947
 Iliadis, C. — 983, 1841, 1844
 Iliev, A.I. — 1268
 Ilkov, F.A. — 1735, 1740, 1749
 Illiadis, C. — 2175
 Im, J.H. — 425
 Imai, K. — 1843
 Imai, T. — 173
 Imai, Takashi — 96
 Imamoğlu, A. — 1123
 Imanishi, A. — 1338
 Imas, L. — 2282
 Imre, K. — 2050
 Imry, Y. — 230
 Inam, A. — 212
 Inam, Arun — 160
 Inbar, Iris — 576
 Inderhees, S.E. — 577, 689
 Indlekofer, G. — 642
 Ingalls, B. — 457, 1552
 Ingalls, R. — 386, 457, 458
 Ingalls, W.B. — 1273, 1318, 1320
 Ingber, M.S. — 2300
 Ingermanson, R. — 2088
 Ingersent, K. — 757
 Inglefield, P.T. — 349
 Ingold, G. — 1234, 1326, 1330
 Ingold, G.-L. — 328
 Ingold, John — 2344
 Ingram, Q. — 1818
 Inman, C. — 1066
 Inoguchi, H. — 1527
 Inoue, M. — 1334
 Inoue, T. — 2052
 Inouye, Y. — 1478
 Insolia, A. — 999, 1815, 1853, 1854
 Intrator, T. — 2024, 2025, 2026
 Inugai, A. — 1669, 1681
 Iori, I. — 1853
 Ioriatti, L. — 841
 Ip, M. — 1225
 Ippen, E.P. — 502
 Iqbal, M.Z. — 1713
 Iqbal, Z. — 369, 1540
 Irby, J. — 1955, 2113
 Irby, J.H. — 1955, 1956
 Irkaev, S.I. — 1536
 Irom, F. — 1816
 Irvine, S.J.C. — 513
 Irving, R.E. — 1152
 Irwin, J. — 1237, 1239, 1240, 1242, 1243
 Irwin, J.C. — 125, 460, 595
 Isaac, I. — 749, 751
 Isaac, M. — 705
 Isaacman, R. — 920
 Isaacs, E.D. — 777
 Isaacs, W.A. — 1130
 Isaacson, M.S. — 475
 Isaak, D. — 1502
 Isawa, K. — 272
 Isbert, J. — 932
 Iscobar, Ismael — 197
 Ise, N. — 293
 Isei, N. — 2053, 2054
 Isenhowe, D. — 942, 1818
 Isenhowe, L.D. — 1684
 Isenor, Neil — 1099
 Isfahani, S.M. — 2315
 Isgur, N. — 974
- Ishaq, M. — 194
 Ishi, K. — 1331
 Ishida, H. — 287, 303
 Ishida, S. — 2037, 2053, 2054
 Ishige, Y. — 2008
 Ishiguro, T. — 106, 159
 Ishihara, O. — 1904, 1994
 Ishii, T. — 2208
 Ishimaru, A. — 383
 Ishimaru, H. — 1263
 Ishimasa, T. — 625
 Ishizuka, H. — 1301, 1328
 Ishkhanov, B.S. — 1368
 Iskandarian, V.M. — 216
 Iskander, Felib Y. — 928, 929
 Islam, M.A. — 1685
 Islam, Quazi T. — 1616
 Islam, Shaheen M. — 1616
 Islam, S.K. — 234
 Island, T.C. — 2202
 Isler, R. — 2095
 Isler, R.C. — 2095
 Ismail, K. — 54, 84, 229, 230
 Isoya, J. — 1588
 Israelachvili, Jacob — 101
 Israeloff, N.E. — 123, 466, 520, 752
 Israelsson, U.E. — 139, 1607
 Itami, K. — 1918
 Itano, A. — 1333, 1401
 Itano, W.M. — 1140, 1142
 Itaya, K. — 1729
 Itchkawitz, B.S. — 286
 Itié, J.P. — 1565, 1579
 Ito, H. — 1821
 Ito, N. — 1445
 Ito, T. — 1543
 Itoh, A. — 2327, 2333
 Itoh, H. — 832, 2342, 2364
 Itoh, K. — 108, 1926
 Itoh, Kohei — 238
 Itoh, M. — 225
 Itoh, N. — 1618
 Itoh, Noriaki — 734
 Itoh, S.-I. — 1926
 Its, A.R. — 595, 1621
 Itskevich, E.S. — 1573, 1577
 Ittermann, B. — 843
 Itti, R. — 225
 Ivanchenko, Yu. M. — 580
 Ivanov, A.A. — 2072
 Ivanov, A.I. — 2361
 Ivanov, A.S. — 1284
 Ivanov, L.N. — 1943
 Ivanov, S. — 1360
 Ivanov, Z.G. — 112
 Ivanova, E.P. — 1943
 Ivers, J.D. — 1282, 1402
 Ivers, T.H. — 2006, 2007
 Iverson, R. — 1366
 Ivie, R. — 1816, 1817
 Iwai, J. — 1021
 Iwai, S. — 1618
 Iwasa, Y. — 205, 825, 1605
 Iwasaki, H. — 1574
 Iwasaki, S. — 455
 Iwashita, Y. — 1320, 1334
 Iwengar, G. — 764
 Iyer, K.R. — 1504
 Iyer, S. — 686
 Iyer, Subramanian — 107
 Iyyengar, S.K. — 2342
 Iyadpanah, H. — 1713
 Izawa, M. — 1382
 Izergin, A.G. — 595, 1621
- Jaanimagi, P.A. — 1962
 Jabbour, Z.J. — 1093
- Jaber, F.A. — 2229
 Jablonski, D. — 1955
 Jach, C. — 1401
 Jach, T. — 518, 519
 Jachim, S.P. — 1215, 1393, 1397
 Jacksier, Tracey — 2369
 Jackson, A. — 1233
 Jackson, C.L. — 141, 348
 Jackson, D.P. — 591
 Jackson, G. — 1202, 1216, 1255, 1312, 1349, 1358, 1405
 Jackson, G.L. — 1936, 1937, 2007, 2061, 2062
 Jackson, G.P. — 1268
 Jackson, H.E. — 282, 283, 565
 Jackson, Ian — 1526
 Jackson, J.W. — 1296
 Jackson, K.P. — 982, 1830
 Jackson, L.T. — 1399
 Jackson, M. — 261
 Jackson, P. — 1065
 Jackson, R.H. — 1963
 Jackson, Shirley — 353
 Jackson, Virgil — 1667
 Jacob, G.D. — 935, 1667
 Jacob, Jamey D. — 2302
 Jacob, M. — 2379
 Jacobi, K. — 448
 Jacobs, A.E. — 584
 Jacobs, B.C. — 1761
 Jacobs, D.C. — 1755, 1756
 Jacobs, J. — 2208, 2209, 2284, 2376
 Jacobs, J.P. — 1121
 Jacobs, K. — 623, 1261
 Jacobs, K.D. — 1212, 1224, 1368
 Jacobs, L.D. — 1435
 Jacobs, V.L. — 1098
 Jacobs, W.W. — 1116, 1847
 Jacobsen, F.M. — 499, 800
 Jacobsen, K.W. — 67, 742
 Jacobsen, R. — 1366
 Jacobsen, R.L. — 453
 Jacobsen, S.M. — 1615
 Jacobson, D. — 946
 Jacobson, K.B. — 118
 Jacobson, S.A. — 2197
 Jacques, Steven L. — 1628, 1732
 Jaquet, F. — 1218
 Jacquinet, J. — 2055
 Jada, S. — 985, 1054, 1055
 Jadusliwer, B. — 1162
 Jaecks, D.H. — 1161
 Jaeger, E.F. — 2033, 2034, 2049, 2107, 2122
 Jaeger, F. — 2034
 Jaeger, H. — 107
 Jaeger, H.M. — 644, 739
 Jaenker, P. — 1387
 Jaeschke, E. — 1324, 1336
 Jaffe, J. — 445
 Jaffe, J.E. — 564
 Jaffe, R.L. — 192, 244, 422
 Jaffery, T.S. — 1290
 Jagger, J. — 1948
 Jaggi, N.K. — 343, 396
 Jahan, Mirza M. — 761, 762
 Jahan, M.S. — 190, 602
 Jahn, L. — 1754
 Jahnke, Lucia — 1255
 Jahnke, F. — 1734, 1740
 Jahns, G.L. — 2070
 Jai, J. — 226
 Jain, A. — 1290, 1291, 1341
 Jain, F.C. — 234, 705
 Jain, J.K. — 236, 237, 279
 Jain, P.L. — 1062
 Jaklevic, R.C. — 640
 Jakob, H. — 1210

- Jakobsen, C. — 334
 Jakubowicz, A. — 1503
 Jalbert, C. — 294
 Jalbert, E. — 1813
 Jalife, J. — 100
 Jalinaud, T. — 1912
 James, A. — 1620
 James, A.J. — 167
 James, B. — 1924
 James, B.W. — 2379
 James, Daniel J. — 377
 James, D.J., II — 1676
 James, E. — 1038
 James, F. — 2174
 James, H.R. — 1564
 James, R. — 2066
 James, R.A. — 2066, 2070
 James, R.B. — 746
 James, R.D. — 2284
 Jameson, K. — 2379
 Jameson, Lorin W. — 1977
 Jameson, R. — 1332, 1408
 Jamieson, Alex M. — 141, 541
 Jamieson, A.M. — 94, 95
 Jamieson, G. — 1200, 1201, 1219, 1334
 Jamil, T. — 423
 Jamriska, D. — 914, 1804
 Jan, G.J. — 1225, 1308
 Jan, T.R. — 1967
 Janarthanan, V. — 91
 Jancic, D. — 1992
 Jänecke, J. — 1052, 1842
 Janes, D.B. — 1617
 Jang, K.W. — 467
 Jang, Winyann — 1779
 Jang, Young-Jae — 1487
 Janicki, C. — 2028, 2065
 Janke, Wolfhard — 1452
 Jankó, B. — 71
 Jankowski, Alan F. — 831
 Jansson, Tomasz — 1718
 Janos, A. — 1907, 2031, 2032, 2036
 Jansen, H.J.F. — 674, 795
 Janssen, S. — 143
 Janssens, R.V.F. — 1014, 1049, 1791, 1819, 1830, 1831, 1832
 Janzen, V.P. — 980, 1805, 1856, 1857
 Jaqua, L.M. — 1822
 Jarboe, T. — 2112
 Jarboe, T.R. — 2009, 2010
 Jardim, R.F. — 327
 Jardin, S. — 2005, 2091, 2096, 2112
 Jardin, S.C. — 1946, 2049, 2050, 2078, 2112
 Jarić, M.V. — 625, 626, 680
 Jarlborg, T. — 83, 500, 506, 1624
 Jarman, R.H. — 1728
 Jarnagin, R.C. — 142, 540
 Jarnyk, M.A. — 2341
 Jaronski, Walter S. — 2174
 Jaros, Milan — 199
 Jarrell, M. — 290, 500, 523
 Jarrío, M. — 1819
 Jarrold, Martin — 250
 Jarrold, M.F. — 67
 Jarvis, R. — 808
 Jasnó, David — 714
 Jason, A. — 1235, 1266, 1332
 Jassby, D. — 1907, 2052
 Jassby, D.L. — 1905, 1906, 2032, 2037
 Jasty, S. — 58, 238
 Jaswal, S.S. — 816
 Jatcko, Mark E. — 559
 Jauhar, S. — 393
 Jauho, A.P. — 646, 756
 Jaya, N. Victor — 1531, 1573
 Jayamaha, U.N. — 376
 Jayanthi, C.S. — 63, 67
 Jayaprakash, C. — 645, 752, 1043
 Jayaram, B. — 126, 225
 Jayaraman, A. — 254
 Jean, P. — 1317
 Jean, Y.C. — 104, 425, 716
 Jeanjean, J. — 1222
 Jeanloz, R. — 151, 255, 307, 1517
 Jeanloz, Raymond — 809
 Jedrzejek, C. — 647
 Jeffers, G. — 1620
 Jeffers, Stanley — 1737
 Jefferson, J.H. — 754
 Jeffries, Jay B. — 1727
 Jeger, E.F. — 1907
 Jeglinski, S. — 257
 Jehng, J.-Y. — 116, 116
 Jecic, A. — 1317
 Jelenković, B.M. — 2359
 Jelinek, R. — 369
 Jemiłniak, R. — 1530, 1531
 Jena, P. — 68, 69, 220, 221, 222
 Jendoubi, S. — 2220
 Jenekhe, S.A. — 110, 238
 Jenffer, P. — 2187, 2304
 Jenkins, I. — 2008
 Jenkins, N.D.W. — 622
 Jenner, G. — 1564
 Jennings, Johnny — 1973
 Jennison, D.R. — 786, 1434
 Jensen, C. — 1404
 Jensen, D.R. — 1294
 Jensen, E. — 549, 1760
 Jensen, H.J. — 1818
 Jensen, J.H. — 812
 Jensen, K. — 1401
 Jensen, K.F. — 2255
 Jensen, K.L. — 2120
 Jensen, L.C. — 207, 351, 736, 786, 790
 Jensen, O.E. — 2293
 Jensen, R.V. — 707, 1109, 1146
 Jensen, T.H. — 1925, 2062
 Jessen, Hans P. — 1716
 Jentoft-Nilsen, K. — 1819
 Jentz, D. — 627
 Jeon, D. — 726
 Jeong, E.-K. — 2191
 Jeong, Hyeong-Chai — 681
 Jepsen, O. — 643
 Jermakian, A. — 401
 Jerng, D. — 1266
 Jernigan, T.C. — 2065
 Jerosch-Herold, Michael — 434
 Jessen, P.S. — 1144
 Jessen, S.W. — 312
 Jesson, D.E. — 678
 Jestin, P. — 1530
 Jesurun, D. — 2193
 Jeyabalan, K. — 1573
 Jeziorska, M. — 1127
 JFT-2M Group — 2008
 Jha, S. — 241, 1663, 1819
 Jhans, H. — 73, 326
 Ji, D. — 1092
 Ji, Feng — 759, 811
 Ji, H. — 1978
 Ji, X. — 1838
 Jia, H. — 676, 677
 Jia, J.J. — 320, 519, 1621
 Jia, Weiyi — 1738
 Jian, Y.X. — 222
 Jiang, B. — 1315, 1402, 1403
 Jiang, C.L. — 1806
 Jiang, Fukang — 2234
 Jiang, H. — 331, 751
 Jiang, Hao — 418
 Jiang, H.W. — 46, 128
 Jiang, H.X. — 265, 746
 Jiang, J. — 999
 Jiang, J.S. — 733
 Jiang, L. — 1100
 Jiang, M.F. — 1816, 1823, 1834
 Jiang, Q.T. — 579
 Jiang, S. — 1350
 Jiang, T. — 68, 409, 458
 Jiang, T.F. — 1146
 Jiang, W. — 70, 223, 272, 458, 790, 834
 Jiang, W.-D. — 1034
 Jiang, Wu — 388
 Jiang, X. — 625
 Jiang, Xiuguang — 388, 460
 Jiang, Y. — 1953
 Jiang, Yanan — 1730
 Jiang, Y.Z. — 999
 Jiang, Z. — 2079
 Jianmin, Li — 1598
 Jimbo, K. — 1896
 Jiménez, J. — 2214
 Jimenez, M. — 1613, 1625
 Jimenez-Sandoval, S. — 478
 Jin, A.J. — 536
 Jin, Albert J. — 631
 Jin, G.X. — 1006
 Jin, H.-Q. — 980, 1015, 1050, 1050
 Jin, Jian-Min — 1619
 Jin, J.T. — 1322
 Jin, R. — 77
 Jin, Rong-Sheng — 1019, 1019
 Jin, Wei — 574, 675
 Jin, X. — 419
 Jin, X.G. — 1520, 1529
 Jin, Y. — 152, 1716, 1720, 1721
 Jin, Yanhe — 1034
 Jing, Ding — 1493, 1598
 Jing, J. — 1660
 Jing, K. — 1812
 Jing, Xiaodun — 809
 Jing, Z. — 444
 Jiqiong, Dai — 847
 Jishi, R.A. — 501
 Jo, J. — 236, 814, 815
 Jo, W. — 1607
 Joannopoulos, J.D. — 367, 1722
 Jobe, R.K. — 1206, 1217
 Jobes, F.C. — 2039
 Jochensen, R. — 1027
 Joe, J. — 1938, 1939
 Joffe, M.A. — 1141
 Joffe, Michael — 1650
 Jogai, B. — 593
 Joh, K. — 1236, 1237
 Johannsmann, D. — 651
 Johansson, H.I.P. — 1618
 Johansson, J. — 1805
 Johansson, L.I. — 1618
 Johansson, Peter — 762
 Johari, H. — 2282
 John, S. — 1064
 John, Sarah — 1805
 Johns, G.D. — 1857
 Johnsen, R. — 2378
 Johnson, A. — 1382
 Johnson, Anthony M. — 181
 Johnson, A.T. — 1614
 Johnson, A.W. — 2266, 2284
 Johnson, B. — 913, 914, 1036
 Johnson, B.L. — 332, 441, 755
 Johnson, B.M. — 951, 1148
 Johnson, B.W. — 1683, 1684
 Johnson, Calvin W. — 1807
 Johnson, C.D. — 1288
 Johnson, C.E. — 128
 Johnson, C. Greg — 481
 Johnson, C.W. — 1637
 Johnson, D. — 129, 451, 1254, 1268, 2031
 Johnson, David — 1659
 Johnson, D.D. — 215, 255
 Johnson, D.E. — 1484
 Johnson, Derwin C. — 1737
 Johnson, D.J. — 2045
 Johnson, D.L. — 652, 653, 768
 Johnson, D.W. — 1907, 2030, 2037
 Johnson, Edward A. — 1646
 Johnson, G.A. — 2306
 Johnson, G.E. — 190, 348, 423
 Johnson, G.R. — 1509
 Johnson, J. — 942, 943, 1817
 Johnson, J.A., III — 1889, 2241
 Johnson, J.B. — 1596
 Johnson, J.C. — 260
 Johnson, J.D. — 1849
 Johnson, J. Karl — 121
 Johnson, J.L. — 1832, 2021
 Johnson, J.N. — 1481, 1511, 1523
 Johnson, J.P. — 1849
 Johnson, K. — 942, 943, 1817
 Johnson, K.E. — 118, 503, 596
 Johnson, Kent — 1746
 Johnson, K.F. — 1273, 1318
 Johnson, K.H. — 466
 Johnson, K.L. — 790
 Johnson, Kristine M. — 2239
 Johnson, K.W. — 1817
 Johnson, L. — 2030
 Johnson, L.C. — 1906, 1907, 2029, 2031, 2032
 Johnson, L.E. — 1889, 2241
 Johnson, L.F. — 1725
 Johnson, M. — 232
 Johnson, M.B. — 296
 Johnson, M.D. — 135, 232, 278, 279, 841
 Johnson, N.M. — 569
 Johnson, N.R. — 1013, 1014, 1015, 1049, 1806, 1858, 2170
 Johnson, P. — 256
 Johnson, P.D. — 503, 672, 834
 Johnson, P.E. — 1342
 Johnson, R.D. — 152
 Johnson, R.I. — 569
 Johnson, R.P. — 1229, 1234
 Johnson, R.R. — 1317, 1859
 Johnson, Russell D., III — 1761
 Johnson, S.L. — 680
 Johnson, S.R. — 321
 Johnson, T.D. — 1857
 Johnson, T.W. — 1917
 Johnson, W. — 480
 Johnson, W.L. — 2356
 Johnson, Wm.L. — 1005
 Johnson, W.N. — 989
 Johnson, W.R. — 1125, 1126
 Johnston, D.C. — 123, 262, 325, 732
 Johnston, G. — 1988
 Johnston, G.P. — 1988
 Johnston, I.D. — 1454
 Johnston, J.P. — 2217
 Johnston, S. — 1889
 Johnston, Tudor — 2124
 Johnston, Tudor Wyatt — 2085
 Johnston, T.W. — 1998, 2349
 Johnstone, C. — 1227
 Johnstone, J. — 1268
 John, E.L. — 1832
 Joiner, W. — 389
 Joiner, W.C.H. — 241, 1663
 Jolivet, P.L. — 1847
 Jolly, J. — 2335
 Jonas, J. — 1475
 Jones, A. — 1200

- Jones, A.A. — 349
 Jones, A.K. — 1974
 Jones, B.A. — 109, 561, 757
 Jones, C. — 997, 1491
 Jones, C.M. — 1272
 Jones, C.R. — 1655
 Jones, D.R. — 253
 Jones, E.C. — 260, 272, 802
 Jones, E.D. — 787, 788
 Jones, E.R. — 2164
 Jones, F.C. — 934
 Jones, G. — 1859
 Jones, G.A.C. — 696, 697, 808
 Jones, G.J. — 1806
 Jones, G.L. — 1803
 Jones, Herbert W. — 1118
 Jones, J.R. — 2298
 Jones, K.W. — 951, 1148
 Jones, M. — 581, 1280, 1817
 Jones, M.E. — 1901, 1916, 2338, 2341
 Jones, Michael E. — 1898
 Jones, M.K. — 943, 1036, 1817
 Jones, M.L. — 467, 468
 Jones, N. — 2163, 2164
 Jones, O.S. — 2010
 Jones, P.G. — 1843
 Jones, P.M. — 1049, 1806
 Jones, R. — 528, 769, 947, 1382, 1977, 2124
 Jones, R.A.L. — 488
 Jones, Robert W. — 992
 Jones, R.R. — 1137, 1720, 1751
 Jones, R.S. — 1454
 Jones, S. — 2092, 2093, 2094
 Jones, S.E. — 1985
 Jones, S.L. — 1134
 Jones, S.W. — 2274
 Jones, T. — 2005
 Jones, T.A. — 1314
 Jones, T.E. — 216, 260, 637
 Jones, T.G. — 2004, 2005
 Jones, W. — 1245
 Jones, Wesley B. — 1890
 Jones, W.P. — 1197, 1245, 1257, 1847
 Jong, R.A. — 2059, 2066, 2067
 Jonker, B.T. — 132, 373, 797, 798, 1589
 Jonker, M. — 1365
 Jonkman, H.T. — 365
 Jonson, M. — 465, 538
 Jonsson, Björn — 1768
 Jonsson, H. — 167, 310, 793
 Jönsson, L. — 687, 1146
 Joo, J. — 238, 311
 Joo, S.W. — 2295
 Joo, Yong L. — 2314
 Jordan, R.G. — 215, 216
 Jorgensen, J. — 388
 Jorgensen, J.D. — 241, 242, 390, 460
 Jørgensen, T.G. — 1098
 Jory, H. — 2002
 José, J.V. — 401, 707, 752, 756, 804, 837
 Josefowicz, J.Y. — 653
 Joseph, D.D. — 1043, 2241
 Joshi, C. — 1285, 1311, 1323, 1342, 1359, 1934, 1935, 1988, 1997, 2073, 2080, 2084
 Joshi, C.J. — 2047
 Joshi, R. — 327
 Joshi, V. — 1540, 1592
 Josphipura, A. — 2175
 Jossem, E. Leonard — 1011
 Jost, W. — 1385
 Jostlein, H. — 1294
 Joubert, A. — 1339
 Journal, L. — 1139
 Jovanovic, D. — 54, 394
 Jowett, J.M. — 1356, 1366
 Joyce, G. — 1278, 2354
 Joyce, Glenn — 1328, 1899
 Joyce, J.J. — 642, 643, 758
 Joyce, M. — 1831
 Joyce, M.J. — 981, 1049
 Joyce, Steve A. — 1762
 Joynt, R. — 167, 726
 Joynt, Robert — 174, 226, 333, 694
 JT-60 Team — 1882, 2054
 Ju, Gao — 1161
 Ju, H.L. — 438
 Juan, Y.M. — 140
 Juang, Cheng — 1757
 Judas, A. — 690
 Judd, D. — 1303, 1994, 1995
 Judd, David L. — 1995
 Judd, E. — 1836
 Judd, E.G. — 1641
 Judkins, J. — 1371
 Judkins, J.G. — 1314, 1388
 Juhasz, T. — 616, 1750
 Juillard, J.C. — 1213, 1352
 Julian, Glenn M. — 1658, 1663
 Julian, G.M. — 241, 1819
 Julian, J. — 1398
 Julien, K. — 2198, 2317
 Julienne, P. — 1169
 Julienne, Paul — 1121, 1169
 Julienne, P.S. — 1170
 Julin, E. — 2214
 Jun, J. — 1504, 1549, 1576
 Jun, Y. — 836
 Junck, K. — 1359
 Juneja, A. — 2191
 Jung, G.V. — 989
 Jung, J. — 749, 751
 Jung, Jaeho — 1364
 Jung, K.S. — 1322
 Jung, R. — 1205, 1221
 Jung, T.A. — 232
 Jungclaus, A. — 980
 Junk, T. — 1203
 Junquera, T. — 1378
 Juras, R.C. — 1272
 Jurgens, T. — 1378
 Justice, M. — 998, 1796, 1815, 1828, 1853, 1854
 Justiss, R.L. — 1670
 Kabadiyski, M. — 980
 Kabadiyski, M.K. — 1856
 Kabani, R. — 1610
 Kabius, B. — 1611
 Kaburaki, H. — 1445
 Kachintsev, D. — 399
 Kadanoff, Leo — 2223
 Kadar-Kallen, M. — 2163
 Kadar-Kallen, M.A. — 1125, 1153
 Kadel, R.W. — 1037
 Kader, H. — 1064
 Kadnikov, A. — 1285, 1403
 Kadomtsev, B.B. — 1929
 Kadowaki, Kazuo — 720
 Kaduwela, A.P. — 364, 504
 Kaftori, D. — 2218
 Kagan, Cherie R. — 807
 Kagan, H. — 577, 676, 677
 Kagarlis, M. — 943
 Kagi, H. — 1588
 Kagi, Hiroyuki — 1509
 Kahana, E. — 1200, 1210, 1274
 Kahana, S. — 1811
 Kahle, Brewster — 1463
 Kahn, Andrew — 239
 Kahn, J.L. — 324
 Kahn, K. — 1995
 Kahn, S. — 1290, 1341
 Kahn, S.M. — 1152
 Kahol, P.K. — 312, 340, 406
 Kaiktsis, L. — 2238
 Kailasanath, K. — 2221, 2262
 Kaiming, Zhang — 1624
 Kain, Aron Z. — 1607
 Kaindl, G. — 682, 831, 1147
 Kaiser, D. — 2378
 Kaiser, H. — 1383
 Kaiser, J.H. — 224, 225, 800
 Kaiser, R. — 1947
 Kaiser, T. — 1444
 Kaiser, T.B. — 1914, 1920, 1921, 2060
 Kaiser, W.J. — 402
 Kaita, E. — 1065
 Kaita, R. — 2092, 2093, 2094, 2095, 2096, 2121
 Kajihara, S.A. — 444
 Kajiwara, T. — 2335
 Kakalios, J. — 630
 Kakalios, James — 537
 Kakar, Sandeep — 1147
 Kakehi, Y. — 2338
 Kakihara, K. — 1316
 Kakkar, A.K. — 572
 Kako, E. — 1385, 1387
 Kakol, Z. — 80
 Kakudate, Y. — 1588
 Kalachev, Yu.L. — 1277, 2116
 Kalal, M. — 2079
 Kalamarides, A. — 1765
 Kalantar, A. — 946
 Kalantar, D.H. — 2088
 Kalbfeld, S. — 1042
 Kalbfleisch, C. — 1222
 Kalbreier, W. — 1366
 Kaldon, P.E. — 1630
 Kale, N. — 2291
 Kalfas, C. — 1049
 Kalia, Rajiv K. — 441, 574, 673, 675, 757, 795
 Kalitkin, N.N. — 1488
 Kalki, K. — 503
 Kalliadiasis, S. — 2310
 Kallin, C. — 71, 754, 766
 Kálmán, P. — 1735, 1771
 Kalmeyer, V. — 236, 784
 Kalnins, J. — 1265
 Kalonji, G. — 214
 Kalonji, Gretchen — 163
 Kalos, M.H. — 69
 Kaloskamis, N.I. — 1809
 Kalpana, G. — 1544, 1573
 Kaltchev, D. — 1317, 1368
 Kalvius, G.M. — 114, 564
 Kam, K.F. — 2054
 Kamada, S. — 1324
 Kamada, Y. — 2054, 2063
 Kamal, M. — 970
 Kamal, Michael — 304
 Kamaras, K. — 126
 Kamath, Sanjay — 1900
 Kamber, E.Y. — 1160
 Kambour, K. — 517
 Kambour, R.P. — 350
 Kamikubota, N. — 1316
 Kamins, T.I. — 84
 Kaminski, J.P. — 233, 592, 702, 813
 Kaminskii, A.S. — 842
 Kamitakahara, W.A. — 744
 Kamitani, A. — 1975
 Kamitani, T. — 1286, 1316
 Kamiya, I. — 452
 Kamiya, Y. — 1208, 1210, 1212, 1326, 1382
 Kamm, G.N. — 734
 Kamm, J. — 1541
 Kammash, T. — 1967, 2087
 Kammeraad, J. — 997, 998
 Kammeraad, J.E. — 1825, 1846
 Kamon, M. — 2346
 Kampwirth, R.T. — 583
 Kanai, M. — 59, 173
 Kanai, T. — 1331
 Kanazawa, K. — 1261
 Kanazawa, M. — 1333, 1401
 Kanbach, G. — 988, 989, 1635
 Kanbe, Hiroshi — 1723
 Kanda, H. — 1588
 Kandel, D. — 701
 Kane, B.E. — 705
 Kane, C.L. — 277
 Kaneda, T. — 2356
 Kanekal, S. — 984
 Kaneko, T. — 225, 670, 1519, 1535, 1536
 Kanel, G.I. — 1483, 1494, 1499, 1512, 1539
 Kaner, R. — 808
 Kaner, Richard — 311
 Kaner, R.M. — 368
 Kaneyasu, t. — 205
 Kang, B.K. — 1292
 Kang, H. — 1326
 Kang, H.S. — 478
 Kang, I.S. — 2225
 Kang, J. — 1828, 1833
 Kang, J.H. — 519
 Kang, J.U. — 1766
 Kang, S.W. — 2273
 Kang, W. — 778, 779, 780
 Kang, Y. — 1231, 1284, 1381, 1389
 Kang, Y.G. — 1399
 Kanhere, D.G. — 83
 Kankaala, K. — 1450
 Kanke, Y. — 259
 Kanki, T. — 1975
 Kannan, R.M. — 657
 Kanner, G. — 57
 Kanner, G.S. — 258, 502
 Kanninen, Melvin F. — 292
 Kanomata, T. — 1519, 1535, 1536
 Kanskar, M. — 322
 Kant, G. — 2025, 2026
 Kanter, E.P. — 1090, 1120, 1140, 1170
 Kanzaki, M. — 1488, 1575
 Kao, C.C. — 280, 365
 Kao, F. — 1673
 Kao, H.L. — 212, 222
 Kao, W.F. — 1639
 Kao, Y.-C. — 233, 813
 Kao, Y.H. — 84, 461, 519, 798
 Kaoru — 1509
 Kapalka, Przemyslaw — 1440
 Kapchinskiy, I.M. — 1273
 Kapitulnik, A. — 74, 223, 274, 275, 520, 636, 691, 694
 Kapitulnik, Aharon — 330, 835
 Kaplan, A.E. — 1770
 Kaplan, D.L. — 539, 1628
 Kaplan, M.L. — 826
 Kaplan, P.D. — 287, 288
 Kaplan, R. — 446, 675
 Kaplan, T.A. — 577, 683
 Käppeler, F. — 1802, 1844
 Kaprielov, B. — 1777
 Kapustin, A.A. — 1270
 Kar, C. — 1944
 Kara, A. — 67
 Karabekov, I.P. — 1259
 Karadi, C. — 393, 1624
 Karagozian, A.R. — 2258
 Karakashian, A.S. — 1650

- Karan, Rainer — 2234
Karantzoulis, E. — 1215
Karapetrov, G.T. — 175, 806
Karas, P.L. — 830
Karass', V. — 1278
Karass, V.I. — 1200, 1359
Karasso, P.S. — 2246
Karasyuk, V. — 1367
Karasyuk, V.A. — 842
Karasz, F.A. — 159
Karasz, F.E. — 94, 109, 413
Karatz, F.E. — 157
Karayianni, E. — 93
Karczewski, G. — 401, 512, 796
Karger, N. — 1521
Karikari, E.K. — 485
Karim, A. — 90, 91, 294, 572
Karim, K.R. — 1102, 1129
Karim, R. — 2096
Karimi, M. — 650
Kariotis, R. — 737
Karis, T.E. — 409
Karl, F.X. — 1298
Karl, G. — 1801
Karlhede, A. — 135
Karlou, M.A. — 228
Karlsson, S. — 2234
Karma, A. — 590
Karma, Alain S. — 99
Karn, E.L. — 2217
Karnaikhov, I. — 1324, 1368
Karney, C.F.F. — 1919, 1922, 2077
Karney, Charles F.F. — 2104
Karniadakis, G.E. — 1459, 2194, 2238, 2303, 2313
Karow, H.U. — 1483, 1512
Karow, H.V. — 1539
Karpov, V. — 575
Karpov, V.G. — 264, 789
Karpov, Vladimir B. — 1737
Karraï, K. — 74, 126, 805
Kartha, S. — 306, 790
Kartheuser, E. — 798
Karunamuni, J. — 781
Karunasiri, R.P.G. — 706
Karweit, M. — 2260
Karwowski, H.J. — 1845
Karzel, H. — 114, 564
Karzhavin, Yuri Y. — 1948, 1952
Kascak, T.J. — 689
Kasemo, B. — 729
Kasemo, Bengt — 1765
Kasevich, M.A. — 1086
Kash, J.A. — 764
Kash, K. — 393, 807
Kasha, D. — 1394
Kashihin, V.S. — 1270
Kashiwada, J. — 2087
Kashiwagi, T. — 949
Kaski, Kimmo — 1461
Kasner, Marcus — 137
Kasowski, Robert V. — 373
Kasper, E. — 86
Kaspi, R. — 1655
Kass, R. — 577, 676, 677
Kassinou, S.C. — 2232
Kassoff, J.M. — 2365
Kassoy, D.R. — 2219, 2279
Kastalsky, A. — 317
Kastner, M.A. — 124, 127, 227, 640
Kastrinakis, G. — 323
Kasuga, T. — 1216
Kasuya, K. — 2045
Kas'yanov, Yu. S. — 2087
Katalev, V.V. — 1381
Katayama, D.H. — 1727
Katayama, T. — 1197, 1338
Katayama, Y. — 1557, 1565, 1571
Katayama-Yoshida, H. — 368, 629
Katine, J.A. — 706, 840, 1120
Katiyar, R.S. — 1615
Katkanant, V. — 407
Katkov, V.M. — 1317
Kato, H. — 1572
Kato, Keith G. — 1940
Kato, R. — 1331
Kato, S. — 1357
Kato, Y. — 1309, 1492, 1943
Kato, Yoshiaki — 2099
Katsch, H.-M. — 2353
Katsouleas, T. — 1279, 1359, 1964, 1993, 1997, 2073, 2080, 2081
Katsumori, H. — 1447
Katsura, T. — 1208, 1210, 1212, 1216, 1219
Katsurai, M. — 1927, 2008
Katta, V.R. — 2227
Katwal, A. — 944
Katz, D.P. — 1122
Katz, H.E. — 258
Katz, J. — 792, 2231
Katzenellenbogen, N. — 763
Katzer, D.S. — 232, 474
Kauffman, J. — 1751
Kauffman, K. — 1362
Kauffman, R.L. — 1886, 1915, 1934, 2087
Kauffman, Robert L. — 2086
Kauffmann, K. — 1240
Kauffmann, S. — 1243
Kauffmann, S.K. — 1218, 1248
Kaufman, Allan N. — 1913
Kaufman, A.N. — 1990, 2104
Kaufman, L. — 317
Kaufman, V.R. — 544
Kaufman, W.A. — 987
Kaukler, W.F. — 829
Kaup, D.J. — 1968
Kauppila, T. — 1302, 1314
Kauppila, W.E. — 1100, 1101
Kausch, H.H. — 655
Kavanagh, R.W. — 983
Kavassalis, T.A. — 191
Kaw, P.K. — 2097
Kawabata, C. — 1436
Kawabata, T. — 2362
Kawaguchi, K. — 112
Kawaguchi, M. — 2366
Kawai, R. — 68
Kawai, S. — 59, 173, 280, 582
Kawai, T. — 59, 173, 280, 582
Kawakami, H. — 1520
Kawakatsu, T. — 1439
Kawakatsu, Toshiro — 1457
Kawamoto, T. — 1219
Kawamura, H. — 1598
Kawamura, M. — 1393
Kawamura, T. — 54, 708
Kawamura, Y. — 1311
Kawano, Y. — 2037, 2053, 2054
Kawasaki, K. — 1439
Kawasaki, M. — 212, 582
Kawasaki, S. — 1301, 1328
Kawashima, T. — 1535, 1536
Kawazu, S. — 1318
Kaxiras, E. — 52, 140, 167, 753
Kaxivas, Efthimios — 427
Kay, Pasha — 1457
Kayama, M.E. — 2334
Kaye, S. — 2005, 2092, 2095, 2121
Kaye, S.M. — 1973, 2093, 2094, 2095
Kayser, D.R. — 700, 701
Kazacha, V. — 1317, 1368
Kazakevich, G. — 1367
Kazanas, D. — 919
Kazansky, A.K. — 1110
Kazarezov, I.V. — 1280
Kazarinov, N. — 1317, 1368
Kazarinov, Yu.M. — 1054
Kazeminejad, F. — 2018
Kazimi, R. — 1232, 1382
Kazmark, D.L., Jr. — 1298
Keana, John F.W. — 110, 542
Keane, C.J. — 2043
Keane, D. — 998, 999, 1034, 1815, 1828, 1853, 1854
Keane, J. — 1223, 1287, 1391
Keane, R. — 2294
Kearney, K.J. — 2082
Keast, S. — 819
Keat, J. — 384
Keating, Donna — 2224
Keating, P. — 1253
Keavney, D. — 442, 617
Keay, B.J. — 233, 704
Kebaili, N. — 221
Kedzierski, W. — 1161, 1758
Keeffe, M.E. — 567
Keegan, D.M. — 2337
Keegan, M.A. — 209
Keegstra, P. — 1065
Keenan, J. — 1675, 1684, 1685
Keener, C.D. — 370
Keeney, D.S. — 1303
Keese, C.R. — 630
Kehayias, J. — 928
Kehne, D. — 1236, 1345, 1363
Kehne, D.M. — 1236
Keil, D. — 2107
Keimer, B. — 223
Keinigs, R.K. — 2338, 2341
Keiter, E.R. — 2374
Keith, C.D. — 1063, 1846
Kelber, J. — 157, 1671
Kelesey, J.M. — 1836
Kellar, S. — 365
Keller, J.S. — 549
Keller, J.U. — 2191
Keller, N. — 1092, 1133, 1160
Keller, R. — 1292, 1297, 1325
Kelley, F.N. — 603, 1654
Kelley, J. — 1558, 1841
Kelley, J.H. — 983, 1842
Kelley, R.J. — 75, 274
Kellman, A.G. — 2067, 2068
Kellman, Mike — 101
Kellog, N. — 1393
Kellogg, Gary L. — 613
Kellogg, J.C. — 2046
Kelly, A. — 155
Kelly, David M. — 784
Kelly, E. — 1341
Kelly, Henry C. — 924
Kelly, J. — 1659
Kelly, J.H. — 2085
Kelly, Jim — 1154
Kelly, J.J. — 1034
Kelly, J.P. — 1918
Kelly, J.R. — 767, 1131
Kelly, M.A. — 1038
Kelly, P.J. — 686
Kelly, R.E. — 2198, 2221, 2292, 2316
Kelly, W.H. — 1049, 1050
Kelso, R.M. — 2272, 2313
Kelton, K.F. — 206, 681
Kemner, K.M. — 182, 737
Kempa, K. — 54, 755
Kemper, K.W. — 1064, 2171
Kempka, S.N. — 2270
Kendall, J.M. — 2208
Kendelewicz, T. — 1151
Kendrick, R.D. — 1979
Kendziora, C. — 272
Kenefick, R.A. — 1156
Kengkan, P. — 265, 1646
Kenkre, V.M. — 529, 530, 598, 792
Kennard, Mark A. — 174
Kennedy, A.D. — 2169
Kennedy, C. — 1053
Kennedy, L.A. — 2243
Kennedy, M. — 1820
Kennedy, M.A. — 1832
Kennedy, M.L. — 1649
Kennedy, P.K. — 318
Kennedy, R.J. — 75, 782
Kennedy, T.A. — 86, 266, 621
Kennedy, W.L. — 1388
Kenney, J.F. — 1508
Kenning, G.G. — 475
Kenny, R. — 1975
Kenny, R.G. — 1975
Kenny, S. — 1620
Kenrow, J.A. — 55, 289
Kent, A. — 295
Kent, A.D. — 183
Kent, J.C. — 2243
Kent, M. — 420, 713
Kent, R.D. — 1098
Kepler, R.G. — 257
Keppel, C. — 1034, 1821
Kepple, P.C. — 2081
Keppler, K.A. — 1662
Keppler, Karen — 1005
Kerbel, G.D. — 1443, 2014, 2102
Kerby, G.W. — 1133
Kerchner, H.R. — 802, 835
Kerins, J. — 800
Kerkel, M.D. — 2210
Kerley, G. — 1507
Kern, S. — 324
Kernan, W.J. — 1812
Kerner, W. — 1927
Kerney, J.T. — 486
Kerns, C. — 1396
Kerns, Q. — 1392, 1396
Kerr, P.L. — 1064, 2171
Kerr, R.M. — 2213, 2230, 2239, 2244, 2269
Kerr, W.C. — 710
Kerrick, G. — 1677
Kerrick, Ginger — 513
Kerschen, E.J. — 2219
Kersevan, R. — 1261
Kerslick, G. — 1402
Kerslick, G.S. — 1282
Kerstein, A.R. — 2243
Kersteins, D. — 1273
Kerstel, Erik R.Th. — 1725
Kerstel, E.R.Th. — 1730
Kertesz, M. — 110, 506
Kesan, V.P. — 85, 812
Keser, M. — 410
Keshavamurthy, S. — 1629
Keshkar, Nitin, R. — 674
Keskinen, M.J. — 1912, 1968, 1969
Kesler, G. — 1483
Kesmodel, L.L. — 727
Kesner, J. — 2092, 2093, 2096
Kessel, C. — 2050, 2091, 2093, 2112
Kessel, C.E. — 1946, 2112
Kessel, Q. — 1163
Kessel, Q.C. — 1163
Kessler, D. — 100, 380
Kessler, D.A. — 470
Kessler, E.G., Jr. — 951
Kessler, G. — 1437
Kessler, J. — 1104
Kessler, J.O. — 2267, 2306
Kessler, T.J. — 1961, 2085
Ketcham, R. — 396
Ketchen, M.B. — 691
Keto, J.W. — 1672

- Ketola, K.S. — 1022
 Ketterle, W. — 1141
 Ketterle, Wolfgang — 1650
 Ketterson, J.B. — 53, 111, 131, 205, 235, 435, 638, 694, 1042, 1617
 Ketzmerick, R. — 234
 Keup, R.M. — 944
 Kevan, S. — 729
 Kevan, S.D. — 451, 650, 699, 730, 782
 Keverkidis, I.G. — 2194
 Kew, J. — 379
 Kewisch, J. — 1222, 1226
 Key, J. — 1948
 Keyes, R.W. — 633
 Kezerashvili, G. — 1332
 Khacef, A. — 2359
 Khachan, J. — 2379
 Khairallah, Y. — 2329
 Khalilollahi, Amir — 1654
 Khan, A. — 621
 Khan, A.H. — 2119
 Khan, Asif — 1729
 Khan, F. — 963, 1062
 Khan, M.A. — 446, 621, 675
 Khan, Mohammad Javed — 2203
 Khan, S.A. — 1667, 1668, 1669
 Khandagle, M. — 1918
 Khandaker, M. — 1817
 Khandelwal, Govind S. — 1834
 Khandpur, A. — 605
 Khanna, S.N. — 68, 69, 221, 222, 2157
 Khatri, R. — 571
 Khayat, M. — 1052, 1846
 Khayat, M.G. — 1817
 Khayrutdinov, R.R. — 2068
 Kheifets, S. — 1243, 1289
 Kheifets, S.A. — 1354
 Khemliche, H. — 1160
 Khesghi, H.S. — 2237
 Khieshchenko, K. — 1515
 Khitrova, G. — 77
 Khodr, C. — 2333
 Khodyrev, V.Yu. — 1054
 Khoo, I.C. — 1718
 Khoo, T.L. — 1014, 1049, 1819, 1830, 1831, 1832
 Khook T.L. — 1819
 Khor, K.E. — 679
 Khorrami, M.R. — 2195
 Khosropour, R. — 2191
 Khrebtukov, D.B. — 1097, 1110
 Khudoleev, A.V. — 2030
 Khurana, I. — 1100
 Khurgin, Jacob B. — 991, 992, 1718
 Khurgin, J.B. — 1718, 1754
 Khusnatdinov, N.N. — 468
 Khveshchenko, D.V. — 588, 589, 821
 Kibble, Bryan P. — 977
 Kick, R. — 1246
 Kickel, Bernice L. — 2361, 2371
 Kidd, M. — 1021
 Kidder, J.N., Jr. — 108
 Kidder, Ray — 1024
 Kieda, D.B. — 1020, 1021
 Kieffer, J.C. — 1987, 1988, 2079, 2335
 Kiehl, R. — 678
 Kiehl, R.A. — 812
 Kiehl, W. — 271
 Kiehlmann, D. — 1390
 Kielczewska, D. — 1021
 Kiesel, P. — 1769
 Kiess, T.E. — 1002
 Kiger, K.T. — 2278
 Kiiski, A.A. — 1546, 1585
 Kikegawa, T. — 1574, 1597
 Kikin, K.M. — 2020
 Kikuchi, J. — 949
 Kikuchi, M. — 1436, 1450, 1568, 2037, 2053, 2054
 Kikuchi, R. — 1631
 Kilcup, Gregory — 1462
 Kilgore, M.D. — 2350
 Kilian, Karland A. — 448
 Kilic, H. — 2091
 Kilkenny, J.D. — 1484, 1882, 1961
 Killen, P.D. — 1546
 Killian, E. — 1341
 Killoran, J. — 931
 Kilper, D. — 165, 671
 Kim, B. — 1286
 Kim, Bong Ok — 781
 Kim, B.S. — 363
 Kim, C. — 68, 1367, 1618
 Kim, C.-B. — 2077
 Kim, Charles — 346
 Kim, D. — 367, 1042, 1154
 Kim, Dae Young — 1753
 Kim, Dai-S'ik — 199, 1772
 Kim, D.E. — 1290, 1292
 Kim, D.H. — 459, 519
 Kim, D.M. — 516
 Kim, D.W. — 702
 Kim, E. — 844
 Kim, Eunsik — 753
 Kim, Eunsook — 1005, 1056
 Kim, G. — 761, 1310
 Kim, Geunsik — 548
 Kim, Gia Y. — 92, 422
 Kim, Gon-Ho — 1888
 Kim, H. — 181, 639, 1589, 2110, 2349
 Kim, Hak-Jun — 1487
 Kim, Heesang — 758
 Kim, Hungchong — 913
 Kim, Hye-Rim — 60
 Kim, Hyung Won — 1487
 Kim, I. — 2212
 Kim, J. — 133, 210, 231, 915, 1232, 1889, 1937, 1998, 2003, 2063
 Kim, J.C. — 282
 Kim, Jeha — 164
 Kim, J.H. — 670, 728, 800
 Kim, Jin Min — 380
 Kim, J.J. — 2311
 Kim, J.M. — 379
 Kim, J.S. — 79, 80, 178, 1276, 1345, 1923, 2035
 Kim, J.-T. — 331
 Kim, Ju H. — 1609, 1610
 Kim, J.W. — 759, 822
 Kim, J.Y. — 2075, 2100
 Kim, K. — 312, 621, 1292, 1293, 2173
 Kim, K.H. — 262
 Kim, Kihong — 240, 544
 Kim, K.-J. — 1234, 1237, 1313, 1327, 2047
 Kim, K.W. — 55, 269, 2069
 Kim, K.Y. — 1038
 Kim, Nam-Young — 1448
 Kim, Peter C. — 1001
 Kim, S. — 803, 1292
 Kim, Sangbo — 1022
 Kim, Sang Kyu — 1741
 Kim, Sangtae — 2220
 Kim, S.B. — 1039
 Kim, S.E. — 2304
 Kim, S.G. — 115, 802
 Kim, S.-H. — 187, 1292, 1293
 Kim, S.J. — 970
 Kim, S.T. — 335
 Kim, W. — 1322
 Kim, W.G. — 1674
 Kim, W.K. — 293
 Kim, W.W. — 79, 80, 497
 Kim, Y.-B. — 1936, 1937, 1937, 2064
 Kim, Y.D. — 746, 798, 1674, 1675, 1684, 1828
 Kim, Y.E. — 1801, 1802
 Kim, Y.H. — 145
 Kim, Y.J. — 364
 Kim, Yong-Jihn — 524
 Kim, Yong-Ki — 1130
 Kim, Yong W. — 739
 Kim, Y.S. — 145
 Kim, Y.W. — 2248
 Kimball, J.C. — 321
 Kimmel, G. — 830
 Kimmel, J. — 2260
 Kimura, F. — 2338
 Kimura, H. — 2054
 Kimura, K. — 1119
 Kimura, M. — 1099, 1161, 1165, 1526, 2348, 2361, 2369, 2371
 Kimura, T. — 223, 1282, 2332, 2336, 2338
 Kimura, W. — 1277, 1310, 1311
 Kimura, Y. — 1301, 2282
 Kinaret, J.M. — 641
 Kincaid, B. — 1329
 Kincaid, Brian — 150
 Kinell, D.K. — 532
 Kinney, W. — 2004
 King, A. — 409
 King, B.J. — 985, 986, 1037
 King, D.M. — 226, 274, 275
 King, D.R. — 1663
 King, H.E., Jr. — 435, 535, 574, 845, 1542
 King, J.A. — 1651
 King, J.D. — 1841
 King, N.S.P. — 982
 King, P. — 1812
 King, R. — 1203
 King, S.E. — 689
 Kingma, K.J. — 575, 1496
 Kingsbury, O.T. — 2100
 Kingsley, L.E. — 1716, 1720
 King-Smith, Dominic — 563
 King-Smith, R.D. — 507, 674
 Kingston, J.J. — 637, 691
 Kinnel, T. — 985, 986
 Kinnel, T.S. — 1037
 Kinney, E.R. — 942, 997
 Kinoshita, N. — 826
 Kinross-Wright, J.M. — 1342
 Kinsey, J. — 2078, 2125
 Kinsho, M. — 1321
 Kintner, Edwin — 2097
 Kinugasa, Y. — 1975, 2057
 Kioussis, N. — 256, 758
 Kipp, M.E. — 1553
 Kippen, R.M. — 968
 Kipper, A. — 1319
 Kirbie, H.C. — 1305
 Kirby, R. — 1636
 Kirby, R.D. — 442
 Kirby, R.E. — 1312, 1313
 Kirby, S.K. — 646
 Kircher, J. — 76, 126
 Kirchgessner, J. — 1231, 1300, 1354, 1380, 1381, 1384, 1385, 1406
 Kirchhoff, J.F. — 1674, 1675, 1681
 Kirchman, J. — 1208
 Kirchner, P.D. — 231, 284
 Kirchoff, J.F. — 1684, 1685
 Kirzenow, G. — 278, 332, 441, 708, 755
 Kirk, Eugenie — 690
 Kirk, H. — 931
 Kirk, H.G. — 1311, 1363
 Kirk, P. — 1815
 Kirk, W.P. — 466, 633, 641, 647, 706
 Kirkitelos, Paul — 1991
 Kirkkopru, K. — 2219
 Kirkman, G. — 1315, 1402, 1403
 Kirkpatrick, R.J. — 1518
 Kirkpatrick, T.R. — 693
 Kirkwood, R. — 1976
 Kirkwood, R.K. — 1888
 Kirmaier, Christine — 549
 Kiroh, Jay — 547
 Kirolos, H. — 1939
 Kirov, A.S. — 980
 Kirsch, R. — 1317
 Kirschgessner, J. — 1374
 Kirschman, R.K. — 1010
 Kirschner, J. — 832
 Kirtley, J. — 79
 Kirtley, J.R. — 328, 691
 Kirven, P. Douglas — 125
 Kirz, J. — 1195
 Kirz, Janos — 150
 Kiselev, G. — 1339
 Kiselev, S.A. — 521
 Kiselev, S.B. — 1006
 Kiselev, V. — 1367
 Kish, J.C. — 949
 Kish, K. — 838
 Kishida, H. — 1605
 Kishimoto, T. — 944, 1326
 Kishimoto, Y. — 2075, 2100
 Kishinevsky, M. — 2025, 2026
 Kishiro, J. — 1301
 Kisker, E. — 831
 Kislov, A.Ya. — 2069
 Kissel, Lynn — 950, 1098
 Kistenmacher, T.J. — 446, 566
 Kistner, O.C. — 914, 915, 981
 Kisvarsanyi, E.G. — 138
 Kita, R. — 112
 Kita, T. — 130
 Kitabatake, N. — 2045
 Kitagawa, A. — 1333, 1401
 Kitagawa, H. — 1527
 Kitagawa, M. — 2332, 2338
 Kitagawa, Y. — 1309
 Kitahama, K. — 582
 Kitamori, Kazutaka — 2368
 Kitamura, H. — 1233
 Kitamura, N. — 509
 Kitazawa, K. — 212, 223, 224, 225, 454, 582
 Kitching, J. — 1713
 Kitzmiller, J. — 1948
 Kiuttu, G.F. — 1896, 1974, 2090
 Kivelson, S.A. — 135, 600
 Kiwi, Miguel — 671
 Kizzar, S. — 1670
 Kjaer, K. — 122, 455
 Kjølgaard, S. — 2206
 Kjoller, K. — 119
 Klabunde, C.E. — 802
 Klabunde, K.J. — 832
 Klaisner, L. — 1312, 1636
 Klaisner, L.A. — 1312, 1313, 1342
 Klakow, D. — 1815
 Klamp, L. — 1350
 Klar, H. — 1148
 Klare, K.A. — 2083
 Klarmann, J. — 949, 999, 1061
 Klatt, D. — 1162
 Klauss, H.H. — 564
 Klavins, P. — 72, 73, 103, 171
 Kleb, R. — 1266
 Kleban, P.H. — 711, 712, 729
 Klebanoff, L.E. — 503
 Kleckley, Stephen — 2168
 Kleeven, W. — 1352, 1369, 1389

- Kleffner, C.-M. — 1336
 Klehe, A.-K. — 104
 Kleiman, G.G. — 780
 Kleiman, R.N. — 579
 Klein, A. — 1818
 Klein, Barry M. — 755
 Klein, H. — 1285, 1287, 1288
 Klein, M.V. — 76, 133, 226, 228, 282, 746, 798, 1625
 Klein, Norbert — 298
 Klein, P.B. — 86, 676
 Klein, S.P. — 175
 Kleinhammes, A. — 527
 Kleinman, L. — 2269
 Kleinman, Leonard — 219, 504, 1434
 Kleinsasser, A.W. — 328, 837
 Kleis, S.J. — 2246
 Kleis, T. — 933
 Kleiser, L. — 2270
 Klem, D. — 2079, 2080
 Klem, D.E. — 1915, 1934, 2080
 Klem, J. — 282
 Klem, J.F. — 591
 Kleman, K. — 1382, 1397
 Kleman, M. — 818
 Klemberg-Sapieha, J. — 2376
 Klemberg-Sapieha, J.E. — 2376
 Klemm, R.A. — 325
 Klemme, B. — 320
 Klenerman, D. — 1779
 Klepeis, J.E. — 208, 1506
 Klepeis, John E. — 730
 Klepper, C. — 1918
 Klepper, C.C. — 2058, 2059
 Klepper, S.J. — 826
 Kleppner, D. — 185, 1170
 Kleppner, Daniel — 1649, 1774
 Kleva, R.G. — 1927
 Klevans, E.H. — 1898
 Klewicki, J.C. — 2203, 2231
 Kliman, J. — 1806
 Klimeck, G. — 641, 760, 761
 Klinger, T. — 1907
 Klingfus, J.L. — 1738
 Klingmann, B.G. — 2237
 Klingmann, B.G.B. — 2236
 Klipstein, W.M. — 1121
 Klitsner, T. — 1434
 Kloczkowski, A. — 412, 546
 Kloeppe, P.K. — 1210
 Kłosowski, P. — 797
 Klotz, S. — 1533, 1583
 Klug, C.A. — 572
 Klug, D. — 1556
 Klug, D.D. — 56, 1594
 Kluge, M.D. — 574
 Klymachyov, A. — 184
 Kmetyk, L.N. — 1563
 Knapp, D. — 1124, 2040
 Knapp, D.A. — 935, 1167, 1813
 Knasiak, K. — 2236
 Knauer, J.P. — 1961, 2085
 Knauss, Wolfgang — 291
 Knee, D. — 2007
 Kneedler, E. — 782
 Kneisel, P. — 1262, 1382, 1383, 1386, 1389
 Kneissl, M. — 1769
 Knetsch, E.A. — 79, 131
 Knewton, M. — 652
 Knickerbein, M. — 221
 Knickerbein, M.B. — 1087
 Knickerbocker, C.J. — 528
 Kniffen, D.A. — 988, 989, 1635
 Knight, D. — 2314
 Knight, J.B. — 739
 Knight, P.L. — 1154
 Knipp, P.A. — 55
 Knizhnik, A. — 830
 Knobloch, E. — 2267, 2306, 2317
 Knobloch, J. — 1380
 Knoczykowski, M. — 834
 Knoll, D. — 1922
 Knoll, D.A. — 1894, 1920, 1921
 Knoll, M. — 1036
 Knoll, W. — 1660
 Knotek, Michael L. — 666
 Knott, C.N. — 999
 Knott, J.E. — 914, 1804
 Knott, M. — 1229
 Knotts, M.E. — 77, 827
 Knowles, David S. — 1738
 Knowles, H.B. — 1337
 Knowlton, S. — 2022
 Knowlton, S.F. — 2022
 Knox, A. — 1266
 Knudson, J.N. — 1817, 2171
 Knutson, L.D. — 1847
 Knyazev, B.A. — 2113
 Knystautas, Emile J. — 2358
 Ko, C.M. — 1838
 Ko, I. — 1286, 1326
 Ko, In Soo — 1364
 Ko, I.S. — 1286
 Ko, K. — 987, 1382, 1388
 Ko, Kwok — 1385
 Ko, S. — 1021
 Kobari, T. — 1264
 Kobayashi, H. — 1316
 Kobayashi, J. — 2338
 Kobayashi, M. — 507, 949, 1264, 1589, 1598
 Kobayashi, R. — 2208, 2251
 Kobayashi, T. — 915, 1359, 1503
 Kobayashi, Y. — 82, 1244, 1402
 Kobe, D.H. — 1667, 1682, 1683
 Koberstein, J.T. — 91, 143, 294, 412, 449
 Koblińska, G.R. — 1293
 Kobobel, D. — 2335
 Kobori, H. — 284
 Kobzev, D.G. — 833
 Koch, Donald L. — 2219, 2268
 Koch, J.A. — 1915, 1934, 2044
 Koch, K. — 1219, 1818
 Koch, M.E. — 1727
 Koch, P.M. — 1097, 1109
 Koch, R.H. — 636, 688
 Koch, S. — 98
 Koch, S.W. — 1734, 1740, 1742, 1753, 2120
 Koch, T. — 1639
 Kochanek, Christopher — 1046
 Kochanski, G. — 342
 Kochanski, G.P. — 204, 369, 403
 Kocks, U.F. — 396
 Kocur, P. — 1405
 Koda, T. — 205, 825, 1605
 Kodaira, M. — 1326
 Kodali, P.D. — 389
 Kodama, R. — 1943
 Kodama, T. — 1042
 Kodashima, Y. — 2251
 Kodis, M.A. — 2003
 Koehler, J. — 1818
 Koehler, P.E. — 983
 Koelbel, Charles — 1455
 Koelle, D. — 637
 Koeller, D. — 501
 Koelling, D.D. — 226, 277, 619
 Koepf, W. — 1015, 1824
 Koepke, K. — 1381, 1392
 Koepke, M.E. — 1887, 1907, 1966
 Koerber, C.T. — 69
 Koesoemodiprodjo, Chandra W. — 1447, 1921, 2123
 Koga, T. — 112
 Kogan, V.G. — 325, 580, 692
 Kogan, Vladimir — 720
 Kogtev, V. — 1284
 Kogut, A. — 1065, 1433
 Kohama, Y. — 2208, 2251
 Kohel, J. — 1672
 Kohgi, M. — 79
 Kohl, D. — 1673
 Kohl, J.L. — 1116
 Kohler, M.D. — 943, 1818
 Kohli, Sandeep — 1535
 Kohno, T. — 1333, 1401
 Kohyama, M. — 677
 Koide, Y. — 2053, 2054
 Koiller, B. — 264
 Koizuma, H. — 212, 582
 Kojima, H. — 224, 225, 1042
 Kok, L.P. — 1063
 Kokorin, A.M. — 1270, 1336
 Kokta, Milan R. — 1721
 Kolakowska, A. — 1127
 Kolata, J.J. — 1841, 1842
 Kolb, N. — 1847
 Kolbe, R. — 2221
 Kole, Francisco — 918
 Kole, Thomas M. — 1654
 Kolev, I. — 1777
 Koller, D. — 502, 616
 Kollman, P.A. — 1462
 Kolobov, V.I. — 2349
 Kolodner, P. — 2266, 2267, 2276, 2277
 Kolodner, Paul — 469, 667
 Kolomenskii, Al A. — 1677
 Kolomiets, A.A. — 1273
 Kolomiets, V.G. — 1054
 Koltenbah, B.E.C. — 694
 Koltover, I. — 366
 Koltun, Daniel S. — 1816, 1823
 Kombargi, R. — 2006, 2007
 Kominsky, D. — 1859
 Komitov, L. — 534
 Komives, A. — 914, 1804
 Komiyama, T. — 949
 Koňák, C. — 410
 Konczykowski, M. — 122, 459, 801
 Kondakov, A. — 1397
 Kondev, J. — 766
 Kondo, K. — 1527, 2344, 2357
 Kondo, Ken-Ichi — 1490
 Kondo, K.I. — 1594
 Kondo, T. — 1519
 Kondoh, T. — 1882
 Kondratjev, B.K. — 1321
 Kondratyeva, M.A. — 948
 Konecny, R. — 1276, 1376
 Kong, S.H. — 1342
 Kong, Y. — 82, 499, 647, 800
 König, A. — 1091
 Koniges, A.E. — 1912, 1923
 Konijn, J. — 1817
 Konnert, J.H. — 1900
 Kono, A. — 2335
 Kononenko, S. — 1324, 1368
 Konoshima, S. — 1937, 2061, 2062
 Konrad, C.H. — 1553
 Konstadinidis, K. — 449
 Kontsevoi, O.Yu. — 83
 Koo, Y.M. — 1290, 1292
 Koochesfahani, M.M. — 2287
 Koon, D.W. — 528
 Koon, N.C. — 672
 Koontz, R. — 1402
 Koontz, R.F. — 1230, 1288
 Koopman, J. — 1221
 Koopmans, B. — 365
 Kopelman, R. — 813
 Kopf, R.F. — 633, 765
 Koplik, J. — 2230
 Koplik, Joel — 777
 Kopp, R.A. — 1482
 Kopp, S. — 944
 Koppi, K.A. — 604, 657
 Kopylov, N. — 152, 625
 Korableva, Stella L. — 1760
 Koranda, S. — 830
 Korb, C. Laurence — 1773
 Korchin, V.A. — 1577
 Korchuganov, V. — 1239, 1246, 1285, 1292, 1405
 Korde, Raj — 2110
 Korenivski, V. — 369
 Korepin, V. — 595, 1621
 Korepin, V.E. — 392, 1622
 Körffgen, B. — 1858
 Korichi, A. — 1049, 1831
 Korkmarz, E. — 1036
 Korkmaz, E. — 1836, 1847
 Kormanyos, C. — 1817, 1859
 Kormanyos, C.M. — 944, 1817
 Kormicki, J. — 980, 1014, 1015, 1806, 1858, 2170
 Kormiki, J. — 946
 Korn, G. — 2081
 Korn, Jeffrey — 1736
 Kornas, V. — 2335
 Kornfield, D. — 1735
 Kornfield, J.A. — 657
 Kornyshev, Alexei — 360
 Korotkov, A. — 2057
 Korotkov, A.N. — 697
 Korsch, W. — 1034
 Kortan, A. — 426
 Kortan, A.R. — 152, 560, 625, 680
 Kortzen, W. — 1050, 1831
 Kortright, J.B. — 182
 Kortshagen, U. — 2343, 2350, 2354
 Kortyna, A. — 1093
 Kosály, G. — 2268
 Koscielniak, S.R. — 1357, 1364
 Kose, K. — 2315
 Koseff, J. — 2229, 2261
 Koseki, S. — 1401
 Koseki, T. — 1210, 1326, 1382
 Koshelev, A.E. — 636
 Koshelkin, A.V. — 1332
 Koshida, N. — 107
 Koshizuka, N. — 225, 1624
 Kosik, D.W. — 1035
 Koska, W. — 1290
 Koslowsky, V.T. — 1844
 Koss, T.A. — 1021
 Kossler, W.J. — 805
 Kost, Alan — 1768
 Kostas, C. — 1344
 Kosteletzky, V. Alan — 1131
 Kostelich, E.J. — 2194
 Koster, J.E. — 1826, 1846
 Kostial, H. — 834
 Kostic, P. — 242
 Kostolev, V.V. — 1511
 Kostoulas, Y. — 128
 Kostur, V.N. — 390
 Kosuge, K. — 173
 Kosyakin, M. — 1291
 Kot, N.Ch. — 1371
 Kota, C. — 370
 Koteles, E. — 132
 Kothekar, N. — 1659
 Kotliar, G. — 228, 638, 640, 821
 Kotlinski, B. — 1818
 Kotov, N.V. — 1519
 Kotov, V.I. — 1259
 Kotschenreuther, M. — 2075, 2100
 Kotschenreuther, Mike — 2101

- Kottmann, F. — 935
 Kottulski, J.D. — 1533
 Kotz, A.L. — 228
 Koudelka, L. — 113
 Koujbida, R.P. — 1294
 Koul, R. — 1298
 Koul, R.K. — 1298
 Koulsha, A.V. — 986, 987
 Koumoutsakos, P. — 2270
 Kourbanis, I. — 1197, 1255, 1268, 1363
 Kouri, D.J. — 1449
 Koutchouk, J.-P. — 1236, 1366
 Kouvel, J.S. — 122
 Kouveliotou, C. — 1635, 1638
 Kouwenhoven, L.P. — 1614
 Kouzes, R.T. — 1460
 Kovach, C. — 212
 Kovachev, L.M. — 1747
 Kovanis, V. — 234
 Kovarik, M.D. — 584
 Kovash, M. — 913
 Kowalczyk, R.S. — 997
 Kowalewski, M. — 371
 Kowalski, E. — 1578
 Kowalski, J.M. — 597, 812
 Kowalski, S. — 1034, 1368
 Kowitt, M. — 1066, 1203
 Koyama, H. — 107
 Koyama, N. — 1557, 1565, 1571
 Koymen, A. — 579, 728
 Koymen, A.R. — 266, 670, 800
 Koza, M.A. — 452, 1713
 Kozawa, H. — 2008
 Kozchekin, M.A. — 1294
 Kozin, V. — 1368
 Kozlov, E.A. — 1580
 Kozlov, G. — 75
 Kozlov, M. — 1110, 1111
 Kozlov, V.G. — 1720
 Kozlov, V.V. — 2236
 Kozłowska, B. — 1845
 Kozłowski, Mirosław — 1440, 1443
 Kozub, R.L. — 1854, 1855
 Kozub, S. — 1291
 Kozuch, D. — 377
 Kozyrev, E.V. — 1280
 Kraeft, W.D. — 2120
 Krafft, G.A. — 1210, 1213, 1226, 1257, 1287, 1357, 1372
 Kraft, David W. — 919, 1651
 Kraft, T. — 257
 Krahn, J.R. — 145
 Kraichnan, R.H. — 2211, 2228
 Kraichnan, Robert — 1435
 Kraidenov, V.F. — 1573
 Kraimer, M. — 1229
 Krainsky, I.L. — 699
 Krajewski, J.J. — 222
 Krakauer, H. — 270, 390, 460, 620
 Kral, J.F. — 1641
 Krall, J. — 1278, 1279, 1942, 2081, 2098
 Krall, N.A. — 1977
 Krall, Nicholas A. — 1923, 1975
 Krämer, D. — 1233, 1324
 Kramer, Edward J. — 246, 713
 Kramer, E.J. — 90, 295, 350, 409, 419, 482
 Kramer, L.H. — 1836, 1846, 1858
 Kramer, M.J. — 783
 Kramer, Peter — 1909
 Kranbuehl, David E. — 488
 Krasberg, M. — 945
 Krashennikov, S.I. — 2051, 2076, 2123
 Krasiicky, Philip D. — 1019
 Krasik, Ya.E. — 1894, 1895, 2122
 Krasko, Genrich L. — 61
 Krasnopolsky, V. — 1284, 1382
 Krasnykh, A. — 1284, 1317, 1368
 Krasowski, M. — 682
 Krastev, E. — 52
 Krastev, P.I. — 2175
 Kratz, K.-L. — 1844
 Kraus, J.S. — 67
 Kraus, Philip A. — 1022
 Kraus, R. — 1273
 Krause, D. — 1637
 Krause, Jeffrey L. — 1112
 Krause, J.L. — 1112
 Krause, L. — 1124, 1161, 1758
 Krause, Manfred — 911
 Krause, S. — 91
 Kraushaar, J.J. — 943, 1818
 Kraushaar, P. — 1263, 1290
 Krauss, G.G. — 1649
 Krauter, K. — 1225, 1227
 Krauth, Werner — 639
 Krauthauser, Carl — 1153
 Kravis, S. — 2371
 Kraynik, A.M. — 2188
 Krebs, G. — 1204, 1815
 Krebs, S. — 1162
 Krech, R.H. — 2342
 Kree, R. — 263
 Krein, G. — 1838
 Kreischer, K.E. — 2002
 Kreiser, H. — 1197
 Krejcik, P. — 1213, 1214, 1366, 1371
 Kremens, R.L. — 2084
 Kremer, Kurt — 245
 Kremkova, G.N. — 1560, 1566
 Kremliovskiy, M.N. — 1911, 2018
 Kremp, D. — 2120
 Kresin, Vitaly V. — 222
 Kresin, V.Z. — 276, 392, 462, 725
 Kreskovsky, John P. — 315
 Kress, J.D. — 796, 1128
 Kress, Joel D. — 373, 506
 Kress, L. — 2007
 Kress, M. — 2106
 Kreutz, R. — 1289
 Krick, J. — 634
 Kriechbaum, M. — 599
 Krieger, J.B. — 139
 Krieger, K. — 2059
 Krieger, S.J. — 1807
 Kriesel, J. — 2048
 Krim, J. — 379, 596, 670, 750, 827
 Kriman, A.M. — 1448
 Krimm, H.A. — 1020
 Krimm, S. — 487
 Krinsky, S. — 1223, 1234, 1325, 1327, 1330, 1349
 Kriplani, U. — 70, 458, 834
 Krisch, A.D. — 986, 987
 Krishnagopal, S. — 1355
 Krishnamurthi, V. — 1088, 1104
 Krishnamurthy, S. — 799
 Krishnan, M. — 2013
 Krishnan, P. — 349
 Krishnan, R. — 1677
 Krishnaswamy, J. — 1326
 Krispin, P. — 834
 Kriss, B.J. — 943, 1818
 Krive, I.V. — 230
 Kroc, T.K. — 1333
 Kroedel, M. — 1818
 Kroeger, R.A. — 577, 689, 989
 Kroemer, H. — 531
 Kroes, F. — 1201, 1212, 1275
 Kroesen, W. — 2367
 Krofcheck, D. — 1826
 Krogh, M. — 1200, 1201, 1221
 Krogh, Michael — 1442
 Krohn, K.A. — 1337
 Krokhin, A.A. — 230
 Krol, A. — 84, 461, 798
 Kroll, D.M. — 553
 Kroll, N. — 1288, 1354, 1382, 1385, 1395
 Krommes, J.A. — 2101, 2102
 Kronfeld, Andreas — 937
 Kronfeld, Andreas S. — 1459
 Kropp, W.R. — 1021
 Krothapalli, A. — 2202, 2313
 Krotkov, R. — 1651
 Krötz, W. — 2362
 Kroupa, M.A. — 1804
 Krueger, J.J. — 693
 Krueger, W. — 1344, 1386, 2106
 Kruer, W.L. — 1913, 1914, 1915, 1917, 1935, 2080
 Krug, J. — 772, 835
 Kruger, M. — 1517
 Kruger, M.B. — 151, 255, 307
 Krukowski, M. — 1517
 Krukowski, S. — 1504, 1549
 Krumhansl, J.A. — 306, 790
 Krupenkin, T.N. — 685
 Krupnick, J. — 1237, 1294
 Kruse, J.W. — 1625
 Krusell, W. — 794
 Krusin-Elbaum, L. — 122
 Krycuk, A. — 1232, 1382, 1392
 Kryger, R.A. — 983, 984, 997, 1051, 1835
 Krylov, I. — 635
 Krylov, Yu. — 1285
 Kryshkin, V.I. — 1259
 Krzystek, J. — 1609
 Ksendzov, A. — 156
 Ku, H.C. — 72
 Ku, L.P. — 2030
 Kuang, E. — 1282
 Kubitschek, D. — 2250
 Kubo, H. — 283, 1401, 1918, 2054
 Kubo, K. — 1213, 1356, 1357, 1385, 1387
 Kubo, T. — 1393, 1842
 Kubota, C. — 1393
 Kubota, Shigeo — 1714
 Kubotera, K. — 92
 Kucera, D.M. — 1042
 Kucera, J.T. — 782
 Kuchnir, M. — 1290
 Kuchta, Frank D. — 1565
 Kucks, M. — 94, 244
 Kudelainen, V.I. — 1371
 Kudo, H. — 1326
 Kudo, K. — 1393
 Kudoh, Y. — 1488, 1575
 Kudriavtsev, V.V. — 2249, 2264
 Kudrnovsky, J. — 216, 799
 Kudryavsev, V.G. — 1381
 Kuech, T.F. — 473, 474
 Kuehl, H.H. — 1993
 Kuei, J. — 82
 Kueny, A.W. — 1727
 Kuga, Y. — 383
 Kugel, H. — 2092, 2095, 2121
 Kugel, H.W. — 2095
 Kugi, J. — 1841
 Kuhl, J. — 316
 Kuhlmann, H.C. — 2200
 Kuhn, K. — 764
 Kühn, O. — 121, 398
 Kuhn, S. — 1034, 1821
 Kuhne, U. — 1560
 Kuhnert, A. — 1013, 1049, 1050, 1831
 Kuijt, J. — 1201
 Kuiper, L. — 968
 Kukes, E.W. — 395
 Kukhtin, V. — 1322
 Kukla, Kris W. — 1758
 Kukla, K.W. — 1097, 1120, 1139
 Kukushkin, A.B. — 2051
 Kukushkin, I. — 302
 Kula, W. — 128, 689
 Kulander, K.C. — 1099, 1145, 1770, 2334
 Kulcsar, G. — 1989
 Kulick, J.D. — 2278
 Kulikov, A. — 1287, 1636
 Kulikov, A.V. — 1312, 1313, 1342
 Kulinski, S. — 1252, 1286, 1287, 1384
 Kulipanov, G. — 1285, 1367, 1405
 Kulke, B. — 1997
 Kulkov, S.N. — 1494, 1518
 Kulnis, W.J., Jr. — 543
 Kulnitskii, B.A. — 1559
 Kulsrud, R.M. — 2041
 Kulsrud, Russell — 1926
 Kumada, M. — 1333, 1401
 Kumagi, Shinji — 1509
 Kuman, M. — 2350
 Kumar, A. — 54, 916
 Kumar, A. Satheesh — 2330
 Kumar, B.S. — 1837, 1851
 Kumar, D. — 2355, 2367, 2377
 Kumar, M. — 282
 Kumar, P. — 269
 Kumar, S. — 1462, 1810, 2211, 2309
 Kumar, Satish — 409, 417, 425
 Kumar, Satyendra — 405, 406, 652, 819, 845
 Kumar, S.K. — 91, 143
 Kumar, Sudha — 562
 Kumar, T.S. Sampath — 1544
 Kumar, V. — 1065
 Kumarakrishnan, A. — 1154, 1170, 2346
 Kumareson, P. — 281
 Kuma-Zawa, M. — 1478, 1526
 Kumazawa, R. — 1205
 Kumbartzi, G. — 1048, 1831
 Kumbasar, A.H. — 1938, 1939
 Kummerer, R. — 1065
 Kumpan, S.A. — 2085
 Kunchur, Milind N. — 459
 Kunde, G.J. — 1853
 Kunhardt, E.E. — 2047
 Kunka, M.D. — 2294
 Kunkel, G. — 636
 Kunkel, W.B. — 1335
 Kunhardt, E.E. — 2360
 Kunz, M.C. — 421
 Kunz, M.S. — 351
 Kunz, R.E. — 705
 Kuo, C.C. — 1228
 Kuo, K.H. — 1550
 Kuo, S.P. — 1889, 1908, 1968, 2003, 2078, 2123
 Kuo, T. — 1253, 1335
 Kuo, T.C. — 285
 Kuok, M.H. — 1570
 Kupersmidt, H. — 1942, 2118
 Kupfer, K. — 2068, 2105
 Kupferberg, Lenn C. — 422
 Kuprat, A.P. — 1892
 Kuprianov, A.P. — 1301
 Kuschus, P. — 2055
 Kuptsov, I. — 1397
 Kuramoto, R. — 1401
 Kurbanov, O. — 987
 Kurdak, C. — 80, 179
 Kurennoy, S.S. — 1352
 Kurfess, J.D. — 989
 Kuric, M.V. — 170
 Kurihara, S. — 462

- Kurihara, Susumu — 638
 Kurkin, G. — 1397
 Kurki-Suonio, T.K. — 1937
 Kurkjian, C.R. — 378
 Kurnaz, M.L. — 63
 Kurochkin, I.A. — 1204
 Kuroda, H. — 2357
 Kuroda, S. — 1212, 1299
 Kurokawa, Shin-Ichi — 1250, 1366
 Kuroki, K. — 2363
 Kurosaka, M. — 2312
 Kurrer, Ch. — 654
 Kurth, Lisa — 1860
 Kurth, W. — 2019
 Kurtz, C.A. — 1139
 Kurtz, Charles A. — 1758
 Kurtz, R.L. — 781
 Kurtz, Sarah R. — 737
 Kurtz, S.K. — 407
 Kurtz, S.R. — 513
 Kurtze, D.A. — 589
 Kurz, C. — 1956, 1957
 Kurz, H. — 315, 734
 Kurz, K. — 1819
 Kurz, K.L. — 933
 Kurz, M. — 1285, 1287, 1288
 Kusaba, K. — 1568
 Kusaba, Keiji — 1516
 Kusche, K. — 1310
 Kushner, Mark J. — 2328, 2330,
 2331, 2341, 2345, 2347, 2352, 2356,
 2369, 2373
 Kushner, M.J. — 2346
 Kushnir, V.A. — 1316, 1358
 Kushwaha, Manvir S. — 384, 532
 Kushwaha, M.S. — 384
 Kuske, B. — 1324
 Kuske, P. — 1324
 Kusner, R.E. — 800
 Kusse, B.R. — 2046, 2074
 Kussmaul, A. — 60, 160, 325
 Kustom, R. — 1205, 1231, 1249,
 1266, 1284, 1351, 1381, 1386, 1389,
 1397, 1401
 Kuthi, A. — 2360
 Kuti, Julius — 937
 Kutler, K. — 800
 Kutschera, W. — 927
 Küttel, O.M. — 2376
 Kutzelnigg, W. — 1119
 Kuwahara, H. — 345
 Kuwahara, K. — 2236
 Kuwahara, M. — 108
 Kuwata-Gonokami, Makoto — 1772
 Kuyucak, S. — 1848
 Kuyucak, Serdar — 1848
 Kuyumchev, A. — 1576
 Kuyumchev, A.A. — 1521
 Kuzelev, M.V. — 2116
 Kuzmiak, V. — 1616
 Kuzmin, I.A. — 1378
 Kuzminski, J. — 1290
 Kuznetsov, A.V. — 687
 Kuznetsov, G.I. — 1280
 Kuznetsov, N. — 1367
 Kuznetsov, S. — 1229, 1285, 1325
 Kuznia, J.N. — 446
 Kuzyk, M.G. — 538, 543
 Kvale, M. — 383, 767
 Kvale, T.J. — 1131
 Kvitik, E.V. — 1532
 Kwak, K.W. — 507
 Kwan, C.K. — 1100, 1101
 Kwan, C.M. — 1214
 Kwan, J.W. — 1320, 2052
 Kwan, T. — 1281
 Kwan, T.J. — 1395
 Kwan, T.J.T. — 1964
 Kwasnick, R.F. — 537
 Kwei, G.H. — 388, 644
 Kwiatkowski, J.T. — 814, 815
 Kwiatkowski, K. — 1828
 Kwiatkowski, S. — 1377, 1383
 Kwiram, A.L. — 1609
 Kwiram, Alvin L. — 1609
 Kwo, J. — 212, 222, 227, 271
 Kwok, P.W. — 989
 Kwok, S.H. — 763, 813
 Kwok, T. — 61
 Kwok, W.K. — 345, 347, 635, 802
 Kwon, C. — 59, 212, 227, 461
 Kwon, I. — 372, 629, 1128
 Kwon, M. — 1952
 Kwon, S. — 1222
 Kwon, S.-I. — 2047
 Kwon, T.H. — 2160
 Kwong, H.S. — 1129
 Kwong, Victor H.S. — 1129
 Kwun, S.-I. — 1607
 Kycia, S. — 626
 Kyle, G. — 1817, 1818
 Kyle, G.S. — 1816
 Kyoya, K. — 1612
 Kyser, R.H. — 1999
 Kytömaa, H.K. — 2294
 Kyu, T. — 293, 485
 Laane, J. — 415, 1671, 1672
 Laane, Jaan — 1671, 1672
 Laasonen, Kari — 505
 Labat, K.B. — 142
 Labaune, C. — 1912, 1915
 Laberge, D.R. — 764
 Labombard, B. — 1955, 1958
 Labrador, A.W. — 933
 Labrousche, J. — 1301, 1302
 Lacabanne, C. — 416, 421, 487, 603
 Lacerda, A. — 79, 223
 Lacey, R. — 927, 940, 941, 1795,
 1815, 1828, 1854
 Lachambre, J.-L. — 2029
 Lackey, J. — 1206, 1219
 Lackey, S. — 1227
 Lackner, K.S. — 2227, 2248, 2286
 Lackritz, H.S. — 413, 417, 420, 424,
 486
 Laclare, J.L. — 1232
 Laco, R.C. — 160, 705
 LaComb, R. — 234, 705
 Lacomme, M. — 1538
 Lacy, Fred — 183, 672
 Lad, R.J. — 379
 Ladd, A.J.C. — 778
 Ladd, Anthony J.C. — 2300
 LaDue, J. — 2187
 Ladygin, V. — 1036
 Laegsgaard, E. — 522
 LaFemina, John P. — 58, 280
 La Femina, J.P. — 334, 564
 Laflamme, C. — 2374
 Lafond, W. — 1040
 LaForest, R. — 1813
 Lafortune, K.N. — 1153
 LaFosse, D.R. — 980, 981, 1856
 Laframboise, J.G. — 2013
 Lagally, M. — 679
 Lagally, Max G. — 508
 Lagally, M.G. — 164, 333, 334
 Lagarde, T. — 2328, 2332, 2339
 Lagasse, R.R. — 487, 744
 Lagerwall, S.T. — 534
 Lagos, Theresa — 1644
 Lagowski, J.b. — 1630
 Lagus, Mark E. — 2334
 La Haye, R.J. — 1936, 2062, 2063
 Lahey, R.T., Jr. — 2284
 Lai, A. — 1034
 Lai, B. — 1284
 Lai, C.C. — 72
 Lai, C.H. — 1993
 Lai, K.S. — 984
 Lai, Y. — 1723
 Laibowitz, R.B. — 329, 636
 Laicher, G. — 455
 Laiho, R. — 1609
 Laikhtman, B. — 645
 Lail, B. — 1816, 1817
 Laird, R. — 1274
 Lake, P. — 2045
 Lake, R. — 760
 Lake, R.K. — 641, 761
 Lakew, B. — 689
 Laks, David — 444
 Laks, David B. — 737
 Lal, A. — 1988, 1997, 2084
 Lal, N. — 949
 Lalazissis, G.A. — 1615
 Lalle, P. — 1487, 1491, 1499, 1547
 Lam, A.J. — 2357
 Lam, D.J. — 407, 452
 Lam, H. — 94
 Lam, J. — 314, 569, 1609
 Lam, J.C. — 580
 Lam, L. — 700, 701
 Lam, N.T. — 1887, 1888, 2105
 Lam, Q.H. — 733
 Lam, S.H. — 2289
 LaMadrid, M.A. — 748
 Lamain, H. — 1894, 2122
 Lamanna, G. — 1371
 Lamb, Mark — 750
 Lamb, Richard C. — 1031
 Lamba, J.J.S. — 158
 Lambert, D. — 1001
 Lambert, G. — 1214
 Lambert, J.M. — 1825
 Lambert, V.E. — 783
 Lambertson, G. — 987, 1388
 Lambertson, G.R. — 1308
 Lambie, W. — 1197, 1245
 Lambrecht, W.R.L. — 285, 515, 565,
 566, 622, 744
 Lambrianides, P. — 538
 Lambright, D. — 1627
 Lamelas, F. — 324
 Lamkin, K. — 1841, 1842
 Lamm, A.J. — 2356
 Lamm, D. — 1841
 Lamm, L.O. — 2175
 Lamm, M. — 1037
 Lamm, M.J. — 985, 986, 1290
 Lammert, P.E. — 304
 Lamont, M. — 1228, 1365
 Lamoreaux, S.K. — 1111, 1121
 Lamoreaux, Steve K. — 955
 Lamoureux, M. — 1157
 Lamouri, A. — 699
 Lamp, C.D. — 1668, 1670, 1676,
 1677
 Lamp, C. David — 266, 377, 513
 Lampe, M. — 1939, 1940, 2047, 2354
 Lampe, Martin — 1899
 Lampel, M. — 1311
 Lampoura, S.S. — 410
 Lamzin, E. — 1322, 1323
 Lan, M.D. — 72, 103, 171, 222, 241,
 387
 Lancaster, C.A. — 1342
 Lancaster, H. — 1208
 Lanczycki, C. — 379
 Land, Bruce — 1442
 Land, D.J. — 951, 1148
 Landau, D.P. — 1438, 1446, 1450,
 2164
 Landau, R.H. — 1824, 1834, 1835
 Landau, Rubin H. — 1033
 Landauer, Rolf — 490
 Lande, K. — 1040, 1797
 Landee, Christopher — 1621
 Landee, C.P. — 533
 Landen, O. — 1884
 Landen, O.L. — 2083, 2122
 Lander, G.H. — 324
 Landers, P. — 1948
 Landers, P.K. — 1948
 Landers, R. — 780
 Landes, B.G. — 411
 Landgraf, J.M. — 642
 Landis, D. — 1205, 1638
 Landis, P.G. — 519
 Landis, R. — 1206
 Landman, Uzi — 120, 220, 433, 573,
 652, 653, 1437
 Landmann, Uzi — 1452
 Landolt, M. — 442, 504
 Landry, Gary D. — 1732
 Landsberg, A.M. — 1460, 2205, 2221
 Landtman, M. — 1095
 Lane, B. — 2343
 Lane, K.R. — 475
 Lane, Neal F. — 1130
 Lane, N.F. — 1161, 1165, 2361, 2371
 Lane, R.O. — 1825, 1845
 Lane, S. — 2080
 Lane, S.M. — 1539, 2079
 Lang, D.P. — 677
 Lang, G.H. — 1441
 Lang, H.P. — 1606
 Lang, J.M. — 1503
 Langdon, A.B. — 1305, 1305, 1365,
 1893, 1914, 1917, 1935, 2017
 Langdon, A. Bruce — 1996
 Lange, F. — 1262
 Langenbeck, B. — 1373
 Langenbrunner, J. — 943, 1036, 1387
 Langenbrunner, J.L. — 943, 982,
 1818
 Langer, J.S. — 589, 644, 799
 Langer, S.H. — 2043, 2086
 Langer, Stephen A. — 651
 Langer, Steven — 535
 Langer, Steven H. — 2086
 Langford, S.C. — 207, 351, 786, 790
 Langhoff, P.W. — 1118
 Langley, K.H. — 94, 413
 Langoff, P.W. — 1148
 Langreth, David C. — 279, 497, 498
 Langreth, D.C. — 628
 Langton, Chris — 1433
 Languell, M.L. — 2166
 Lanni, C. — 1263
 Lannin, J. — 490
 Lannin, J.S. — 501, 744
 Lanou, R.E. — 1044
 Lanouette, William — 961
 Lantz, S.R. — 1440
 Lanz, P. — 1393
 Lanzerotti, M.Y.D. — 790, 1538
 Lao, K.Q. — 1627
 Lao, L.L. — 1936, 2061, 2062, 2065,
 2066, 2121
 Lao, X. — 406
 Laouini, Nozha — 305
 Lapatovich, W.P. — 2378
 Lape, John M. — 2373
 Lapenta, G. — 1455
 Lapenta, Giovanni — 1891
 Lapeyre, Gerald J. — 232
 Lapeyre, G.J. — 231, 510, 728, 1855
 Lapicki, G. — 1669, 1681
 Lapidus, L. — 1111

- Lapitsky, S.N. — 1203, 1204, 1219
 LaPointe, Michael A. — 1970
 La Porta, A. — 526
 Lapostolle, P. — 1362
 Lapp, M. — 1767
 Lappas, T. — 2263
 Lapshin, V. — 2118
 Lara, P.D. — 1320
 Laredo, E. — 545, 741
 Larese, John Z. — 748
 Larese, J.Z. — 279
 Larimer, R.-M. — 1804, 1829, 1830, 1855
 Larkin, D. — 565
 Larkin, M.I. — 126
 Larocque, R.Y. — 2359
 LaRose, P.G. — 2293
 Larour, J. — 2120
 Larralde, Hernan — 169
 Larriva, R. — 1553
 Larroche, O. — 2087
 Larsen, C. — 1021
 Larsen, J.T. — 1456
 Larsen, R. — 1369
 Larson, Alvin R. — 2030
 Larson, B. — 526
 Larson, B.C. — 113
 Larson, C. William — 1148
 Larson, D.J. — 967, 1123, 1124, 1892
 Larson, Jonathan — 1102
 Larson, R.G. — 194, 657, 845
 Larson, Ronald — 723
 Larsson, Anders G. — 1768
 Larsson, B. — 1338
 La Sala, John E. — 375
 Lash, J.S. — 1900
 Lasher, William — 1654
 Lasheras, J.C. — 2211, 2253, 2278
 Lashmore-Davies, C.N. — 2054
 Lashmore-Davis, C.N. — 2018
 Lasinski, B.F. — 1914, 1915, 1935
 Laskowski, E.J. — 633
 Laslett, L.J. — 1304
 Lasnier, C.J. — 1328, 2059, 2060
 Lassen, J. — 935, 1674
 Lassila, D.H. — 1563
 Lath, A. — 1203
 Latham, P.E. — 1280, 1281, 1963, 1999
 Lathrop, Daniel P. — 2191
 Latour, L.L. — 166
 Latta, Greg — 968
 Lattery, Mark J. — 1017
 Lau, A. — 1976
 Lau, C.N. — 739
 Lau, S.S. — 1617
 Lau, Y.-T. — 1040, 2017
 Lau, Y.Y. — 1348, 1963, 2074
 Laube, S. — 2360, 2375
 Lauckner, R. — 1210
 Laudenslager, James B. — 1766
 Laufenberg, J. — 1980
 Launspach, J. — 1301, 1302
 Lauret, J. — 927, 940, 1815, 1854
 Laurich, B.K. — 2366
 Laurier, Wilfrid — 1747
 Lauritsen, J. — 1110
 Lauritsen, T. — 1014, 1049, 1819, 1830, 1831, 1832
 Laux, S.E. — 54
 Laverty, M. — 1392
 Lavine, C.F. — 179
 Lavine, T.L. — 1288, 1391, 1395, 1396
 LaViolette, R.A. — 187, 310, 684
 Lavoie, C. — 321
 Lavrentovich, O.D. — 818
 Lavrentovich, Oleg — 819
 Law, B.M. — 121, 122
 Lawall, John — 1141
 Lawandy, N.M. — 1718
 Lawler, J.E. — 1172, 2335, 2372, 2373, 2377
 Lawless, K.R. — 784
 Lawrence, C.J. — 2220
 Lawrence, D.J. — 949
 Lawrence, G. — 1339
 Lawrence, J. — 642, 643, 758
 Lawrence, J.M. — 178, 644
 Lawrence, R.J. — 1554, 1563
 Lawson, V. — 1366
 Lawson, W. — 1280, 1281, 1999
 Lax, Melvin — 359
 Laxdal, R.E. — 1253
 Lay, T.S. — 236
 Laymon, C. — 1816, 1817
 Laymon, C.M. — 944
 Layne, W.B. — 1672
 Layton, E.G. — 1105, 1123
 Lazar, D.P. — 1514
 Lazarev, N.V. — 1273
 Lazarus, David — 972
 Lazarus, E.A. — 1936
 Lazzari, J.L. — 321
 Lazzouni, M.E. — 182, 703
 Le, H. — 349
 Le, M. — 1938, 1957
 Lea, Suzanne — 1005
 Leadley, D.R. — 402
 Leal, L.G. — 2225
 Lear, K.L. — 1724
 Learned, J.G. — 1021
 Leaseburg, Michael J. — 1629
 Leask, M.J.M. — 469
 Leath, P.L. — 752, 1624
 Leavitt, Richard P. — 1754
 Leavitt, R.P. — 592, 704
 Le Bars, J. — 1300
 Lebedev, N. — 1397
 Lebedev, T.S. — 1518, 1577
 Lebedev, V. — 1367, 1371
 Lebedev, V.B. — 1910
 LeBlanc, B. — 2092, 2093, 2094, 2095, 2121
 LeBlanc, B.P. — 1959
 LeBlanc, P. — 2251
 Leblans, M. — 468, 469
 Leblond, B. — 1314
 Leboeuf, J.G. — 1900
 Leboeuf, J.-N. — 1912, 2014, 2015, 2075, 2099, 2101
 LeBoeuf, R.L. — 2246
 Le Breton, J.P. — 1886, 2087, 2125
 Lebrun, C. — 1828
 Lebrun, D. — 1826
 LeBrun, M.J. — 2015, 2075
 LeBrun, T. — 1125, 1149, 1150
 Leburton, J.P. — 54, 394, 708, 762
 LeCave, M. — 94
 Le Clair, G. — 1891
 Leclair, L.R. — 1117, 2332
 Leclercq, J.L. — 321
 Le Coz, Y. — 1049, 1831
 Ledbetter, H. — 830
 Lederman, David — 211, 259
 Lederman, M. — 340
 Ledgerwood, M.L. — 808
 Le Diberder, F. — 1222
 Le Dizès, S. — 2290
 le Doussal, P. — 553
 Ledoyen, F. — 540
 Leduc, E. — 2375
 Leduc, H.G. — 690
 Le Duff, J. — 1368
 Ledvij, M. — 325, 580, 692
 Lee, A. — 312
 Lee, B. — 1283, 1683
 Lee, B.J. — 1946, 2065
 Lee, B.W. — 73, 75
 Lee, C. — 763, 926, 1811, 2353
 Lee, C.H. — 285, 515, 744
 Lee, Changyol — 505
 Lee, C.K. — 1040
 Lee, C.P. — 2226
 Lee, D. — 2092, 2121
 Lee, D.-H. — 45, 951, 1148
 Lee, D.K. — 2038, 2093, 2107
 Lee, D.K.K. — 588
 Lee, Dung-Hai — 500
 Lee, E. — 761, 1995
 Lee, E.T.P. — 2368
 Lee, E.Y. — 285
 Lee, Geunseop — 286
 Lee, H. — 133, 625, 2370
 Lee, H.C. — 837, 838
 Lee, Hee S. — 528
 Lee, H.S. — 77, 539, 1286
 Lee, Hyun C. — 240
 Lee, Ida — 118
 Lee, Insook — 810
 Lee, I-Y. — 980, 1013, 1014, 1015, 1049, 1050, 1050, 1806, 1831, 1857, 1858, 2170
 Lee, J. — 1436, 2225
 Lee, J.C. — 711, 1228
 Lee, J.H. — 2069
 Lee, J.-J. — 2222
 Lee, Jon — 2269
 Lee, Jong-Rim — 654
 Lee, Jooyoung — 654
 Lee, J.T.C. — 2327
 Lee, J.W. — 484
 Lee, J.Y. — 331
 Lee, K. — 1035, 1092
 Lee, Keeyung — 83
 Lee, K.H. — 670, 801, 837
 Lee, Kiyoung — 2203
 Lee, K.Y. — 229, 230
 Lee, L. — 944, 1036, 1847, 1859
 Lee, L.L., Jr. — 926, 927, 1812
 Lee, L.M. — 1484, 1528
 Lee, L.T. — 420, 713
 Lee, M. — 1238, 1239, 1280, 1324
 Lee, M.A. — 1659
 Lee, Mark — 234
 Lee, M.C. — 2078
 Lee, M.H. — 796
 Lee, Michael A. — 586, 846, 1661
 Lee, Mierie — 808, 1572
 Lee, M.J. — 1242, 1967
 Lee, M.J.G. — 522, 523
 Lee, M.K.E. — 1281, 1999
 Lee, M.S. — 410
 Lee, M.W. — 2160
 Lee, N.W. — 77
 Lee, P. — 2079
 Lee, P.A. — 463, 641
 Lee, R.L. — 2067
 Lee, R.W. — 1484, 1915, 1934, 2082
 Lee, S. — 117, 163, 761, 1223, 2002, 2202
 Lee, S.A. — 120, 265, 531, 1120, 1572, 1660, 1662, 1664
 Lee, S.B. — 529, 1678
 Lee, Seung Hee — 1660
 Lee, S.-F. — 671, 734
 Lee, S-G. — 1888
 Lee, S.H. — 765
 Lee, S.L. — 579
 Lee, S.R. — 562
 Lee, S.T. — 132, 373
 Lee, Sukmock — 164
 Lee, S.Y. — 986, 1196, 1197, 1238, 1245, 1257, 1258, 1295, 1358
 Lee, T. — 520, 1232, 1345, 1378
 Lee, T.D. — 952, 1723
 Lee, T.G. — 1399
 Lee, T.J. — 1682
 Lee, T.K. — 696
 Lee, T.-M. — 1051, 1662
 Lee, T.N. — 1235
 Lee, T.P. — 1713
 Lee, T.-S.H. — 1840
 Lee, W.C. — 76, 188, 226, 277, 331, 1625
 Lee, W.W. — 1891, 2015, 2099, 2100
 Lee, W.Y. — 1021
 Lee, Y. — 2043
 Lee, Y., Y. — 1253
 Lee, Y.H. — 832, 844, 1719
 Lee, Yim T. — 2113
 Lee, Y.Y. — 2212
 Leeb, H. — 1825
 Lee-Franzini, J. — 984
 Leegwater, J.A. — 682
 Leemans, W. — 1237, 1285
 Leemans, W.P. — 1997
 Leen, T.M. — 630
 Lefakis, H. — 784
 Le Faou, Anne — 416
 Lefloch, F. — 475
 LeFlohic, Marc P. — 1759
 Le Flohic, M.P. — 1094
 Lefmann, W.C. — 985, 986, 1037
 Lefrant, S. — 159
 Legault, R. — 1597
 Leger, J.M. — 1527, 1552
 Leger, L. — 350
 Legg, S. — 2317
 Leggett, C. — 1037
 Legner, H. — 2196
 Legoues, F.K. — 624
 LeGrand, D.G. — 417
 Legrange, J.D. — 378
 Legros, C. — 2028
 Lehecka, T. — 2085
 Leheny, Robert L. — 63
 Lehmann, A. — 1818
 Lehmann, Kevin — 50
 Lehmann, Kevin K. — 1725
 Lehmborg, R.H. — 1913, 2085
 Lehmer, R. — 1920, 2095
 Lehmer, R.D. — 1912
 Lehr, D. — 2044
 Lehr, F.M. — 1896
 Lehrer, W.F. — 987
 Lehrman, I. — 1326
 Lehrman, I.S. — 1311, 1326
 Lehrmann, I. — 1234
 Lei, Ming — 389, 396
 Lei, Ning — 599
 Lei, T. — 621
 Leibenguth, R.E. — 399, 760, 1719
 Leibig, M. — 700, 1627
 Leibovich, S. — 2224
 Leibsle, F.M. — 341
 Leifeste, G.T. — 1200, 1201, 1217, 1361
 Leighton, Jim — 1440
 Leighton, R.I. — 2215, 2217, 2218
 Leiken, Sergei — 495
 Leitch, M.J. — 1816
 Leite, V.B.P. — 268
 Leite, D. — 919
 Leith, J.R. — 2239
 Leiweke, Robert J. — 1974
 Lejay, P. — 79
 Lejay, Pascal — 634
 Lele, S.K. — 2202, 2265, 2298
 Lemaire, M.-C. — 1853
 Lemar, E.R. — 1547, 1564
 Lemberger, T.R. — 70, 331

- LeMesurier, B.J. — 1993
 LeMeune, Marylloyd — 513
 Lemke, Raymond W. — 2001
 Lemma, N. — 1948
 Lemmer, R.H. — 1639
 Lemons, Don S. — 1891
 Len, P.M. — 364
 Lenahan, P.M. — 376, 633, 634
 Lenchyshyn, L.C. — 84
 Lenck, Stephan — 330
 Leneman, D. — 1887, 1965
 Leng, J.M. — 206, 210, 258
 Leng, Y. — 1943
 Leng, Yaojian — 540
 Lengel, G. — 231, 233, 335
 Lengsfeld, B.H., III — 1099, 1117, 1147, 2334
 Lengsfeld, Byron H. — 2348
 Lenisa, P. — 1371
 Lenk, T.J. — 412, 449
 Lenkszus, F. — 1210, 1229, 1274
 Lennox, A.J. — 1272, 1337
 Lenosky, T.J. — 490
 Lenosky, Tom — 742
 Lenz, J. — 1319, 1320
 Leo, Karl — 1752
 Leon, M. — 314, 569, 580
 Leon, R. — 1611
 Leonard, A. — 2194, 2243, 2263, 2270
 Leonard, A.W. — 2059, 2060, 2062
 Leonard, B.P. — 2286
 Leone, S.R. — 1088
 Leone, Stephen R. — 1745
 Leonhardt, W.J. — 1263
 Leoni, R.E. — 176
 Leou, K.C. — 2001
 Lepeltier, V. — 1222
 Lepore, F.A. — 2315
 Lepp, S. — 1128
 Lerch, P. — 83, 500
 Lerche, R.A. — 2083, 2122
 Lerman, Kristina — 2267
 Lerner, D.M. — 631
 Lerner, I.V. — 537
 Leroy, R. — 1339
 Le Roy, R.J. — 1760
 Le Sage, G.P. — 1941
 Leshchuk, A.A. — 1595
 Leske, R.A. — 948
 Lesko, K.T. — 1804, 1829, 1830, 1850, 1855
 Leskovar, M. — 514
 Leslie-Pelecky, D.L. — 743
 Lessner, E. — 1266, 1324
 Lessner, E.S. — 1255
 Lester, Marsha I. — 1740
 Lestrade, P. — 1638
 Le Taillandier, P. — 1301, 1302
 Letaw, J.R. — 934
 Leterrier, Y. — 416
 Letessier-Selvon, A. — 1815
 Letoullec, R. — 1483, 1515
 Lett, P. — 934, 1169
 Lettieri, T. — 1558
 Letton, A. — 415, 424
 Letts, J. — 1640
 Letzring, S.A. — 2085
 Leu, J. — 1645
 Leu, Tzong-Shyng — 2234, 2275
 Leuchtag, H. Richard — 1668
 Leung, K. — 1261, 1291, 1325
 Leung, Ka-Ngo — 1320
 Leung, K.-N. — 1313, 1320, 1322, 1335, 1897, 2047, 2336
 Leung, K.T. — 510, 549, 683, 1134, 1152
 Leung, P.T. — 827, 828
 Leung, W.C. — 985, 986, 1037
 Leung, W.P. — 735
 Leuschner, M. — 914, 1804
 Levedahl, W.K. — 2043, 2083
 Level, M.P. — 1323
 Levene, H.B. — 682
 Leventhal, J.J. — 1139
 Leveque, E. — 2295
 Lévesque, S. — 2337
 Levi, A.F.J. — 180, 1734
 Levi, Carlos G. — 207
 Levicehev, E. — 1239, 1246, 1285, 1292, 1325, 1405
 Levin, A. — 2369
 Levin, D. — 1021
 Levin, G.A. — 583, 731, 732
 Levin, J.C. — 1092
 Levin, K. — 175, 227, 391, 392
 Levin, Kathy — 97
 Levin, T.M. — 1042
 Levine, Alfred M. — 1758
 Levine, G. — 391
 Levine, H. — 380, 470, 701, 2230
 Levine, Zachary — 562
 Levine, Zachary H. — 687
 Levine, Z.H. — 687
 Levington, F. — 2038
 Levinski, Vladimir — 2304
 Levinton, F. — 2032, 2037, 2038, 2093
 Levinton, F.M. — 1906, 2037, 2038
 Levitas, Valery I. — 1516
 Levitas, V.I. — 1532, 1595
 Levitz, Pierre — 434
 Levush, B. — 930, 931, 1282, 1938, 1963, 2003
 Levy, A. — 227
 Levy, C.D.P. — 1343
 Levy, D. — 544
 Levy, Don — 149
 Levy, F. — 517
 Levy, J. — 453
 Levy, L.B., Jr. — 1685
 Levy, M. — 88, 89
 Levy, Moises — 276
 Levy, P. — 1836, 1847
 Levy, Peter M. — 442
 Lew, D. — 583
 Lew, D.J. — 276
 Lewalle, Jacques — 2296
 Leweke, T. — 2304
 Lewenkopf, Caio — 222
 Lewicki, A. — 122, 212
 Lewin, Walter H.G. — 1635
 Lewis, A. — 386
 Lewis, C.G. — 2264
 Lewis, C.L.S. — 1943
 Lewis, D.A. — 425
 Lewis, Francis H. — 996
 Lewis, J.D. — 1039
 Lewis, J.F. — 1951
 Lewis, J.M. — 1013
 Lewis, J.R. — 1131
 Lewis, Laurent J. — 218, 264, 629, 1619
 Lewis, L.J. — 82
 Lewis, R. — 2302
 Lewis, Raymond A. — 2086
 Lewis, S. — 1265
 Lewis, Steven P. — 505
 Lewitowicz, M. — 1339
 Lew Yan Voon, L.C. — 585
 Leyderman, Alexander — 601, 1738
 Lhenry, I. — 1812
 Li, Aijun — 169
 Li, Chihwen — 2345
 Li, Chiping — 2262
 Li, C.K. — 2045, 2109, 2110
 Li, C.-Y. — 1335, 2188
 Li, D. — 1197, 1245, 1257, 1295, 1311
 Li, David C. — 1775
 Li, D.H. — 1568
 Li, Ding — 2014
 Li, D.J. — 1534, 1535, 1587
 Li, Dongmei — 366
 Li, Dongqi — 286, 672, 699
 Li, F. — 706, 2250
 Li, Fang — 744
 Li, G. — 89, 263, 264, 389, 390, 415, 593, 1645
 Li, Gang — 338
 Li, G.G. — 389
 Li, Guifang — 1982
 Li, G.-X. — 1949, 1951, 1952, 1953
 Li, H. — 364, 543
 Li, H.F. — 170
 Li, H.S. — 706
 Li, Hua — 364
 Li, J. — 653, 703, 768, 1088, 1102, 1123, 1655, 1663, 1813, 1847, 1852, 2164, 2166
 Li, J.H. — 367
 Li, Jian — 1737
 Li, Jiangang — 2008
 Li, Jianmeng — 633
 Li, John J. — 2241
 Li, J.P. — 565
 Li, J.S. — 1934, 1935
 Li, K.-H. — 107
 Li, K.T. — 2236
 Li, Lian — 448, 728
 Li, L.P. — 1575
 Li, L.S. — 410, 483
 Li, M. — 1197, 1246, 1754
 Li, M. Ming — 512, 1479
 Li, N. — 1295
 Li, Ning — 990
 Li, P. — 267, 1035, 1052, 1846
 Li, Pingwah — 1670
 Li, Q. — 461, 1331, 1626
 Li, Qi — 59, 74, 75, 126, 212, 227, 387, 805, 806, 838
 Li, Qiang — 189
 Li, Qiming — 278, 320
 Li, Q.P. — 174, 333, 694
 Li, R. — 1226, 1355
 Li, Rong — 590
 Li, R.R. — 838
 Li, S. — 1122, 1135, 1650, 1652, 1762, 1806
 Li, S.C. — 2249
 Li, Shaozhong — 991, 992, 1718
 Li, Shi — 212
 Li, Shou-Tian — 1576
 Li, S.L. — 1534, 1535, 1674, 1681
 Li, T. — 927, 940, 941, 998, 1815, 1828, 1852, 1854
 Li, T.-Q. — 2288
 Li, W. — 209, 813, 2026
 Li, Wei — 795, 799
 Li, Wei-Gang — 1677
 Li, Wen — 2234
 Li, W.H. — 178, 783
 Li, W.J. — 284, 336, 592, 702
 Li, X. — 1358, 1811, 1817
 Li, Xiaodong — 915, 1859
 Li, Xiaomei — 281, 576
 Li, Xiao-Ping — 500
 Li, Xiuling — 786
 Li, X.-P. — 571
 Li, X.Z. — 1484, 1550, 1568, 1580
 Li, Y. — 139, 313, 375, 507, 1163
 Li, Ya — 65, 322
 Li, Ye — 279
 Li, Y.F. — 172, 173
 Li, Y.M. — 821, 822
 Li, Y.P. — 471
 Li, Y.Q. — 70
 Li, Z. — 407, 515, 1242, 1257, 1335
 Li, Zheng-Xio — 276
 Li, Zili — 819
 Li, Ziyou — 799
 Li, Z.Y. — 73, 212, 223, 272, 274, 387, 438
 Liakopoulos, A. — 2291
 Lian, W. — 2285
 Liang, B.W. — 1611
 Liang, C. — 1294
 Liang, C.F. — 1339, 1812
 Liang, F.-P. — 2196
 Liang, G. — 191, 225
 Liang, J.F. — 926, 927
 Liang, J.M. — 206
 Liang, K.S. — 319
 Liang, R. — 71, 227, 329, 460
 Liang, Ruixing — 189, 276, 326, 805
 Liang, R.X. — 60
 Liang, S. — 182, 697, 1662
 Liang, Shoudan — 428, 701
 Liang, Xinglong — 799
 Liang, Y. — 231, 1014, 1049, 1819, 1832
 Liang, Y.-M. — 1910, 1910
 Liang, Yong — 280
 Liao, C. — 1089, 1171
 Liao, Jun — 93
 Liao, L.B. — 815
 Liapis, C. — 1054
 Liaw, B.Y. — 2119
 Libbert, J.L. — 681
 Libbrecht, K.G. — 1094, 1141
 Libby, B. — 1853
 Libby, P.A. — 2249
 Libchaber, A. — 2210
 Libchaber, Albert — 760
 Liberati, J. — 2111
 Liberati, J.R. — 1928, 2007
 Liberman, M.A. — 1962, 2226
 Libero, Valter L. — 168
 Liby, B.W. — 367
 Licht, V. — 1512, 1539
 Lichtenberg, A.J. — 2353
 Lichtenberger, Dennis L. — 559
 Lichter, S. — 2199, 2200, 2221, 2314
 Lichti, R. — 314, 569
 Licini, J.C. — 128, 176, 265, 537
 Lidbjörk, P. — 1369
 Liddiard, T.P. — 1564
 Liddle, J. Alex — 322
 Lie, X. — 1816
 Lie, Y.C. — 84
 Lieb, K.P. — 980
 Liebeck, R. — 2251
 Liebenberg, D.H. — 346
 Lieber, C.M. — 369
 Lieberman, M.A. — 2353
 Liebmann, J. — 1336
 Liechtenstein, A.I. — 368
 Liedberg, Bo — 436
 Lief, E. — 1118
 Lien, E. — 1232
 Liepmann, Dorian — 2284
 Lierzer, J.R. — 1954, 2109
 Liew, Y.-F. — 794
 Liewer, P. — 1435
 Liewer, P.C. — 1455, 2103
 Lifschitz, A. — 1947
 Lifshitz, R. — 626
 Liger, P. — 1365
 Light, M. — 1897, 2327
 Lightly, D. — 685
 Lightowers, E.C. — 842, 843
 Likhachev, V. — 1368

- Likharev, K.K. — 697
 Likos, C.N. — 601
 Liland, K.B. — 2374
 Liljeby, L. — 1133
 Lilley, G.M. — 2244
 Lilly, D. — 2277
 Lilly, L. — 329, 639
 Lilly, M.D. — 1528
 Lilster, David — 435
 Lim, S.F. — 477
 Lim, S.P. — 759
 Lima, R. — 2261, 2267
 Lima Montenegro, S. — 1226
 Limat, L. — 2187, 2223
 Limberg, T. — 1217, 1257, 1258, 1366, 1367, 1371
 Lin, A.M.T. — 987
 Lin, A.T. — 1963, 2001
 Lin, B. — 419
 Lin, Bili — 2008
 Lin, C. — 514, 1434, 1716
 Lin, C.D. — 1151, 1160
 Lin, Chun C. — 1104, 2334, 2368
 Lin, C.-L. — 79, 106, 122, 231, 369, 642, 817, 1282, 1283, 1310, 2261
 Lin, C.T. — 111, 222
 Lin, D.-S. — 510, 568
 Lin, Fengqi — 322
 Lin, F.Y. — 686
 Lin, H. — 1646, 1950, 1951, 1953, 2022
 Lin, H.C. — 483
 Lin, H.-J. — 338, 643
 Lin, H.Q. — 227, 725, 753, 822
 Lin, H.T. — 282
 Lin, J. — 483, 544, 1043
 Lin, J.A. — 378
 Lin, J.C. — 2301
 Lin, J.G. — 346, 347
 Lin, Jia Ling — 745
 Lin, Jingsu — 799
 Lin, J.S. — 92, 444, 796
 Lin, J.Y. — 265, 746
 Lin, K.K. — 1367
 Lin, L. — 1898, 2119
 Lin, Liu — 1247
 Lin, Martin — 750
 Lin, Min Y., m — 435
 Lin, M.Y. — 164, 422, 483, 539, 714
 Lin, P.S.D. — 1713
 Lin, R. — 1638
 Lin, R.S. — 2288
 Lin, S. — 780
 Lin, S.Y. — 367, 1716
 Lin, W.A. — 707
 Lin, W.J. — 686
 Lin, W.P. — 205
 Lin, X. — 832
 Lin, X.F. — 341
 Lin, X.-T. — 1354
 Lin, X.W. — 53
 Lin, Y., C. — 988
 Lin, Y.C. — 988, 989, 1635
 Lin, Y.K. — 129
 Lin, Z. — 1818, 1891, 2015
 Lin, Z.H. — 330
 Lina, J.-M. — 1437
 Lin-Chung, P.J. — 521
 Lindberg, W.R. — 2191
 Lindblom, L. — 969
 Lindeman, Cheryl A. — 961
 Lindemuth, I. — 2089
 Linden, D.S. — 805
 Lindenfeld, P. — 171
 Lindenstruth, V. — 998, 999, 1815, 1828, 1853, 1854
 Lindgren, R. — 914, 915
 Lindgren, R.A. — 1817, 1820, 1826, 1830, 1846, 1847
 Lindle, D.W. — 1092
 Lindle, J.R. — 1747
 Lindley, R.A. — 1900
 Lindner, A. — 1393
 Lindquist, R.G. — 1718
 Lindroos, M. — 274
 Lindsay, B.G. — 1134, 1161, 2361
 Lindsay, S.M. — 51
 Lindstrom, P.J. — 932
 Lineberger, W.C. — 1088
 Lines, M.E. — 113
 Lineweaver, C. — 1065
 Ling, A. — 1062, 1826
 Ling, K.M. — 1898
 Ling, M.F. — 215
 Ling, X. — 1130, 1155
 Ling, X.S. — 836
 Lingård, P.-A. — 1626
 Lingel, Karen — 1001
 Lingertat, H. — 2056
 Lingertat, J. — 1919
 Lingeitch, Joseph F. — 2312
 Link, J.M. — 1337
 Linke, U. — 312
 Lin-Liu, Y.R. — 1936, 2051, 2065, 2068, 2069, 2104, 2105
 Linneear, T.P.R. — 1214
 Linnen, Allen — 750
 Linscott, I. — 1212, 1213, 1635
 Liou, R. — 1315, 1358
 Liou, R.L. — 1315
 Liou, S.H. — 126, 340, 801
 Lipa, John — 978
 Lipari, P. — 985, 1021
 Lipavský, P. — 646
 Lipkin, I.M. — 1273
 Lipnicky, M. — 1393
 Lipp, M.J. — 575
 Lippel, P. — 579
 Lippmann, G. — 1383
 Lippmann, S.I. — 2058, 2059, 2060, 2061, 2062, 2064
 Lipschultz, B. — 1955, 1956, 1957, 1958
 Lipscomb, T. — 967, 2167
 Lipsett, M.G. — 1388
 Lipson, J.E.G. — 186, 192, 245, 1631
 Lipson, S.G. — 436
 Lis, L.J. — 632
 Lisa, M.A. — 941, 1828, 1853
 Lisantti, J. — 1830, 1846
 Lisin, A. — 1264
 Lisin, Al V. — 1354
 Lisitsyn, A. — 1405
 Lisitsyn, I.V. — 1894, 1896
 Liska, D. — 1335
 Lisoski, D. — 2207
 Liss, Tony — 1009
 Lissaman, P. — 2263
 Lissauer, D. — 1054, 1842
 Lister, G.G. — 2366
 Lister, J.D. — 599
 Lisyansky, A.A. — 367, 587, 711
 Lit, John W.Y. — 1747
 Litaudon, X. — 2108
 Litster, J.D. — 404
 Litster, J. David — 197
 Little, J.W. — 283
 Little, L.M. — 2352
 Little, M. — 1859
 Little, S. — 670
 Littlefield, David — 1541
 Littlefield, D.L. — 1510, 1511, 1553
 Littler, C.L. — 812
 Littlewood, P.B. — 97
 Littley, J.M. — 470, 1637, 2277
 Littman, M.G. — 1716
 Littmann, B. — 1392
 Litvinenko, V. — 1234
 Litvinenko, V.N. — 1296
 Litwin, C. — 1979, 2026
 Litz, Marc S. — 2004, 2119
 Liu, A.J. — 90, 165
 Liu, Amy Y. — 306
 Liu, Andrea J. — 535
 Liu, A.Y. — 620
 Liu, C. — 2288
 Liu, Chang — 2234
 Liu, Chaoyu — 1900, 1901
 Liu, Chiu — 641
 Liu, Chu-heng — 176
 Liu, C.J. — 1302, 1898
 Liu, C.L. — 1900
 Liu, C.S. — 1913, 1926, 1929, 2196
 Liu, D.J. — 671
 Liu, D.N. — 590
 Liu, Dongzi — 53, 1614
 Liu, F. — 985
 Liu, F.C. — 748
 Liu, Fong — 799
 Liu, H. — 447, 1249, 1328, 1365
 Liu, H.B. — 783
 Liu, H.C. — 633, 706, 1296
 Liu, H.J. — 1534, 1575, 1578
 Liu, Hong-Jian — 1534, 1575
 Liu, H.T. — 970, 1636
 Liu, Huimin — 1738
 Liu, J. — 115, 195, 229, 230, 421, 425, 634, 1050, 1242, 1249, 1619, 1829, 1830, 1845, 1846, 1979, 2223
 Liu, J.C. — 1150
 Liu, Jingai — 1669, 1675
 Liu, Jingain — 1675
 Liu, J.M. — 1917, 2349
 Liu, J.R. — 835
 Liu, Jun — 1531
 Liu, Junhui — 2190
 Liu, J.W. — 1117
 Liu, J.Z. — 103, 122, 171, 188, 222, 252, 387
 Liu, K. — 796
 Liu, Katherine X. — 1731
 Liu, K.B. — 1399
 Liu, K.W. — 85, 762
 Liu, L. — 382
 Liu, L.C. — 1016
 Liu, Li — 644
 Liu, Lichi — 576
 Liu, Lizhong — 576
 Liu, L.Y. — 413, 420, 424
 Liu, L.Z. — 576, 642, 643
 Liu, M. — 2195, 2316
 Liu, N.L. — 627
 Liu, Q.J. — 999
 Liu, Q.P. — 2101, 2102
 Liu, Q.Z. — 1617
 Liu, R. — 226, 273, 274, 1625
 Liu, Ran — 76
 Liu, R.S. — 175, 225
 Liu, S. — 126, 805, 2231
 Liu, S.H. — 83, 475
 Liu, Shixi — 1669
 Liu, Shudun — 67, 793
 Liu, T. — 2110
 Liu, Tiehui — 1053
 Liu, T.Y. — 474
 Liu, W. — 998, 2270
 Liu, W.-C. — 1145
 Liu, Wei — 649
 Liu, Wei-Na — 1534
 Liu, W.N. — 1534, 1578
 Liu, X. — 531, 1998, 2081
 Liu, Xiao-Yang — 1517, 1576
 Liu, X.M. — 633
 Liu, Y. — 128, 295, 349, 409, 417, 595, 1202
 Liu, Yan — 215, 216
 Liu, Y.J. — 1043
 Liu, Y.M. — 747, 748, 999
 Liu, Yongqian — 127, 840
 Liu, Youfan — 325
 Liu, Y.X. — 401
 Liu, Z. — 483, 696, 926, 1369, 1811, 2288
 Liu, Z.-C. — 2262
 Liu, Z.W. — 1139, 1150
 Liu Chengjun, B. — 1302
 Livdan, D. — 587
 Livinenko, V.N. — 1245
 Livingston, A.E. — 1097, 1120, 1139, 1140
 Livingston, A. Eugene — 1758
 Liviņš, P. — 386, 386
 Llyanage, L.S.G. — 66
 Lleres, A. — 1852
 Llona, F. — 1632
 Llope, B. — 927, 940, 998, 1854
 Llope, W. — 940
 Llope, W.J. — 940, 941, 1815, 1828, 1852
 Lo, C.C. — 1314, 1392, 1398
 Lo, D.H. — 1956, 2109
 Lo, E. — 2004, 2005
 Lo, Ikai — 181
 Lo, W. — 403
 Lo, W.S. — 364
 Loarer, T. — 2058
 Loarte, A. — 2056
 Lobanov, N. — 1321
 Lobb, C.J. — 387, 388, 460, 803
 Lochhead, M.J. — 468
 Lochmann, L. — 482
 Lochner, E. — 785
 Lock, A.P. — 2286
 Locke, B.R. — 2310
 Lockhart, J.M. — 69
 Lockner, T.R. — 1200, 2045
 Lockwood, J.A. — 948
 Locquet, J.P. — 259
 LoDestro, L.L. — 2016, 2077, 2103
 Lodge, T.P. — 145, 348, 349, 411, 419, 483, 658
 Lodhi, M.A.K. — 1063, 1667, 1668, 1669, 1684
 Loe, S. — 1816
 Loe, S.R. — 1817
 Loehr, J. — 745
 Loeser, A.G. — 274
 Loeser, T. — 275
 Loew, G. — 1234, 1289
 Loew, G.A. — 1230, 1288, 1316
 Loew, G.H. — 1628
 Loewenberg, M. — 2219
 Loewenberg, K. — 1065
 Lofland, S.E. — 326, 838
 Logachov, P.V. — 1371
 Logan, A. — 1589
 Logan, B. Grant — 2086
 Logan, Jonathan — 971
 Logory, L. — 2283
 Lograsso, T. — 270
 Loh, E.C. — 1021
 Loh, K.-G. — 449, 511
 Lohner, Martin — 985
 Lohr, J. — 2069, 2070
 Lohr, John — 2069
 Lohse, D.J. — 484
 Loiselet, M. — 1273
 Zojkowski, W. — 1577
 Loloe, R. — 671, 734, 784
 Lom, C. — 1201, 1377
 Lomatch, S. — 638
 Lombardi, A. — 1318, 1362

- Lombardi, D.R. — 158
 Lombardo, L. — 223, 520, 691
 Lombardo, Lou — 330
 Lombardo, L.W. — 74, 274, 275
 Lomdahl, Peter S. — 837
 Lomdahl, P.S. — 795
 Lommel, B. — 1132
 Lomonosov, I. — 1515
 Londergan, J.T. — 1016, 1858
 London, R. — 2044
 London, R.A. — 1942, 2044
 Long, F.H. — 258
 Long, Gary J. — 161
 Long, Hui — 1922
 Long, L.L. — 543
 Long, N.J. — 537
 Long, S. — 769
 Long, S.M. — 110, 311
 Long, T. — 294
 Long, T.C. — 487
 Longcope, D.W. — 1894, 1926
 Longmire, E.K. — 2198, 2279, 2284
 Loo, W.L. — 1570
 Lookman, T. — 169
 Looney, C. — 1132, 1163
 Loong, C.-K. — 532
 Lopez, Ana — 135
 Lopez, F. — 1298
 Lopez, G. — 1244, 1291, 1344, 1355
 Lopez, J.M. — 2237
 Lopez, Jorge A. — 955
 Lopez, S. Camacho — 1740
 Lopez-Cruz, Elias — 479
 Lopez-Fraguas, A. — 2021
 Lopez Quintela, M.A. — 216
 LoPresti, P.G. — 1718
 Lord, J.J. — 396, 769, 1021
 Lord, R. — 396
 Lorello, M. — 1334, 1397
 Lorents, D.C. — 2337
 Lorenz, B. — 1571
 Lorenz, H. — 1560
 Lorenz, R. — 1211, 1392
 Lorenzana, H.E. — 307
 Lorenzana, J. — 584
 Lorenzini, R. — 2012
 Loretto, D. — 1621
 Loritsch, R. — 1887
 Lorke, A. — 233, 704
 Losche, M. — 122, 455
 Losecco, J.M. — 1021
 Losert, W. — 590
 Losito, R. — 1202
 Loske, A.M. — 1493
 Loss, D. — 230, 278
 Loss, Daniel — 497
 Loter, N. — 2088
 Lott, B. — 941, 1036, 1852
 Lott, F., III — 965
 Lottis, D. — 371, 733
 Lottis, Daniel K. — 323
 Lotz, B. — 92
 Lou, Tai-Ping — 1575
 Lou, W.A. — 172
 Lou, Y. — 1813, 1852
 Lou, Y.M. — 104
 Loubeyre, P. — 1483, 1501, 1515
 Loubriel, G.M. — 516
 Louie, S.G. — 336, 472
 Louie, Steven G. — 305, 472, 688
 Loureiro, J. — 2335, 2367
 Lourenco, L. — 2302
 Lourie, R. — 1034
 Loutfy, R.O. — 152
 Lovato, Julie A. — 2253
 Lovberg, R.H. — 991
 Love, M.J. — 795
 Love, S.P. — 258, 502, 616
 Love, W.G. — 1830
 Loveday, J.S. — 1530, 1533, 1583
 Loveland, W. — 1832
 Lovell, T. — 1980
 Lovell, T.W. — 1979
 Lovelock, M.J. — 984
 Loveman, R. — 1824
 Lovinger, A.J. — 92, 410
 Low, B.C. — 2042
 Low, K. — 1222
 Löw, U. — 594, 600
 Lowder, R.S. — 2074
 Lowe, J. — 1843
 Lowe, M. — 2293
 Lowengrub, J.L. — 2272
 Lowenhardt, P.K. — 2057
 Lowie, L.Y. — 2171
 Lowndes, D.H. — 111, 259, 260, 272, 276, 786, 802
 Lowney, J.R. — 634
 Lowry, B.J. — 2275
 Lowry, M.M. — 1803, 1855
 Loy, M.M.T. — 1765
 Lozano, Antonio — 2253
 Lu, D. — 1835
 Lu, D.F. — 524
 Lu, Fangyun — 1592
 Lu, G. — 2298
 Lu, H.C. — 279, 280, 793
 Lu, H.M. — 407, 408, 1664
 Lu, J. — 1283
 Lu, Jian Ping — 2160
 Lu, J.J. — 1401
 Lu, J.P. — 95, 163, 174, 756
 Lu, Q. — 1806, 1858, 2170
 Lu, W. — 595
 Lu, W.C. — 281
 Lu, Wei, Zhi — 215
 Lu, X. — 104, 1268, 1349
 Lu, Xiaoyong — 2293
 Lu, Z. — 1804
 Luban, M. — 233
 Lubell, M.S. — 1116
 Lubensky, T.C. — 598
 Lubin, J.A. — 217
 Lubin, L. — 1635
 Lubin, P. — 1639
 Lubin, Philip — 198
 Lubin, P.M. — 963
 Lubitz, Peter — 212
 Lublinsky, B. — 1274
 Lucas, C.A. — 1621
 Lucas, Stephen K. — 2216
 Lucazeau, G. — 106
 Luccio, A. — 1203, 1224, 1258
 Luce, T.C. — 1938, 2065, 2068, 2069, 2070
 Luchini, K. — 1399
 Luchini, M.U. — 639, 696
 Luchsinger, R. — 375
 Luckhardt, S. — 2092, 2093, 2095, 2096
 Luckhardt, S.C. — 1888, 1976, 2092
 Lucovsky, G. — 444
 Ludeke, R. — 81, 334
 Ludeking, Larry — 1894, 2004
 Lüdemann, H.-D. — 1521
 Ludewigt, B.A. — 1337
 Ludgate, G.A. — 1225, 1298
 Ludmirsky, E.A. — 1251
 Ludovice, P. — 714
 Ludwig, E.J. — 1064, 1845
 Ludwig, F. — 637
 Ludwig, H. — 1578
 Ludwig, K.F. — 172, 418
 Ludwig, K.F., Jr. — 154, 479
 Ludwig, P. — 1343
 Ludwig, T. — 1319
 Luedtke, William D. — 777
 Luehr, Charles P. — 2193
 Lueptow, R.M. — 2299
 Luettmer-Strathmann, J. — 1006
 Lugiato, L.A. — 1111
 Luginsland, J. — 1348
 Luginsland, J.W. — 2074
 Lugli, Paolo — 764
 Luhmann, N. — 1323
 Luhmann, N.C., Jr. — 1888, 1941, 2000, 2001, 2062, 2064, 2069, 2110, 2111
 Lui, M. — 813, 1728
 Luie, Siu Yim — 936
 Luie, S.Y. — 1108, 1109
 Luijckx, G. — 1275
 Lujan, R. — 1300
 Lukash, V.E. — 2068
 Lukasiak, A. — 949
 Lukasiewicz, J. — 1226
 Lukaszek, D. — 962, 1834
 Luke, P.N. — 1855
 Luke, S.J. — 1816, 1825, 1833, 1846
 Luke, T. — 1955, 2113
 Lukefahr, H.G. — 178
 Lukens, P. — 916
 Lulevich, V.I. — 1294
 Lumb, David H. — 920
 Lumley, J.L. — 2232
 Lumpkin, A. — 1200, 1210, 1307
 Lumpkin, Forrest E., III — 2234
 Lund, B. — 982
 Lund, B.J. — 983
 Lund, Fernando — 2283
 Lund, S. — 1995
 Lund, Steven M. — 1996
 Lund, T.S. — 2214
 Lundblad, E.G. — 1581
 Lundbladh, Anders — 2289
 Lundeen, S.R. — 1110
 Lundgren, E. — 781
 Lundgren, T.S. — 2281
 Lundquist, P.M. — 111, 205
 Lundquist, R.L. — 508
 Lundsberg-Nielsen, L. — 221
 Lundstedt, C.L. — 1818
 Lundy, C.J. — 1102
 Lung, A. — 1034, 1821, 1836
 Lungu, Anca — 125
 Luning, J.E. — 73
 Luo, Fei — 548
 Luo, G.H. — 1396
 Luo, H. — 132, 182, 283, 374, 398, 512, 530, 649, 746, 765, 817, 1503
 Luo, H.L. — 582, 839
 Luo, Hong — 797
 Luo, Huan — 324, 476, 1515, 1559, 1570, 1571, 1575, 1579, 1595
 Luo, Jiarong — 2008
 Luo, Jin — 519
 Luo, Weili — 289, 2174
 Lüpke, G. — 1775
 Lupov, V.G. — 987
 Luppov, V.G. — 987
 Luryi, S. — 633, 645, 705, 1010
 Luse, C.L. — 65
 Lustig, Harry — 924
 Lustig, S.R. — 352, 657
 Luther, B. — 982, 1051, 1830
 Luther, G.G. — 1499, 1904
 Lütkehaus, H. — 1289
 Lutrin, F. — 2125
 Luttwak, G. — 1539
 Lutz, C.P. — 184
 Lutz, I. — 1399
 Lutz, M. — 961, 1017
 Lutz, Matthias — 1838
 Lutz, Raymond — 629
 Lutzenkirchen, K. — 221
 Lux, R.A. — 57, 155
 Luzcak, A. — 1769
 Luzzi, D.E. — 253
 Lwin, Yan N. — 963
 Lyapin, A.G. — 1557
 Lybrand, T.P. — 456
 Lyding, J.W. — 327
 Lyman, P.F. — 730
 Lymberopoulos, D.P. — 2347, 2368
 Lynch, D. — 1234, 1311
 Lynch, D.L. — 796, 1128
 Lynch, D.W. — 226, 780
 Lynch, M. — 1332
 Lynch, M.T. — 1215
 Lynch, V.E. — 1912, 2015
 Lynch, W.G. — 941, 962, 1824, 1828, 1853
 Lyneis, C.M. — 1335, 1808
 Lynen, U. — 1853
 Lynn, J.W. — 71, 73, 74, 178, 212, 783
 Lynn, K.G. — 82, 499, 571, 644, 800, 826
 Lyo, I.-W. — 1614
 Lyo, S.K. — 591, 787, 788
 Lyon, Ian C. — 1750
 Lyon, J.F. — 2023
 Lyon, S.A. — 647, 764
 Lyons, K.B. — 366
 Lyons, S. — 1287
 Lyons, W.G. — 805
 Lysenko, W.P. — 1273
 Lyster, P. — 1455, 2103
 Lytel, Rick — 49
 Lyubutin, I.S. — 1536
 Lyyra, A.M. — 1115
 M, Reghu. — 311
 Ma, C.H. — 2020, 2113
 Ma, C.I. — 1092
 Ma, E. — 207
 Ma, J. — 1453
 Ma, J.F. — 452
 Ma, Jian — 1022, 1738
 Ma, K.B. — 171
 Ma, Ki B. — 750
 Ma, L. — 1845
 Ma, Michael — 263
 Ma, Q.Y. — 60, 224
 Ma, S. — 1975, 2018
 Ma, S.K. — 698
 Ma, W.-C. — 1014, 1015, 1806, 1858, 2170
 Ma, Y. — 320
 Ma, Yanjun — 247
 Ma, Y.L. — 170
 Ma, Zhengxiang — 330
 Ma, Z.Y. — 484
 Maan, A.C. — 1172
 Maas, D.J. — 1614
 Maas, R. — 1226, 1275
 Mabuchi, H. — 1120
 MacAdam, K.B. — 1105, 1130
 MacArthur, D.W. — 1849
 MacCabee, B. — 1041
 Macchiavelli, A.O. — 981, 1013, 1014, 1049, 1050
 Maccioni, P. — 1383
 MacDiarmid, A.G. — 311, 311, 312
 MacDonald, A. — 85, 302
 MacDonald, A.H. — 136, 180, 278, 279, 592, 593, 635
 MacDonald, M. — 1150
 MacDonald, W. — 1454
 MacDonald, William M. — 1458
 Mace, Jonathan L. — 1596

- Macek, H. — 1171
Macek, J.H. — 1090, 1151, 1158, 1159
Macek, R. — 1206, 1207, 1253, 1266, 1346, 1373
MacFarland, T. — 137
MacFarlane, Duncan L. — 1733
MacFarlane, J.J. — 2043, 2083, 2086
MacFarlane, R.M. — 467
MacGibbon, B. — 915
MacGowan, B.J. — 1915, 1934, 2044
Macha, K. — 1299
Machado, L.E. — 1106
Machida, M. — 1445
Machida, S. — 1242, 1359, 1370
Machol, J.L. — 808
Machorro, R. — 367
Machuzak, J. — 2035
Machuzak, J.S. — 2039
Maciejko, R. — 321
Maciel, H.S. — 2373, 2376
Maciga, B. — 1371
Maciszewski, W. — 1226
Mack, L.M. — 2208
MacKay, J.F. — 164
Mackenzie, A.P. — 222
Mackenzie, G.H. — 1253
Mackenzie, J.A. — 321
Mackerrow, E. — 1253
MacKinnon, A. — 54, 332
MacKinnon, John A. — 1004
MacKintosh, F.C. — 598
Mackintosh, R.S. — 962
Macknight, William J. — 413
MacKnight, W.J. — 92, 482, 484
Mackrodt, W.C. — 1582
MacLachlan, J. — 1197, 1255
MacLaren, J.M. — 256, 308
Maclatchy, C.S. — 2027, 2111
MacLaughlin, D.E. — 79, 175, 178
MacMillan, M.F. — 566
MacPhee, A. — 1943
MacPherson, C.D. — 510
Macready, W.G. — 584
Macvean, M.K. — 2286
Madani, H. — 927, 998, 1852
Madanshetty, S. — 2268
Madansky, L. — 1815
Madden, N. — 1205
Madden, R. — 1055
Madden, T.L. — 455
Maddocks, J. — 1263, 1264
Madduri, V.B. — 1283, 1683
Mader, C.M. — 1848, 1853
Mäder, Kurt A. — 737
Madey, J.M.J. — 1234, 1296
Madey, M.J. — 1245
Madey, R. — 982, 1024, 1034, 1841
Madey, T.E. — 341, 437, 452, 498
Madey, Theodore E. — 451, 793
Madison, D.H. — 1105, 1134, 1153, 1158
Madkour, T. — 412
Madlung, J. — 1319
Madnia, C.K. — 2281
Madrigal-Melchor, J. — 62
Madsen, N. — 1353, 1892
Madsen, V.A. — 1835
Maeda, K. — 943
Maeda, M. — 2278, 2332, 2335, 2338
Magahiz, R. — 1843
Magelssen, G. — 1884
Magelssen, G.R. — 1885
Magerl, A. — 313
Magestro, Daniel — 1616
Maggiore, C.J. — 1612
Maggs, J. — 1887, 1965
Maggs, J.E. — 1887
Maglic, S. — 111
Maglic, S.R. — 638, 694
Magnea, N. — 530
Magnier, E. — 1635
Magnotta, F. — 168
Maguire, C.F. — 2173
Magyary, S. — 1208, 1274
Mahajan, S. — 2351
Mahajan, S.M. — 2104
Mahale, N. — 1266
Mahale, N.K. — 1257, 1379
Mahalingam, K. — 737
Mahalingam, S. — 2198, 2213, 2218
Mahalov, A. — 2190
Mahan, G.D. — 273
Mahanti, S.D. — 65, 117, 187, 577, 760
Mahapatra, M. — 1681
Mahdavi, M.A. — 1935, 1936, 1938, 2058, 2059
Maher, J.V. — 63, 540, 541, 589
Maher, Michael P. — 382
Maher, M.P. — 382
Mahesh, K. — 2265
Maheswaran, B. — 750
Maheswaranathan, Ponn — 1065, 2167
Mahia, J. — 216
Mahl, G. — 1818
Mahmoud, M.A. — 1761
Mahner, E. — 1383
Mahon, J. — 927
Mahon, J.C. — 926, 1812
Mahoney, K.L. — 1210
Mai, H.H. — 2028
Maiale, M.Z. — 399
Maier, K. — 1317
Maier, R. — 1272
Maier, R.S. — 684
Maiken, E. — 616
Mailhiot, C. — 477, 1483, 1496
Mailhot, A. — 767
Maillard, J. — 1317
Mailloux, J. — 2027, 2028
Main, W. — 1283
Maingi, R. — 1935, 1938, 2058, 2059, 2060
Mainkar, N. — 781
Maishev, V.A. — 1251
Maisonier, C. — 2097
Maiti, A. — 52
Majeski, D. — 2093
Majeski, R. — 1907, 2025, 2033, 2034
Majeski, R.J. — 2032
Majid, Walid — 1641
Majima, T. — 1402
Majkrzak, C. — 325
Majkrzak, C.F. — 181, 294, 325, 410, 572, 618, 840, 1660
Majors, R. — 1672
Majumdar, S.B. — 1615
Majumder, P.K. — 1111, 1121
Mak, Chee-Leung — 797
Mak, C.L. — 432, 1589
Mak, G. — 1746
Makabe, T. — 2327, 2329, 2333, 2357
Makarov, A.A. — 1270, 1336
Makarov, I.G. — 1280
Makarov, N.M. — 809
Makarov, O.P. — 1130
Makarov, P.V. — 1512
Maki, J.J. — 1714
Maki, K. — 583
Maki, Kazumi — 131, 779
Makino, Toshihiko — 1713
Makins, N. — 1821
Makins, N.C.R. — 1822
Makivic, M. — 526
Makivic, M.S. — 757
Mako, F. — 1283
Makoski, S. — 1635
Makowitz, H. — 187, 395
Makowski, M. — 1328, 2065
Makowski, M.A. — 1328, 1967, 2065, 2066, 2067
Maksimchuk, A. — 2081
Maksimov, I.L. — 71, 790, 836
Maksimova, G.M. — 71, 790
Maksimovic, P. — 2188
Maldarelli, C. — 2225
Maldonado, Theresa A. — 1732
Maleki, S. — 1110
Malet, M. — 1638
Maley, M.P. — 1626
Malghani, M.S. — 740
Malhotra, R.M. — 2337
Malik, A. — 435, 436, 572
Malik, F.B. — 1816
Malik, M.R. — 2250, 2288
Malik, S.K. — 326
Maliszewskyj, N.C. — 253, 653
Malitsky, N. — 1240
Malkan, M. — 919
Malkus, Willem V.R. — 2295
Malliaras, G.G. — 410, 418, 482
Mallier, R. — 2252
Mallik, R. — 1655
Mallik, R.R. — 1655, 1660, 1662
Mallik, S. — 2198
Mallison, W.H. — 328
Mallory, K. — 368, 1635
Mallory, Kendall — 1005
Mallouris, C.Z. — 2350
Malloy, Kevin — 375
Mal'nev, V.I. — 1579
Malo, Bernard — 1737
Malone, G. — 2078
Malone, R. — 1220
Malozovsky, Y.M. — 523, 524, 712, 811
Malyshev, E.N. — 1517
Malyshev, O. — 1263
Malyushitska, Z.V. — 1559
Malzbender, R. — 536
Malzer, S. — 1769
Mamin, H.J. — 185
Mammosser, J. — 1299, 1375, 1383, 1386
Man, R.K. — 2276
Manabe, Y. — 2332, 2338
Manarin, A. — 1220
Manasreh, M.O. — 703, 745
Manatt, D.R. — 1050, 1832
Manca, J. — 1287, 1398
Mancic, D. — 1585
Mancini, J.D. — 234
Mand, Gurpreet S. — 1759
Mandel, L. — 1733
Mandell, John F. — 292
Mandich, Mary — 249
Mandl, W. — 1937, 2071
Mandrekas, J. — 2050, 2051
Mandrus, D. — 127
Mandrus, D.G. — 79, 389
Mane, S. — 1244
Mane, S.R. — 1369
Mane, V. — 1353
Manfredi, P.F. — 1010
Mang, Joseph T. — 405
Manga, Michael — 2201
Mangat, P. — 729
Mangat, P.S. — 335
Manghnani, M.H. — 254, 1492, 1508
Mangiavacchi, N. — 2190, 2216, 2231
Mangino, John — 1214
Mangipudi, V.S. — 91
Manheimer, M.A. — 805
Manheimer, Wallace — 1903
Manheimer, W.M. — 1279, 1963, 1964, 2000
Mani, R.G. — 393, 402
Mani, S. — 918
Maniak, S.T. — 1152
Manias, E. — 1631
Manias, E.D. — 420
Manickam, J. — 1984, 2032, 2050, 2091, 2093, 2096
Manickam, O. — 2301
Manini, P. — 1374
Manion, S.J. — 402
Manivannan, A. — 454
Mank, A. — 1147
Mank, G. — 2008, 2058
Manka, C. — 1942
Manka, C.K. — 1890
Mankbadi, R.R. — 2218, 2219, 2232
Mankey, G.J. — 369, 443, 561
Mankiewicz, Paul M. — 299
Mankiewicz, P.M. — 172, 459
Mankofsky, A. — 1344
Manley, D.M. — 982, 1034, 1820, 1841
Mann, A.K. — 1798
Mann, D. — 1685
Mann, J. — 1221
Mann, J.A. — 800
Mann, L.W. — 1981
Mannami, M. — 1119
Mannell, E. — 1021
Manner, W.L. — 1092
Manninen, M. — 68, 221
Manohar, S.K. — 312
Manoharan, H.C. — 236, 591
Mañosa, LL. — 270
Manousakis, E. — 696, 2165
Manrekas, J. — 2117
Mansfield, D. — 1905, 1907, 2031
Mansfield, D.K. — 1905, 2030, 2037, 2038
Mansfield, T.L. — 91, 294
Mansikka-Aho, J. — 68
Mansky, E.J. — 2334
Mansky, Paul A. — 780, 825
Manso, F. — 1815
Manson, J.R. — 381
Manson, S.T. — 1133, 1139
Mansour, A.N. — 163
Mansour, N.N. — 2228, 2281
Mansy, H. — 2303
Mantaseviphong, J. — 348
Mantell, D.A. — 1751, 1765
Mantica, P.F. — 1805
Mantica, P.F., Jr. — 980
Manttykentta, A. — 1151
Manuel, A.A. — 1624
Mandel, L. — 1733
Manzur, M. — 282
Mao, G.Z. — 712
Mao, H.K. — 255, 477, 575, 1483, 1557, 1575
Mao, J. — 1948
Mao, Jian — 330
Mao, J.M. — 1091
Mao, Naifeng — 1251
Mao, Sining — 388
Mao, S.N. — 59, 330, 387, 806
Mapes, M. — 1263, 1264
Maple, M.B. — 73, 75, 130, 170, 177, 178, 274, 326, 327, 346, 387, 439, 642, 643, 749
Mapoles, E.R. — 168, 572
Mar, D.J. — 1616
Maragechi, B. — 1940
Marand, E. — 417

- Marand, H. — 417
 Marande, Robert P. — 1605
 Marasli, B. — 2313
 Marasli, Barsam — 2304
 Marawar, Ravi — 1125
 Marbeuf, A. — 1579
 Marble, D.K. — 1674, 1675, 1681, 1684, 1685
 Marcano, J. — 437
 Marcassa, L. — 1169
 Marchand, R. — 1891, 1892, 2027
 Marchant, R.E. — 543
 Marchetti, A. — 927
 Marchetti, Alfred — 301
 Marchlenski, D. — 982, 1051
 Marchman, H.M. — 706, 813
 Marcq, P. — 471
 Marcu, Bogdan — 2211
 Marcu, M. — 1452
 Marcus, Charles — 760
 Marcus, C.M. — 840, 1143
 Marcus, Daniel L. — 2201
 Marcus, P.M. — 83, 256, 257
 Marder, M. — 1627
 Mareschal, Michel — 778
 Margaritondo, G. — 182, 474, 642
 Margetis, S. — 1062, 1843
 Margolin, L.G. — 1591
 Margolis, N. — 1627
 Margot, J. — 2327, 2335, 2338, 2339, 2340, 2343
 Mariam, F. — 1254
 Mariette, H. — 530
 Marin, M. — 1389
 Marinelli, J.R. — 1052
 Marinescu, M. — 1098, 1139
 Maring, W. — 682
 Marino, M. — 1374
 Maritan, Amos — 115
 Maritato, Gino — 694
 Marjoribanks, R.S. — 1989
 Mark, J.E. — 412, 546
 Mark, P. — 2353
 Mark, S.K. — 1811
 Märk, T.D. — 1117, 2370
 Markelz, A.G. — 81
 Markert, J.T. — 73, 125, 126, 227, 272, 370
 Markham, B.C. — 1035, 1052, 1846
 Markham, J.L. — 378
 Markiewicz, R.S. — 390, 750
 Markiewicz, W. Denis — 346
 Marklin, G.J. — 1894
 Marko, J.F. — 658, 708
 Markoski, L. — 409
 Markov, V. — 1368
 Markovic, N.M. — 438
 Markovich, P. — 1333
 Markowitz, P. — 1034
 Marks, N. — 1297
 Marks, R.F. — 323, 733, 785
 Marks, S. — 1329
 Marks, T.J. — 572, 580
 Markum, H. — 1825
 Markzjak, C. — 91
 Marlatt, S.W. — 2254
 Marley, A.C. — 453
 Marmar, E. — 1905, 1956, 1957
 Marmar, E.S. — 1955, 1956, 1957, 2038
 Marneris, I. — 1400
 Maron, Jason — 311
 Maron, Y. — 1895, 2012, 2088
 Maroudas, D. — 60
 Marquardt, J. — 1318
 Marquardt, Niels — 1324
 Marque, Jeffrey — 963
 Marques, J.R. — 1998
 Marquina, M.L. — 1613, 1625
 Marquina, V. — 1613, 1625
 Marquis, C.N. — 1153, 1650
 Marran, D.F. — 1153
 Marrelli, L. — 2012, 2113
 Marrero, T.R. — 826
 Marroum, R.M. — 1659
 Marrs, R.E. — 935, 1124
 Marrufo, O. — 1377
 Marschall, Laurence A. — 1047
 Marsden, E. — 1323
 Marsden, S. — 1377, 1398
 Marsh, D.B. — 320
 Marsh, K. — 1988, 1997, 2084
 Marsh, K.A. — 1285
 Marsh, S.P. — 1513
 Marsh, W. — 985, 986, 1037, 1207, 1227
 Marshall, D. — 274, 275
 Marshall, D.S. — 226, 274
 Marshall, J. — 1378, 1406
 Marshall, J.S. — 2271, 2297
 Marshall, P. — 1684
 Marshall, T.C. — 1941
 Marsi, M. — 642
 Marston, J.B. — 497, 498, 587
 Marston, P.L. — 2226
 Marte, P. — 1122
 Martell, E.C. — 1159
 Martens, Craig — 250
 Martens, M. — 1197, 1255, 1346
 Mårtensson, N. — 559
 Marti, Othmar — 1778
 Martin, A. — 2009
 Martin, A.A. — 522, 523
 Martin, A.J. — 929
 Martin, Alex — 1650
 Martin, B.G. — 728
 Martin, C. — 968, 1768
 Martin, D. — 182, 409, 1200, 1263
 Martin, David C. — 93
 Martin, D.C. — 480
 Martin, D.L. — 1461
 Martin, F. — 2029, 2057
 Martin, James E. — 2265
 Martin, J.E. — 343
 Martin, J.S. — 1755, 1756
 Martin, K. — 1227
 Martin, Kevin R. — 570
 Martin, M. — 501
 Martin, M.C. — 421
 Martin, Michael C. — 272, 502, 616
 Martin, N.L.S. — 1134
 Martin, P. — 1268, 2012, 2113
 Martin, R. — 1298, 2008, 2021
 Martin, Richard M. — 167, 168, 505, 742
 Martin, S. — 60, 160, 752, 1272, 1391
 Martin, S.A. — 1266
 Martin, Sam — 581
 Martin, Th. — 278
 Martindale, J.A. — 277
 Martinell, J.J. — 1928
 Martinez, E. — 2012
 Martinez, A. — 1562, 2021
 Martinez, A.R. — 1534, 1564
 Martinez, H. — 1103, 1160, 2371
 Martinez, J. — 2226
 Martinez, J.C. — 771
 Martinez, M.J. — 2199, 2300
 Martinez, R. — 285
 Martinez, R.E. — 515
 Martinez-Miranda, L.J. — 221, 451, 535
 Martini, K.M. — 649
 Martini, M. — 1360
 Martinis, J.M. — 1116, 1623
 Martino, A. — 220
 Martino, S. — 1035
 Martinson, I. — 1152
 Martinu, L. — 2376
 Martín, P. — 1990
 Martínez, D. — 2193
 Martínez, Juan M. — 136
 Martoňák, R. — 406
 Martys, N. — 264
 Maruffo, O. — 1394
 Maruhn, J.A. — 1996
 Marusic, A. — 942, 1684, 1818, 1859
 Marusov, V. — 1367
 Maruyama, T. — 1203
 Maruyama, X. — 1215, 1331
 Maruyama, Y. — 64, 1527
 Marwick, A.D. — 802, 835
 Marx, Egon — 1003
 Marynowski, M. — 649
 Marziali, A. — 1383
 Marzke, R.F. — 742
 Masaike, A. — 1843, 2171
 Mascarenhas, A. — 788, 789
 Mascarenhas, N. — 1854
 Mascarenhas, N.C. — 1020
 Maschke, A.M. — 1218
 Maserjian, Joseph — 1768
 Mashiko, K. — 1287
 Mashimo, T. — 1529, 1540, 1545
 Maslenikov, A.V. — 1519
 Maslennikov, I. — 1263
 Maslov, D.L. — 645, 708
 Maslowe, S.A. — 2252
 Mason, B.A. — 82, 814, 815
 Mason, G.M. — 948
 Mason, Grant W. — 1973
 Mason, J.E. — 926
 Mason, N. — 1630
 Mason, P. — 843
 Mason, R.J. — 1895, 1898, 2080
 Mason, T.G. — 435
 Massarotti, A. — 1318, 1383, 1393
 Masserant, S.A. — 1036
 Massey, J. — 527, 1654
 Massey, T.N. — 1822, 1825, 1845
 Massicott, J.F. — 1726
 Massidda, S. — 1624
 Massie, S. — 1676
 Massó, Joan — 1449
 Massone, C.A. — 2351
 Mast, D.B. — 810, 836, 837, 838
 Masten, J. — 1994
 Mastichiadis, A. — 919
 Mastrapasqua, M. — 633
 Masuda, H. — 1338
 Masuda, Hisashi — 1714
 Masuda, K. — 949
 Masuda, Y. — 2171
 Masui, Jun — 985
 Masullo, M.R. — 1202
 Masumoto, K. — 1571
 Masunov, E. — 1220, 1332
 Masur, T. — 816
 Matafonov, V.N. — 1054
 Matalon, M. — 2226
 Mate, C.M. — 488
 Mateev, K.A. — 465
 Mateos, A.O. — 1818
 Materer, N. — 627
 Matey, James — 201
 Mathae, J.C. — 1217
 Mathai, A. — 690, 691
 Mathauer, K. — 1660
 Mather, J. — 920
 Mather, P.T. — 194
 Mathers, Chris — 1099
 Mathers, C.P. — 549, 683, 1134, 1152
 Matheson, D. — 1222
 Matheus, R. — 1833
 Mathews, G.J. — 984, 1638, 1640, 1802
 Mathewson, A.G. — 1373
 Mathias, L.J. — 481
 Mathieson, D. — 1222
 Mathis, C. — 159
 Mathur, H. — 230
 Mathur, V.K. — 741, 1608
 Matis, H.S. — 998, 999, 1815, 1828, 1853, 1854
 Matkowsky, B.J. — 2227
 Matone, G. — 914, 915
 Matos, M.J. — 1622
 Matsen, M.W. — 405
 Matsuda, K. — 1572
 Matsuda, M. — 124
 Matsuda, T. — 191, 714
 Matsuda, Y. — 2171
 Matsuda, Yuji — 1625
 Matsudate, M. — 107
 Matsuhata, H. — 1612
 Matsui, M. — 1477
 Matsui, S. — 107
 Matsumi, Y. — 1756
 Matsumoto, H. — 1384, 1388, 1391
 Matsumoto, M. — 1264, 1605
 Matsumoto, S. — 1356, 1401
 Matsumoto, T. — 280, 582
 Matsumuro, A. — 1530, 1575
 Matsuno, S. — 1021
 Matsuo, H. — 1481
 Matsuoka, H. — 293, 397
 Matsuoka, M. — 1387
 Matsuoka, S. — 348, 2085
 Matsuzawa, H. — 2340
 Matsuzawa, M. — 1151
 Matt, N. — 1831
 Matte, J.P. — 1917, 1987, 1988, 2087, 2349
 Mattei, Janet A. — 1047
 Mattes, B. — 311
 Matteson, J. — 1638
 Matteson, J.L. — 1638
 Matteson, S. — 1674, 1675, 1681, 1684, 1685
 Matthaues, W.H. — 2193
 Mattheiss, L.F. — 275
 Matthews, D.L. — 2044
 Matthews, G. Eric, Jr. — 741
 Matthews, G.F. — 2056
 Matthews, H. — 1280
 Matthews, H.W. — 1999
 Matthews, J. — 1020
 Matthews, J.L. — 942
 Matthews, M.R. — 1141, 1168
 Matthews, P. — 2023
 Matthews, P.G. — 2022, 2023
 Matthies, B. — 650
 Mattick, A.T. — 2112
 Mattingly, R. — 1039
 Mattison, E.M. — 1170
 Mattison, T.S. — 1404
 Mattor, N. — 1911, 1924, 1992
 Mattoussi, H. — 1632
 Mattoussi, Hedi — 191, 193
 Mattox, J.R. — 988, 989, 1635
 Mattson, J. — 562
 Mattson, J.E. — 562
 Maturro, M.G. — 314
 Matui, Tetsuo — 1837
 Matuk, C. — 1237
 Matulenko, Yu.A. — 1054
 Matulioniene, R. — 1131
 Matveev, K.A. — 277, 397, 464
 Matveev, U. — 1403
 Matveev, Yu. — 1405
 Matz, S.M. — 989
 Mau, T.K. — 1946, 2049, 2068, 2105,

- 2112
Maudlin, P. — 1539
Maudlin, P.J. — 1486
Mauel, M.E. — 1945, 2006, 2006, 2007, 2032
Mauel, Michael E. — 1966
Maung, Khin M. — 1834
Maung, Win Naing — 689
Maurer, D. — 2006, 2007
Maurer, W. — 483
Mauri, Francesco — 89, 140
Mauri, R. — 2267
Maveety, J.G. — 2239
Mavrikos, N. — 2254
Mavriplis, C. — 1444
Mavrogenes, G. — 1284, 1287
Maximov, A.V. — 2343
Maxon, S. — 1942
Maxwell, A.J. — 559
Maxworthy, T. — 2254, 2285
May, A.D. — 1094, 1745, 1759, 1760
May, B. — 1813
May, M. — 1956
May, M.J. — 1957
May, R. — 1204
May, V. — 121
Mayanovic, R.A. — 540
Mayberry, C.S. — 2360
Mayer, E.W. — 2195
Mayer, P. — 94
Mayer, R.H. — 1832
Mayer, R.M. — 1049
Mayer, Stefan — 2273
Mayer-Hasselwander, A. — 988
Mayer-Hasselwander, H.A. — 988, 989, 1635
Mayers, M. — 1860
Mayes, A.M. — 410, 421, 482, 603, 604
Mayes, B. — 1859
Maynard, J.D. — 384, 677, 681, 1042
Mayne, H.R. — 1626
Mayo, D. — 1826
Mayo, M.W. — 77
Mayo, R.M. — 1967
Mayo, S. — 634
Mayo, W.E. — 447
Mayoud, M. — 1366
Mayrand, M. — 1437
Mays, J. — 658, 659
Mays, J.W. — 486
Maytal-Beck, S. — 1859
Mayur, A.J. — 842
Mazak, R. — 2176
Mazarakis, M.G. — 1200, 2045
Maziar, C.M. — 704
Mazin, I.I. — 368
Mazumdar, S. — 57, 585
Mazumdar, T.K. — 1283, 1683
Mazur, E. — 1743
Mazur, Eric — 1772
Mazur, P. — 1290
Mazur, P.O. — 1295
Mazur, S. — 1980
Mazur, Ursula — 451, 572
Mazzucato, E. — 1906, 2034
McAllister, B. — 1368
McAllister, B.G. — 1224
McAllister, R.C. — 395
McBane, George C. — 548
McBeath, Michael — 1664
McBranch, D. — 258, 502, 616
McBreen, J. — 539
McBride, J.R. — 834
McBride, S.E. — 184, 813
McCall, K.R. — 115
McCall, S.L. — 1734
McCallen, R. — 2189
McCallum, D.S. — 763, 764, 1769
McCallum, R.W. — 783
McCambridge, J.D. — 836
McCammon, C.A. — 1552
McCann, Lowell I. — 463
McCarley, J.S. — 626
McCarroll, W. — 117, 365
McCarron, E.M. — 124
McCarron, E.M., III — 188
McCarten, J. — 177, 320, 382, 383, 453
McCarthy, K.L. — 2288
McCarthy, M.J. — 2288
McCarthy, R.J. — 1822
McCarthy, T.J. — 417
McCaughan, Leon — 1725
McCauley, G. — 1335
McCauley, J.P., Jr. — 653
McCauley, S. — 2030
McCauley, S.W. — 1778
McCauley, Thomas G. — 676
McCauley, T.S. — 1594
McChesney, J.M. — 2030
McClelland, Gary M. — 494
McClelland, J. — 1830
McClelland, J.B. — 982
McClelland, J.J. — 669
McClements, K.G. — 2018, 2054
McClernon, Paul R. — 1607
McCloud, K.V. — 63, 589
McClymer, J.P. — 768
McComas, D.J. — 1965
McCombe, B.D. — 284, 336, 592, 702
McConkey, J.W. — 1117, 2332
McConnel, A. — 127
McConnell, M.L. — 948, 968, 989
McCool, S. — 1948, 1950
McCool, S.C. — 1924, 1949, 1950, 1954
McCormack, E.F. — 1092, 1760
McCormack, F. — 1204
McCormack, R.P. — 106
McCormick, B.J. — 312, 340
McCormick, D. — 1202
McCormick, W.D. — 2239, 2291
McCourry, L. — 396
McCoy, John D. — 1631
McCoy, M.G. — 2051
McCracken, G.M. — 1922
McCroxy, E. — 1229
McCroxy, E.S. — 1333
McCroxy, R.L. — 1961, 1962, 2085
McCullough, L. — 2009
McCullough, R.W. — 2341
McCune, D. — 2036, 2037
McCune, D.M. — 2033
McCurdy, A.K. — 1649
McCurdy, C.W. — 1099, 1117
McCurdy, C. William — 2348
McCutcheon, K.S. — 451
McDaniel, D. — 685
McDaniel, F.D. — 1669, 1674, 1675, 1681, 1684, 1685
McDermott, D.B. — 1941, 2000, 2001
McDonald, D.S. — 1322
McDonald, F.B. — 949
McDonald, I.A. — 237
McDonald, J.L. — 1817
McDonald, J.T. — 1813
McDonald, J.W. — 1162, 1813
McDonald, Keith L. — 740, 1041, 2115
McDonald, K.L. — 791, 1041, 1904, 2175, 2277
McDonald, R. — 1525
McDonald, R.J. — 1849
McDonough, J.M. — 2266, 2304
McDowell, A.F. — 314
McDowell, C. — 1220
McDowell, W. — 1229
McEachran, R.P. — 1101, 1104
McElfresh, M. — 80, 122, 212, 459
McEligot, Donald M. — 2298
McEllistrem, M. — 568
McEllistrem, M.T. — 928, 1051
McElroy, C.T. — 1773
McEuen, P.L. — 393
McEver, J. — 1819
McEvoy, R. — 91
McFadden, G.B. — 413, 2295
McFarland, M.D. — 1888
McFarlane, Ken — 1440
McFarlane, R.A. — 1728
McFarlane, Ross A. — 1743
McGhee, D. — 1266
McGhee, D.G. — 1224, 1293, 1400
McGhie, A.R. — 253
McGill, J. — 1254, 1317
McGill, John — 1251
McGill, T.C. — 401, 646
McGinley, C.B. — 2235, 2266
McGinnis, D. — 1206, 1213, 1219, 1268, 1308, 1358, 1360
McGinnis, K. — 1200, 1201
McGinnis, W.C. — 260, 637
McGlynn, S.P. — 2355, 2367, 2377
McGonigal, G.C. — 1619
McGowan, F. — 980, 2170
McGowan, F.K. — 1013, 1014, 1015, 1049, 1806, 1858, 2170
McGowan, R.W. — 1120
McGrath, G. — 1021
McGrath, R.L. — 926, 1812, 1828
McGrath, R.T. — 1898
McGrattan, K.B. — 2240
McGreevy, J.L. — 2226
McGrew, C. — 1021
McGuire, J. — 1089
McGuire, J.H. — 1132
McGuire, K. — 1905, 2031, 2032, 2037
McGuire, K.M. — 1906, 2031, 2032
McGuire, R.E. — 948
McGuire, S.C. — 1825
McGuire, T.R. — 241
McHarris, W.C. — 942
McHenry, J.A. — 314
McHugh, C.M. — 410, 482
McHugh, J.P. — 2215, 2223
McHugh, P.R. — 1894, 1920, 1921
McIlrath, T.J. — 1145
McIlroy, D.N. — 334
McInturff, A. — 1290
McIntyre, C.R. — 810
McIntyre, D.H. — 1714, 1758
McIntyre, J. — 1034
McIntyre, P. — 1675
McIntyre, Peter M. — 1337
McIntyre, P.M. — 1283, 1683
McKague, D. — 370
McKay, Susan R. — 264, 812
McKay, T.A. — 1020
McKee, G. — 2029
McKellar, A.R. — 1760
McKellar, B. — 1841
McKelvy, M.J. — 1607
McKenna, G.B. — 415, 416, 423, 545, 717
McKenna, M.J. — 384, 677, 681, 817, 1042
McKenney, E.A. — 2241
McKenzie, Ross H. — 382
McKenzie-Wilson, R. — 1394
McKernan, J.T. — 935
McKernan, S.K. — 779
McKinley, J. — 735
McKinley, J.D. — 1606
McKinley, J.T. — 182, 474, 2166
McKinstry, C.J. — 1913, 1914, 1934, 1935
McKinzie, M. — 1817
McKinzie, M.G. — 1816, 1830
McKittrick, J. — 1546
McKoy, V. — 1167, 2348
McKoy, Vincent — 1151
McLaren, P.E. — 1951
McLaughlin, K.W. — 1149
McLean, A.B. — 334
McLean, E.A. — 2085
McLean, H.S. — 1974
McLean, J.G. — 342
McLean, R.J. — 1757
McLean, R.S. — 533
McLeod, David M. — 1040, 1041, 1644
McLeod, Roger D. — 947, 1040, 1041, 1644
McMahan, A.K. — 208, 332, 1496
McMahan, M. — 1204, 1815, 1853, 1854
McMahan, M.A. — 1808, 1828
McMahan, P. — 1815
McMahon, M.I. — 1532, 1533, 1573
McMahon, W.E. — 510, 781
McManus, K. — 2196
McMichael, Chase — 750
McMichael, G.E. — 1394
McMichael, R.D. — 217, 816
McMorrow, D. — 1645
McMullan, R.K. — 625
McMullen, T. — 696
McMurry, D. — 1273
McMurtry, P.A. — 2213, 2243
McNally, J.D. — 2001
McNally, J. Rand, Jr. — 2020
McNamee, S.G. — 293, 410, 482
McNeil, J.A. — 965, 966
McNeill, D.H. — 2040
McNeill, P. — 157, 1671
McNerney, A.J. — 1394, 1398
McNiel, L.E. — 132
McParland, C. — 998, 999, 1815, 1815, 1828, 1853, 1854
McPherson, J. — 1197
McQueen, P.G. — 500
McQueen, R.G. — 1528, 1585
McQueeney, R. — 389
McRae, Gregory J. — 1443
McVey, B.D. — 1938, 1939
McWilliams, J. — 2317
McWilliams, R. — 1890, 1966, 2112
Mdeivayeh, N. — 1852
Meade, Bob — 1722
Meade, R. — 367
Meade, R.D. — 98
Meadows, E. — 928
Meads, P.F., Jr. — 1266
Mealing, A. — 265
Mears, C. — 1624
Measday, D.F. — 913, 914
Mechlińska-Drewko, J. — 2350
Meddahi, M. — 1325, 1346
Medina, E. — 62, 116
Medina, Fernando D. — 468
Medina, N.H. — 1819
Medley, S.S. — 1907, 2030, 2049
Medrano, M. — 2021
Medvedev, A.B. — 1584, 1587
Medvedev, V.A. — 1054
Medvedko, A. — 1401
Meegan, C. — 1638
Meegan, C.A. — 989, 1638
Meegan, Charles A. — 1027

- Meehan, B.T. — 1818
 Meekhof, D.M. — 1111, 1121
 Meenakshi, S. — 1514, 1521
 Meents, M. — 252, 625
 Meese, J. — 2119
 Meese, J.M. — 2119
 Meeusen, G.J. — 2376
 Meeves, Bruce — 162
 Mefford, T. — 1834
 Megens, H.J.L. — 934
 Meger, R.A. — 2047
 Mehdian, H. — 1940
 Mehl, M.J. — 372, 576
 Mehlman, G. — 735
 Mehmood, G. — 1849
 Mehra, R.M. — 1535
 Mehrem, R. — 1016, 1807, 1858
 Mehring, M. — 1622
 Mehrotra, V. — 217
 Mehta, R. — 1681
 Mehta, R.D. — 2246, 2272
 Mehta, S. — 239, 1022
 Mehta, Vinay R. — 425
 Mei, B.Z. — 484
 Mei, C.C. — 2222, 2245
 Mei, J. — 208, 310
 Mei, P. — 569
 Mei, Q.Y. — 1915
 Mei, R. — 2220, 2279
 Mei, W.N. — 364, 655, 842
 Mei, Yu — 839
 Meiburg, Eckart — 2211, 2252, 2265, 2301
 Meier, A. — 935, 1674
 Meier, M. — 1951, 1953
 Meier, M.A. — 1953
 Meier, P. — 569
 Meier, P.F. — 375
 Meigs, A.G. — 1949
 Meigs, G. — 338
 Meigs, M.J. — 1272
 Meinders, M.B.J. — 225, 585
 Meinhold, P. — 1639
 Meinke, R. — 1219, 1220, 1244
 Meir, Y. — 641, 756
 Meisel, M.W. — 130, 497
 Meisner, G.P. — 314
 Meisner, K. — 1255
 Meiss, J.D. — 1908
 Meissner, J. — 1841, 1844, 2175
 Meissner, T. — 1838
 Meitz, Hubert L. — 2236
 Meitzler, Charles R. — 1337
 Meitzler, C.R. — 1320
 Melatos, A. — 1994, 2020
 Mele, E.J. — 305, 695
 Melendez-Lira, M. — 478
 Melenkevitz, J. — 715
 Meleshko, Vyacheslav — 2312
 Melikechi, N. — 947, 970, 971, 1120, 1148, 1737
 Melikian, S. — 65, 322
 Melin, G. — 1343
 Mell, W.E. — 2268
 Mellema, S. — 1004
 Mellen, W.R. — 1651
 Meller, R. — 1286
 Melles, M. — 1171
 Mellinger, J. — 1645
 Melloch, Michael R. — 315
 Melloch, M.R. — 316, 703, 707
 Mellors, W. — 1388
 Melman, Seymour — 358
 Melnik, M.S. — 573
 Melnik, Yu.M. — 987
 Melnychuk, S. — 1322
 Melnychuk, S.T. — 1333
 Melton, J. — 1300
 Meltzer, R.S. — 467
 Melzacki, K. — 2091
 Menard, J. — 2004, 2005
 Menceloglu, Y. — 142
 Menchaca, B. — 417
 Menchaca-Rocha, A. — 1813, 1849
 Mendell, G. — 969
 Mendelsohn, A.S. — 144
 Mendelsohn, S.L. — 1338
 Mendelson, K.S. — 116
 Mendes, Ingrid — 1738
 Mendez, A.J. — 1064, 2171
 Mendez, E.E. — 180
 Méndez-Moreno, R.M. — 383, 524
 Mendoza, Bernardo S. — 586
 Mendoza, Bernardo S. — 586
 Mendoza, C.I. — 217
 Menegat, A. — 1230, 1288, 1391, 1395, 1396
 Menendez, J. — 357, 501, 738
 Menendez-Barreto, M. — 1103, 2361
 Meneses, G.D. — 1106
 Meneveau, C. — 2195, 2231, 2269, 2305
 Menezes, D.P. — 1639
 Meng, J. — 447, 1516
 Meng, R.L. — 104
 Meng, W. — 1296, 1297
 Meng, Y. — 1593
 Meng, Z. — 510
 Menge, P.R. — 1282, 1348, 2002
 Menikoff, Ralph — 2227, 2248, 2286
 Menn, W. — 933
 Menna, L. — 401
 Menningen, K.L. — 2335, 2377
 Menninger, W.L. — 1280, 1963
 Menon, M. — 67, 90, 449
 Menon, M.M. — 1935, 2058
 Menon, N. — 544
 Menoni, C.S. — 1589
 Menovsky, A.A. — 178
 Men' Schikov, L. — 1284
 Mensz, P.M. — 507
 Mentink, S.A.M. — 178
 Menyuk, C.R. — 1738, 1748
 Meo, F. — 1892, 2027
 Merati, P. — 2242
 Mercader, I. — 2267
 Mercer, D. — 1841
 Mercer, David J. — 1809
 Mercer, D.J. — 982
 Mercer, L., Jr. — 448
 Mercer, R.L. — 1860
 Merchant, L.M. — 526
 Merchant, P. — 839
 Merchant, Paul — 330
 Mercier, E. — 1322
 Mercier, P. — 1538
 Meredith, P.G. — 1491
 Merer, Anthony — 50
 Merkle, Ralph — 491
 Merkt, U. — 228
 Merl, R. — 1292
 Merle, E. — 1200, 1301, 1302
 Merlin, R. — 648, 763, 813
 Merlini, A.E. — 386
 Merlino, R.L. — 1966
 Mermin, N.D. — 626
 Merminga, L. — 1204, 1213, 1257, 1287, 1357
 Merrill, F. — 1843
 Merriman, B. — 1892, 1920, 1946
 Merritt, Frank — 1057
 Merritt, F.S. — 985, 986, 1037
 Merritt, K.W.B. — 985, 986, 1037
 Mertens, F.G. — 648
 Mertens, G. — 1825
 Mertz, C. — 942, 1684, 1818
 Mertz, C.J. — 942
 Mertz, Jerome — 1778
 Mertz, P. — 764
 Mervis, J. — 1122
 Merz, J.L. — 531, 703
 Merz, W. — 1223, 1226
 Meschanin, A.P. — 1054
 Meschia, S.C. — 406
 Meserve, Richard A. — 996
 Meshcherov, R. — 1284
 Meshcheryakov, Y. — 1486, 1513, 1540, 1580
 Meshkov, S.V. — 588
 Messerschmitt, J. — 1896, 2047
 Messiaen, A. — 2007
 Messiaen, A.M. — 2058
 Messier, A.F. — 2245
 Mestha, L.K. — 1214
 Mesyats, G. — 2090
 Metcalf, H. — 1141, 1155
 Metcalf, P. — 80, 438
 Metcalfe, G. — 2268, 2276
 Metcalfe, R. — 2213, 2214
 Meth, M. — 1209, 1394
 Methfessel, M. — 208, 560
 Methfessel, Michael — 730
 Metiu, H. — 1757
 Metiu, Horia — 67, 793, 799
 Metlay, M.P. — 1831
 Métois, J.-J. — 567
 Metoki, N. — 618
 Metrikin, V.S. — 790
 Metty, P. — 1398
 Metzger, D. — 1354, 1381, 1384, 1385, 1406
 Metzner, C. — 337
 Meulenbroeks, R.F.G. — 2362
 Meunier, J. — 2374
 Meuth, H. — 1350, 1384, 1399
 Mewaldt, A. — 948
 Mewaldt, R.A. — 933, 947, 948, 949
 Mewes, M.-O. — 1141
 Meyer, B.S. — 1802
 Meyer, C.W. — 946
 Meyer, D.M. — 2187
 Meyer, F. — 1223, 1226
 Meyer, F.W. — 1162, 1164, 1165
 Meyer, H. — 1006, 1023
 Meyer, H.O. — 997
 Meyer, J. — 2025, 2026
 Meyer, J.A. — 2025
 Meyer, J.R. — 235
 Meyer, K.A. — 475
 Meyer, M. — 1049, 1831
 Meyer, R. — 57, 1212, 1334
 Meyer, R.E. — 1220
 Meyer, S. — 920, 1066
 Meyer, W. — 1328
 Meyer, W.E. — 1162
 Meyer, W.H. — 1328, 2065, 2112
 Meyerhof, W. — 1170
 Meyerhof, W.E. — 1265
 Meyerhofer, D.D. — 1770, 1987, 1989
 Meyers, M.A. — 1545, 1592
 Meyerson, B.S. — 84
 Meystre, P. — 77
 Meystre, Pierre — 1763
 Meytlis, V.P. — 2372
 Meyyappan, M. — 2333, 2355
 Mezentsev, N. — 1290, 1325
 Mezić, I. — 2194
 Mezzin, O.A. — 833
 Mezzetti, F. — 2091
 Mi, Donglin — 530
 Mi, L. — 2358, 2365
 Miao, L. — 405
 Miao, Ting — 1038
 Miao, Y. — 926, 1811
 Miceli, L. — 914, 915
 Miceli, P.F. — 450
 Michael, A.L. — 1808, 1812
 Michael, D. — 2369
 Michael, R. — 944, 1859
 Michaelian, K. — 1818, 1849
 Michalske, T.A. — 378
 Michaud, D. — 2028
 Michaud, S. — 2343
 Michel, R.P. — 533, 818
 Michel, T.R. — 77, 827
 Michelini, P. — 1222
 Michelotti, L. — 1237
 Michels, J.P.J. — 1496
 Michelson, Peter — 1026
 Michelson, P.F. — 988, 989, 1635
 Michely, Thomas — 341, 612
 Michielsen, S. — 424
 Michizono, S. — 1395
 Mickens, R.E. — 966, 967, 2167
 Mickevičius — 55
 Mickevičius, R. — 842
 Middleton, A.A. — 383, 754
 Middleton, H. — 1140
 Midgley, P.A. — 129
 Midwinter, C. — 1773
 Miele, G. — 1244
 Miertusova, J. — 1260, 1262
 Migault, A. — 1535
 Migdal, W. — 1226
 Migler, K. — 350
 Migliori, A. — 79, 389, 396, 816
 Migliuolo, M. — 260
 Migliuolo, S. — 1946, 2038, 2053
 Mignerey, A.C. — 927, 998, 1852, 1853
 Migone, A.D. — 748
 Mihailidi, Margarita — 1747
 Mihailidis, D. — 1050
 Mihailidis, D.N. — 1052, 1829
 Mihalisin, T. — 106, 122, 817
 Mihaly, G. — 775
 Mihaly, L. — 127, 272, 501, 502
 Mihaychuck, J.G. — 1775
 Mihaychuk, J.G. — 1775
 Mihelic, R. — 1263
 Mikaelian, Karnig O. — 2209
 Mikalopas, J. — 290
 Mikhailenko, S.A. — 1662
 Mikhailichenko, A.A. — 1289
 Mikhailova, O.L. — 1512, 1555
 Mikhalevich, V.G. — 1726
 Mikheenko, P.N. — 1517
 Miki, K. — 1612
 Miki, Kazushi — 568
 Mikić, Z. — 1892
 Mikić, Zoran — 1463
 Mikkelsen, D. — 2052
 Mikkelsen, D.R. — 2037
 Miklich, A.H. — 637, 691
 Miklis, Mark E. — 2168
 Mikolaitis, David W. — 2259
 Miksad, R.W. — 2252
 Mila, F. — 821
 Milanese, M. — 2119
 Milardi, C. — 1368
 Milburn, J.E. — 1292
 Milder, A. — 1054
 Miles, J. — 1365, 1366
 Miles, Jeffrey Hilton — 2265
 Miles, R.B. — 2257
 Miles, R.H. — 531
 Miley, G.H. — 1898, 1977
 Miley, H.S. — 1856
 Milhaly, L. — 616
 Militsin, B. — 1367
 Millar, C. — 1726

- Miller, A. — 449
 Miller, A.E.S. — 1103
 Miller, B.H. — 733
 Miller, Bill — 968
 Miller, C.A. — 982, 1847
 Miller, D. — 133, 422, 481, 1625, 1815
 Miller, D.J. — 459
 Miller, E.A. — 1619
 Miller, G.A. — 2009
 Miller, G.D. — 2303
 Miller, Gerald A. — 957
 Miller, J. — 1362, 1810, 1815
 Miller, J.D. — 1121, 1141, 1168, 2060, 2295
 Miller, J.H., Jr. — 836
 Miller, Joel S. — 533
 Miller, J.S. — 532
 Miller, M.A. — 1846
 Miller, M.D. — 87
 Miller, M.F. — 2202
 Miller, M.M. — 223
 Miller, P. — 113, 394, 2346
 Miller, Philip — 1582
 Miller, R. — 328, 466, 1021, 1149, 1287
 Miller, R.D. — 485, 1092, 1133, 1160
 Miller, R.E. — 691, 752
 Miller, R.H. — 1230, 1288, 1312, 1314, 1316
 Miller, R.J. — 1131
 Miller, R.J.D. — 449, 511, 1751, 1765
 Miller, R.L. — 1945
 Miller, Robin L. — 1756
 Miller, Roger — 102
 Miller, Roger E. — 1753
 Miller, R.S. — 2281
 Miller, S. — 1282
 Miller, S.M. — 931, 1938
 Miller, T. — 342, 568, 727, 781, 2174
 Miller, T.A. — 152, 2336, 2343
 Miller, Thomas M. — 1100
 Miller, T.J. — 284, 516, 646
 Miller, T.M. — 1103, 2361
 Miller, W. — 1253
 Miller, W.H. — 550, 1629, 1630
 Miller, William H. — 101
 Millich, A. — 1352, 1384
 Milliken, A.M. — 402
 Milliman, L. — 1342
 Millis, A.J. — 600, 757
 Millo, D. — 1329
 Mills, D.L. — 503, 504
 Mills, F. — 1249, 1266, 1284
 Mills, F.E. — 1293, 1298
 Mills, G. — 167
 Mills, J.D. — 1148
 Mills, M.E. — 411
 Mills, M.J. — 790
 Mills, M.R. — 1211
 Mills, P.J. — 488
 Mills, R. — 1365
 Millsom, D. — 1225
 Milman, V. — 796
 Milman, Viktor — 1619
 Milner, R. — 1821
 Milner, R.M. — 1836
 Milner, Scott T. — 350, 404, 715
 Milonni, P.W. — 1106
 Milora, S.L. — 2057, 2065
 Milov, A. — 1332
 Milovich, J. — 2102
 Milstead, I. — 1210
 Milton, B. — 1335
 Milton, John — 362
 Mima, K. — 1309
 Mimashi, T. — 1212, 1299
 Mimmagh, D.R.J. — 1104
 Min, B.J. — 832, 844
 Min, K. — 915
 Min, Y. — 311
 Minaev, N.G. — 1054
 Minatti, N. — 1383
 Miné, P. — 1218
 Mineev, V. — 1580, 2248
 Miner, W.H., Jr. — 1953
 Minestrini, M. — 1286, 1384
 Ming, L.C. — 254
 Ming, Z.H. — 84, 461, 798
 Mini, S.M. — 164
 Minkoff, Max — 1452
 Minnix, Dick — 2164
 Minomura, S. — 1571, 1572, 1588, 1589
 Minor, H. — 487
 Mintmire, J.W. — 53, 450, 1524
 Minton, T.K. — 2375
 Minty, M. — 1197, 1213, 1214, 1217, 1245, 1255, 1257, 1371
 Minty, M.G. — 986, 1245, 1257, 1258
 Mintz, S.L. — 913
 Mioduszewski, P.K. — 2058, 2059
 Mioduszewski, S. — 2172
 Miotkowski, I. — 797
 Mira, J. — 216
 Miragliotta, J. — 566
 Miram, G. — 1232
 Miranda, E. — 500
 Miranda, F.A. — 689
 Mireles, Fernando — 928, 929
 Mironov, V. — 1368
 Miro Rodriguez, C. — 1040
 Mirrashidi, P. — 2353
 Mirus, K. — 1979
 Mirzaa, M.C. — 1051
 Mirzozan, A. — 1217
 Mischke, R.E. — 1036, 1836
 Mischler, John — 1654
 Misk, J. — 1404
 Misewich, J.A. — 1765
 Mishin, A.V. — 1384
 Mishin, G.I. — 1484
 Mishnev, S. — 1367
 Mishra, C.S. — 1252, 1293, 1346
 Mishra, K.C. — 466
 Mishra, S.K. — 373
 Mishra, S.R. — 985, 986, 1037
 Mishra, V. — 1051
 Mishra, V.K. — 1847
 Miskimen, R. — 1034, 1035
 Miskimen, R.A. — 1034
 Miskovsky, N. — 579
 Misono, K. — 2359, 2375
 Misra, P. — 970, 971
 Misra, P.K. — 323, 381
 Misra, S. — 971
 Misra, V. — 265
 Missalla, T. — 2043
 Missella, T. — 2079
 Missert, N. — 185, 520
 Mistura, G. — 1048
 Mitani, N. — 462
 Mitás, Luboš — 168, 684, 1453
 Mitch, M.G. — 501
 Mitchel, G.R. — 1216
 Mitchel, W. — 686
 Mitchel, W.C. — 181, 810
 Mitchell, A.C. — 186, 1520
 Mitchell, Dale W. — 114, 564
 Mitchell, G.E. — 913, 1803, 1804, 2171
 Mitchell, I.H. — 2087
 Mitchell, J. — 933
 Mitchell, J.B.A. — 1114, 1116, 2357
 Mitchell, J.T. — 1061, 1834, 1837
 Mitchell, J.W. — 932, 933, 949
 Mitchell, K. — 1016, 1837
 Mitchell, M. — 1441, 2258
 Mitchell, T.B. — 1971
 Mitha, S. — 86
 Mitin, V. — 55, 634, 842
 Mitra, A.K. — 1384, 1401
 Mitra, Partha — 497
 Mitra, P.P. — 114, 115, 166
 Mitrochenko, V.V. — 1316, 1358
 Mitrović, B. — 390
 Mitsuhashi, T. — 1244
 Mitsui, H. — 1205
 Mittelbach, A. — 151
 Mittleman, D.M. — 502, 807
 Mitzi, D.B. — 116
 Miura, A. — 1384, 1391
 Miura, I. — 1271
 Miwa, H. — 1387
 Miwa, K. — 622
 Miyana, N. — 2085
 Miyano, K. — 226, 1151
 Miyano, K.E. — 320, 519
 Miyashita, H. — 2340
 Miyata, H. — 85
 Miyauchi, M. — 1975
 Miyazaki, K. — 2335
 Miyoshi, M. — 1534
 Mize, W.K. — 914, 915
 Mizes, H.A. — 159, 449, 511
 Mizuhara, E. — 1514
 Mizuno, A. — 1287
 Mizuno, H. — 1396, 1402
 Mizuno, K. — 1912
 Mizuno, Katsu — 1935
 Mizuno, M. — 2052, 2340
 Mizutani, G. — 827
 Mizutani, N. — 1527
 Mlynek, J. — 1777
 Mlynek, Juergen — 1778
 Mo, Luke — 924
 Mo, Y.W. — 624
 Mo, Z. — 408, 655
 Moats, A. — 1306
 Mochalov, M.A. — 1512, 1555
 Mochalov, V.V. — 1054
 Mochan, W. Luis — 586
 Mochel, J.M. — 239
 Mochena, M. — 1889
 Mocheshnikov, N. — 1324, 1368
 Mochrie, S.G.J. — 437, 448, 799
 Mock, R.C. — 1302, 2074
 Mock, W., Jr. — 1500, 1509
 Modéer, J. — 1367
 Modena, A. — 2079
 Modi, B.C. — 1924
 Modine, N.A. — 753
 Modreanu, G. — 2351
 Moe, H. — 1205, 1266
 Moeckly, B.H. — 637, 751
 Moeller, C.P. — 2069
 Moerdijk, A.J. — 1168
 Moerel, J. — 1296
 Moerkirk, Robert P., Jr. — 513
 Moerner, W.E. — 49
 Moffat, D. — 1231, 1353, 1354, 1374, 1380, 1381, 1384, 1385
 Moffat, Keith — 150
 Mofeit, K. — 1203
 Moftah, B. — 913, 914
 Moghavvemi, M. — 217
 Moghazy, S. — 545
 Mohamed, M.A.K. — 749, 751
 Mohanty, J.N. — 1248, 1284, 1359, 1369
 Mohapatra, Y.N. — 1615
 Mohar, M.F. — 1842
 Mohideen, U. — 1734
 Mohindra, V. — 2354
 Mohiuddin, F. — 797
 Mohnkern, L.M. — 181
 Moir, P. — 2189, 2197, 2202, 2265, 2280, 2281, 2311
 Moinester, M. — 914, 915
 Moinester, M.A. — 1859
 Moini, S. — 89
 Moir, D. — 1302, 1303, 1997
 Moisan, M. — 2327, 2340, 2343, 2352, 2353, 2372
 Moise, T.S. — 763
 Moiseev, V.A. — 1344
 Mokhov, Nikolai — 908
 Mokhov, N.V. — 1203, 1267, 1316, 1317, 1404
 Mokler, Paul — 910
 Moldover, M. — 480, 1005
 Moler, E. — 365
 Moler, K.A. — 691
 Moler, J.J. — 52
 Molina, M. — 168, 529
 Molinar, G.F. — 1531
 Molinari, Elisa — 149
 Molinas-Mata, P. — 157, 623, 728
 Molitoris, J. — 1016
 Moll, N. — 622
 Moller, J. — 1328
 Moller, J.H. — 1328
 Moller, S. — 1197
 Møller, S.P. — 1336, 1404
 Molis, F.B. — 2229
 Molnar, R.J. — 445
 Molodets, A.M. — 1520
 Molodov, D.A. — 1577
 Moloney, J.V. — 1763, 1904
 Moloni, K. — 124
 Moltz, D.M. — 998, 1808, 1844, 1857
 Molvik, A.W. — 1921, 1974
 Molz, E.B. — 166, 386
 Momberger, K. — 1102
 Momose, H. — 400
 Momose, T. — 1263
 Monaghan, J. — 1442
 Monakhov, A.Yu. — 836
 Moncrief, V. — 1450
 Mondelli, A. — 1344, 1386
 Mondello, M. — 244
 Mondy, L.A. — 2257
 Mong, Yudong — 2008
 Monismith, S. — 2261
 Monkewitz, P.A. — 2290, 2303
 Monroe, C. — 1142
 Monroe, Don — 84
 Monsivais, Guillermo — 531
 Monson, T.K. — 843
 Montambaux, G. — 584
 Montanari, T. — 2091
 Montenegro, L. — 2254
 Montés, B. — 1218
 Montfrooij, W. — 1594
 Montgomery, D. — 1890, 1926
 Montgomery, D.S. — 1886, 1913, 1914, 1915, 1934, 1935, 2087
 Monthoux, P. — 329, 391
 Monticello, D. — 1463, 1946
 Monticello, D.A. — 2021
 Montogomery, D.S. — 1915
 Montvai, A. — 1909
 Moodenbaugh, A.R. — 224, 327, 829
 Moodera, J.S. — 325, 1610
 Moody, J.D. — 1914, 1915, 1934
 Moody, Stephen E. — 1767
 Mooij, J.E. — 273, 804
 Mook, H. — 522
 Mook, H.A. — 579
 Moon, K. — 277, 278
 Moon, M. — 193, 410
 Moon, S.J. — 2105

- Mooney, T. — 113
 Mooney, T.M. — 113, 518
 Moore, B. — 68, 1655
 Moore, B.W. — 1662
 Moore, C. Bradley — 1741
 Moore, C.F. — 942, 943, 944, 1817
 Moore, D.A. — 1973
 Moore, E.F. — 1832
 Moore, F.G. — 265
 Moore, F.L. — 1121, 1154, 1777
 Moore, Gordon — 298
 Moore, J. — 409
 Moore, J.H. — 2348
 Moore, K.R. — 1965
 Moore, M.V. — 746
 Moore, R.S. — 294
 Moore, T.A. — 2375
 Moore, T.Z. — 1678
 Moore, W. — 2232
 Moore, W.J. — 565
 Moores, T. — 927
 Moorman, L. — 1094
 Moos, H.W. — 1957, 2027
 Mopsik, F.I. — 488
 Morales, E. — 107
 Morales, F. — 242, 1613
 Morales, G. — 418, 479, 1261, 1263
 Morales, G.J. — 1887, 1971, 2007, 2105, 2111
 Morales, M.A. — 602
 Morales, R. — 1632
 Moran, Timothy J. — 259
 Morano, R. — 1218
 Morar, J.F. — 85, 678
 Morariu, M. — 1514
 Moratti, S. — 211
 Moravec, K. — 1262
 Morawe, Ch. — 618
 Morcombe, P. — 1403
 Mordechai, S. — 942, 943
 More, R.M. — 1670, 2082
 Moreau, D. — 2108
 Moreland, J. — 185
 Moreland, John M. — 665
 Moreland, L. — 1938
 Morelli, D.T. — 213, 401
 Moreno, J.C. — 1915, 1934, 1943, 1957
 Moreno, M. — 383, 524
 Moreno, M.S. — 270
 Moreo, A. — 463, 725
 Moretti, A. — 1392, 1396
 Moretto, L.G. — 1812, 1828, 1842, 1853
 Morfin, Jorge — 1641
 Morgan, D. — 329
 Morgan, D.C. — 71, 805
 Morgan, D.V. — 1119
 Morgan, G. — 1290, 1341
 Morgan, H.D. — 1152
 Morgan, J. — 997
 Morgan, J.D., III — 1119, 1127
 Morgan, J.F. — 1825
 Morgan, J.M. — 928
 Morgan, P. — 2055
 Morgan, Roger J. — 142
 Morgan, W.L. — 1456, 2379
 Morgillo, A. — 1290, 1341
 Morhac, M. — 1806
 Mori, M. — 625, 2053, 2054
 Mori, N. — 400, 1497
 Mori, W. — 1988, 1998
 Mori, W.B. — 1279, 1964, 1993, 2080, 2081
 Mori, Y. — 1265, 1321
 Moriarty, J.A. — 309, 505, 1551
 Moriarty, P. — 598
 Morier-Genoud, F. — 182
 Morifuji, M. — 283
 Morihiro, Y. — 1614
 Morikawa, T. — 368
 Morikawa, Y. — 287
 Morillo, J. — 1218
 Morin, B.G. — 533
 Morishita, O. — 1333
 Morishita, T. — 112, 259
 Morita, A. — 1927, 2008
 Morita, S. — 2022
 Morita, Yukinori — 568
 Moritz, G. — 1373
 Moritz, W. — 436
 Moriyama, S. — 2054
 Morkoç, H. — 133, 593
 Morland, L.C. — 2245
 Moroi, D. — 848
 Moromisato, J. — 1020
 Moroni, A. — 1853
 Moroni, E. — 83
 Moroni, S. — 176, 620
 Morosin, B. — 173, 617, 749, 1527, 1622
 Moroso, R. — 2119
 Moroz, P. — 2024, 2049
 Moroz, P.E. — 2025, 2115
 Morozov, D.K.H. — 1929
 Morozov, N. — 1368
 Morpurgo, G. — 1308
 Morris, C. — 942, 1684, 1818
 Morris, C.E. — 1528
 Morris, C.L. — 942, 943, 944, 1036, 1037, 1817, 1818
 Morris, D. — 1298
 Morris, D.E. — 152, 830
 Morris, D.J. — 948
 Morris, Donald E. — 462
 Morris, J. — 232
 Morris, J.F. — 2258
 Morris, J.R. — 794, 1755, 1756
 Morris, P.J. — 2195
 Morris, R.A. — 1103, 2361, 2371
 Morris, R.C. — 369
 Morris, R.V. — 114
 Morris, S.L. — 944
 Morris, W. — 1948
 Morrison, David P. — 1000
 Morrison, F.A. — 486
 Morrison, Ian — 219
 Morrison, J.H. — 2266, 2286
 Morrison, M.A. — 1100, 1105, 1130
 Morrison, P.J. — 1909, 1931, 1990, 1991
 Morrison, R.J. — 1964
 Morrissey, D. — 1827
 Morrissey, D.J. — 983, 1841, 1842, 1844
 Morrobel-Sosa, A. — 314, 569
 Morrow, Cherilynn — 1047
 Morrow, P.R. — 1154, 1674
 Morrow, R.A. — 265, 377, 1646
 Morrow, S. — 162
 Morrow, T. — 2335
 Morrow-Jones, J. — 1208, 2068, 2112
 Morrow-Jones, J.W. — 2112
 Morse, David C. — 404, 552
 Morse, Mike — 50
 Morse, R.J. — 1061, 1811
 Morse, S.F.B. — 2085
 Morse, W. — 1369
 Mortara, J.L. — 939, 1804, 1855
 Mortazavi, M. — 190
 Mortensen, K. — 143, 579, 604, 605, 657
 Morton, David — 1664
 Morton, D.C. — 109, 155
 Morton, P. — 1234
 Morton, Thomas L. — 1899
 Moruzzi, V.L. — 83, 256
 Moser, R. — 1435
 Moser, R.D. — 2214, 2271, 2311
 Moses, D. — 206, 211, 311, 312, 501, 502
 Moses, G.A. — 2083, 2086
 Moses, H.E. — 1649
 Moses, R.W., Jr. — 1976
 Moshhammer, H. — 1255, 1367
 Moshchalkov, V.V. — 1623
 Mosher, D. — 2013, 2046
 Moskalenko, V. — 1368
 Moskovits, M. — 62
 Moskowitz, B. — 317, 1832, 1836, 1837
 Moskowitz, Jules W. — 1453
 Mosley, W.D. — 241
 Mosnier, A. — 1288, 1378
 Moss, Frank — 318, 362, 811
 Moss, S.C. — 235, 252, 625
 Moss, Simon C. — 105, 197
 Mossman, M.A. — 2111
 Mostovych, A.N. — 2082
 Mostrom, M.A. — 2046
 Mostrovych, A.N. — 2082
 Moszkowski, S.A. — 1822
 Mota, R.P. — 2334
 Motai, K. — 403
 Motohashi, T. — 2236
 Motojima, O. — 2021
 Motowidlo, Leszek R. — 346
 Motowidlo, L.R. — 836
 Motret, O. — 2359
 Mott, P.H. — 423
 Motz, Lloyd — 919, 1651
 Mouchaty, G. — 1813
 Moudry, B.W. — 1161
 Mougey, J. — 1034
 Mouloupoulos, Konstantinos — 741
 Moulton, Jeff — 158
 Moulton, N.E. — 1573
 Moulton, W.G. — 527
 Mountford, A.W. — 1844
 Mourad, Pierre D. — 2224
 Mourgues, M. — 487
 Mouritsen, O.G. — 1626
 Mourou, G. — 1279, 1729, 1988
 Mousseau, Normand — 738, 833
 Moustakas, T.D. — 445, 621
 Mouzouris, Y. — 1887
 Mover, R.A. — 2063
 Movshovich, R. — 79, 369
 Mowat, J.R. — 1116
 Mowrey, R.C. — 286
 Moxon, M.C. — 522
 Moy, A.M. — 531
 Moya de Guerra, E. — 1822
 Moyer, C.A. — 534
 Moyer, R.A. — 1924, 1937, 2008, 2059, 2060
 Moynihan, Cornelius T. — 743
 Moz, S. — 1389
 Mroczkowski, T. — 1298
 Mrowka, S. — 2044
 Mryasov, O.N. — 83
 Msall, M.E. — 810
 Msezane, A. — 1159
 Msezane, Alfred Z. — 1101, 1129
 Msezane, A.Z. — 1105
 Mu, S. — 2218
 Muchnoi, N. — 1332
 Mück, M. — 688
 Mudjugin, B.G. — 1270
 Mudry, Christopher — 753
 Muehler, H.E. — 1094
 Mueller, D. — 1905
 Mueller, D., Dr. — 1537
 Mueller, D.R. — 226, 320
 Mueller, F.M. — 1612
 Mueller, P. — 1829, 1846
 Mueller, P.E. — 1051
 Mueller, W.F. — 1015, 1818, 1819
 Mueller, W.F.J. — 998, 999, 1815, 1828, 1853, 1854
 Muenchausen, R. — 459, 1988
 Muenchausen, R.E. — 160
 Muggli, P. — 2047
 Mughal, S. — 2291
 Muheim, Franz — 1053
 Muira, Y. — 2063
 Mukamel, S. — 58, 121, 682, 1112
 Mukharsky, Y.M. — 87, 88
 Mukhopadhyay, S. — 1818
 Mukhopadhyay, A. — 1062
 Mukhopadhyay, Nimai C. — 915, 1016
 Mukhopadhyay, S. — 1817
 Mukugi, K. — 1326
 Mulazzi, E. — 159
 Mulbrandon, M. — 2089
 Muldavin, J.B. — 987
 Mulder, A. — 1496
 Mulders, N. — 137, 166
 Mulford, Roberta N. — 1564
 Mulhollan, G.A. — 370, 649
 Mulholland, G. — 1290
 Mullen, C.P. — 527
 Mullen, K. — 239
 Müller, B. — 961, 1064
 Müller, D. — 932, 1020
 Müller, E. — 1509
 Müller, G. — 1386
 Müller, Gerhard — 594, 595
 Müller, H. — 1262, 1300, 1380, 1381, 1384, 1385
 Muller, H.G. — 1736
 Müller, J. — 1171
 Müller, K.G. — 2353
 Müller, M. — 1825
 Muller, M.R. — 2187
 Müller, P. — 636, 752
 Müller, R. — 1225
 Müller, W. — 699
 Mullin, C.S. — 367, 1154
 Mullin, S.A. — 1553
 Mullins, D.R. — 730
 Mullins, S. — 980, 1805
 Mullins, S.M. — 1856, 1857
 Mulliss, C. — 1656, 1659
 Multari, R. — 1673
 Muna, D. — 1843
 Munekata, H. — 334, 798
 Mungal, M.G. — 2202, 2246
 Muñoz-Sandoval, E. — 1608
 Munro, D. — 1915
 Munro, D.H. — 1915, 1934
 Munsat, T. — 2030, 2031
 Munson, F.H. — 1333
 Muntz, E.P. — 2263
 Murad, E. — 2358
 Murai, K. — 1943
 Murakami, M. — 1907, 2020, 2033, 2034, 2035
 Murakami, T. — 1333, 1401, 1828
 Muraoka, K. — 2332, 2335, 2338
 Murari, A. — 2012, 2113
 Murat, Michael — 658
 Murata, K. — 1492
 Muratore, J. — 1290, 1341
 Muratore, J.J., Jr. — 2235
 Muratov, L.S. — 592
 Muravjev, V.E. — 1219
 Murdoch, S. — 1763
 Murdock, D.P. — 913
 Murgatroyd, J. — 926, 1811
 Murgatroyd, J.T. — 926

- Muriel, A. — 1043
Murin, B.P. — 1323, 1339, 1385
Murnick, D.E. — 2355, 2362
Murphy, A. St. J. — 926
Murphy, C. — 1039
Murphy, D. — 1023
Murphy, D.P. — 2047
Murphy, D.W. — 368, 1622, 1625
Murphy, E.A. — 437
Murphy, H. — 2088
Murphy, J.E. — 1131
Murphy, K. — 1342
Murphy, L. — 915
Murphy, P.J. — 1042
Murphy, S.Q. — 591
Murphy, T.J. — 2084
Murphy, T.P. — 1063
Murray, B.T. — 1060, 2295
Murray, C.A. — 288, 692
Murray, C.B. — 548, 550, 573
Murray, D. — 1222, 1223
Murray, J. — 1223, 1224, 1400
Murray, J.M. — 2083
Murray, Jon.E. — 1148
Murray, P.T. — 735
Murray, Stephen S. — 953
Murrell, S.A.F. — 1491
Murthy, Ganpathy — 304
Murthy, N.S. — 487
Murthy, S.N. — 369
Murthy, S.N.B. — 2299
Murugkar, S. — 813
Musa, G. — 2359
Muschol, M. — 590
Musfeldt, J.L. — 825
Musick, H.B. — 2217
Mustaine, R.E. — 1388
Mustre de Leon, J. — 389, 390, 460
Muta, H. — 2332
Mutabazi, I. — 2316
Mutel, R.L. — 1905
Muthukumar, M. — 194, 411, 486
Mütter, K.H. — 594
Mutter, T.B. — 2195
Muzart, J.L. — 2342
Muzikar, Paul — 581, 758
Muzny, C.D. — 820
Muzzio, Fernando J. — 2316
Muzzio, F.J. — 2195
Mwez, Nawej — 183, 763
Myae, E.A. — 1251
Myatt, C.J. — 1141
Myatt, J. — 1916
Mydosh, J.A. — 131, 178
Myers, Christopher — 774
Myers, C.R. — 644
Myers, C.W. — 350
Myers, E.G. — 1064, 2171
Myers, Joseph F. — 1721
Myers, K.E. — 60, 751
Myers, M.C. — 2047
Myers, S.M. — 571
Myers, T.H. — 181
Myler, U. — 448
Myles, Charles W. — 372, 517, 1671, 1677, 1681
Mynick, H.E. — 2034, 2039, 2063, 2077, 2102
Mynk, J. — 1398
Myra, J.R. — 2034
Mysnik, A.I. — 1054
Mytnikov, A. — 1896
Mytsykov, A. — 1324, 1368
Myznikov, K. — 1291
Myznikov, K.P. — 1405
Mzoughi, Taha — 1019
- Na, Y. — 2311
Nabiev, R. — 1724
Nachev, I. — 848
Nadal, H. — 1383
Nadasen, A. — 927, 940, 1815, 1854
Nadasky, T. — 2242
Nadiga, B.T. — 2187
Nadim, A. — 2187, 2268, 2309
Nadkarni, G.D. — 710
Nadle, D. — 2006, 2007
Nafis, Suraiya — 322
Nagadi, M.M. — 1063
Nagafuchi, T. — 1367
Nagaitsev, S. — 987, 1197, 1245, 1257, 1265, 1358
Nagaitsev, Sergei S. — 1358
Nagamine, K. — 174
Nagamiya, S. — 1811
Nagase, T. — 1575
Nagashima, A. — 2054
Nagata, M. — 1527, 1975, 2057
Nagata, Y. — 72
Nagayama, K. — 1554
Nagel, Sidney R. — 63, 176, 289, 544, 709, 739
Nagib, H.M. — 2261
Nagle, J. — 1837
Nagle, J.L. — 1810
Nagler, S.E. — 148, 452
Nagorny, P.A. — 1514
Nagorny, V.P. — 2351
Nagpal, R. — 2344, 2350, 2368
Naguleswaran, S. — 980, 1819
Nagy, A.F. — 1905
Nah, Y.G. — 1292
Nahar, Sultana N. — 1129, 1157
Nahm, M.L. — 1917
Nahme, H. — 1481, 1506
Nahory, R.E. — 132
Nahum, M. — 1623
Naik, G.R. — 2342
Naik, R. — 370, 617
Naiou, O. — 2054
Nair, L. — 498
Nair, M. — 408
Nairn, C.M.C. — 2020
Najafabadi, R. — 61
Najafabadi, R.F. — 207
Najafi, S. Iraj — 1713
Najjar, F.M. — 2206
Najm, H.N. — 2213
Najmabadi, F. — 1892, 1920, 1946
Najmudin, Z. — 2079
Nakagawa, S. — 1324
Nakagawa, T. — 1589
Nakahara, Y. — 1328
Nakai, S. — 1943, 2085
Nakajima, K. — 124, 1219, 1309, 1359
Nakajima, S. — 1301
Nakamatsu, J. — 423
Nakamura, A. — 1545, 1618
Nakamura, F. — 1588
Nakamura, H. — 1208
Nakamura, K. — 1358
Nakamura, N. — 345, 1208, 1210, 1212, 1624
Nakamura, S. — 1323, 2242, 2243, 2293
Nakamura, T. — 1354
Nakamura, Y. — 1520, 1533
Nakanishi, H. — 1309, 1359
Nakanishi, Sawako — 1053
Nakanishi, T. — 1323, 1436
Nakano, Aiichiro — 673, 757
Nakano, T. — 1587
Nakao, K. — 1395
Nakatani, Y. — 293
- Nakatsuka, M. — 2085
Nakayama, A. — 2298
Nakayama, E. — 1510
Nakayama, H. — 1212, 1299
Nakazato, T. — 1331
Nakazawa, Y. — 64
Nakroshis, P. — 1651
Nam, S.B. — 525
Nam, S.H. — 1286, 1402
Nam, S.K. — 1349
Nambodiri, M.N. — 1833
Nambodiri, N. — 1816
Namkung, W. — 1286, 1326, 1402
Nandakumar, K. — 2191
Nann, H. — 1847
Nantista, C. — 1385, 1395
Nantista, C.D. — 1288
Nantoh, M. — 212, 582
Napoly, O. — 1289, 1353
Narahari Achar, B.N. — 581, 1665
Narain, M. — 984
Narasimhan, Shobhana — 66, 215
Narayan, K.S. — 110
Narayan, Onuttom — 773
Narayanamurti, V. — 402
Narayanan, A. — 927
Nardi, V. — 2090, 2091
Narh, K.A. — 143
Narihara, K. — 1935
Narten, A.H. — 481
Nas, S. — 2187
Nascente, P.A.P. — 780
Nasch, P.M. — 1508
Naseem, H.A. — 1670
Nash, H. — 1434
Nash, J. — 60
Nash, J.K. — 2043
Nashold, Karen M. — 1732
Nash-Stevenson, Sheila — 1728
Nassi, M. — 2052, 2053, 2078
Nassiri, A. — 1216, 1287
Nastasi, M. — 1900
Natarajan, L.V. — 1659
Natarajan, Priya — 1128
Natarajan, Ramesh — 2238
Natarajan, S. — 1531, 1544, 1551, 1573
Nathan, A. — 915, 1801
Nathan, M. — 102
Nathan, M.I. — 284, 516, 646
Nathanson, Gilbert M. — 432
Nathanson, R. — 1859
Nation, J.A. — 1280, 1281, 1282, 1402
Natoli, Vincent — 167, 1447
Natowitz, J.B. — 1813, 1852
Natsumura, T. — 1510
Natter, E.F. — 1215, 1393
Nattermann, Thomas — 773
Naudet, C. — 1815
Nauenberg, M. — 935
Nauenberg, Uriel — 1057
Naughton, M. — 607
Naughton, M.J. — 326, 779
Naumann, W.K. — 1948
Naumkin, F.Y. — 2363
Naumov, Alexander K. — 1760
Navarria, F.-L. — 1641
Navarro, A.P. — 2021
Navarro, R. — 1621
Navas, C. — 533
Navas, E. — 831
Navratil, G.A. — 2006, 2007
Navrotsky, A. — 783
Nawrocki, G. — 1229
Nawrocky, R.J. — 1201, 1207
Nayak, Anteryami — 1248
Nayak, T.K. — 1811
- Nazarenko, S. — 2194
Nazarewicz, W. — 1014, 1818, 1856, 1857
Nazikian, R. — 1906, 2004, 2005, 2031, 2034, 2035
Naziripour, A. — 345, 689
Nazmov, V. — 1263
Neal, H.L. — 639, 1637, 2160
Neale, L. — 1127
Nebbia, G. — 1813, 1852
Nebel, R.A. — 1976, 1977, 2102
Need, O. — 784
Needles, M. — 56
Needleman, A. — 1529
Needs, R.J. — 796, 1620
Neely, D. — 1943
Neergaard, John — 798
Neganov, A.B. — 1054
Negoita, F. — 2170
Negulescu, I. — 423
Nehring, M.S. — 1053
Neil, G. — 1328, 1365
Neil, G.R. — 1249
Neill, P. — 1163
Neill, P.A. — 1163
Neilson, D. — 382
Neilson, D.T. — 1766
Neilson, G.H. — 2048, 2049
Neilson, H. — 2050
Neilson, J. — 2002
Neitzel, G.P. — 2199
Nélisse, Hugues — 584
Nellis, W. — 1592
Nellis, W.J. — 186, 574, 1495, 1520, 1546, 1551, 1592
Nelmes, R.J. — 1530, 1532, 1533, 1573, 1590
Nelson, A. — 1553
Nelson, A.J. — 830
Nelson, B.A. — 2009, 2010
Nelson, C.D. — 802
Nelson, D. — 1225
Nelson, David — 720
Nelson, D.R. — 836
Nelson, E.M. — 1385, 1390
Nelson, J. — 1227
Nelson, Jeffrey K. — 1018
Nelson, J.M. — 1843
Nelson, Joel T. — 94
Nelson, J.S. — 183, 279, 755, 1434, 1439
Nelson, K.A. — 168
Nelson, Keith A. — 1631
Nelson, M. — 672
Nelson, M.B. — 2084
Nelson, M.C. — 252, 625
Nelson, R. — 1242
Nelson, R.O. — 1826
Nelson, S. — 622
Nelson, S.F. — 84
Nelson, W.D. — 1901
Nemanich, R.J. — 571, 719
Nemeth, D.T. — 637, 691
Neofotistos, G. — 634
Neravetla, B.R. — 2230
Neri, F. — 1235
Neri, J.M. — 2046
Nesbitt, David — 150
Nessler, W. — 345, 347
Nesterenko, V. — 1563
Nesterenko, V.F. — 1494
Net, M. — 2267
Nett, D. — 1287
Netz, R.R. — 601
Neubert, M.E. — 819
Neuenschwander, Dwight E. — 1055
Neufeld, R. — 2028
Neuffer, D. — 1201, 1346, 1365

- Neuhaus, J. — 932
 Neuhausen, R. — 1820
 Neuhauser, D. — 1461
 Neumann, D.A. — 252, 744
 Neumann, H.-B. — 544
 Neumann, J.J. — 1062
 Neumann, John J. — 1848
 Neumark, Daniel M. — 1730
 Neumark, G. — 356
 Neumeier, J.J. — 170
 Neuschaefer, G. — 1332, 1334
 Neuttiens, G. — 1615
 Neves, J.C. — 2217, 2218
 Nevins, W. — 1919
 Nevins, W.M. — 1921, 2049
 Newberger, Barry S. — 2114
 Newberger, B.S. — 1254, 1361
 Newbury, N.R. — 1140, 1141
 Newcomer, P.P. — 173
 Newell, A.C. — 1904
 Newman, B.A. — 412, 419, 484
 Newman, D.A. — 735
 Newman, D.E. — 1911, 1912, 1960
 Newman, D.L. — 1903, 1912, 2019, 2042
 Newman, H.S. — 839
 Newman, Jeff — 359
 Newman, Kathie E. — 514
 Newman, K.E. — 785
 Newman, M.E.J. — 134, 626
 Newman, N. — 447, 621, 693
 Newman, P. — 133
 Newman, P.G. — 132, 284, 532
 Newman, S. — 632
 Newman, T.J. — 530
 Newman, W. — 1201
 Newport, B.J. — 1020
 Newrock, R.S. — 836, 837, 838
 Newsham, D. — 1890
 Newsham, M. — 292
 Newton, J.C. — 650
 Newton, M.A. — 1305
 Newton, Paul K. — 2252
 Newville, M. — 386, 457
 Nexsen, W. — 1218, 1219, 1220
 Ney, P. — 1447, 2125
 Neyatani, Y. — 2054
 Nezhevenko, O. — 1285
 Nezhevenko, O.A. — 1280
 Ng, A. — 1524, 1539, 1548
 Ng, Chokuen — 1385
 Ng, Chung-Sang — 1991
 Ng, C.-K. — 1352, 1388
 Ng, H.K. — 75
 Ng, K. — 1245
 Ng, K.W. — 582
 Ng, K.Y. — 1197, 1238, 1245, 1255, 1257, 1346, 1363
 Ng, L.S.B. — 1229
 Ng, W. — 182
 Ng, Y. — 1201
 Ngai, K.L. — 263, 349
 Nguyen, A. — 1053
 Nguyen, D.C. — 1342
 Nguyen, H. — 1770
 Nguyen, H.V. — 1650, 1652, 1806
 Nguyen, J.H. — 151, 307
 Nguyen, L. — 1684
 Nguyen, L.V. — 1341
 Nguyen, M.N. — 1404
 Nguyen, N. — 336
 Nguyen, P. — 2313
 Nguyen, Phuong — 145
 Nguyen, P.P. — 839
 Nguyen, Q. — 2061
 Nguyen, T. — 114
 Nguyen, T.C. — 2244
 Nguyen, V.D. — 2298
 Nguyen, X. — 2064
 Nguyen-Tansill, L. — 942, 1818
 Nguyen-Tuong, V. — 1386
 Ni, A.L. — 1494
 Ni, B. — 1034
 Ni, Beta Y. — 416
 Ni, J. — 2243, 2293
 Ni, Wei-Ton — 952
 Niarchos, D. — 672
 Niazi, K. — 2353
 Niboh, M.M. — 1820
 Nicholas, R. — 249
 Nicholas, R.J. — 402
 Nicholls, G. — 1397
 Nicholls, J.T. — 697
 Nichols, D. — 782
 Nichols, D.H. — 72
 Nicholson, D.M. — 256
 Nicholson, D.M.C. — 255
 Nick, W. — 1289
 Nickel, Janice H. — 462
 Nicklaw, C. — 2036
 Nicklow, R.M. — 479, 534
 Nico, J.S. — 913
 Nicol, E.J. — 1625
 Nicol, Elisabeth — 298
 Nicol, M. — 1590
 Nicol, T. — 1312, 1385
 Nicolaenko, B. — 2190, 2244
 Nicolai, Helene — 2257
 Nicolaidis, D. — 711
 Nicolet, M.-A. — 84
 Nicolis, N.G. — 980, 1013
 Nicopoulos, V. Nikos — 269
 Niebauer, T.M. — 1030
 Niederriter, C.F. — 685, 1004
 Niedzwiecki, T.D. — 800
 Niehof, A. — 787
 Niel, M. — 1638
 Nielsen, B. — 82, 571
 Nielsen, D.E., Jr. — 1892
 Nielsen, M.B. — 221
 Nielsen, O.H. — 67
 Nielsen, P. — 2055
 Nielsen, R. — 1266
 Niemann, James — 201
 Niemczewski, A. — 1955
 Niemel, J. — 2379
 Nien, C.S. — 171
 Nierat, G. — 1538
 Nieuwenhuys, G.J. — 131, 178
 Nieuwenkamp, H. — 1201
 Nifenecker, H. — 1826
 Nighman, N. — 1728
 Nightingale, M.P.S. — 1338
 Niimura, M.G. — 2003
 Nijmeijer, M.J.P. — 1446
 Niki, K. — 1338
 Nikiforov, A.A. — 1280
 Nikitenko, B.A. — 1219
 Nikitin, Nikolai V. — 2311
 Nikkel, D.J., Jr. — 1563
 Nikolić, K. — 54
 Nikolić, M. — 405
 Nikolić, M. — 404
 Nilsen, B.S. — 999, 1061
 Nilsen, J. — 951
 Nilson, D.G. — 2061
 Nilsson, A. — 559
 Nilsson, B. — 129, 1338
 Nilsson, P.Å. — 112
 Ning, Hong — 125
 Ning, L. — 2209, 2317
 Ning, Li — 470
 Nintunze, N. — 745
 Nirmal, M. — 548, 550, 573
 Nisamaneephong, Pornthep — 263
 Nishi, M. — 1250
 Nishi, Y. — 155
 Nishida, M. — 1540, 1975, 2057
 Nishida, Satoshi — 1550
 Nishida, Y. — 1309, 1359
 Nishigaki, S. — 727, 728
 Nishihara, K. — 1962, 2011
 Nishikawa, K. — 2019
 Nishikawa, T. — 2208
 Nishimura, H. — 1238
 Nishina, Y. — 617
 Nishino, T. — 499
 Nishitani, T. — 2053, 2054
 Nishiura, Tetsuya — 655
 Nishri, B. — 2196
 Nisius, D. — 1819
 Nissen, M.K. — 321
 Nissius, D. — 1049, 1832
 Nithianandam, V.S. — 425
 Nitz, D. — 1020
 Nitz, David E. — 1102
 Niu, J. — 221
 Niu, Ming — 803
 Niu, Q. — 272
 Niu, Qian — 240, 633, 641, 841
 Niwa, E. — 1571
 Niwa, H. — 72
 Niyaz, P. — 754
 Noack, R.M. — 332
 Nobari, M.R. — 2200
 Noble, Robert — 959
 Nocera, D.G. — 2287
 Nocera, J. — 180
 Nockleby, M. — 935
 Noda, A. — 1197, 1334
 Noda, K. — 1333, 1401
 Noel, Michael W. — 1774
 Nogami, J. — 341
 Noguchi, S. — 1385, 1387
 Noguez, C. — 217
 Noh, T.W. — 216, 1607
 Noh, Y. — 2257
 Noid, D.W. — 191, 384, 409
 Noje, C. — 2188
 Nolan, P.J. — 981
 Nolan, P.L. — 988, 989, 1635
 Nolan, S.J. — 292, 411
 Nöldeke, G. — 1860
 Nolden, F. — 1336
 Nolen, J.A. — 1236, 1237, 1333
 Nolen, J.A., Jr. — 1140
 Nolen, Jerry A., Jr. — 936
 Nolen, S. — 213, 596
 Noll, C. — 2205
 Nolle, C.S. — 264
 Nolte, D.D. — 316, 797
 Nomura, K. — 2281
 Nomura, M. — 1199
 Noojin, G. — 318
 Noojin, G.D. — 318
 Noolandi, Jaan — 541
 Noomen, J. — 1201, 1275
 Noonan, W. — 2046
 Noordam, B. — 1137
 Noordam, L.D. — 2163
 Norbeck, E. — 927, 940, 1815, 1852, 1854
 Norberg, R.E. — 314
 Norcross, D.W. — 1105, 1136
 Norcross, J.A. — 384
 Nordberg, E. — 1385
 Nordby, M. — 1264
 Nordgren, Joseph — 248
 Nordlander, P. — 1164
 Nordlander, Peter — 497, 498
 Nordlund, P. — 1980
 Nordlund, T.M. — 119, 2158
 Nordman, J.E. — 241
 Norem, J. — 1219
 Nori, F. — 645
 Nori, Franco — 644
 Norman, D. — 930
 Norman, E.B. — 1804, 1829, 1830, 1849, 1855
 Norman, Michael L. — 959
 Norman, M.R. — 391, 392
 Normand, B. — 463
 Normand, C. — 2315
 Normand, L. — 1811
 Norreys, P. — 2079
 Norreys, P.A. — 2079
 Norris, D.J. — 548, 550, 573
 Norris, J. — 416
 Norris, J.A. — 2279
 Norris, T.B. — 813, 1715
 Norskov, Jens — 67
 Nørskov, J.K. — 67, 742
 North, Gerald R. — 1443
 Northby, J.A. — 68
 Northrop, G.A. — 85, 473, 687
 Northrop, T.G. — 1040
 Northrup, J.E. — 447
 Nortier, F.M. — 1317
 Norton, David P. — 259
 Norton, D.P. — 111, 260, 802
 Norton, L.J. — 90
 Norton, M.G. — 60, 790
 Norum, B.E. — 1820
 Nose, Takuhei — 243
 Nosenchuck, D.M. — 2197
 Nosochkov, Y. — 1239, 1240, 1246, 1267
 Nossal, Ralph — 631
 Noszticzius, Z. — 2239
 Notkin, G.E. — 2069
 Nott, D. — 1021
 Notte, J. — 1970
 Noguez, C. — 217
 Nounesis, G. — 404, 818
 Nour, E. — 415
 Nousek, John A. — 920
 Novak, D. — 793
 Novak, J. — 1387
 Novakovskii, S. — 1923
 Novakovskii, S.V. — 1926, 1929
 Novet, T. — 129, 451
 Novikov, D.L. — 275, 452
 Novikov, E.A. — 2214
 Novikov, N.V. — 1532, 1579
 Novikov, S.A. — 1513
 Novikov, V. — 1854
 Novotny, M.A. — 653, 654
 Nowak, E. — 520
 Nowlin, M.L. — 1727
 Nozieres, J.P. — 692, 784
 Nuhn, H.-D. — 1234, 1242, 1330
 Numikko, Arto — 1729
 Nunan, W.J. — 2103, 2109
 Nunes, G., Jr. — 402
 Nunes, Geoffrey, Jr. — 339
 Nunez, V. — 840
 Nunez-Regueiro, J.E. — 582
 Nur, A. — 970
 Nurmikko, A. — 374
 Nurmikko, A.V. — 806, 815, 1720
 Nurushev, S.B. — 1054, 1251
 Nurushev, T.S. — 987
 Nusinovich, G. — 1282
 Nusinovich, G.S. — 1280, 1281, 1310, 1963
 Nyako, B. — 981
 Nyako, B.M. — 981
 Nyborg, Wesley — 429
 Nyholm, R. — 781
 Nyhus, P. — 76, 226
 Nyman, M. — 1265
 Nystrom, W.D. — 1977

- O, Beom-Hoan — 73, 227, 272
Oakes, D.B. — 2342
Oasa, K. — 1328
Oates, D.E. — 839
Obenschain, S.P. — 1886, 2085
Ober, C.K. — 293, 410, 482
Ober, D.R. — 1808
Oberacker, V.E. — 2170
Obert, J. — 1339
Obeysekare, U. — 1445
Obina, T. — 1216
Oblakowski, Z. — 311
Obradovic, B. — 685
O'Brien, D.P. — 1937
O'Brien, T. — 2336
O'Brien, T.K. — 155
O'Brien, W. — 160, 624
O'Brien, W.L. — 320
Obst, A.W. — 1916
Ochando, M.A. — 2021
Ochiai, Y. — 107
Ochs, Michael Ann — 1040, 1041, 1644
Ocio, M. — 475
Ocker, K. — 1667
Ocko, B.M. — 800
O'Connell, E.M. — 413
O'Connell, J. — 1365
O'Connell, R.F. — 641, 697
O'Connor, C.J. — 526
Octavio, M. — 62, 582, 803
Oda, H. — 1478, 1502, 1526
Oda, Y. — 2057
O'Day, S. — 1219, 1251, 1317
Ödberg, L. — 2288
O'Dell, C.W. — 1661
O'Donnell, J. — 241, 328, 942
O'Donnell, J.E. — 1825, 1845
O'Donnell, J.H. — 425
O'Donnell, J.M. — 943, 944, 1816, 1817
O'Donnell, K.A. — 77, 827
O'Donnell, T.W. — 1842
Odyniec, G. — 1851
Oeftiger, U. — 1202
Oelfke, W.C. — 920
Oelschlaegel, B. — 756
Oertel, J. — 2083
Oertel, J.A. — 2083
Ofcarcik, C. — 544
Ofenloch, B.G. — 1817
Ofutt, P.W. — 2261
Offtree, D.F. — 1762
Oganesjan, K.O. — 1817
Oganesian, Yu. — 1858, 2170
Oganesian, Yu. Ts. — 1806
Oganesyan, K.O. — 943
Ogata, A. — 1309, 1359
Ogata, M. — 696
Ogata, Masao — 271
Ogawa, E. — 2340
Ogawa, H. — 1333, 1401, 2008, 2062
Ogawa, Y. — 1316
Oger, Luc — 2257
Ogier, W.T. — 1165
Ogilvie, C. — 1837
Ogilvie, C.A. — 1836
Ogino, M. — 582
Ogitsu, T. — 1290
Ogiwara, N. — 1328
Ognibene, T.J. — 998, 1808, 1844, 1857
Oguri, Y. — 1318
Ogut, A.S. — 207
Oguz, H. — 2188
Oh, E.J. — 311
Oh, Eunsoon — 530, 797
Oh, J. — 1036
Oh, J.S. — 1286, 1402
Oh, Ki-Hwan — 1487
Oh, S. — 2169
Oh, S.-J. — 643
Oh, Yoonsik — 89
O'Halloran, T. — 1021
O'Hara, K.E. — 277
O'Hern, T.J. — 2206
Ohki, Y. — 2202
Ohkubo, M. — 2121
Ohkuma, H. — 1326
Ohlsen, D.R. — 2223
Ohmer, M.C. — 686
Ohmori, C. — 986, 1346
Ohnishi, S. — 1457
Ohno, H. — 1519
Ohno, I. — 1478, 1526
Ohnuma, S. — 1248, 1320, 1362
Ohsawa, S. — 1316
Ohsawa, Y. — 1205
Ohsone, Y. — 2356
Ohta, K. — 1589
Ohta, S. — 1575
Ohuchi, F. — 677
Ohuchi, F.S. — 108
Ohwada, T. — 1527
Ohya, S. — 1447
Oide, K. — 1212, 1260, 1299, 1348
Oikawa, Y. — 1260
Ojeda, J.R. — 480
Ok, H.N. — 119
Oka, Michio — 1714
Okabayashi, M. — 2038, 2091, 2092, 2093, 2095, 2096, 2121
Okabe, Y. — 1436, 1450
Okada, K. — 1843
Okada, S. — 2121
Okamoto, H. — 1245, 1327, 1334
Okamoto, Tsutomu — 1714
Okamoto, Y. — 539
Okamura, M. — 1318
Okamura, S. — 2022
Okano, K. — 1899
Okay, N. — 1320
Okay, N.C. — 1220, 1319, 1323
O'Keefe, M.T. — 86, 87
O'Keefe, M. — 304
O'Kelly, D. — 1813
Oku, Y. — 1324
Okuda, H. — 1899, 2019, 2042
Okuda, S. — 1323, 2362
Okumura, Y. — 2364
Okun, Lev — 924, 1057
Okuno, K. — 2371
Olafsen, J.S. — 1007
Olbright, G.R. — 552
Olbright, Greg — 1719
Olchowski, F. — 1197
Oldfather, D. — 1205
Olea, O. — 1896
Olea-Cardoso, O. — 1901
Olinger, B. — 1547
Olinger, D.J. — 2239, 2282, 2303
Oliphant, V. — 1334
Oliva, S. — 2025, 2026
Olivas, H.D. — 1534
Olive, D. — 1829, 1846
Oliveira, F.A. — 483
Oliveira, J.R.B. — 1013, 1014, 1049, 1050, 1819, 1831
Oliver, B.J. — 820
Oliver, B.V. — 2046
Oliver, S.A. — 161
Olivieria, J.R. — 1049
Olivier, M. — 2341
Olivier, R. — 1366
Oliviera, J. — 1050
Oliviera, J.R.B. — 1050
Olivieri, D. — 1034
Olivo, M. — 1322
Ollis, C.W. — 1305
Olmer, C. — 1846, 1847
Olmstead, Marjorie A. — 514
Olmsted, Peter — 724
Olmsted, Peter D. — 715
O'Loughlin, M.J. — 705
Olsen, David K. — 937
Olsen, D.K. — 1272
Olsen, J. — 1213, 1225
Olsen, J.A. — 702
Olsen, J. Staun — 1513
Olsen, R. — 1223, 1224, 1366, 1400
Olson, C.G. — 226, 274, 642, 643, 780
Olson, C.L. — 2046
Olson, D. — 1828
Olson, D.L. — 998, 999, 1815, 1828, 1853, 1854
Olson, D.T. — 446
Olson, E.D. — 1021
Olson, J.A. — 787
Olson, J.C. — 2046, 2074
Olson, J.M. — 737, 788, 789
Olson, R. — 1101, 1163
Olson, R.E. — 1102, 1133, 1163, 1200, 2030, 2045
Olsson, E. — 112
Olthoff, J. — 2329
Olthoff, J.K. — 2347, 2355, 2365
Oltman, E. — 985, 986, 1037
Oltmanns, P. — 1858
Olver, M. — 179
Olvera, N. — 1670
Olvera de la Cruz, M. — 144, 486
O'Malley, M. — 459
O'Malley, Megan L. — 172
O'Malley, M.L. — 172
Oncley, S. — 2215
Ondrechen, Mary Jo — 1651
Ondris-Crawford, R. — 819
Ondris-Crawford, R.J. — 767
O'Neil, J. — 2305
O'Neil, T.M. — 1909, 1972
O'Neill, T.G. — 1821
Onel, Y. — 1197
Onellion, M. — 75, 274, 286, 672
Ong, J. — 2293
Ong, L. — 2262, 2270, 2302
Ong, N.P. — 70, 223, 388, 691, 692, 1625
Ong, R.A. — 1020
Ongena, J. — 2007, 2058
Onillon, E. — 1214
Onischenko, L. — 1368, 1391
Onley, D.S. — 916, 961, 1034
Ono, H. — 107
Ono, K. — 2236
Ono, M. — 1387, 1393, 2004, 2005, 2091, 2093, 2094
Ono, R.H. — 172
Ono, Ronald H. — 840
Ono, S. — 2349, 2374, 2378
Ono, Y. — 1927, 2008
Onodera, A. — 1566
Onomichi, M. — 1570
Onuchic, J.N. — 268
Onuchic, Jose — 558
Onuki, Y. — 178
Oogoe, T. — 1316
Ookouchi, Teichi — 1482
Ookubo, N. — 107
Ooms, D. — 1822
Oono, Y. — 589, 654, 709
Oostens, J. — 314, 569, 1609
Oothoudt, M. — 1317
Opila, R.L. — 449
Oppen, A. — 1847
Oppen, A.K. — 1847
Oppitz, R. — 1913
Or, A.C. — 2292
Oraevsky, Alexander — 1628
Oraevsky, Alexander A. — 1732
Oran, E.S. — 739, 1435, 1524, 2189, 2233
Orbach, R. — 475
Orbesen, S.D. — 1321
Ordejon, P. — 742
Oreglia, M. — 1037
Oreglia, M.J. — 985, 986
O'Reilly, J.W. — 731
O'Reily, J.W. — 782
Orel, A.E. — 1099, 1147, 2334
Oren, W. — 1299
Orenstein, J. — 227, 393, 1624
Orgzall, I. — 1571
Orita, N. — 629
Orito, S. — 933
Orlandi, P. — 2312
Orlandini, E. — 541
Orlando, T.P. — 804, 805
Orlov, A.V. — 1520
Orlov, Y. — 1356
Ormand, W.E. — 993, 2171
Orme, M. — 2295
Ormes, J.F. — 933
Ornstein, J. — 839
Oro, D.M. — 1164
Oron, A. — 2292
O'Rourke, J. — 2055, 2056
O'Rourke, M.J. — 546
Orozco, L.A. — 997
Orozco, S. — 524
Orr, B. — 813
Orr, B.G. — 232, 380, 722
Orr, N. — 1842
Orr, N.A. — 983, 1841, 1842
Orris, D. — 1290
Orrman-Rossiter, K.G. — 2341
Orsitto, F. — 2109, 2125
Orszag, S.A. — 2193, 2238, 2304, 2311, 2317
Ortega, J. — 335
Ortega, J.E. — 369, 443, 561
Orthel, J.L. — 1337
Ortiz, M.A. — 524
Ortiz-Lopez, J. — 321
Orts, William J. — 418
Ortiz, A. — 507
Ortz, W.J. — 294
Orvis, D. — 2009
Orwoll, Mark — 2270
Orzechowski, J. — 1317
Orzechowski, T.J. — 1915, 1934
Osaheni, J. — 110
Osaheni, J.A. — 238
Osakabe, T. — 79
Osborn, R. — 178, 460
Osborne, J. — 1828
Osborne, J.H. — 1826
Osborne, T.H. — 1936, 1937, 2061, 2062, 2065, 2121
Osborn, Gordon C. — 198, 300
Oseroff, S. — 73, 124, 216, 648
Oseroff, S.B. — 125
O'Shaughnessy, Ben — 542, 710
O'Shea, M.J. — 672, 673
O'Shea, P.G. — 1257, 1311, 1371
O'Shea, Seamus F. — 186
Osher, S. — 2189
Osheroff, D.D. — 86, 87, 743
Oshita, H. — 1199
Osipov, V. — 1263

- Osman, M.A. — 515, 516, 745
 Osofsky, Michael — 693
 Osofsky, M.S. — 223, 242, 327, 1543
 Ostapenko, S.S. — 843
 Ostdiek, P.H. — 686
 Oster, G.F. — 631
 Österberg, F. — 599
 Osterfeld, F. — 1858
 Osterheld, A. — 518, 1157, 2040
 Osterheld, A.L. — 1456, 1986, 1987, 2082, 2117
 Osterheld, Albert — 1986
 Ostiguy, J.-F. — 1293, 1297
 Östlund, Stellan — 639
 Ostreiko, G. — 1285
 Ostroumov, P.N. — 1333
 Ostrovsky, B. — 539
 Osugi, G.S. — 2315
 O'Sullivan, M. — 1227
 O'Sullivan, P. — 2264
 Oswald, J. — 179
 Oswald, Josef — 1769
 Otani, Y. — 692
 Otis, A. — 1398
 Otorbaev, D.K. — 2362
 Otsuka, N. — 80, 316, 737
 Ott, E. — 760, 2194
 Ott, H.-R. — 79, 79, 80
 Ott, J.A. — 85
 Ott, Mary L. — 511
 Ottaviani, M. — 1924, 1927
 Otter, A.J. — 1297
 Otter, F.A. — 155, 341
 Ottewell, D. — 1859
 Ottinger, M.B. — 1973
 Ottinger, P.F. — 1988, 1989, 2046
 Ottino, J.M. — 2194, 2268, 2276
 Otto, Jens W. — 1566
 Oudar, J.L. — 199
 Ourmazd, A. — 296
 Ouroua, A. — 1951, 1952
 Ousset, J.C. — 327
 Outrebon, P. — 1599
 Outten, C.A. — 1896
 Ou-Yang, H.D. — 94, 244, 351, 603, 658
 Ouyang, Jian — 652
 Ovchinnikov, Serge' — 1033
 Ovchinnikov, S.Y. — 1171
 Ovchinnikov, V.P. — 1284
 Ovchinnikova, A. — 1159
 Over, H. — 436, 794
 Overbury, S.H. — 1164
 Overhauser, A.W. — 323, 524
 Overney, G. — 257
 Overney, Gregor — 738
 Overzet, L.J. — 2353
 Ovid'Ko, I.A. — 1535
 Ow, K. — 334
 Owen, J.J. — 1728
 Owen, L.W. — 2058, 2059
 Owens, D.K. — 1905, 2034, 2036, 2038
 Owens, F.J. — 70, 1520
 Owens, Joseph F. — 1641
 Owens, Larry — 938
 Owens, L.H. — 422
 Owens, M. — 2022
 Owens, M.A. — 2022
 Owens, T.L. — 1333
 Oxborrow, M. — 626
 Oxoby, G. — 1212, 1213, 1635
 Oyamada, M. — 1331
 Oyanagi, H. — 1565
 Ozaki, T. — 1205, 1301, 2022
 Ozcomert, J. — 342
 Ozcomert, J.S. — 342
 Ozeki, T. — 2054
 Ozelis, J. — 1290
 Ozhogin, I. — 238
 Pabst, M. — 378
 Pacheco, M. — 283
 Pachter, R. — 194, 408, 414, 421, 454, 486
 Paciesas, W. — 1638
 Paciesas, W.S. — 989, 1638
 Paciotti, M. — 314, 569, 1609
 Pack, J.L. — 2344
 Packard, R.E. — 87, 88, 138
 Packard, W.E. — 231
 Paczkowski, M.A. — 204
 Padalino, S. — 1812
 Padamsee, H. — 1231, 1354, 1374, 1380, 1381, 1384, 1385, 1406
 Padden, F.J., Jr. — 92
 Paddon, P. — 1745
 Padua, S. — 1141, 1155
 Pagan, C.J.B. — 2334
 Page, J.B. — 304, 522
 Page, J.H. — 165
 Page, L. — 1066
 Page, N.W. — 1546
 Page, R.H. — 2283
 Page, S.A. — 1036, 1836, 1847
 Page, T. — 1219
 Page, W. — 1206
 Pahl, R. — 518
 Pai, W.W. — 342
 Pai.D.M. — 49
 Paikeday, Joseph M. — 950
 Paine, D.X. — 791
 Painter, C.L. — 2009
 Painter, Gayle S. — 101
 Painter, Paul — 715
 Painter, P.C. — 143
 Pais, Abraham — 971
 Paisley, D.L. — 1482, 1539
 Paithankar, A.S. — 2342
 Pajevic, S. — 410
 Pak, H.K. — 2191, 2240
 Pak, R. — 941, 998, 1815, 1828, 1852
 Pakbaz, K. — 58
 Palacios, J.J. — 397
 Palakos, Paul — 952
 Palanival, B. — 1573
 Palanivel, B. — 1544
 Palarczyk, M. — 943, 982, 1036, 1817
 Palasantzas, G. — 596
 Palfy-Muhoray, P. — 76, 293, 653, 767, 768, 848
 Palinkas, J. — 1160
 Palkovic, J.A. — 1196
 Palkovic, John A. — 1344
 Pallas, N.R. — 651
 Palma, R.L. — 1667
 Palmer, Christopher A. — 1638
 Palmer, D. — 1638
 Palmer, N. — 1264
 Palmer, R.B. — 994
 Palmer, W. — 577, 676, 677
 Palmstrom, C. — 103
 Palmström, C.J. — 322, 450
 Palstra, T.T. — 104
 Palstra, T.T.M. — 78
 Palsule, C. — 1669, 1670, 1671
 Palumbo, G. — 82
 Palumbo, L. — 1244, 1375
 Palumbo, M. — 581
 Pambianchi, M.S. — 805
 Pamulapati, J. — 132, 133, 532
 Pan, C. — 483, 714, 1124
 Pan, C.Y. — 135, 578
 Pan, David H. — 415
 Pan, Dawei — 750
 Pan, Jian-Mei — 451, 793
 Pan, L. — 589
 Pan, N. — 284
 Pan, Q. — 420, 941
 Pan, S.H. — 1606
 Pan, X.W. — 1807, 1808
 Pan, Y. — 2282
 Pan, Yuansheng — 1525
 Panagiotopoulos, I. — 672
 Panarella, E. — 2044
 Panasyuk, M.I. — 948
 Pancella, P.V. — 997
 Panchanathan, V. — 314
 Panda, J. — 2302
 Pandey, L.N. — 592
 Pandey, R. — 68, 69, 445, 791
 Pandey, Ras B. — 319, 710, 1437, 1439, 1629
 Pandharipande, Vijay R. — 922
 Pandidurai, A. — 1544
 Pandit, R. — 1043
 Pang, D. — 629
 Pang, H.B. — 757
 Pang, J.Z. — 534, 820
 Pang, Ning-Ning — 701
 Pang, Tao — 336
 Pang, Y. — 1283, 1683, 1811
 Pangia, M.J. — 991
 Pangilinan, G. — 1518
 Pangilinan, G.I. — 1558, 1598
 Paniccia, M. — 342
 Panin, V.A. — 2116
 Pankove, Jacques — 1729
 Pankratov, O. — 334
 Pannetier, B. — 692
 Pansewicz, K. — 781
 Pant, J. — 216, 266, 781
 Pant, P.V.K. — 91
 Pantaleo, A. — 1853
 Pantazelou, Eleni — 811
 Pantelica, A. — 2170
 Pantelica, D. — 2170
 Pantelides, Sokrates — 721
 Pantelides, Sokrates T. — 1443
 Pantelides, S.T. — 60
 Panton, Ronald L. — 2300
 Panulapati, J. — 284
 Paoletti, F. — 2091, 2092, 2093, 2094
 Paolucci, S. — 2240
 Papach, A.I. — 1336
 Papaconstantopoulos, D. — 390
 Papaconstantopoulos, D.A. — 209, 372
 Papadia, S. — 403
 Papadichev, V. — 2048
 Papadimitrakopoulos, F. — 482
 Papadopoulos, K. — 1893, 2018, 2019
 Papanikolaou, N. — 176
 Papash, A. — 1253
 Papash, A.I. — 1270
 Papatheofanis, B. — 1303
 Papen, George C. — 1776
 Pappas, D.A. — 2109, 2110
 Pappas, G. — 1403
 Pappert, S.A. — 1617
 Papureanu, S. — 1336, 1384
 Paquette, G. — 589
 Paquin, L. — 2055
 Parail, V.V. — 2055
 Paranthaman, M. — 125, 271, 830
 Paranthanman, M. — 689
 Parchomchuk, V. — 1367
 Pardey, R. — 195
 Pardo, R.C. — 1333
 Paredes, R. — 62
 Pareek, A. — 374
 Parekh, P.P. — 1849
 Parent, J.L. — 533
 Pargellis, A.N. — 1630, 1631
 Parigger, C. — 1757
 Parihar, S.R. — 647
 Parikh, A.N. — 436, 539, 713
 Parikh, S.P. — 1100
 Parini, A. — 2113
 Paris, P. — 1339
 Parish, J.W. — 2342
 Parisi, G. — 1318
 Park, B. — 154, 942, 1818, 1830
 Park, B.K. — 943, 982, 1051, 1062, 1817, 1826
 Park, C.-H. — 152, 274, 275, 403, 624, 726
 Park, C.S. — 768
 Park, D.W. — 191
 Park, G.S. — 1999
 Park, H. — 1092, 1682, 1907, 2031, 2032, 2037
 Park, H.K. — 735, 2036, 2037, 2039, 2054
 Park, H.T. — 942
 Park, Hyunggyu — 701
 Park, J.C. — 2175
 Park, J.-H. — 525, 642, 643
 Park, J.S. — 84, 1286
 Park, K. — 761, 2213
 Park, Kevin A. — 226
 Park, Key-Taec — 219
 Park, K.H. — 1292
 Park, K.T. — 544, 699
 Park, M. — 475
 Park, M.J. — 844
 Park, O.O. — 409
 Park, P. — 761
 Park, R.M. — 356
 Park, S. — 709, 1285, 1311, 1323, 1342, 1941, 1997
 Park, S.J. — 122
 Park, S.S. — 1286, 1402
 Park, W. — 1945, 1946, 2115
 Park, Y.G. — 2254
 Park, Young-Kyun — 372, 1671, 1681
 Parker, B. — 1267, 1404
 Parker, F.T. — 562, 784
 Parker, G.J. — 1172, 2339, 2372, 2373
 Parker, Greg — 1461
 Parker, J.C. — 2242
 Parker, J.G. — 1854
 Parker, J.S. — 1145, 1146
 Parker, M.A. — 161
 Parker, M.R. — 1808
 Parker, P. — 982, 983
 Parker, P.D. — 1841
 Parker, R.C. — 1318, 1337
 Parker, R.R. — 1929
 Parker, S.E. — 1891, 1960, 2015, 2101, 2102
 Parker, W. — 998
 Parker, W.E. — 997, 1825, 1846
 Parkin, D. — 2168
 Parkin, S.S.P. — 163, 619, 733, 785
 Parkins, A.S. — 1122
 Parkinson, W.H. — 1129, 1148
 Parks, B. — 227, 839
 Parks, C. — 398, 703
 Parks, E.K. — 549
 Parks, J.E. — 2176
 Parks, P.B. — 2030, 2061
 Parmar, D.S. — 845
 Parodi, R. — 1374, 1375, 1386
 Parpia, J.M. — 475, 1023
 Parr, T. — 2258
 Parris, P.E. — 320, 517
 Parry, R. — 1206

- Parry, S. — 943
 Parry, S.P. — 1818
 Parsa, Z. — 988
 Parsegian, Adrian — 495
 Partin, D.L. — 401
 Partlan, M. — 1828
 Partlan, M.D. — 998, 999, 1815, 1828, 1853, 1854
 Partlan, M.P. — 1815
 Partom, Y. — 1510
 Parvanov, O. — 1777
 Pascale, J. — 1102
 Paschal, K.B. — 2301
 Paschereit, C.O. — 2246
 Paseuk, E.A. — 943
 Pashenkov, A. — 1406
 Pasini, D. — 2056
 Pasotti, C. — 1383, 1393
 Pasqualotto, R. — 1980
 Pasquarello, A. — 427
 Pasquero, D. — 2357
 Pasquinelli, R. — 1307, 1358
 Pasquinelli, R.J. — 1213
 Pasquino, J.B. — 2114
 Passardi, G. — 1341
 Passner, A. — 180
 Pastalan, G.J. — 396, 845
 Pastalan, J. — 179
 Pasternack, L. — 1521
 Pasternak, M. — 1519, 1559
 Pasternak, M.P. — 114, 1517, 1536
 Pastor, C. — 1852
 Pastor, G.M. — 1608
 Pastor, I. — 2021
 Pastukhov, V.P. — 1947
 Pasturel, A. — 799
 Pasyuk, E.A. — 1817
 Paszula, J. — 1593
 Patakuchi, P. — 1388
 Patalakha, D.I. — 1054
 Pate, B.B. — 676, 719
 Pate, B.H. — 1724, 1753
 Pate, S.F. — 942, 1847
 Patel, D. — 1589
 Patel, J.R. — 514, 623, 624
 Patel, J.S. — 845
 Patel, Kumar — 1733
 Patel, R. — 808
 Patel, S.S. — 347, 348, 657
 Patel, V. — 2370
 Pater, J.R. — 917
 Paterson, A. — 1294, 2187
 Paterson, J. — 1234
 Patey, G. — 68
 Pathak, B. — 1713
 Pathak, R.N. — 266
 Patichio, V. — 1853
 Patil, Rajkumari — 93
 Patitsas, S.N. — 232
 Patnaik, S.S. — 194, 414, 418
 Paton, A. — 649
 Patrick, D.L. — 535, 598
 Patrick, R. — 2366
 Patteri, P. — 1286
 Patterson, B.M. — 816
 Patterson, D. — 1200, 1952
 Patterson, J.D. — 797
 Patterson, R.M. — 2064
 Patterson, S.S. — 2171
 Patteson, R. — 2346
 Patton, Bruce R. — 1654
 Patton, D.C. — 602
 Patton, R.E. — 1398
 Patyal, B. — 631
 Paul, D.I. — 339
 Paul, D.M. — 579
 Paul, D.Mck. — 579
 Paul, E. — 1831
 Paul, E.S. — 980, 981, 1049
 Paul, M. — 927
 Paul, P.H. — 1650, 2204
 Paul, S. — 2037, 2095
 Paul, S.F. — 1907, 1973, 2035, 2038
 Paul, W. — 629, 1478
 Paulikas, A.P. — 226, 242
 Paulin, S.E. — 1627
 Paulius, L.M. — 75, 346
 Paulson, C.C. — 1338
 Paulson, J.F. — 1103, 2361, 2371
 Paulson, John F. — 1100
 Pauluhn, A. — 1248
 Paulus, T.J. — 201
 Paval, E. — 1514
 Pavlov, S.N. — 1270, 1336
 Pavlovsky, D. — 1948
 Pavuna, Davor — 213, 1623
 Pawlak, T. — 1268
 Pawley, C.J. — 2085
 Paxson, V. — 1228
 Payerle, T. — 1034
 Payne, A.N. — 1305
 Payne, D.A. — 228
 Payne, G.L. — 1063, 1449, 1991
 Payne, J. — 1262
 Payne, J.A. — 396
 Payne, J.R. — 108
 Payne, M.C. — 281, 444, 796
 Payne, Michael C. — 1619
 Paz, D. — 2294
 PBX-M Group — 2091, 2092, 2093, 2094, 2095
 PBX-M Team — 2091
 Peabody, M.R. — 1153
 Peacher, J. — 1090
 Peacher, J.L. — 1158
 Peacor, S.D. — 794
 Peale, D.R. — 342, 624
 Peale, R.E. — 467
 Peanasky, John — 350
 Pearce, K.D. — 2343
 Pearce, W.J. — 1229
 Pearl, D.M. — 1099
 Pearlstein, Arne J. — 2287
 Pearlstein, L.D. — 1921, 2016, 2077
 Pearsall, T.P. — 85, 86, 108
 Pearson, C.C. — 1288
 Pearson, Dale S. — 190
 Pearson, D.S. — 194
 Pearson, J. — 164, 441, 442
 Pearson, S. — 377
 Pearson, S.J. — 376
 Peaslee, G.F. — 941, 1828, 1853
 Peatross, J. — 1770
 Peattie, R.A. — 2292
 Pechan, Michael J. — 562
 Peck, S.K. — 1637
 Peck, W.F., Jr. — 222
 Pecora, L.M. — 340
 Pecquet, J. — 510
 Pedersen, F. — 1213, 1214, 1371
 Pedersen, J. — 221
 Pederson, D.O. — 172, 173
 Pederson, Mark — 53
 Pederson, Mark R. — 279, 441
 Pederson, M.R. — 441, 576
 Pedley, T.J. — 2306
 Pedlosky, J. — 2223
 Pedraza, A.J. — 786
 Pedroni, R. — 1852
 Pedroni, R.S. — 1051
 Pedrosa, M.A. — 2021
 Pedroza, M.R. — 1615
 Peebles, W.A. — 1937, 2007, 2049, 2062, 2064, 2069, 2110, 2111
 Peek, K.E. — 1668
 Peeler, D.T. — 735
 Peeters, A.G. — 2077
 Peeters, F.M. — 337, 401, 402, 592
 Peggs, S. — 1197, 1236, 1242, 1245, 1246, 1247, 1256, 1268
 Pegoraro, F. — 2076
 Pehl, R. — 1638
 Pehlke, E. — 447
 Pehrson, Heath — 1460
 Pei, A. — 1245
 Pei, X. — 1197, 1245, 1257
 Peiffer, D. — 487
 Peiffer, D.G. — 293, 422, 435, 483, 714
 Peiniger, M. — 1390
 Peiris, F.C. — 374
 Pekeler, M. — 1381
 Peker, L.K. — 1858, 2170
 Pekker, L. — 2339
 Pekker, M.S. — 1944
 Pelekasis, Nikos — 2240
 Pella, P.J. — 1034
 Pellat, R. — 2013
 Pellegrini, C. — 1234, 1242, 1277, 1285, 1286, 1311, 1323, 1327, 1330, 1342, 1359, 1941, 1997, 2073
 Pellegrino, J.G. — 1769
 Pellegrino, Mario — 362
 Pelletier, J. — 2332, 2339
 Pelling, M. — 1638
 Peltier, L.J. — 2189
 Peltzer, E.L. — 270
 Pelz, J.P. — 510
 Pelz, R.B. — 1458, 2297
 Pence, William H. — 1767
 Penchev, L. — 1036
 Pendleton, G. — 1638
 Pendleton, G.N. — 1638
 Pendleton, R. — 987
 Pendleton, R.P. — 1388
 Pendry, J.B. — 597
 Penebre, N.A. — 393
 Penesis, George — 2248
 Penetrante, B.M. — 2345, 2361
 Penfold, J. — 488
 Peng, G. — 268
 Peng, H.S. — 1915, 2044
 Peng, J. — 225
 Peng, J.L. — 73, 212, 223, 272, 274, 387, 438
 Peng, M. — 2005
 Peng, S.S. — 64
 Peng, Y.-K. — 2050
 Peng, Y.-K.M. — 1921, 2008
 Peng, Z.L. — 703
 Pengra, D.B. — 323, 453
 Pengtao, Huo Peter — 141
 Penn, Benjamin G. — 1735
 Penn, B.G. — 1715
 Penn, David R. — 461
 Penner, S. — 1254
 Penney, Thomas — 431
 Pennington, C.H. — 368
 Pennington, D.M. — 1961
 Pennycook, S.J. — 111, 678
 Penttilä, H. — 1014, 1818, 1819
 Penttilä, S.I. — 2171
 Penzo, A. — 1197
 Pepin, S. — 1015
 Pepke, S.L. — 739
 Pepper, M. — 537, 696, 697
 Pepper, Stephen V. — 101
 Perahia, D. — 658
 Perakis, I.E. — 290, 500
 Peralta, R. — 1436
 Peralta-Fabi, R. — 2216, 2249
 Percec, V. — 419
 Perdrisat, C.F. — 1036
 Perdue, D. — 1917
 Péré, J. — 1570
 Pereira, L.G. — 733
 Perel, A.S. — 369
 Perelstein, E. — 1317, 1368
 Perenboom, J. — 402
 Perera, A.G.U. — 578
 Perera, Indral K. — 1750
 Perera, P. — 672, 673
 Perera, P.A.A. — 933, 1809
 Perera, R.C.C. — 182
 Peres, Irene — 2356
 Perevedentsev, E. — 1352
 Pereyaslovets, B. — 1895
 Perez, J.M. — 157, 514, 597, 812, 1671
 Pérez, R. — 1615, 1990
 Perez-Rodriguez, F. — 398, 809
 Pergamenschchik, V.M. — 818
 Perger, Warren F. — 1673
 Perkins, C. — 1264
 Perkins, C.L. — 1629
 Perkins, J.D. — 127
 Perkins, L.J. — 2050, 2051, 2053
 Perkins, L.T. — 1322, 1897
 Perkowitz, S. — 532
 Perlin, P. — 445
 Perng, Y.-Y. — 2200
 Perroomian, O. — 2221
 Perraud, J. — 1555
 Perregrini, L. — 1374
 Perrin, N. — 1831
 Perring, T.G. — 534, 765
 Perrons, R. — 2317
 Perrot, F. — 1539
 Perry, A.J. — 2327, 2332, 2340
 Perry, David S. — 1724
 Perry, J. — 1204, 1227, 1286
 Perry, M. — 2080
 Perry, M.D. — 1770, 2079, 2080
 Perry, T.A. — 52, 447
 Persans, P.D. — 108, 216
 Pershan, P.S. — 494
 Pershin, V. — 1316
 Pershing, D.E. — 1963
 Persing, H. — 2327, 2328
 Persing, H.M. — 2332, 2340, 2341
 Person, M. — 628
 Persov, B.Z. — 1280
 Persson, M. — 403, 573
 Persson, Mats — 218
 Persson, P.-A. — 1547
 Perun, Matthew L. — 2293
 Perutz, S. — 350
 Peschardt, E. — 1213, 1226, 1352
 Pesci, A.I. — 2209
 Pesenson, L. — 751
 Pesenson, M. — 2290
 Pesetskiy, B.I. — 647
 Peskin, R.L. — 2195, 2316
 Pestrikov, Dmitri — 1250
 Peter, M. — 1624
 Peter, W. — 1283, 1434
 Peterkin, R.E. — 1894, 1896
 Peterkin, R.E., Jr. — 1974
 Peterkin, Robert E., Jr. — 1974
 Peters, C. — 1303, 1994
 Peters, M. — 1169, 2346
 Peters, Philip B. — 1665
 Peters, Randall — 1667, 1668, 1676
 Petersen, B.L. — 1147
 Petersen, D. — 1328
 Petersen, D.E. — 1328
 Petersen, H. — 224
 Peterson, B.G. — 1943
 Peterson, B.J. — 2023
 Peterson, C.G. — 2124
 Peterson, D. — 1358, 1360, 1812
 Peterson, D.M. — 2163, 2164

- Peterson, E. — 1215
 Peterson, G. — 1034, 1035, 1821, 2090
 Peterson, G.A. — 1034
 Peterson, J. — 1209, 1244, 1266, 1267
 Peterson, J.R. — 1545, 2163, 2358, 2370
 Peterson, L. — 1638
 Peterson, L.D. — 730
 Peterson, R.J. — 944, 1817, 1859
 Peterson, R.R. — 1483, 2085
 Peterson, T. — 1376
 Petillo, J. — 1344, 1386
 Petitet, J.P. — 1521, 1530, 1571
 Petkie, D.T. — 1662
 Petkovic, T. — 1818
 Petraconi, G. — 2373
 Petradza, M. — 1203
 Petrasso, R.D. — 1954, 1956, 2045, 2109, 2110
 Petratos, G. — 1034, 1821
 Petravic, M. — 1919
 Petravich, G. — 2092, 2093
 Petre, R. — 1635
 Petrenko, S.V. — 1219, 1321
 Petrenko, V.F. — 468, 791
 Petri, H. — 1321
 Petrich, D.M. — 591
 Petrie, T.W. — 1936, 2059, 2060, 2062, 2071
 Petrillo, C. — 951
 Petroff, P.M. — 132, 233, 704
 Petrou, A. — 132, 239, 373, 532, 702
 Petrov, M. — 1803
 Petrov, M.P. — 2030
 Petrov, S. — 1401
 Petrov, V. — 1377, 1379, 1397
 Petrovic, M.S. — 473
 Petrović, Z.Lj. — 2350
 Petrovich, F. — 1846, 1847
 Petrovich, G. — 2094
 Petrovici, A. — 1858, 2170
 Petrucci, G. — 1293
 Pett, J. — 1401
 Petters, T.J. — 1857
 Pettersen, M.S. — 1042
 Pettersson, O. — 1338
 Petteway, Jason — 1753
 Pettit, G.D. — 231, 284
 Pettit, K. — 672
 Pettit, Montgomery — 495
 Pettitt, B.M. — 64
 Petty, C.C. — 1938, 2065, 2068, 2069, 2107
 Petukhov, A. — 622
 Petukhov, A.G. — 517
 Peurrung, A.J. — 1969
 Pevgov, V.G. — 2363
 Pevzner, V. — 55
 Pewitt, E.G. — 1293
 Peyghambarian, N. — 1742
 Peyromaure, J. — 1378
 Peyronneau, J. — 1488
 Peyrusse, O. — 1987, 1988
 Peysson, Y. — 2108
 Pezak, J. — 446
 Pezeshki, B. — 552
 Pezeshki, Charles — 2253
 Pfaff, R. — 1051, 1842
 Pfannkuche, D. — 755
 Pfeiffer, H. — 1381
 Pfeifer, T. — 315
 Pfeiffer, B. — 1844
 Pfeiffer, L. — 179, 265
 Pfeiffer, L.N. — 235, 236, 393, 591, 691, 705, 738, 807
 Pfeiffer, N. — 180
 Pfeiffer, R.S. — 513
 Pfender, E. — 2374, 2375
 Pfenninger, William M. — 1776
 Pfister, U. — 1272
 Pflanz, S. — 794
 Phair, L. — 941, 962, 1828, 1853
 Pham, John T. — 1754
 Pham, K. — 1052
 Pham, L.D. — 1816
 Phaneuf, R.A. — 1107, 1163
 Phang, Y.-H. — 164
 Phares, A.J. — 847
 Phelps, A.V. — 2328, 2359
 Phelps, D.A. — 2069
 Phelps, R.A. — 986
 Philipbar, Denise — 2316
 Philipchenko, A. — 1239, 1285, 1292, 1405
 Phillips, H. — 205
 Phillion, D. — 1884
 Phillion, D.W. — 1484, 1915, 1934
 Phillipps, V. — 2007
 Phillips, A. — 1447
 Phillips, C. — 2034
 Phillips, C.-K. — 1907, 2030, 2031, 2033, 2034, 2034
 Phillips, H.L. — 1386
 Phillips, H.M. — 787
 Phillips, J. — 2065
 Phillips, J.A. — 1981
 Phillips, James C. — 760
 Phillips, James Christopher — 683
 Phillips, James M. — 748
 Phillips, J.C. — 2062
 Phillips, J.M. — 279, 802
 Phillips, Jon R. — 2281
 Phillips, J.R. — 804
 Phillips, L. — 1524
 Phillips, Lee — 1436
 Phillips, M.W. — 1945
 Phillips, N.E. — 188
 Phillips, P. — 109, 278, 290, 320, 1950, 1952
 Phillips, P.E. — 1948, 1950
 Phillips, R. — 209, 342, 1232
 Phillips, R.A. — 142
 Phillips, W. — 934, 1169
 Phillips, W.D. — 934, 1142, 1778
 Phillips, W.R. — 1807
 Phillips, W.R.C. — 2261
 Philomin, V. — 2260
 Philpott, M.R. — 456
 Photinos, P. — 535
 Pianetta, P. — 152, 1234, 1327
 Piazetsky, E. — 1816
 Piccirillo, Paul — 2254
 Piccirillo P. Calisse, L. — 1066
 Piché, Michel — 1722
 Pichler, K. — 211
 Pickard, D.S. — 1897
 Pickens, D. — 1234
 Pickering, J.A. — 412, 449
 Pickett, E. — 460
 Pickett, Robert C. — 1448
 Pickett, W. — 719
 Pickett, W.E. — 166, 309, 390
 Picozzi, S. — 1816
 Picraux, S.T. — 775
 Piejak, R.B. — 2370
 Piekawicz, J. — 944
 Piekutowski, A.J. — 1553
 Piel, A. — 1907
 Piel, H. — 1272, 1383, 1386
 Piepenstock — 455
 Pieper, John B. — 229
 Pierce, D.T. — 341
 Pierce, F. — 679
 Pierce, Wilbur F. — 2312
 Piercy, P. — 828
 Pieri, J.-C. — 1622
 Piermarini, G.J. — 1516
 Pierson, Stephen W. — 524, 580
 Pierson, S.W. — 188
 Piestrup, M. — 1215, 1331
 Pietsch, W. — 1635
 Pigarov, A. — 2051
 Pigg, A. — 172
 Pigott, J.R. — 2379
 Pike, T.P. — 688
 Pike, W.T. — 156
 Piker, C.W. — 2174
 Pilat, F. — 1240, 1244, 1246
 Pile, G. — 1323, 1334
 Pile, P. — 1843
 Pilipenko, G.I. — 1520
 Pilla, Ravi P. — 931
 Pillai, C. — 314
 Pillai, M. — 945, 1037
 Pillai, Sateesh — 1970
 Pilotte, S. — 980, 1014, 1805, 1857
 Piltz, R.O. — 1545, 1578
 Pimiskern, K. — 1383
 Pimperl, M.M. — 114
 Pinceaux, J.P. — 1483, 1515
 Pinck, L.H. — 516
 Pincus, P. — 545, 598
 Pincus, Phil — 599
 Pinczuk, A. — 236, 301, 393, 807
 Pindak, R. — 845
 Pindyurin, V. — 1263
 Pindzola, M.S. — 1091, 1156, 1438
 Pine, David — 614
 Pine, D.J. — 287, 288
 Pinegre, M. — 1555
 Pines, D. — 174, 329, 391
 Ping, D. — 191
 Pinheiro, L.M.V. — 1521
 Pinizzotto, R.F. — 157, 1671
 Pinnington, T. — 232
 Pinsker, C.C. — 2068
 Pinsker, R.I. — 1938, 2065, 2068, 2069, 2107
 Pinski, F. — 290
 Pinski, F.J. — 215, 216, 255
 Pinsky, L. — 1859
 Pinsky, M. — 1165
 Pinston, J.A. — 1826
 Pinsukanjana, P.R. — 815
 Pintiliescu, L. — 1514
 Pinto, J. — 790, 1538, 1567
 Pinto, N.J. — 151, 406
 Piomelli, Ugo — 2190
 Piper, James A. — 1738
 Pipes, Leonard — 1753
 Pippan, Manfred — 1769
 Piprek, J. — 513
 Piprek, Joachim — 834
 Pique, A. — 1048
 Pires, M.A. — 73
 Piriz, A.R. — 1886, 2086
 Pirkl, W. — 1394, 1398
 Pisanty, A. — 1607, 1621
 Pisent, A. — 1197
 Piskarev, I.M. — 1368
 Piskunov, N. — 1036
 Pitcher, E.J. — 1257, 1311, 1371
 Pitcher, S. — 2036, 2039
 Pitchford, L. — 1315
 Pitchford, L.C. — 2349, 2358, 2374
 Pitts, W.K. — 1845
 Pitts, W.M. — 2212, 2284
 Pivarc, J. — 1264
 Pivit, E. — 1391
 Pivovarov, V. — 1903
 Pizarro, P.J. — 1142
 Pizzolati, P. — 2109
 Pla, Oscar — 644
 Placidi, M. — 1366
 Planeta, R. — 1828
 Plano, R. — 295
 Plano, V.L. — 1116, 1160
 Plante, D.R. — 1126
 Plante, Jacinthe — 2358
 Plaschko, Peter — 2252
 Plassmann, P. — 581
 Platchkov, S. — 1035
 Plate, D. — 1329
 Platt, C.E. — 112, 637, 1625
 Platt, Christine E. — 840
 Platt, N. — 1637
 Platt, R. — 1768
 Platt, R.C. — 1218
 Platzzer, R. — 107, 175, 508
 Platzman, P.M. — 180, 472
 Plazek, D.J. — 487
 Plemmons, D.H. — 1757
 Plesko, M. — 1241
 Plesniak, M.W. — 2242, 2299
 Pless, I.A. — 1837
 Pletka, B.J. — 1555
 Plewa, J.S. — 2002
 Plimpton, S. — 1462
 Plimpton, S.J. — 1439
 Plink, O. — 1318
 Plis, Yu.A. — 1054
 Plischke, M. — 772
 Pliska, M. — 828
 Ploog, K. — 315, 316, 393, 763, 813
 Plouffe, D. — 1340
 Plourde, B. — 645
 Ployard, G. — 1200
 Pltazman, P.M. — 472
 Plum, M. — 1203, 1207, 1253, 1346
 Plum, M.A. — 1847
 Plumb, R.A. — 2224
 Plumer, M.L. — 601, 767
 Plummer, E.W. — 286, 365, 726, 781, 828
 Plummer, James D. — 722
 Pluth, J.J. — 173
 Po-Chan, Lin — 1682
 Pochan, P. — 2346
 Poche, D.S. — 423
 Pochodzalla, J. — 1853
 Pochy, R.D. — 700, 701
 Pocius, A.V. — 91
 Podeszwa, E.M. — 1644
 Poduretz, M.A. — 1596
 Poelker, M. — 997
 Poelsema, Bene — 218
 Poepfelmeier, K.R. — 174
 Poff, R. — 1553
 Poga, C. — 538
 Poggi, G. — 1828
 Poggi, M. — 1813
 Poggiani, R. — 1318
 Pogorelsky, I. — 1277, 1310
 Pohl, B. — 1826
 Pohl, K. — 926
 Pohl, K.R. — 1841, 1857
 Pohland, O. — 515
 Poilblanc, D. — 584, 695
 Poilleux, P. — 1218
 Poindexter, E.H. — 155
 Poinson, A. — 2349
 Pointu, A.M. — 2351, 2374
 Poirier, D.A. — 2333
 Poirier, J.P. — 1488, 1490
 Poirier, M. — 1622
 Poirier, R. — 1230
 Poitzsch, M.E. — 1142
 Poizat, J.C. — 1317
 Poker, D.B. — 286
 Polak, M. — 1611
 Polakos, P.A. — 172

- Polanyl, John C. — 1733
 Polatoglou, H.M. — 1612
 Polavarapu, P.L. — 2166
 Polcyn, A.D. — 405, 599
 Polcyn, M.A. — 1536
 Polhorsky, V. — 1806
 Poli, A. — 370, 617
 Poliakov, E.D. — 1147
 Polian, A. — 1579, 1594
 Poliashenko, Maxim — 812, 2206, 2290
 Polishchuk, A.Ya. — 1548
 Politzer, P.A. — 1883, 2066
 Poll, D. — 1358
 Pollack, E. — 1103
 Pollak, G.D. — 2043
 Pollock, D. — 1290
 Pollock, E.L. — 1483, 1942
 Pollock, R.E. — 997
 Pollock, S. — 913
 Poloni, C. — 1329
 Polotnyak, S.B. — 1532
 Polvani, L.M. — 2297
 Polyakov, S. — 1968
 Polyakova, R.V. — 1226
 Polzik, E.S. — 1106
 Pomerantz, Melvin — 571
 Pumphrey, N. — 1463, 1946, 2005, 2032, 2077, 2078
 Pomrenke, G.S. — 264
 Ponce, D. — 1897
 Ponce, D.M. — 2336
 Ponce-de-Leon, L. — 2340
 Pond, J.M. — 1607
 Pong, R.G.S. — 1747
 Pontonnier, M. — 1343
 Ponzoni, C. — 507
 Ponzoni, C.A. — 375
 Poole, C.P. — 1520
 Poole, M.W. — 1325, 1361, 1365
 Poole, P.H. — 1445
 Poon, C.C. — 735
 Poon, C.-D. — 348
 Poon, S.J. — 679, 680
 Poorman, K.L. — 1553
 Pope, J.K. — 1836, 1837
 Pope, K. — 1810
 Pope, S.B. — 2212
 Popeko, G.S. — 1806
 Popel, A. — 2293
 Popkov, Yu. — 1324, 1368
 Popov, S. — 2070
 Popov, Yu. — 1284
 Popov, Yu. P. — 983
 Popova, S.V. — 1557
 Popovic, D. — 128
 Popovic, M.B. — 1333, 1396
 Popovic, S. — 2360
 Popovici, G. — 2119
 Popple, R.A. — 1131
 Popplewell, J. — 289
 Poras, H. — 284
 Porcelli, F. — 1924
 Porile, N. — 998, 999, 1815, 1828
 Porile, N.T. — 1849, 1853, 1854
 Porkolab, M. — 1888, 1937, 1958, 1976, 2049, 2063, 2064, 2068
 Porowski, S. — 1504, 1549, 1576, 1577
 Porquet, M. — 1831
 Porquet, M.G. — 1049
 Porro, M. — 1374
 Porte, A. — 335
 Porte, L. — 1937
 Porteous, R.K. — 2332, 2338, 2349
 Porter, G.D. — 1936, 2060, 2061, 2066, 2067
 Porter, J. — 1201, 1216, 1915
 Porter, R. — 913, 914
 Porter, R.F. — 1566
 Porter, R.J. — 1815
 Portman, G. — 1329
 Portmann, G. — 1208
 Portnoi, M.E. — 136
 Porto, J.V. — 1023
 Pospieszczyk, A. — 2007
 Pospieszalski, Marian — 1010
 Pospieszczyk, A. — 2008
 Post, D. — 1919
 Post, D.E. — 1919
 Post, R.F. — 2074
 Posternak, M. — 563
 Postiau, N. — 1273
 Post-Zwicker, A. — 2092, 2094
 Post-Zwicker, A.P. — 2095
 Post-Zwicker, A. — 2095
 Potemkin, M.M. — 1532
 Potenza, R. — 998, 999, 1815, 1828, 1853, 1854
 Potepan, F. — 1222
 Potter, J. — 1386
 Potter, L. — 67, 2173
 Potter, M. — 784
 Potterveld, D.H. — 997
 Potts, C. — 1266
 Potvin, J. — 1438
 Potzel, W. — 114, 564
 Pouget, J.P. — 311
 Poukey, J.W. — 1200, 1302, 2045
 Pouliot, R.J. — 503
 Pouliquen, O. — 2252
 Poulsen, H.F. — 1626
 Pound, R.V. — 610
 Pounds, Kenneth A. — 909
 Pourang, R. — 982
 Pourkaviani, M. — 913
 Pournaras, H. — 1672
 Pouryamout, J. — 1386
 Pouvesle, J.M. — 2359
 Pouzo, J. — 2119
 Povinelli, Louis A. — 2218
 Poweleit, C.D. — 132
 Powell, C. — 2091
 Powell, H.T. — 1961
 Powell, J. — 1802, 1843
 Powell, J.A. — 565
 Powell, J.W. — 119, 120
 Powell, R.L. — 2288
 Power, J. — 1212, 1223, 1273, 1276, 1314
 Powers, E.J. — 1952
 Powers, L. — 1884
 Powers, L.V. — 1885, 1915, 1934
 Powers, P.E. — 1729
 Powers, T. — 1386
 Pozharov, V. — 2051
 Pozrikidis, C. — 2291
 Praburam, G. — 1965, 2341
 Pradal, F. — 1260
 Pradhan, Anil K. — 1128, 1157
 Pradhan, S. — 461
 Prager, S. — 1977
 Prager, S.C. — 1978, 1979, 1981
 Prahovic, M.G. — 1993
 Prakash, A. — 1511
 Prasad, A. — 2303
 Prasad, J. — 157, 1671
 Praskovsky, A. — 2195, 2215
 Prassides, K. — 252
 Prasuhn, D. — 1272
 Prater, R. — 2068
 Pratesi, G. — 1594
 Prato, D.P. — 169
 Pratt, R.H. — 950, 951, 1098, 1151, 1157
 Pratt, S. — 962, 1811, 1814, 1828
 Pratt, S.T. — 1092, 1150, 1151, 1760
 Pratt, W.P., Jr. — 480, 671, 734, 784, 802
 Prawirodirdjo, Linette M. — 1638
 Preble, J. — 1299, 1378, 1406
 Predebon, W.W. — 1555
 Predehl, P. — 1635
 Predtechensky, A.A. — 2239
 Preece, R. — 1638
 Freedom, B. — 1860
 Preger, M. — 1368
 Preische, S. — 2093
 Preist, D. — 1231
 Prelas, M. — 2119
 Prelas, M.A. — 1898, 2119
 Prentiss, Mara — 1141
 Prentiss, M.G. — 1122
 Preosti, Gianfranco — 581
 Preppernau, B.L. — 2336, 2343
 Prescott, C. — 1312, 1636
 Prescott, Charles — 909
 Prescott, C.Y. — 1312, 1313, 1342
 Presles, H.N. — 1563
 Presting, H. — 86
 Preston, J. — 75
 Preston, J.S. — 127
 Prete, G. — 1813, 1852
 Prevost, D. — 1805
 Pribyl, P. — 1928, 2007, 2111
 Price, C.E. — 965, 966
 Price, D. — 518, 2082
 Price, David Long — 684, 738
 Price, D.F. — 1986, 1987, 2082, 2117
 Price, D.L. — 308
 Price, Dwight — 1986
 Price, E. — 1286
 Price, J.L. — 951, 1148
 Price, John C. — 128, 229, 689, 840
 Price, L.R. — 1021
 Price, Peter J. — 516
 Price, P.N. — 1096
 Price, R. — 472, 1234
 Prieto, F.E. — 1487, 1493
 Priggemeyer, S. — 787
 Prigodin, V.N. — 332, 536
 Primdahl, K. — 1231, 1386, 1401
 Pringle, O.A. — 161
 Prinja, Anil K. — 1447, 1921, 2123
 Prinz, G. — 371, 990
 Prinz, G.A. — 338
 Prinz, Gary — 323
 Prior, M. — 1128
 Prior, M.H. — 1160
 Pripstein, D. — 1203
 Pritchard, Dave — 1650
 Pritchard, David E. — 977, 1761
 Pritchard, D.E. — 1141
 Prober, D.E. — 688, 836
 Probert, P. — 2024, 2026
 Probert, P.H. — 2025
 Procaccia, I. — 1461
 Procassini, R. — 1915
 Proch, D. — 1230
 Procrassini, R. — 2044
 Prodell, A. — 1290, 1341
 Prohaska, R. — 2047, 2048
 Prohofskey, E.W. — 119
 Prokes, S.M. — 156, 157
 Prokhorov, A.M. — 1277, 1998, 2116
 Proksch, R. — 317
 Prokuratova, E. — 1580
 Promislow, J. — 193
 Pronko, M.S. — 2085
 Propp, A. — 1377
 Prosa, T.J. — 158
 Prosnitz, D. — 1234
 Prosperetti, A. — 2188, 2220, 2225
 Prosser, Richard D. — 1737
 Prout, D. — 982, 1830
 Provansal, M. — 2304
 Providencia, C. — 1639
 Prudkoglyad, A.F. — 987, 1054
 Pruet, C.E. — 2251
 Prunet, M. — 1815
 Prusa, J. — 2224
 Prusakov, V. — 1284
 Pruschke, Th. — 500
 Pruski, M. — 677
 Pruss, S. — 1269
 Prut, E.V. — 1543
 Pruzan, Ph. — 1496, 1576
 Prybyla, J.A. — 1750
 Pryde, C.A. — 423
 Pryor, Craig — 694, 754
 Prystupa, D.A. — 293
 Przewoski, B.V. — 997
 Prybyla, D.A. — 1100
 Psaltis, D. — 299
 Psiaki, Mark — 2197
 Ptuskin, V. — 933
 Puchalla, J. — 1066
 Pudalov, V. — 471, 473
 Puech, V. — 1315
 Puglisi, M. — 1318
 Puiatti, M.E. — 1980
 Pullen, D.J. — 1650, 1652, 1806
 Pulsifer, P.E. — 2081, 2082
 Pundir, A. — 1542
 Punjabi, V. — 1036
 Puntus, V.A. — 1387
 Pupeter, N. — 1383
 Purcell, W.R. — 989
 Puri, A. — 89, 1172
 Pušeljčić, Danilo — 1038
 Pusep, Yu.A. — 702
 Pusterla, M. — 1197
 Putaux, J.C. — 1339
 Putikka, W.O. — 130, 695, 696, 821
 Puvvada, S. — 820
 Puzo, P. — 1222
 Pywell, R. — 1820
 Pywell, R.E. — 915
 Qadri, S.B. — 631, 632, 1516, 1545, 1573
 Qi, J. — 366
 Qi, L.Y. — 1915
 Qi, N. — 2013
 Qi, X. — 2361
 Qian, G. — 1357
 Qian, M. — 386, 458
 Qian, Q. — 1281
 Qian, Qian — 1997
 Qian, X. — 590
 Qian, Y.H. — 2193
 Qian, Yong — 1730
 Qin, Jiang — 2021
 Qin, K. — 1108, 1131, 1672
 Qin, X.H. — 2110
 Qing, Z. — 2362
 Qingdon, Dong — 1567
 Qingquan, Gou — 1595
 Qiu, An — 838
 Qiu, Jianwei — 1641
 Qiu, Jun — 507
 Qiu, S.L. — 215, 216
 Qiu, S.-Y. — 153, 625, 626
 Qiu, Z.Q. — 441, 442
 Q.-S., Zhang — 843
 Qu, James — 171, 750
 Qu, W.X. — 1924
 Qu, Z. — 781
 Quader, K. — 846
 Quader, K.F. — 583, 731, 732
 Qualls, A.L. — 2038, 2057

- Quan, X. — 190, 348
 Quandt, E. — 2353
 Quarles, C.A. — 1135, 1669, 1675
 Quarles, Gregory J. — 1743
 Que, W. — 252
 Quednau, B.M. — 941, 1036, 1812, 1852
 Queen, B. — 990
 Quesnel, D.J. — 795
 Quijada, M.A. — 75
 Quinlan, S.M. — 462
 Quinn, B. — 1843
 Quinn, J.J. — 136, 473, 728
 Quinn, P.D. — 1361, 1365
 Quinn, P.J. — 1463
 Quinn, T.J. — 946
 Quintana, E.J. — 1103
 Quintas, P.Z. — 985, 986, 1037
 Quintenz, J.P. — 2011
 Quintero-Torres, R. — 58, 1719
 Quirino, Leopoldo L. — 928, 929
 Quirk, R.P. — 93
 Qunell, D. — 1404
 Quong, A.A. — 140, 441
 Quong, Andrew A. — 441, 827
 Qvarford, M. — 781
- Rabe, K.M. — 207, 253, 406
 Rabec le Gloahec, M. — 2125
 Rabedeau, T.A. — 323, 733, 785
 Rabeony, M. — 422, 483, 714
 Rabie, Ronald L. — 1596
 Rabin, Y. — 724
 Rabinowitz, M. — 1801, 1802
 Rabinowitz, S.A. — 985, 986, 1037
 Rabitsch, K. — 1825
 Rabkin, E.I. — 1577
 Rabolt, J.F. — 189, 485, 713
 Rabolt, John F. — 712
 Rabson, D.A. — 671
 Raccah, P.M. — 1618
 Rachdi, F. — 1622
 Rachford, F.J. — 340
 Rachford, F.S. — 805
 Rachlew-Källne, E. — 1980
 Raddatz, R.A. — 1725
 Radelli, P.G. — 242
 Rader, Mark — 2003
 Radeztsky, R.H., Jr. — 2236
 Radford, D.C. — 980, 1794, 1805
 Radhakrisnan, S. — 142
 Radler, M.J. — 411
 Radloff, J.L. — 1646
 Radmanovic, M. — 1585
 Radousky, H.B. — 73, 122, 783, 829
 Radovanov, S.B. — 2347
 Radtke, R.J. — 391, 392
 Radzilowski, L.H. — 292, 423
 Raeker, A. — 2334
 Rafac, R.J. — 1120, 1139
 Rafac, Robert J. — 1758
 Rafaca, Robert J. — 1740
 Rafailovich, M.H. — 295, 339, 409, 417, 481, 713
 Rafalko, J. — 190
 Rafatian, A. — 1037
 Rafelski, J. — 962, 1062, 1847
 Raff, Lionel M. — 1620
 Raffaele, D.P. — 742
 Raffone, G. — 1265, 1368
 Ragab, S.A. — 2229, 2252, 2270
 Raghavan, G. — 1620
 Raghavan, S. — 529
 Raghu, S. — 2259
 Rahav, A. — 1859
 Rahman, A. — 1953
 Rahman, A.S. — 1953
- Rahman, H.U. — 2088, 2090
 Rahman, Lutfur — 1745
 Rahman, Shafiqur — 1437
 Rahman, T. — 147
 Rahman, Talat — 66
 Rahn, J. — 1225
 Rahn, Larry A. — 1739
 Rai, G. — 998, 999, 1815, 1828, 1849, 1853, 1854
 Rai, M.M. — 2311
 Raichel, Daniel R. — 2219, 2248
 Raichev, O.E. — 593, 647
 Raichle, B.W. — 1063
 Raikh, M.E. — 398, 537, 630
 Raimondi, P. — 1237, 1238, 1239
 Raines, P.E. — 1857
 Raisanen, A.D. — 284
 Raiser, G. — 1500
 Raith, H.F. — 1615
 Raitt, David — 2306
 Raizen, M.G. — 1121, 1140, 1154, 1674, 1777
 Rajace, M. — 2234
 Rajagopal, G. — 1620
 Rajagopalan, M. — 1544, 1573
 Rajagopalan, S. — 1359
 Rajaram, C. — 95
 Rajasekaran, J.J. — 411
 Rajendran, A.M. — 1556
 Rajeswari, M. — 227, 387, 388
 Raju, Narayanan — 2211, 2252
 Rakoto, H. — 327
 Rakowsky, G. — 1330
 Rakowsky, S. — 1741
 Ralls, K.S. — 393
 Ralph, D.C. — 393
 Ralph, Stephen E. — 763
 Ram, A.K. — 1908, 2108
 Ram, R. — 1066
 Ram, Rajeev J. — 1723
 Ram, R.J. — 1741
 Ram, S. — 1859
 Ramabadrán, Uma B. — 1715
 Ramachandra, A. — 185
 Ramachandran, H. — 1971
 Ramachandran, J.S. — 805, 838, 839
 Ramachandran, S. — 1516
 Ramakrishna, M.V. — 300
 Ramakrishnan, E. — 997, 1051, 1835
 Ramamoorthy, M. — 674
 Ramamoorthy, S. — 1223
 Ramamoorthy, Susila — 1223
 Ramamurthy, A.C. — 1500
 Ramamurthy, V.S. — 1059
 Raman, R. — 1551, 2029, 2057, 2058
 Raman, S. — 2034
 Raman, T.S. Subba — 1551
 Ramani Lata, K. — 268, 269
 Ramaswamy, K. — 1301, 2048
 Ramaty, R. — 920
 Ramayya, A., V. — 1858
 Ramayya, A.V. — 1014, 1015, 1806, 1818, 1858, 2170
 Rambaldi, S. — 1249
 Rambo, A. — 540
 Rambo, P.W. — 1915, 2082
 Ramdas, A.K. — 398, 507, 521, 530, 703, 797, 842, 1589
 Ramesham, R. — 1895, 1940, 2004
 Ramirez, A.P. — 103
 Ramirez, A.P. — 78
 Ramirez, J. — 2260
 Ramirez, J.J. — 2045
 Ramirez, R. — 1948
 Ramirez-Santiago, G. — 653, 804
 Ramkrishna, D. — 420
 Rammohan, K. — 282
 Ram-Mohan, L.R. — 374, 585, 703, 1503
- Ramos, E. — 1607
 Ramos, G.B. — 2163
 Ramos, J. — 2049
 Ramos, J.J. — 1946, 2092, 2096
 Rampersad, H.R. — 836
 Ramírez-Bon, R. — 214
 Ramšak, A. — 695
 Ramsay, W.D. — 1036, 1836, 1847
 Ramseier, G. — 1366
 Ramsey, A. — 2030
 Ramsey, A.T. — 1905, 2031, 2036
 Ramsey, N.F. — 1112
 Rana, R.S. — 797
 Rand, R.E. — 1363
 Rand, S.C. — 1744
 Randall, C.A. — 407
 Randall, J.N. — 813
 Randall, Robert W. — 1740
 Randeau, G. — 1245
 Randeria, M. — 463, 587, 639
 Randrup, J. — 1794
 Ranganathan, R. — 336, 702, 1386, 1406
 Rangel, R. — 803
 Rankin, J. — 1066
 Ransome, R.D. — 1817
 Rao, A.M. — 204, 501, 502
 Rao, B.K. — 69, 220, 221
 Rao, D. — 125
 Rao, D.V.G.L.N. — 539, 1628, 1719
 Rao, K. Narahari — 1662
 Rao, K.R. — 135, 270
 Rao, K.V. — 369
 Rao, M. — 172
 Rao, M.G. — 1262, 1382
 Rao, M.N. — 1819
 Rao, M.P. Ranga — 1488
 Rao, N.N. — 1968
 Rao, R.S. — 1514, 1559
 Rao, U. — 370
 Rao, V. — 1263
 Rapaport, D.C. — 1433
 Rapaport, J. — 982, 1051, 1062, 1826, 1830, 1835
 Rapaport, V. — 1968
 Raparia, D. — 1201, 1217, 1239, 1319, 1320, 1337, 1357, 1361
 Rapelje, K.A. — 1091
 Raphaelian, M. — 1163
 Raphaelian, M.L.A. — 1089, 1102
 Rapkine, D.H. — 438, 680
 Rappaport, A.G. — 767, 820
 Rappe, A.M. — 367
 Rappe, Andrew M. — 472
 Rappenecker, G. — 1860
 Rapposch, M. — 1163
 Raridon, R.J. — 1921, 2379
 Rasera, R.L. — 407
 Rashba, E.I. — 136
 Rashidnia, N. — 2287
 Raskolnikov, I. — 1911
 Rasmussen, D.A. — 1907, 2032, 2033, 2034, 2106, 2107
 Rasmussen, H.D. — 221
 Rasmussen, I.L. — 933
 Rasmussen, J. — 998, 999, 1815, 1828, 1853, 1854
 Rasmussen, J.O. — 942, 1823
 Rasmussen, M. — 205
 Rassat, A. — 1527
 Rasmussen, D. — 2033
 Rasul, J.W. — 642
 Ratchev, B. — 2376
 Ratcliff, J.T. — 2292
 Ratel, A. — 2028
 Ratel, G. — 2028
 Rath, H.J. — 2200
- Rath, S. — 2100
 Rathnasnigham, R. — 2197
 Ratliff, L. — 1169
 Ratliff, L.P. — 1124
 Ratna, B. — 404
 Ratna, B.R. — 820
 Ratner, E.R. — 274
 Ratner, L.G. — 986, 1258
 Ratt, R.T. — 1923
 Ratti, A. — 1353, 1394
 Raubenheimer, T. — 1234, 1256
 Raubenheimer, T.O. — 1196, 1286, 1289, 1296, 1362, 1366, 1367
 Rauchas, A. — 1266
 Raufand, S. — 2104
 Raupach, M.R. — 2256
 Rauscher, E.A. — 1089, 1163
 Rave, M.J. — 710
 Raveh, A. — 2376
 Ravel, B. — 457, 458
 Ravelo, R. — 218
 Ravi, T.S. — 807
 Ravindran, K. — 595, 836, 838
 Ravindran, P. — 1544
 Ravizza, D.L. — 2198
 Rawers, J.C. — 162
 Rawicz, W. — 405
 Rawitscher, G.H. — 962, 1834
 Rawool, M. — 944
 Rawool-Sullivan, M. — 942, 943, 1817, 1818
 Rawool-Sullivan, M.W. — 943, 1037
 Rax, J.M. — 2052, 2077
 Ray, A. — 1054, 1842
 Ray, A.K. — 68, 69, 1681, 1682
 Ray, J.R. — 2159, 2160
 Ray, L. — 1860
 Ray, V. — 581
 Ray-Chaudhuri, A.K. — 182
 Raychev, P.P. — 1639
 Rayevski, D.K. — 1919, 1920
 Raykin, M. — 84
 Raymond, R.S. — 987, 1054, 1842
 Raymond, T.D. — 1715, 1721, 1767
 Raynolds, James E. — 687
 Razani, Babak — 1460
 Razorenov, S.V. — 1512
 Razumova, K.A. — 1884, 2069
 Read, N. — 476
 Reader, J. — 1140
 Reading, J.F. — 1132
 Ready, S.E. — 569, 570
 Reardon, J. — 1958
 Reass, W.A. — 1900
 Reatto, L. — 69, 137
 Reaugh, J. — 1510
 Reber, E.L. — 1064, 2171
 Rebhan, E. — 2191
 Rechester, A.B. — 2096, 2124
 Recio, J.M. — 68, 69, 791
 Recker, Cdt. Chris — 1298
 Record, M.C. — 1549
 Reda, D.C. — 2235
 Reddy, B.R. — 1728
 Reddy, Buddha — 221
 Reddy, B.V. — 69
 Reddy, M. — 1206
 Reddy, S. Paddi — 1148
 Reddy, T.A. — 425
 Redekopp, L.G. — 2261, 2291, 2303
 Redi, M.H. — 2037
 Redin, R.D. — 407, 744
 Redmer, R.A. — 80, 1582
 Redmon, J. — 942
 Redmon, J.A. — 942
 Redmon, J.R. — 1684
 Redmon, J. — 1818
 Redon, N. — 1049, 1831

- Redondo, A. — 158
 Redwine, R.P. — 1816, 1818
 Redwing, R. — 241
 Ree, F.H. — 478, 1501, 1507, 1515
 Reece, C. — 1386
 Reece, R.K. — 1266, 1363, 1400
 Reed, Bryan — 940
 Reed, B.W. — 118
 Reed, C.E. — 485
 Reed, D.S. — 70, 458, 834
 Reed, H.L. — 2208
 Reed, K.J. — 1156
 Reed, M.A. — 158
 Reed, Mark A. — 233, 814
 Reed, R.P. — 1528, 1533
 Reed, W.F. — 485
 Reed, X.B., Jr. — 2269
 Reeder, D.D. — 1640
 Reeder, P.L. — 577, 578
 Reedy, S. — 1953
 Rees, D. — 1323, 1394, 1396
 Rees, D.E. — 1396
 Rees, G. — 1346
 Rees, G.H. — 1373
 Rees, J. — 1407, 2329
 Reeve, M.D. — 697
 Reeve, P. — 1298
 Reeve, P.R. — 1297
 Reeves, M.E. — 805, 835
 Reeves, S. — 1293
 Reeves, T.M. — 1161
 Regan, A. — 1323
 Regan, A.H. — 1215, 1393
 Regan, P.H. — 1857
 Regan, S.P. — 2027
 Reghu, M. — 312
 Reginato, L. — 1303, 1404, 1994
 Reginato, L.L. — 1199
 Rehak, M. — 1290, 1341
 Rehm, K.E. — 927, 1806
 Rehm, R.G. — 2240
 Rehr, J.J. — 385, 386, 456, 457
 Reibert, M.S. — 2236
 Reich, D. — 147
 Reich, T. — 1147
 Reichelt, T. — 1034
 Reichenbach, J. — 1622
 Reichmann, H.J. — 1489
 Reid, B. — 321
 Reid, C. — 1376
 Reid, David D. — 1102
 Reid, J. — 1350
 Reid, Paul B. — 912
 Reidy, J. — 1037
 Reidy, James S. — 2172
 Reifenberger, R. — 342, 511
 Reiff, W.M. — 113
 Reilly, M.L. — 946
 Reilly, R. — 1404
 Reiman, A. — 1463
 Reiman, A.H. — 2021
 Reiman, Allan — 1909
 Reimer, O. — 933
 Reimers, Jan N. — 256, 608
 Reimers, J.N. — 65, 209
 Reimund, J. — 1400
 Rein, Martin — 2201
 Reindl, W. — 2259
 Reinecke, T.L. — 55, 399, 647, 810, 1617
 Reinelt, D.A. — 2188
 Reinertson, R.C. — 328
 Reinhard, L. — 154
 Reinhardt, N. — 1315, 1402, 1403
 Reinhardt, W. — 120
 Reinhardt, William — 250
 Reinhardt, W.P. — 121, 456, 631
 Reinhold, C. — 1119, 1171
 Reinhold, C.O. — 1164
 Reiniger, K. — 1232
 Reiniger, K.W. — 1400
 Reinsch, M.W. — 1122, 1135, 1762
 Reipa, V. — 632
 Reisenfeld, D.B. — 1116
 Reisenhel, P. — 2315
 Reiser, M. — 1236, 1280, 1281, 1301, 1319, 1345, 1363, 1364, 1365, 1999, 2048, 2119
 Reiser, G.M. — 830
 Reiss, H.R. — 935
 Reisse, C. — 1538
 Reist, H. — 1338
 Reistad, D. — 987, 1265, 1336
 Reiter, D. — 1892, 1919
 Reiter, G. — 175, 252
 Reitter, T. — 2273
 Reitz, Larry — 675
 Reitz, Larry F. — 675
 Reitze, D. — 2082
 Reitze, D.H. — 1986, 1987, 2082, 2117
 Reitzel, K.J. — 2105
 Reizer, M.Yu. — 500, 523
 Rej, D. — 1988
 Rej, D.J. — 1900, 1988, 2048, 2117
 Rejaei, B. — 136
 Remaud, B. — 1796
 Remelius, D. — 1342
 Remillard, J.T. — 834
 Remillard, S.K. — 805
 Remillieux, J. — 1317
 Remington, Bruce — 1961
 Remiot, C. — 1498
 Remler, E.A. — 1064
 Remmers, G. — 682, 1147
 Remnev, G.E. — 1894
 Remo, J. — 1562
 Remondino, V. — 1236
 Rempe, Margaret E. — 559
 Rempel, T. — 1952
 Remy, M.A. — 1390
 Ren, A. — 2123
 Ren, Q.-W. — 1819
 Ren, S.-F. — 531, 746
 Ren, Shang Yuan — 336
 Ren, S.Y. — 240
 Ren, S.Z. — 542
 Ren, Y.T. — 461, 838
 Renardy, Y. — 2222
 Renault, P. — 1134
 Rencsok, R. — 683
 Rendell, R.W. — 353
 Rendon, A.M. — 1220
 Reneker, Darrell H. — 93
 Renero, C. — 1487
 Renfrow, S.N. — 1675, 1684, 1685
 Renftle, W. — 1262
 Renk, T.J. — 2045
 Renn, M.J. — 1109
 Renner, O. — 2043
 Renner, T.R. — 1337
 Rennick, F. — 2176
 Reno, John L. — 375
 Renou, G. — 1317
 Rensing, N.M. — 1610
 Rensink, M.E. — 1920, 1936, 2060, 2061
 Renwick, S.P. — 1159
 Repnow, R. — 1336
 Repeur, T. — 927, 940, 1828, 1854
 Reppy, J.D. — 240, 1022
 Reschke, D. — 1386
 Rescigno, Thomas N. — 2348
 Rescigno, T.N. — 1099, 1117, 1147, 2334
 Reshetin, A.I. — 943, 1817
 Reshotko, E. — 2196
 Reshotko, M. — 131
 Resler, D.A. — 913, 1802, 1822
 Resnik, D. — 226
 Ress, D. — 1884, 1885, 2044, 2083
 Ress, D.B. — 1885
 Ressel, M.T. — 1802
 Resta, R. — 181, 563
 Rettig, C.L. — 1936, 1937, 2061, 2062, 2063, 2064, 2069
 Rettori, C. — 73, 124, 125, 648
 Reusch, M.F. — 1326, 1338
 Reusch, Michael F. — 1235, 1363
 Reuter, E.E. — 531
 Reuter, W. — 752
 Reutt-Robey, J.E. — 342
 Reviol, W. — 980, 1049, 1052, 1818, 1819, 1832
 Revuluri, S. — 2016
 Rewoldt, G. — 2075, 2100, 2101
 Reyes, A.P. — 124, 175, 439
 Reyes, C. — 2045
 Reyes, H. — 1948
 Reynes, A. — 1615
 Reynolds, D.C. — 316, 593, 745
 Reynolds, G.A. — 2221
 Reynolds, M.A. — 1887
 Reynolds, M.W. — 1142
 Reynolds, R. — 314
 Reynolds, W.C. — 2197, 2232
 Reza, K.A. — 479
 Rezayi, E.H. — 135, 236
 Rezendes, P.S. — 1825, 1826
 Reznik, D. — 76
 Rhallabi, A. — 2329
 Rhee, D.Y. — 2039
 Rhee, M.J. — 1256, 1302, 1898
 Rhein, Martin D. — 1809
 Rhines, P.B. — 2223
 Rhines, Peter — 825
 Rhoades, R.L. — 2339
 Rhode, J. Ivan — 1661
 Rhodes, T. — 2007
 Rhodes, T.L. — 1937, 2062, 2064, 2069, 2110, 2111
 Rhyne, J.J. — 785
 Ribas, R.V. — 1819
 Ribeiro, C. — 2008
 Ribet, M. — 1622
 Ricard, A. — 2343
 Ricaud, Ch. — 1339
 Ricci, S. — 416
 Rice, A.L. — 987
 Rice, A.P. — 70, 834
 Rice, B.W. — 2061, 2067
 Rice, D. — 383, 1274, 1355
 Rice, David M. — 413
 Rice, D.E. — 647
 Rice, J. — 1956
 Rice, Jane K. — 1521, 1778
 Rice, J.E. — 1956, 1957
 Rice, JOe — 2201
 Rice, J.P. — 635, 692, 771
 Rice, M.J. — 694
 Rice, R.A. — 1449
 Rice, Stuart A. — 494
 Rice, T.M. — 588, 821, 822
 Rich, Daniel H. — 1768
 Rich, D.H. — 282
 Richard, N. — 2028
 Richard, P. — 1089, 1103, 1171
 Richards, B. — 1883, 1948, 1950, 1951
 Richards, D. — 1097
 Richards, H.L. — 654
 Richards, P.L. — 1618, 1624, 1625
 Richards, R.K. — 2113
 Richardson, D. — 704
 Richardson, J. — 324
 Richardson, J.M. — 913
 Richardson, R.D. — 1218, 1267
 Richardson, Steven L. — 183, 672, 762, 763
 Richie, D.A. — 399
 Richie, David A. — 760
 Richmond, E.D. — 678, 1619
 Richmond, G.L. — 437, 563, 628, 1619, 1751, 1775
 Richter, C.A. — 179
 Richter, D. — 262, 313
 Richter, R. — 1393
 Richter-Sand, R.J. — 1401
 Ricketts-Foot, D.A. — 253
 Rickman, J.M. — 628
 Riconda, C. — 2055
 Ridaura, R. — 1613, 1625
 Ridder, D. — 1128
 Ride, S. — 2116
 Ride, S.K. — 1331, 1903, 1905, 1941, 1994
 Ridener, F. — 2174
 Rieck, C.T. — 273
 Riecke, Hermann — 2227, 2306
 Riedel, Eberhard K. — 707
 Riedel, K.S. — 1909, 1927, 2036, 2050
 Riedinger, L.L. — 1013, 1015, 1818, 1819
 Riehl-Chudoba, M. — 727
 Riemann, K.-U. — 2333, 2375
 Riera, J. — 496, 594, 696
 Riera, Jose — 595
 Rietdyk, H. — 1215
 Rietveld, G. — 273
 Rieubland, J.-M. — 1341
 Rife, D. — 2243
 Riffe, D.M. — 363, 1670
 Rifkin, J.A. — 674
 Rigakis, N. — 331
 Rigby, D. — 425
 Riggs, K. — 371
 Riggs, Kevin — 323
 Rightley, M.L. — 2226
 Rightley, P.M. — 2211
 Rigney, J. — 409
 Rigney, M. — 1860
 Rigos, A.A. — 120
 Riitano, A.M. — 125
 Rikovska, J. — 1805
 Rikvold, P.A. — 654
 Riley, D. — 2081
 Riley, M. — 1049, 1858
 Riley, M.A. — 1792, 1857
 Riley, M.E. — 2373
 Riley, Merle E. — 2367
 Riley, R.A. — 991
 Riley, R.J. — 2199
 Riley, S.J. — 549
 Rimai, D.S. — 294, 511, 795
 Rimai, L. — 669
 Rimini, F. — 2055
 Rimnik, F.G. — 1907
 Rimkus, K.A. — 1662, 2342
 Rimlinger, M. — 1281
 Rimmer, B. — 987
 Rimmer, R. — 1388
 Rimmer, R.A. — 1351, 1379
 Rinaldi, M. — 1318
 Rinckel, T. — 986, 997, 1116, 1197
 Rinehart, E. — 1562
 Rineman, R.C. — 528
 Ring, P. — 1807, 1823
 Ringler, S.J. — 1318, 1337
 Ringsdorf, H. — 455, 712
 Ringwall, A.D. — 1334, 1378
 Ringwood, A.E. — 1501

- Rinneberg, H. — 1091
 Riordan, M. — 1034, 1821
 Riordon, J. — 1200
 Rios-Jara, D. — 1613
 Rios-Martinez, Carlos — 1676
 Ripin, B.H. — 1890, 1965
 Ripouteau, F. — 1339
 Rippert, E.D. — 638, 694
 Ripple, Dean — 1006
 Riseborough, Peter S. — 225, 757
 Riseborough, P.S. — 639, 643, 758
 Risley, J.S. — 1159
 Risselada, T. — 1247
 Risser, S.M. — 268
 Risser, Steven M. — 564
 Ristinen, R.A. — 943, 1818
 Ristorcelli, J.R. — 2232, 2265
 Ritchey, Barry — 1611
 Ritchie, A. — 1205
 Ritchie, A.B. — 1117
 Ritchie, B. — 1860
 Ritchie, Barry — 943
 Ritchie, B.G. — 1817
 Ritchie, D.A. — 696, 697, 808
 Ritchie, N.W.M. — 1168
 Ritley, K. — 818
 Ritley, K.A. — 644
 Ritson, D. — 1239, 1240, 1267
 Rittenhouse, G. — 466
 Ritter, H.G. — 998, 999, 1815, 1828, 1853, 1854
 Ritter, Rogers C. — 923
 Ritter, T.M. — 181, 1589
 Ritz, Ch.P. — 2021
 Riunaud, J.P. — 1360
 Rivas, J. — 216
 Rivera, O. — 314
 Rivera, W. — 514
 Rivero, J. — 169, 700
 Rivir, R.B. — 2204
 Rivkin, L. — 1352
 Rix, W. — 2088
 Riyopoulos, S. — 2003, 2106
 Rizzi, V. — 1393
 Rizzo, T.R. — 1742
 Rizzutto, M.A. — 1819
 Roach, J.F. — 539, 1628, 1719
 Roach, W.P. — 77, 318
 Robb, A. — 1329
 Robb, J. — 1299
 Robbins, Mark O. — 264
 Roberson, M.A. — 1671, 1676
 Roberson, N.R. — 1063, 1805, 1846, 2171
 Robertazzi, R.P. — 636
 Roberts, A.D. — 996, 997
 Roberts, B.W. — 134, 471, 790
 Roberts, C.D. — 1837
 Roberts, D. — 1052
 Roberts, D.A. — 1842
 Roberts, D.R. — 1950, 1954
 Roberts, J. — 459
 Roberts, J.A. — 1678
 Roberts, J.T. — 2337
 Roberts, R.B. — 926
 Roberts, S. — 324
 Roberts, Scott E. — 1017
 Robertson, B.W. — 673
 Robertson, D.H. — 53, 796, 1536, 1586
 Robertson, J.D. — 928
 Robertson, J.L. — 625
 Robertson, M.C. — 738
 Robertson, R.G.H. — 913, 1797
 Robertson, S. — 921, 996, 1279, 1964, 1980
 Robertson, Scott — 1328, 1941
 Robertson, W.M. — 367, 1716
 Robey, H.F. — 2198
 Robichaux, J.H. — 2285
 Robicheaux, F. — 1096, 1150
 Robin, D. — 1240, 1243
 Robins, K. — 1234, 1330, 1341
 Robins, Kathleen A. — 1153
 Robinson, A.C. — 1455
 Robinson, A.W. — 341
 Robinson, D.C. — 2008
 Robinson, G. Wilse — 1677
 Robinson, G.Y. — 737
 Robinson, J. — 1672, 2005
 Robinson, J.C. — 1154
 Robinson, J.M. — 258, 502, 616
 Robinson, M.T. — 1164
 Robinson, P.A. — 1994, 2020
 Robinson, P.B. — 2194
 Robinson, R.A. — 79
 Robinson, S.J. — 1854, 1855
 Robinson, W. — 1290, 1340
 Robison, M.W. — 968
 Robledo, Alberto — 653
 Roche, C. — 1377
 Roche, C.T. — 1334
 Roche, G. — 1815
 Rochester, U. — 699
 Rock, S. — 1034, 1821
 Rockett, A. — 568
 Rockwell, B.A. — 318
 Rockwell, D. — 2301
 Roddick, E. — 837
 Roddy, Chris J. — 2164
 Rodenburg, R.E. — 1342
 Rodenz, G. — 1280, 1344, 1353
 Roderick, N.F. — 1896, 1974, 2090
 Rodger, E. — 1297
 Rodgers, D. — 1147
 Rodgers, J. — 1301, 2048
 Rodrigue, M. — 1132
 Rodrigues, A.R.D. — 1234
 Rodriguez, A. — 66
 Rodriguez, C.O. — 270
 Rodriguez, G.A. — 367
 Rodriguez, I. — 812
 Rodriguez, J. — 483
 Rodriguez, J.H. — 119, 162
 Rodriguez, Jorge L. — 1001
 Rodriguez, Jose — 196
 Rodriguez, J.P. — 223, 390
 Rodriguez, Juan — 549, 1672
 Rodriguez, P. — 1968
 Rodriguez, R. — 1377, 1398, 1615
 Rodriguez, S. — 521, 797, 798
 Rodrguez, L. — 2021
 Roe, R.J. — 191, 244
 Roeklein, J.C. — 1298
 Roehlsberger, R. — 113
 Roelofs, L.D. — 1619
 Roentgen, P. — 1503
 Roesgen, T. — 2287
 Roesler, Gordon — 693
 Roesler, J.M. — 239
 Roessle, E. — 1843
 Rogalla, H. — 637, 753
 Rogdestvensky, B.V. — 1270
 Rogers, B. — 1946, 2038, 2053
 Rogers, D. — 509
 Rogers, J.A. — 2009
 Rogers, J.D. — 1388, 1399
 Rogers, J.H. — 1888, 1907, 2032, 2033, 2034
 Rogers, John A. — 1631
 Rogers, M.E. — 318, 319
 Rogers, M.M. — 2214, 2271
 Rogers, W.F. — 1844
 Rogerson, Audrey — 2301
 Rogge, R.B. — 155, 479
 Rogge, S. — 743
 Roglein, T. — 1899
 Rognlien, T. — 1936
 Rognlien, T.A. — 1936
 Rognlien, T.D. — 1920, 1921, 2016, 2060, 2061, 2103, 2365, 2366
 Roh, Heui-Seol — 1837
 Rohatgi, R.R. — 1813
 Rojas, C. — 401, 752
 Rojas, F. — 756
 Robins, R. — 218
 Rojo, A.G. — 227, 587
 Rokhsar, D.S. — 304, 305, 333, 588
 Rokni, S. — 1034, 1821
 Rokni, S.H. — 1816
 Roland, C. — 1620
 Roldan, J.M. — 378
 Roles, K. — 603
 Rojas, R.G. — 1130
 Rolfs, C. — 983
 Rolin, Terry D. — 829
 Rollefson, A.A. — 2175
 Rollins, D.K. — 2245
 Rollins, E. — 1956
 Rollins, R.W. — 1446, 1448
 Rolston, S. — 934, 1142, 1169
 Rolston, S.L. — 934, 1778
 Romain, J.P. — 1484
 Romain, P. — 981
 Romaine, S. — 179
 Roman, C. — 846
 Romanelli, F. — 1944, 1946, 2075
 Romano, J. — 930
 Romano, L.T. — 1606
 Romano, P. — 583
 Romanov, G.V. — 1387
 Romanow, W.R. — 253
 Romanowsky, A. — 2110
 Romanski, J. — 999, 1815, 1853, 1854
 Rome, J.A. — 2021, 2023, 2107
 Roméas, P. — 2120
 Romeo, C. — 583
 Römer, Rudolf A. — 291
 Romero, D. — 297
 Romero, H.A. — 1968
 Romero, J. — 1826, 1828
 Romero, J.L. — 998, 999, 1062, 1815, 1825, 1826, 1828, 1829, 1853, 1854
 Romero, L. — 2346
 Romero, L.A. — 516
 Rommel, S. — 920
 Romo, Roberto — 762
 Ron, A. — 1942
 Ron, Amiram — 2118
 Ronay, Maria — 241
 Rondeau, G. — 1197, 1245, 1257
 Rondelez, F. — 420, 713
 Roney, P. — 2093
 Roney, P.G. — 2094
 Rong, F.C. — 155
 Ronhovde, P.H. — 2174
 Ronningen, R. — 1842
 Rönqvist, T. — 1338
 Rooks, M.J. — 707
 Roos, G. — 691
 Roos, K. — 569, 623, 625
 Roos, P.G. — 1035, 1052, 1817, 1846
 Root, L. — 1253
 Root, T.W. — 413
 Roper, C.D. — 1825
 Ropert, A. — 1326
 Röpke, G. — 1582
 Roppo, M.N. — 2251
 Roquemore, A.L. — 2030, 2031, 2032
 Roquemore, L. — 2030
 Roquemore, W.M. — 2227, 2259
 Roques, A. — 1301, 1302
 Rosati, M. — 1811
 Roscoe, S.B. — 572
 Rose, C. — 1212
 Rose, D.V. — 2046
 Rose, F. — 1895, 1940, 2004
 Rose, H. — 831
 Rose, H.A. — 1987, 1991
 Rose, Harvey A. — 1913, 1935
 Rose, J. — 1394, 1817
 Rose, S. — 2043
 Rose, Todd S. — 1743
 Rosedale, J.H. — 90, 604, 605
 Rosén, Arne — 1765
 Rosen, Mervine — 793
 Rosen, S. Peter — 1683
 Rosenbauer, M. — 56, 157
 Rosenbaum, T.F. — 170, 289, 438
 Rosenbaum, Thomas — 824
 Rosenberg, A. — 521
 Rosenberg, J.M. — 1462
 Rosenberg, L.J. — 1020
 Rosenberg, S. — 1965
 Rosenberg, Z. — 1555
 Rosenblum, S. — 648
 Rosenbluth, M.N. — 1911, 1929
 Rosencher, E. — 555
 Rosenfeld, Arthur H. — 925
 Rosenfeld, H.D. — 390
 Rosensteel, G. — 962, 1808
 Rosensweig, R.E. — 289, 2174
 Rosensweig, Ron — 289
 Rosenthal, A. — 1016
 Rosenthal, G. — 1970, 1989
 Rosenthal, S.E. — 1302
 Rosenzweig, J. — 1234, 1246, 1278, 1285, 1312, 1323, 1327, 1348, 1356, 1997
 Roser, T. — 1209, 1266, 1322, 1363
 Roshko, A. — 2207, 2264
 Rosier, L. — 1317, 1860
 Rosing, M. — 1276
 Roskies, Ralph — 1440
 Rosner, S.D. — 1112, 1125
 Rosov, N. — 73
 Ross, David W. — 1949
 Ross, D.W. — 1951
 Ross, J. — 447, 621
 Ross, J.G. — 983, 1841, 1844, 2175
 Ross, Joseph H., Jr. — 215, 321
 Ross, K.A. — 744
 Ross, M. — 1217, 1490, 1506
 Ross, M.A. — 997
 Ross, Marc — 924
 Ross, M.C. — 1198, 1202, 1206, 1360
 Ross, P.N. — 438
 Ross, Richard S. — 599
 Ross, S. — 271
 Ross, S.B. — 1111
 Ross, T. — 1890, 1966
 Ross, W.R. — 1002
 Rossa, E. — 1217, 1220, 1352
 Rosseinsky, M. — 368
 Rosseinsky, M.J. — 1622, 1625
 Rossi, C. — 1318, 1383, 1393
 Rossi, D.F. — 1829, 1830
 Rossi, L.F. — 2265
 Rossing, Thomas D. — 1012
 Rossmann, R. — 1197, 1258, 1259
 Rost, C. — 1976
 Rost, Jan M. — 1134
 Rost, J.C. — 1888
 Rost, J.M. — 848
 Rostamzadeh, C. — 1407
 Rostoker, N. — 2046, 2047, 2048, 2088, 2090
 Rostoker, Norman — 1976
 Rotella, F. — 324
 Rotenberg, Eli — 514
 Roth, Ch. — 831

- Roth, E.P. — 749
Roth, G. — 1315
Roth, H. — 1856
Roth, Johannes — 626, 681
Roth, J. Reece — 1900, 1901
Röth, R. — 1386
Rothberg, L. — 210, 258
Rothberg, Lewis — 204, 267
Rothberg, L.J. — 211
Rothery, N.E. — 1737, 1761
Rothman, J.L. — 1210
Rothschild, K.J. — 319, 600
Rothschild, Peter J. — 1000
Roughani, B. — 228
Rouillé, C. — 1894, 2089, 2122
Rouke, J.L. — 287
Rous, J. — 2120
Roussulp, C.L. — 1887
Roussev, R.P. — 1639
Rouvellou, B. — 1139
Rouviere, N. — 1215
Roux, Daniel — 1299
Rowelstad, A.L. — 2231
Rowan, L.G. — 2167
Rowan, William L. — 1949
Rowan, W.L. — 1949, 1950, 1951
Rowcliffe, A.F. — 1929
Rowdyshrub, C.K. — 1977
Rowe, B.R. — 2357
Rowe, M.W. — 998, 1808, 1844, 1857
Rowland, H. — 1968
Rowland, H.L. — 1969
Rowley, N. — 1814
Rowntree, D. — 1818
Rowson, P. — 1203
Roy, A. — 1388
Roy, C.M. — 2232
Roy, D. — 2368
Roy, G. — 1036, 1836, 1843, 1844
Roy, N. — 1049
Roy, R. — 1813
Roy, Rajarshi — 1744
Roy, S. — 1435
Roy, Steve S. — 2103
Royal, J.S. — 189
Roytman, V. — 1929
Rozen, J.R. — 688
Rozen, Y. — 1001
Rozenberg, M.J. — 821
Rozmus, W. — 1913, 1916, 2020
Roznerski, W. — 2350
Rozsnyai, Balazs F. — 991
Rubel, E.C. — 1831
Rubel, E. — 1013, 1014, 1049, 1050, 1806, 1831
Rubel, E.C. — 1805
Rubenchik, A.M. — 1912, 1987
Rubenstein, A. — 964
Ruberti, J. — 2292
Rubin, Brad C. — 989
Rubin, D. — 1354, 1355, 1381
Rubin, I.D. — 94
Rubin, M. — 447, 621
Rubin, M.E. — 649, 817
Rubingh, M. — 1389
Rubinstein, Mark — 212
Rubinstein, R. — 2305
Rubio, Alberto — 762
Rubio, Angel — 621
Ruby, S.L. — 832
Ruckenstein, A.E. — 500
Ruckman, M.W. — 560, 699, 780
Rudakov, L.I. — 1993
Rudchik, A.T. — 1270, 1336
Rudd, H. — 1236
Rudd, M.E. — 1132, 1133
Ruden, E.L. — 1974
Ruden, Paul P. — 1768
Ruden, P.P. — 634, 646
Ruden, P. Paul — 54
Rudenko, V. — 1284
Rudge, W.E. — 443
Rudin, S. — 399, 647
Rudman, D.A. — 172, 185
Rudmin, J.D. — 1124
Rudolf, P. — 411, 559
Rudolph, D. — 980, 1856
Rudolph, K. — 1387
Rudra, A. — 182
Rudra, J. — 217
Ruebush, S. — 364
Ruel, R.R. — 235
Ruesink, M. — 1129
Ruetzsch, Gregory, R. — 2211
Ruf, T. — 1572
Ruffner, Judith A. — 515
Rugar, D. — 185
Rugar, Daniel — 556
Ruggiero, A.G. — 1303, 1358
Ruggiero, S. — 213, 596
Ruggles, L. — 1915
Rühle, W.W. — 315, 316
Ruiz, C.L. — 1988
Ruiz, E. — 1351, 1390
Ruiz, J. — 1813, 1852
Ruja, R. — 1287
Rukhadze, A.A. — 1998, 2116, 2118
Ruland, R.E. — 1340
Rule, D. — 1215, 1218, 1331
Rullier, J.L. — 1280
Rumaner, L. — 108
Rumschitzki, D. — 2225
Runge, F.E. — 713
Roy, K.J. — 333, 1483
Rungsimuntakul, N. — 412
Ruoff, A. — 1475
Ruoff, A.L. — 1482, 1566
Ruoff, Arthur L. — 254, 324, 476, 576, 577, 1515, 1517, 1522, 1559, 1570, 1571, 1572, 1575, 1579, 1595
Ruoff, R.S. — 2337
Rupp, L.W., Jr. — 496, 525, 526
Ruppert, D.E. — 1979
Rupprecht, A. — 120, 1660, 1662
Rusak, Z. — 2247
Rusakova, I. — 204, 615
Rusanov, A.I. — 1513
Rusch, D. — 1539
Rusek, A. — 1837, 1843
Rush, J.J. — 313
Rushford, M.C. — 2083
Ruskov, E. — 2036
Rusnak, B. — 1387
Russ, D.E. — 927, 998, 1852
Russell, W.B. — 288, 343
Russell, A.D. — 1268
Russell, D.A. — 2039
Russell, David — 1913
Russell, J. — 2249
Russell, M.W. — 217
Russell, S.J. — 1342
Russell, T. — 1287, 1402
Russell, T.P. — 90, 91, 143, 325, 410, 417, 421, 482, 488, 603, 604, 659, 1516, 1547
Russo, A.J. — 2242
Russo, D. — 1209
Russo, G.V. — 999, 1815, 1853, 1854
Russo, P.S. — 48, 94, 423
Rusotto, M.A. — 2084
Rustgi, M.L. — 336
Rusthoi, D.P. — 1273, 1318
Rusthol, D. — 1299
Rutgers, M. — 288
Rutgers, M.A. — 288, 343
Ruth, C. — 914, 915
Ruth, R.D. — 1199, 1230, 1249, 1288, 1381, 1395
Rutherford, D.A. — 1849
Rutkowski, H. — 1303, 1994
Rutkowski, H.L. — 1303
Rutland, C.J. — 2212
Rutledge, J.E. — 240, 1048
Rutt, P. — 1034
Ruuskanen, P.R. — 1546, 1585
Ruvalls, J. — 273
Ruzic, D. — 2049
Ruzic, D.N. — 1918, 2051
Ruzin, I.M. — 472
Ryan, J. — 989
Ryan, James M. — 1026
Ryan, J.M. — 180, 468, 948, 968
Ryan, P.M. — 2033, 2106, 2107
Ryan, R.E. — 1714
Ryan, W. — 1210, 1211
Rybakov, E. — 1291
Rybalko, V. — 1284
Rybarcyk, L. — 982, 1051, 1830
Rybarcyk, L.J. — 982
Rybnikar, F. — 195, 414, 421, 487
Rychagov, A. — 1291
Ryckewaert, G. — 1273
Ryd, Anders — 1018
Ryder, R. — 1373
Rykov, V.L. — 1054
Rylov, S.V. — 1448
Ryne, R. — 1344, 1353
Ryne, R.D. — 1370
Rynn, N. — 1890, 1973
Rytz, D. — 406
Ryu, C. — 1286
Ryu, S. — 835
Ryzhkov, Yu.F. — 1518
Rzaev, R.A. — 1259
Rzchowski, M.S. — 241, 328
Rzezonka, B. — 1289
Sa, B.H. — 1852
Sá, P.A. — 2367
Saad, Y. — 620
Saadatmand — 1343
Saadatmand, K. — 1200, 1201, 1217, 1220, 1319, 1320, 1323
Saam, B. — 1140
Saam, B.T. — 1120
Saam, W.F. — 240, 650
Saarinen, J. — 1450
Sabatini, R.L. — 327
Sabbagh, S. — 2032, 2034
Sabbagh, S.A. — 1984
Sabbaghzadeh, J. — 1672
Sabbah, Ali — 115
Sabiryanov, R.F. — 83
Sabnis, R.D. — 2242
Saboungi, Marie-Louise — 269, 684, 738
Sacchetti, F. — 951
Sacchi, M. — 1842
Sachdev, S. — 476, 647
Sachdev, V.K. — 1535, 1542
Sachidanandam, R. — 253
Sachrajda, A.S. — 698
Sachs, Robert G. — 938
Sachtschale, R. — 1403
Sack, N.J. — 498, 629
Sackett, C. — 1141
Sacks, R. — 133
Sacks, R.N. — 179
Sacksteder, V.E., IV — 1810
Sacra, A. — 548, 550
Saddoughi, S.G. — 2316
Sadeghi, N. — 2328, 2333, 2377
Sadeghpour, Hossein — 251
Sadeghpour, H.R. — 1086, 1098, 1139
Sadeh, W.Z. — 2207
Sá de Melo, C.A.R. — 523, 587
Sadler, G. — 2055
Sadler, M. — 942, 1818
Sadler, M.E. — 1684
Sadoulet, Bernard — 994
Sadowski, W. — 1624
Sadra, K. — 182
Saeed, M. — 1092, 1146, 2332
Saeki, H. — 1263
Saemann-Ischenko, G. — 1611
Saeta, P.N. — 792
Sáez, P. — 1312, 1636
Sáez, P.J. — 1312, 1313, 1342
Safar, H. — 223, 520
Safar, Hugo — 635
Safinya, C.R. — 319, 404, 599, 600
Safrank, J. — 1209, 1238, 1239, 1325
Safron, S.A. — 794
Safronova, U.I. — 1165
Sagalovsky, L. — 1249, 1334, 1365, 1377
Sagan, D. — 1235, 1355
Sagdahl, L. — 520
Sage, J. — 1217, 1220, 1222
Sage, J.T. — 266
Sagear, P. — 1671
Sager, G.T. — 2061
Saghai, B. — 1860
Sagui, Celeste — 710
Sagurton, M. — 1149
Saha, Bidhan C. — 1130
Saha, H.P. — 1095
Saha, Susanta K. — 743
Sahafeyan, M. — 425
Sahimi, M. — 738
Sahin, I. — 2244
Sahni, V. — 139
Sahoo, N. — 174, 268, 269, 564
Sahu, T. — 323
Said, R. — 1160
Saigusa, M. — 2054
Saiki, E.M. — 2235
Sailor, W.C. — 2110
Saito, E.F. — 1825, 1845
Saito, Hisao — 1723
Saito, K. — 1301, 1387
Saito, N. — 1843
Saito, R. — 205
Saito, Susumu — 222
Saito, T. — 617
Saito, Y. — 1395
Sajin, V. — 1284
Sajoto, T. — 471
Sakai, H. — 1651
Sakai, K. — 1530, 1575
Sakai, M. — 64
Sakai, Y. — 2352, 2364
Sakaie, K.E. — 572
Sakakibara, J. — 2278
Sakakibara, S. — 2021
Sakamoto, K. — 827, 1328, 1612
Sakamoto, M. — 846
Sakamoto, S. — 1301, 1402
Sakamoto, T. — 1612
Sakamoto, Y. — 1597
Sakanaka, S. — 1356, 1387
Sakashita, M. — 1496
Sakaue, H.A. — 1260
Sakmar, Sam — 1129
Sakuler, W. — 1825
Sakumoto, W.K. — 985, 986, 1037
Sakurai, K. — 484
Sakurai, Shinichi — 2306
Sakurai, T. — 231, 403, 617, 623, 624, 726, 1905

- Saladin, J.X. — 980, 1831
 Saladin, V. — 1290
 Salamo, G.J. — 172, 260
 Salamon, D. — 1625
 Salamon, M. — 188, 297, 672
 Salamon, M.B. — 163, 188, 619
 Salamon, M.H. — 919, 1021
 Salamon, P. — 1437
 Salari, K. — 2315
 Salas, A. — 2021
 Salashenko, N.N. — 832
 Salat, S. — 1947
 Saldin, D. — 160
 Sale, K. — 1272
 Sale, K.E. — 928, 997, 998, 1825, 1846
 Saleh, Adli A. — 498, 781
 Salem, J.R. — 152
 Salem-Sugui, S., Jr. — 276
 Saleres, A. — 1538
 Sales, B.C. — 280, 802, 835
 Salimov, A. — 1263
 Salinas, F. — 1825
 Salinas, Raul G. — 929
 Salior, W.C. — 982
 Salisbury, D. — 1685
 Salkola, M. — 304
 Salkola, M.I. — 460
 Salling, C. — 679
 Salmeron, M. — 112, 1762
 Salmon, J.K. — 1463
 Salter, R.H. — 2358
 Saltzberg, D. — 944
 Salvador, A. — 593
 Salvino, D.J. — 743
 Salvino, Dominic J. — 743
 Salzborn, E. — 1107
 Samant, M. — 830
 Samantray, C.B. — 1369
 Samara, G.A. — 68, 220, 1527
 Samarth, N. — 132, 182, 283, 374, 398, 430, 512, 530, 649, 746, 765, 797, 817, 1503
 Samimy, M. — 2235, 2299
 Samios, Nicholas — 994
 Samm, U. — 2007, 2008
 Sammis, C.G. — 738
 Sammonds, P.R. — 1491
 Sampson, D.H. — 1157, 1942
 Sampson, W. — 1234, 1290, 1330, 1341
 Sams, T. — 1830
 Samsaki, S. — 1575
 Samson, J.A.R. — 1149
 Samtaney, Ravi — 2209
 Samuels, David C. — 138
 Samuels, R. — 545
 Samuelson, L.A. — 1719
 Samulski, E.T. — 142, 193, 348, 540
 Sanbonmatsu, K.Y. — 2019
 Sanborn, B.A. — 237
 Sanchez, A. Martin — 991
 Sánchez, Angel — 528
 Sanchez, E. — 828, 2021
 Sanchez, I.C. — 192
 Sanchez, J. — 2021, 2096
 Sanchez, Juan Carlos — 964
 Sanchez-Castro, C. — 439
 Sánchez-Sinencio, F. — 214
 Sandberg, J. — 1400
 Sandberg, J.C. — 185, 1170
 Sandberg, W.C. — 1445
 Sander, L.M. — 380
 Sander, O.R. — 1273, 1318
 Sanders, Gary D. — 55
 Sanders, J. — 2164
 Sanders, J.M. — 1103, 1171, 2163
 Sanders, M.M. — 1109
 Sanders, R. — 1398
 Sanders, R.T. — 1394
 Sanders, S.C. — 185
 Sanders, S.J. — 1889, 2114
 Sanderson, D. — 1828
 Sanderson, P.W. — 632
 Sanderson, R.C. — 2296
 Sandford, S.A. — 747
 Sandford, Scott — 354
 Sandler, P. — 1037
 Sandler, P.H. — 985, 986
 Sandorfi, A. — 914, 915
 Sandorfi, A.M. — 915
 Sandoval, C. — 1387
 Sandoval, D. — 1218
 Sandoval, D.P. — 1273
 Sandri, G.v.H. — 1649
 Sandstrom, F.W. — 1547
 Sandstrom, R.L. — 636
 Sandström, Sven-Erik — 951
 Sandusky, K. — 522
 Sandvik, A.W. — 583
 Sandweiss, J. — 1310
 Sanford, N.A. — 1747
 Sanford, T.W. — 2074
 Sanford, T.W.L. — 1302
 Sanghera, Sukhpal — 984
 Sangster, T.C. — 1816, 1826, 1833
 Sankar, M.K.V. — 2006, 2007
 Sankar, S. — 990
 Sankaran, Subramanian — 2274
 Sankey, O. — 620
 Sankey, O.F. — 304, 320, 335, 506
 San-Miguel, A. — 1579
 San Miguel, M. — 2245, 2306
 Sann, H. — 998, 999, 1815, 1828, 1853, 1854
 Sannibale, F. — 1287
 Santana, J. — 1065
 Santanam, P. — 393, 465
 Santi, D. — 2109
 Santi, P. — 1841
 Santiago-Aviles, J.J. — 451
 Santoro, R.A. — 2015, 2099, 2101
 Santos, D. — 981
 Santos, F.D. — 1064
 Santos, J. — 2047
 Santos, M. — 815
 Santos, M.B. — 46, 236, 471, 756, 814, 840
 Santoso, S. — 1950, 1954
 Sanuki, H. — 2022
 Sanyal, M. — 295
 Sanyal, M.K. — 164, 181
 Sapirstein, J. — 1126
 Sapirstein, J.R. — 1166
 Sapozhnikov, L. — 1212, 1213, 1635
 Sapp, W. — 1293, 1299, 1300, 1368, 1405
 Sar, David R. — 1940
 Sarachik, M. — 662
 Sarachik, M.P. — 237, 238, 239
 Saraf, R. — 194
 Saraf, R.F. — 378
 Sarafa, J. — 1828
 Saraniti, D. — 1381
 Sarantites, D.G. — 941, 980, 1013, 1852
 Sarantites, D.G. — 1051
 Saraph, G.P. — 930, 931, 2003
 Saravia, E. — 2113
 Sardar, D.K. — 1685
 Sarfaty, M. — 1895
 Sarff, J. — 1978, 1980
 Sarff, J.S. — 1978, 1979
 Sargent, M., III — 77
 Sargoytchev, S. — 1777
 Saric, W.S. — 2208, 2236
 Saricifci, N.S. — 211
 Saricifci, N.S. — 205, 502, 616
 Sarid, E. — 1971
 Sarikaya, M. — 386
 Saritepe, S. — 1252
 Sarkadi, L. — 1160
 Sarkar, D. — 205, 616
 Sarkar, K. — 2220
 Sarkar, S. — 165, 1223, 1226, 1227, 2260
 Sarkisov, G.S. — 2087
 Sarkissian, A. — 590
 Sarkissian, A.H. — 2028
 Sarksyian, K.A. — 2020
 Sarma, B. — 131
 Sarma, Bimal K. — 276
 Sarocka, David C. — 2279
 Sarrao, J.L. — 79, 389, 396, 816
 Sartor, R. — 2293
 Sarukura, Nobuhiko — 1721
 Sasaki, A. — 1942, 2087
 Sasaki, K. — 1478
 Sasaki, N. — 2363
 Sasaki, S. — 1491, 1570, 1571
 Sasaki, T. — 629
 Sasaki, Y. — 138, 1367
 Sasinowski, M. — 1891
 Sass, R. — 1228, 1308
 Sasser, G. — 2022
 Sata, N. — 107
 Satchler, G.R. — 1815, 1835, 1857
 Sathaiah, S. — 1615
 Sathe, S. — 1223
 Satija, I.I. — 811
 Satija, Indubala I. — 811
 Satija, S. — 91, 652, 1660
 Satija, S.K. — 181, 294, 325, 410, 572, 658
 Satija, Sushil — 418
 Satkowski, M.M. — 546
 Sato, H. — 106, 986, 1099, 1401, 2348, 2369
 Sato, I. — 1199, 1286, 1316, 1395
 Sato, K. — 1333, 1401
 Sato, M. — 2054
 Sato, Y. — 1333, 1401, 2122
 Satogata, T. — 1247
 Satoh, K. — 1318
 Satpathy, S. — 373
 Satsangi, A.J. — 1977
 Satsangi, H. — 1977
 Satterson, M.R. — 1819
 Satteson, M. — 926, 1844
 Satti, John A. — 1296
 Satyapal, S. — 1756
 Sauer, B.B. — 295
 Sauer, B.E. — 1096
 Sauer, L. — 1262
 Sauer, Tilman — 1452
 Sauerbrey, R. — 205, 787, 2098
 Sauers, I. — 2328, 2351
 Saul, J. — 2029
 Saulnier, G.G. — 577
 Saulnier, Gregory — 690
 Saulnier, Gregory G. — 690
 Saulnier, Michael — 917
 Sauls, J.A. — 330
 Sauls, James — 610
 Sautler, Q. — 1378
 Sauncy, T. — 1479
 Saunders, A. — 943, 1817, 1818
 Saue, A. — 1659
 Sauter, O. — 2065, 2076, 2105
 Sauthoff, N. — 2091, 2093
 Sauvajol, J.L. — 157, 159
 Sauvay, E. — 2343, 2352, 2372
 Sauvín, G. — 1718
 Savage, Craig — 1019
 Savage, D.E. — 164
 Savard, G. — 1844
 Savaş, Ömer — 2302
 Savchenko, A.K. — 537
 Savenko, B.Y. — 1518
 Saversky, A.J. — 1387
 Saville, D.A. — 2274
 Saville, G.F. — 137, 290
 Savin, D.W. — 1116
 Savord, T. — 1227, 1290
 Savoy, R.J. — 733
 Savrasov, S.Y. — 140
 Saw, C.K. — 420, 485
 Sawada, K. — 1333
 Sawada, S. — 2364
 Sawafta, R. — 1843, 1859
 Sawamura, M. — 184
 Sawaoka, A.B. — 1540, 1585
 Sawatzky, B. — 2029
 Sawatzky, G.A. — 225, 365, 559, 585, 699, 700, 794
 Sawicki, M. — 1838
 Sawin, H.H. — 2327, 2343, 2354, 2355, 2376
 Sawyer, D. — 1294
 Saxena, A. — 53, 153, 158, 169, 210, 258, 711
 Saxena, S.K. — 1477
 Saylor, J.M. — 366
 Sazhaev, V. — 1239, 1246
 Scadron, M.D. — 916
 Scafuri, C. — 1222
 Scalapino, D.J. — 462, 499, 523, 583, 584, 1453
 Scalettar, R. — 463
 Scalettar, R.T. — 82, 333, 526, 754
 Scalora, M. — 1723
 Scandale, W. — 1196, 1197, 1247
 Scanlan, R. — 1340
 Scardino, D.A. — 186
 Scarin, P. — 1980
 Schabel, M. — 559
 Schachinger, L. — 1228
 Schachter, J. — 1957
 Schachter, L. — 1281, 1282, 1310, 1402
 Schacter, L. — 1280
 Schad, R. — 784
 Schade, W. — 1088, 1162
 Schadow, K. — 2258
 Schadt, R.J. — 348
 Schaefer, B. — 1638
 Schaefer, B.E. — 1638
 Schaefer, D. — 142
 Schaefer, D.M. — 511
 Schaefer, R. — 934, 1066, 2377
 Schaefer, C. — 914, 915
 Schafer, K.J. — 1138, 1145, 1506, 1770
 Schäfer, P. — 1289
 Schäfer, T. — 1824
 Schaff, W. — 336
 Schaff, W.J. — 592, 702
 Schaffer, G. — 1388, 1399
 Schaffer, M.J. — 1935, 1936, 2058, 2059, 2060
 Schaich, W.L. — 380, 586
 Schailey, R. — 1254, 1317, 1404, 1405
 Schall, P. — 2223
 Schamberger, R.D. — 984
 Schamiloglu, E. — 1938, 2360
 Schantz, Stimson P. — 1766
 Schappe, R. Scott — 1104
 Schardt, S. — 1820
 Scharenberg, R. — 998, 999, 1815, 1828
 Scharenberg, R.P. — 1849, 1853,

- 1854
 Scharer, J. — 2049
 Scharer, J.E. — 1887, 1888, 1938, 1939, 2105, 2122
 Scharkowski, A. — 846
 Scharlemann, E.T. — 1327, 1328
 Scharlemann, T. — 1234
 Schärpf, O. — 293
 Schartner, K.H. — 1132
 Schatz, G.C. — 1626
 Schatz, H. — 1802
 Schatz, J.G. — 1951
 Schatz, Michael F. — 2291
 Schatzel, K. — 47
 Schaubel, K. — 2058
 Schauer, J.M. — 703
 Schawlow, A.L. — 468
 Schearer, L.D. — 1117, 1136
 Schechter, D.E. — 1901, 2057
 Schectman, R.M. — 1152
 Scheer, M. — 1324
 Scheffel, J. — 2090
 Scheffler, M. — 218, 257, 302, 334, 447, 560
 Schegolev, L. — 1405
 Scheidegger, T.E. — 2194, 2297
 Scheidemann, Adi — 152, 222
 Scheinbeim, J.I. — 412, 419, 484
 Scheitrum, G. — 1938, 1939
 Schellekens, P. — 1299
 Scheller, G.R. — 258
 Scheller, K. — 2175
 Scheller, K.W. — 1841, 1844
 Schellinghouth, N.W. — 1063
 Schellman, H. — 1037
 Schellman, H.M. — 985, 986
 Schelten, J. — 378
 Schempp, A. — 1272, 1319
 Scheps, Richard — 1721
 Scher, H. — 789, 1611
 Scherban, T. — 106
 Scherer, A. — 1719
 Scherer, J. — 2302
 Schermer, R. — 1290
 Scheuer, J.T. — 2366
 Schevelev, O.N. — 1054
 Scheven, U.M. — 779, 780
 Schiaffino, S. — 2294
 Schick, M. — 405
 Schieber, J.D. — 2368
 Schiek, Richard — 2258
 Schiemenz, P. — 1064
 Schier, W.A. — 1650, 1652, 1806
 Schiessl, W. — 114, 564
 Schifano, E. — 1912
 Schiferl, S.K. — 1486
 Schiffer, J.P. — 1804, 1806, 1855
 Schiffer, P. — 86, 87
 Schilling, F.C. — 193
 Schilling, G. — 1907, 2032, 2033, 2034
 Schilling, James S. — 725
 Schilling, J.S. — 104, 439
 Schilling, M.L. — 258
 Schilling, R. — 681
 Schiminovich, D. — 968
 Schimmel, F. — 1226
 Schimmerling, W. — 932
 Schindler, S.M. — 933
 Schirber, J. — 188
 Schirber, J.E. — 124, 125, 1526, 1527, 1625
 Schirm, K.M. — 728
 Schissel, D.P. — 1935, 1938
 Schivell, J. — 1907, 2037, 2039
 Schlagel, T. — 1811
 Schlankowitz, M. — 2163
 Schleich, W.P. — 1778
 Schlenoff, J.B. — 1632
 Schlesinger, M. — 1098
 Schlesinger, T.E. — 260, 746
 Schlesinger, Z. — 426, 439
 Schlickeiser, R. — 919
 Schloessin, H.H. — 1584
 Schlueter, R. — 1329
 Schlueter, R.D. — 1335
 Schlüter, H. — 2343
 Schmalian, J. — 225
 Schmalzle, J. — 1291
 Schmeing, N. — 1805
 Schmeller, A. — 807
 Schmeltzer, D. — 277
 Schmickler, H. — 1365
 Schmid, A.K. — 832
 Schmid, G.J. — 1846
 Schmid, J. — 1301
 Schmid, K.W. — 1858, 2170
 Schmid, Peter J. — 2289
 Schmidt, A. — 1660
 Schmidt, B.G. — 1064, 2171
 Schmidt, C. — 552, 1272
 Schmidt, C.W. — 1333
 Schmidt, F. — 1210, 1247, 1401
 Schmidt, G.L. — 2036, 2037, 2038, 2055
 Schmidt, J.A. — 2048, 2049
 Schmidt, K.E. — 846
 Schmidt, M. — 2369
 Schmidt, M.F. — 123
 Schmidt, P.C. — 466
 Schmidt, P.W. — 119, 544
 Schmidt, R. — 1197, 1201, 1308, 1366
 Schmidt, S.R. — 1318, 1337, 1394, 1398
 Schmidt, T. — 337
 Schmitt, V.H. — 151, 396, 406, 845
 Schmidt-Böcking, H. — 1089, 1133, 1163
 Schmiedel, T. — 132, 702
 Schmieder, R.W. — 1661
 Schmiedeshoff, G.M. — 171
 Schmiedmayer, J. — 1761
 Schmitt, Andrew J. — 1916
 Schmitt, D.R. — 1320, 1321
 Schmitt, G.G. — 1916, 2124
 Schmitt, H. — 1843
 Schmitt, M.J. — 1257, 1371
 Schmitt, R. — 2227
 Schmitt, Roland W. — 198, 300
 Schmitt, R.P. — 1813
 Schmitt, W. — 1035
 Schmittmann, b. — 601
 Schmitz, L. — 1912, 1920, 2095
 Schmor, P.W. — 1343, 1836
 Schmueser, P. — 1380
 Schmüser, P. — 1381
 Schmuttenmaer, C.A. — 1751, 1765
 Schnack, D.D. — 1892, 1981
 Schnare, H. — 981, 1856
 Schnase, A. — 1350, 1384, 1399
 Schnatterly, S.E. — 108, 366, 467, 679
 Schnatterly, Stephen E. — 64
 Schneck, A. — 79
 Schneemeyer, L.F. — 520, 835
 Schneid, E. — 988, 989
 Schneid, E.J. — 988, 989, 1635
 Schneider, B.I. — 1100, 1158
 Schneider, C.M. — 371
 Schneider, D. — 1108, 1128, 1160, 1162, 1165
 Schneider, D.H.G. — 1813
 Schneider, Hildegard M. — 145
 Schneider, J. — 2223
 Schneider, J.D. — 1273, 1320, 1321
 Schneider, J. David. — 1320
 Schneider, L. — 1404
 Schneider, L.E. — 2091
 Schneider, M.B. — 1055
 Schneider, Robert J. — 1652
 Schneider, R.P., Jr. — 787, 815
 Schneider, T.P. — 571
 Schneider, W. — 1378, 1406
 Schneider, W.J. — 1299
 Schneider-Muntau, H.J. — 2168
 Schneiders, D. — 143
 Schnell, W. — 1198
 Schnur, J.M. — 404
 Schoch, P. — 1950
 Schoch, P.M. — 1951, 1952
 Schoeller, H. — 230
 Schoemaker, D. — 468, 469
 Schoemaker, Dirk — 467, 478
 Schoenfeld, V. — 989
 Schoenlein, R.W. — 502, 807
 Schoessow, P. — 1223, 1276
 Schöll, E. — 705
 Scholl, T.J. — 1112, 1125
 Scholten, P.D. — 1663
 Scholten, R.E. — 669
 Scholz, T. — 1351, 1388
 Scholz, T.T. — 1156
 Schomacker, K.T. — 266
 Schöne, H. — 1089
 Schone, H.E. — 805
 Schönfelder, V. — 948, 968
 Schott, Garry L. — 1512
 Schott, L. — 2110
 Schouten, J. — 1506
 Schouten, J.A. — 1496, 1506
 Schoutens, K. — 392, 1622
 Schowalter, D.G. — 2253
 Schowalter, L.J. — 108, 285
 Schowalter, W.R. — 2249
 Schrag, J.L. — 145
 Schram, D.C. — 2362, 2366, 2371, 2376
 Schramm, David — 972
 Schramm, S. — 1821
 Schrenk, Stephen E. — 917
 Schreyer, A. — 618
 Schreyer, H.L. — 1455
 Schrieffer, J.R. — 329, 330, 638, 639
 Schroder, Dieter K. — 823
 Schröder, W.U. — 941, 998, 1036, 1812, 1852
 Schroeder, J. — 216
 Schroeder, John — 743, 808, 1572
 Schroeder, J.S. — 1478
 Schroeder, L. — 1815
 Schroeder, P.A. — 671, 734, 784
 Schroeder, W.A. — 745, 764
 Schroeder, W. Andreas — 1746
 Schroll, S. — 1116
 Schubert, E.F. — 633, 765
 Schubert, G. — 2292
 Schubert, J. — 752
 Schuck, C. — 1049, 1831
 Schuck, P. — 1807
 Schuele, D.E. — 419, 422, 484
 Schuessler, H.A. — 935, 946, 1667, 1674, 1675, 1677, 1726
 Schukeilo, I.A. — 1270
 Schukraft, J. — 1054, 1842
 Schulitz, R. — 1844
 Schuller, Ivan — 548
 Schuller, Ivan K. — 259, 784
 Schulman, J.N. — 531, 814
 Schulte, A. — 2158
 Schulte, Alfons — 2168
 Schulten, K. — 654
 Schultz, D. — 1636
 Schultz, D.C. — 1312, 1313, 1342
 Schultz, D.R. — 1102, 1153, 1164, 2170
 Schultz, F.J. — 928
 Schultz, J. — 1021
 Schultz, J.M. — 93, 142, 418, 485
 Schultz, L. — 1611
 Schultz, Peter A. — 1439, 1613
 Schultz, S. — 125, 340
 Schultz, S.D. — 1908
 Schultz, Sheldon — 1309
 Schultz, W.W. — 2245
 Schulz, D.N. — 484
 Schulz, M. — 948, 1090, 1162
 Schulz, M.F. — 604, 605
 Schulz, W.W. — 725
 Schulze, H.J. — 1639
 Schulze, M.E. — 1337
 Schulze, T.S. — 2280
 Schumacher, D.W. — 1720, 1736, 1751
 Schumacher, M. — 1860
 Schumacher, R. — 1818, 2002
 Schumacher, R.A. — 1843
 Schumann, Michael — 645
 Schumm, B. — 1037, 1203
 Schumm, B.A. — 985, 986
 Schumm, J.S. — 158
 Schunemann, P.G. — 686
 Schürmann, M. — 1248
 Schuster, J. — 1639
 Schutt, R.L. — 1826
 Schüttler, H.-B. — 126, 391, 392
 Schütze, M. — 734
 Schwab, K. — 87, 88
 Schwager, L.A. — 2074
 Schwahn, D. — 143
 Schwall, D. — 155
 Schwalm, D. — 1336
 Schwalm, M.K. — 177, 530
 Schwalm, W.A. — 177, 530
 Schwandt, P. — 987, 1035, 1052, 1265, 1321, 1846
 Schwandt, Peter — 1358
 Schwartz, L. — 115
 Schwartz, L.M. — 114
 Schwartz, L.W. — 2200
 Schwartz, Robert N. — 1725
 Schwartzberg, J. — 1819
 Schwarz, A.C. — 2299
 Schwarz, C. — 941, 1853
 Schwarz, H. — 987, 1214
 Schwarz, H.D. — 1388
 Schwarz, K.W. — 1043, 2229
 Schwarz, S. — 417
 Schwarz, S.A. — 295, 409, 481
 Schwarzenberg, J. — 1819
 Schweber, Silvan S. — 938
 Schweer, B. — 2007
 Schweickart, D.L. — 2364
 Schweinfurth, R.A. — 112, 637, 1625
 Schweitzer, D. — 825
 Schweitzer, H.P. — 232
 Schweizer, Kenneth S. — 1631
 Schweizer, K.S. — 144, 485
 Schwelberger, J.G. — 1951
 Schwemmer, Geary K. — 1773
 Schweppe, E.-G. — 1394
 Schwettman, H.A. — 1383
 Schwinberg, P.B. — 946, 947
 Schwirzke, F. — 1904
 Schwitters, R. — 1267
 Sciacca, M.D. — 842
 Scime, E. — 1965
 Sciortino, F. — 245, 545, 716, 1438, 1445
 Sciuilli, F. — 1037
 Sciuilli, F.J. — 985, 986
 Sciotto, W. — 1389

- Scilavi, B. — 119, 120
 Scofield, John H. — 633
 Scoles, G. — 1730
 Scott, A. — 998, 999, 1815, 1828, 1853, 1854
 Scott, B. — 258
 Scott, B.A. — 59, 259
 Scott, D.C. — 2120
 Scott, H.A. — 2043
 Scott, J.C. — 109
 Scott, J.F. — 689
 Scott, J.N. — 2218, 2242
 Scott, John J., BS — 1766
 Scott, J.S. — 813
 Scott, S. — 2034
 Scott, S.C. — 1907
 Scott, S.D. — 1906, 1907, 2036, 2037
 Scotti, A.D. — 2195
 Scouten, S. — 751
 Scoville, J.T. — 2062, 2063
 Scruggs, Bryan — 2224
 Scudder, D.W. — 991, 1976
 Scully, Marlan O. — 1762
 Scura, M.A. — 1016
 Scuseria, Gustavo E. — 440
 Seabaugh, A.C. — 813
 Seabury, E.H. — 1806
 Seager, C.H. — 377, 843
 Seagraves, C.L. — 631
 Seale, W.A. — 1819
 Sealock, R.M. — 914, 915
 Seaman, C.L. — 170, 177, 178, 642, 643
 Seamen, J.F. — 1533
 Searle, B.G. — 268
 Sears, B.R. — 538
 Sears, J. — 1231, 1374, 1380, 1381, 1384, 1385
 Sears, Mark P. — 1439
 Sears, M.P. — 1439
 Sears, V.F. — 1594
 Sebastian, A.A. — 1994, 2364
 Sebastian, K. — 2174
 Secco, R.A. — 1508, 1526, 1529, 1530, 1584
 Seddighi, F. — 1907
 Seddougui, S.O. — 2233
 Sedgwick, T.O. — 85, 812
 Sedláček, M. — 987, 1265
 Sedlyarov, I. — 1397
 See, A.K. — 280
 See, E.F. — 1548
 Seeger, P.A. — 604
 Seel, M. — 445
 Seeman, J. — 1234, 1330
 Seeman, John — 958
 Seeman, J.T. — 1217, 1221, 1256, 1286, 1289, 1350, 1360, 1371
 Seestrom, S.J. — 944, 1817, 2171
 Sefan, V. — 2116
 Seffer, G.A. — 797
 Segall, B. — 285, 515, 565, 566, 622, 744
 Segalov, Z. — 1301, 2048
 Segawa, Yusaburo — 1721
 Segel, D. — 1461
 Seger, Janet E. — 1019
 Seger, J.E. — 1848
 Segev, Mordechai — 1717
 Segnan, R. — 817
 Segner, F. — 1171
 Segundo, J.P. — 318
 Seiberling, L.E. — 623, 679
 Seibert, D. — 1062
 Seibt, K. — 672
 Seibt, Peter — 1667
 Seidel, Edward — 1448
 Seidl, P. — 1304, 1815, 1995
 Seidl, P.A. — 1995, 1996
 Seidler, G.T. — 170
 Seifert, N. — 281, 508, 740, 2166
 Seifert, U. — 404, 405, 598
 Seifert, Udo — 651
 Seiffert, M. — 1639
 Seifrid, P. — 1358
 Seifu, Dereje — 215
 Seiler, D.G. — 634
 Sein, J.J. — 967
 Seiple, J. — 510
 Seitz, W.L. — 1536
 Seitzman, J.M. — 2202
 Seka, W. — 1717, 1934, 1935, 2085
 Seki, H. — 573
 Sekine, T. — 1527
 Sekioka, T. — 1125
 Sekizawa, H. — 2342
 Sekulovich, A.M. — 1036
 Selcher, C.A. — 1887, 1966
 Selesnick, R.S. — 948
 Seleznev, V.S. — 1203, 1204, 1219
 Seligman, W.G. — 985, 986, 1037
 Selin, A.V. — 1294
 Selinger, J.V. — 404
 Selinger, R.L.B. — 575, 671
 Sell, J.A. — 447
 Sellens, R.W. — 2286
 Sellers, C.H. — 154, 155, 207
 Sellers, R.M. — 1820
 Sellin, I.A. — 1092, 1133, 1160
 Sellmyer, D.J. — 442, 619, 672, 816
 Selloni, A. — 509, 510
 Sellyey, W. — 1200, 1206, 1210
 Selmi, M. — 2191
 Selph, F. — 1237
 Selser, J.C. — 94
 Selvaggi, Jerry A. — 1654
 Selwyn, G.S. — 1901, 2330, 2341, 2354
 Semaltianos, N. — 796
 Semashko, Vadim V. — 1760
 Semenov, A. — 1203
 Semenov, P.A. — 1054
 Semenov, V. — 1435
 Semertzidis, Y. — 1369
 Semkow, T.M. — 1849
 Semmes, P. — 1857
 Semmes, P.B. — 1014, 1806
 Semon, F. — 727
 Semple, A.T. — 981
 Sen, A. — 1131, 1975
 Sen, A.K. — 1889, 1992, 2072
 Sen, K.D. — 1172
 Sen, M. — 2263
 Sen, P. — 115, 434
 Sen, P.N. — 114
 Sen, S. — 1945
 Sen, Surajit — 463, 683, 738, 739, 760
 Sen, T. — 1240, 1241, 1246, 1267
 Senashenko, V.S. — 1089, 1132
 Senatore, G. — 176
 Sedyka, T. — 389
 Sedyka, T.R. — 388
 Sengers, A. — 764
 Sengers, J.V. — 1006
 Sengupta, L. — 228
 Sengupta, S. — 171
 Senhua, Chen — 1593
 Senichev, Yu. — 1357, 1364, 1406
 Sennhauser, U. — 1818
 Seno, F. — 671
 Senoo, M. — 1530, 1575
 Seo, E.S. — 949
 Seo, H.S. — 1290
 Seong, Huangskuk — 187
 Seong, Hyangskuk — 65, 117
 Seong, K. — 1645
 Sepulveda, E. — 1682
 Sepulveda, L. Eric — 1667
 Sepúlveda, M.A. — 683
 Serafim, Philip — 1328
 Serafini, L. — 1312, 1345
 Serafino, G.N. — 1064
 Seraydarian, R.P. — 1937, 2063, 2070, 2071
 Serdobintsev, G. — 1285
 Serdobintsev, G.V. — 1280
 Serebryanaya, N.R. — 1574
 Serene, J.W. — 78, 500, 585
 Sereno, N.S. — 1372
 Sergeeva, O.S. — 1294
 Serghiou, George C. — 254
 Sergolle, H. — 1831
 Seriani, G. — 2012
 Serio, M. — 1212, 1375, 1635
 Serlin, V. — 1939, 1940
 Serot, Brian D. — 1824
 Serpa, F.G. — 1097, 1120, 1139
 Servranckx, R. — 1247
 Servranckx, R.V. — 1242, 1268
 Seshaiyar, G. — 768
 Seshadri, R. — 288
 Seshadri, Raj — 196
 Sesnic, S. — 2095, 2096
 Sesnic, S.S. — 2094
 Sessler, A. — 1277
 Sessler, A.M. — 1276, 1327, 1345, 1358, 1997
 Seta, J. — 1543
 Sethi, A. — 1050, 1052, 1829
 Sethi, R.C. — 1334
 Sethian, J.D. — 2085
 Sethna, J.P. — 67, 134, 271, 306, 471, 790
 Seto, R. — 1828, 1836, 1837
 Settles, G.S. — 2235, 2295
 Setze, H.R. — 1825
 Severens, R.J. — 2362
 Severgin, Y.P. — 1336
 Severgin, Yu. — 1205, 1291, 1322, 1323
 Severgin, Yu.P. — 1270
 Severini, Horst — 1038
 Sevian, H.M. — 245, 1631
 Sevier, D.L. — 1936
 Sevillia, E.H. — 674
 Sevier, M. — 1859
 Seymour, J.D. — 2288
 Seyoum, H.M. — 125, 1152
 Sezac, L. — 1828
 Sha, W. — 1715
 Shackelford, M. — 2007
 Shacklette, L.W. — 310
 Shaddix, Christopher R. — 1757
 Shadid, J.N. — 2239
 Shadwick, B.A. — 1991
 Shafer, D.W. — 820
 Shaevitz, M.H. — 985, 986, 1037
 Shaeygan, M. — 815
 Shafer, R. — 920, 1211
 Shafer, R.E. — 1400
 Shaffer, C. David — 950, 1098
 Shaffer, J.S. — 244
 Shaffner, Thomas — 824
 Shafi, Q. — 1066
 Shafroth, S.M. — 1163, 2163, 2164
 Shah, Jagdeep — 704, 764, 1756
 Shah, N. — 2269
 Shahar, D. — 179
 Shahbazyan, T.V. — 398
 Shaheen, S.A. — 816, 817
 Shahriar, M.S. — 1122
 Shaibani, Saami J. — 1019, 1020
 Shaimerdenov, E. — 1285
 Shaing, K.C. — 1928, 2122
 Shakhnovich, Eugene — 558
 Shako, V.V. — 1216
 Shalae, I.Yu. — 836
 Shalae, V.M. — 62
 Shalz, L. — 1265
 Sham, L.J. — 182, 284, 399, 463, 703
 Shamim, M. — 1900
 Shamim, M.M. — 1890
 Shamu, R.E. — 1826
 Shan, J.P. — 1197, 1236, 1245, 1256, 1268
 Shan, W. — 282, 374, 531
 Shan, Z.S. — 442
 Shanabrook, B.V. — 474
 Shane, S.F. — 258
 Shang, C.C. — 1353
 Shang, S-Q. — 1804
 Shang, S.S. — 1545
 Shan'gin, V. — 1291
 Shank, C.V. — 502, 807
 Shankar, S. — 2359
 Shankland, T.J. — 1488, 1490
 Shannon, R.F., Jr. — 1606
 Shao, H.H. — 535, 845
 Shao, Hongxiao — 497, 498
 Shao, M. — 375, 507
 Shao, Y. — 998, 999, 1815, 1828, 1853, 1854
 Shapira, D. — 927, 1054, 1842
 Shapirio, M. — 1037
 Shapiro, E. — 2116
 Shapiro, G. — 1203
 Shapiro, Maurice M. — 1056
 Shapiro, M.M. — 932
 Shapiro, S.M. — 307, 308, 406, 479
 Shapiro, V. — 2016
 Shapiro, V.D. — 1903, 1905, 1909, 1910, 1911, 2115
 Shaqfeh, Eric S.G. — 2258, 2314
 Sharaf, M.A. — 546
 Sharapov, E.I. — 2171
 Shariff, K. — 2312
 Sharifi, F. — 527
 Sharma, A. — 1735
 Sharma, Anup — 1715
 Sharma, A.S. — 1893, 2018, 2019
 Sharma, J. — 741, 1608
 Sharma, J.K.N. — 1514
 Sharma, L.K. — 2315
 Sharma, P. — 929, 1542
 Sharma, P.C. — 1665
 Sharma, Ravi — 713
 Sharma, R.D. — 1162
 Sharma, R.R. — 345
 Sharma, S.C. — 316, 514
 Sharma, S.K. — 254, 1325
 Sharma, Surinder M. — 1514, 1516, 1557
 Sharp, David H. — 2209
 Sharp, G. — 1917, 1918
 Sharp, J.W. — 1613
 Sharp, W.M. — 1305, 1995
 Sharpey-Schafer, J. — 1831
 Sharpey-Schafer, J.F. — 1049
 Sharping, J.E. — 519
 Shasharina, S.G. — 2077
 Shashidhar, R. — 404
 Shastri, A. — 626
 Shats, M.G. — 2020
 Shattuck, M. — 2306
 Shaw, B.E. — 739
 Shaw, D. — 2335
 Shaw, J. — 915
 Shaw, K. — 785
 Shaw, M.S. — 1507
 Shaw, M.T. — 143
 Shaw, N.P. — 927
 Shaw, Robert — 1462

- Shaw, T. — 112
 Shaw, Thomas M. — 111
 Shaw, T.J. — 835
 Shaw, T.M. — 59, 259
 Shayegan, M. — 236, 249, 471, 591, 756, 814, 840
 Shchedrin, I.S. — 1387
 Shcherbakov, A. — 1324, 1368
 She, K. — 1385
 She, Z. — 2228
 She, Z.-S. — 2295
 Shea, J.Y. — 998, 1852
 Shea, T. — 1353
 Shea, T.J. — 1210, 1211, 1298, 1353
 Sheedy, E. — 1311
 Sheehan, D. — 2112
 Sheehan, J. — 1234, 1311, 1326
 Sheehan, J.R. — 1326
 Sheehy, P. — 2089
 Sheehy, J.A. — 1118
 Sheeley, J.M. — 2209
 Sheerin, J.P. — 1968
 Sheffield, J. — 2023
 Sheffield, R.L. — 1342
 Sheffield, S. — 1560
 Sheffield, S.A. — 1498, 1534
 Sheffield, Stephen A. — 1564
 Shegelski, M.R.A. — 475
 Shehadeh, Rana — 1730
 Sheik-Bahae, M. — 1772
 Sheikh, J.A. — 1807, 1856, 1857
 Sheikh, J.Y. — 1394
 Shek, M.L. — 320
 Shekarriz, Reza — 2314
 Shekhter, R.I. — 464, 465, 538
 Sheldon, J. — 2358
 Sheldon, J.W. — 1088, 1102, 2163, 2164, 2166
 Sheldon, P.A. — 86, 1022
 Shelekhov, A.P. — 1733
 Shelfer, T.D. — 114
 Shelley, M.J. — 2209, 2272
 Shelton, R.N. — 72, 73, 103, 124, 171, 188, 222, 241, 252, 387, 783, 829
 Shelton, W.A. — 215, 255
 Shen, C.S. — 1225
 Shen, H. — 57, 133
 Shen, Jing — 1203, 1217
 Shen, J.M. — 1670
 Shen, Jun — 336
 Shen, J.X. — 442
 Shen, M.H. — 114
 Shen, S.C. — 595
 Shen, W. — 1888, 1977, 1978, 2122
 Shen, Weidian — 402
 Shen, X.A. — 1558
 Shen, Y. — 530, 2210
 Shen, Yi — 319, 600
 Shen, Y.R. — 334, 366, 367, 573, 651, 652, 730, 1154, 1771
 Shen, Y.-T. — 1095
 Shen, Z.-X. — 152, 226, 274, 275, 1570
 Shender, E. — 765
 Sheng, D.N. — 304, 695
 Sheng, I.C. — 1325
 Sheng, J.T. — 2044
 Sheng, Ping — 176, 384, 809
 Sheng, Q.G. — 758
 Sheng, W. — 1735
 Sheng, Z.Z. — 172, 173
 Shenoy, K. — 416
 Shenoy, Suresh — 715
 Shepard, J.R. — 944
 Shepard, K.W. — 1333, 1388
 Shepard, T.D. — 1915, 1934, 2043
 Shepard, Thomas — 2113
 Shepel, S.I. — 1518
 Shepel, V.M. — 1517
 Shephard, W. — 1377
 Shepherd, R. — 2082
 Shepherd, R.L. — 1986, 1987, 2082, 2117
 Shepherd, Ronnie — 1986
 Sheplak, M.S. — 2235, 2266
 Shepley, L.C. — 1685
 Sheppard, R. — 518
 Sher, A. — 687, 799
 Shere, A. — 194
 Sheridan, T.E. — 1887, 1900, 1966
 Sherman, A. — 794
 Sherman, D.M. — 1502
 Sherman, Joseph D. — 1320
 Sherrill, B. — 1841, 1842
 Sherrill, B.M. — 983, 1841, 1842, 1844
 Shertzter, J. — 1127, 1444
 Shertzter, Janine — 1012
 Sherwin, G. — 1225
 Sherwin, M.E. — 591
 Sherwin, M.S. — 453, 646, 815
 Sherzter, J. — 1158
 Shestakov, A.I. — 2016, 2103
 Sheth, K. — 2291
 Shevchenko, V. — 2016
 Shevchenko, V.I. — 1905, 1994, 2115
 Shevtsov, P.V. — 1203
 Shevy, Y. — 1713
 Sheynin, S. — 1255
 Shi, Bill Q. — 709
 Shi, D. — 1858, 2170
 Shi, Donglu — 171
 Shi, H. — 425, 2110
 Shi, Hang — 65
 Shi, Huan — 1493
 Shi, J. — 163, 1246, 1247, 1248, 1358, 1362
 Shi, Jianhui — 321
 Shi, J.M. — 337
 Shi, L.T. — 206
 Shi, Q. — 2309
 Shi, X. — 287, 365, 729
 Shi, X.D. — 289, 709
 Shi, Y. — 1639
 Shi, Y.H. — 522
 Shi, Y.J. — 172, 260
 Shi, Yushan — 652
 Shi, Z. — 2331
 Shi, Zhu-Pei — 442
 Shiang, J.J. — 807
 Shiao, M. — 1250
 Shibamura, E. — 949
 Shibata, H. — 1359
 Shibata, J.H. — 422, 481
 Shibata, R. — 1618
 Shibata, Y. — 59, 1331
 Shibue, T. — 1510
 Shick, A.B. — 135
 Shida, K. — 1452
 Shidara, T. — 1286
 Shieh, J.H. — 72
 Shield, J. — 626
 Shields, H. — 741
 Shiffler, D. — 1938
 Shifflett, G. — 2263
 Shih, Chang — 2313
 Shih, C.K. — 182, 568, 596
 Shih, D. — 560
 Shih, H.-J. — 1254, 1254, 1361
 Shih, M.C. — 435, 436, 572
 Shih, S.H. — 2218
 Shih, T.H. — 2192
 Shih, Wan Y. — 288
 Shih, Wei-Heng — 288
 Shihad Eldin, A. — 942
 Shiho, M. — 1301, 1328
 Shiina, T. — 2008
 Shi Jinshui, A. — 1302
 Shiktorov, P. — 634
 Shim, S. — 1860
 Shimada, M. — 1550, 1918
 Shimakura, N. — 2371
 Shimamura, I. — 2371
 Shimamura, S. — 1567
 Shiming, Zhuang — 1539
 Shimizu, H. — 1491, 1570, 1571
 Shimizu, H.M. — 2171
 Shimizu, K. — 1918
 Shimmin, L. — 1677
 Shimomura, O. — 480, 1519, 1565, 1566, 1591, 1597
 Shimomura, Y. — 1929
 Shimozuma, M. — 2344
 Shimshoni, E. — 465
 Shimura, N. — 2327, 2333
 Shin, G.R. — 962, 1062, 1847
 Shin, J.H. — 1719
 Shin, S. — 107
 Shin, S.-R. — 1953
 Shin, S.T. — 406
 Shinar, J. — 109, 211, 676, 677
 Shinas, M.A. — 1218
 Shinbrot, T. — 2194
 Shindo, I. — 576
 Shingal, R. — 1089
 Shinn, N.D. — 363, 452
 Shinoc, K. — 1210, 1212, 1326
 Shinohara, H. — 617
 Shinohara, K. — 2337, 2378
 Shinozaki, A. — 654
 Shinpaugh, J. — 1133, 1162, 2164
 Shinpaugh, J.L. — 1163
 Shintake, T. — 1388
 Shio, Ch. — 1054, 1055
 Shioga, T. — 72
 Shipley, S.E. — 2107
 Shiraga, H. — 1309
 Shirai, H. — 2037, 2054
 Shirai, T. — 1334
 Shiraishi, M. — 1527
 Shirane, G. — 96, 124, 766
 Shirazi, S.A. — 2192
 Shirk, James S. — 1747
 Shirley, D.A. — 365, 682, 1147
 Shirley, Eric L. — 305, 688
 Shishido, T. — 1385, 1387
 Shishkova, N. — 1517, 1578
 Shishkova, N.V. — 1517
 Shishlov, A. — 1943
 Shitara, T. — 670
 Shivamoggi, B.K. — 2244, 2245
 Shivarova, A. — 2343
 Shiwaku, H. — 1324
 Shkarofsky, I. — 2108
 Shkarofsky, I.P. — 2108
 Shklovskii, B.I. — 397
 Shkolnikov, P.L. — 1770
 Shkolnikova, S. — 1895
 Shlachter, J.S. — 991
 Shluger, A. — 1618
 Shneidman, V.A. — 206, 601
 Shoae, H. — 1228, 1229, 1308
 Shoda, K. — 915
 Shohet, J.L. — 2022, 2023, 2338, 2340, 2346, 2376
 Shoji, M. — 1503
 Shoji, T. — 1309, 2008
 Shokair, I. — 1361
 Shon, Jong W. — 2352, 2373
 Shore, B.W. — 1154
 Shore, H.B. — 538
 Shore, J.D. — 71, 790
 Shore, Linda S. — 1032
 Short, Ken T. — 322
 Short, K.T. — 84
 Short, R.W. — 1934
 Short, S.W. — 374
 Shoucri, M. — 1892, 2108
 Shoumkin, D.S. — 986
 Shpatakovskaya, G. — 1587
 Shpitalnik, R. — 1895
 Shrader, M. — 1231
 Shraiman, B. — 496
 Shraiman, Boris — 529
 Shriner, J.F., Jr. — 913, 1803, 1804, 2171
 Shrivastava, K.N. — 991
 Shteinberg, Lev — 601
 Shtern, V. — 2296
 Shtirbu, S. — 1228
 Shu, J.F. — 1575
 Shu, Q.S. — 1261, 1263, 1264, 1381
 Shuda, Zhang — 1532
 Shukeilo, I.A. — 1336
 Shukla, A. — 1624
 Shulga, V.M. — 1521
 Shulginov, A.A. — 1739, 1771
 Shull, K.R. — 418, 545
 Shull, R.D. — 217, 816
 Shumaker, Dan E. — 1892
 Shumaker, D.E. — 1436, 2102
 Shumakov, A.V. — 1368
 Shumlak, U. — 1894, 1974
 Shumway, Shelly — 635
 Shung, K.W.-K. — 698
 Shun'ko, E.V. — 2378
 Shur, M. — 621
 Shurter, R. — 1302
 Shurtleff, R. — 1646
 Shuryak, E.V. — 1824
 Shutov, A.V. — 1494
 Shutt, R. — 1290, 1341
 Shutthanandan, V. — 498, 781
 Shutz, B.F. — 1434
 Shuvalov, S. — 1034
 Shvartsman, L.D. — 705
 Shvedunkov, V.I. — 1368
 Shvedunov, V.I. — 1389
 Shvets, G. — 1916, 1998
 Shvets, V.F. — 1991, 1993
 Shviedlerman, L.S. — 1577
 Shyamsunder, E. — 599
 Shyn, Tong W. — 1158
 Si, Qimiao — 175, 640
 Sibeaud, J.M. — 1493
 Sibille, G. — 1538
 Sibley, C. — 1368
 Sica, R.J. — 1777
 Siciliano, E.R. — 1989
 Sick, Ingo — 922
 Siddique, R.K. — 241
 Siddons, D.P. — 518, 1201
 Sidebottom, D.L. — 542
 Siders, C.W. — 1998
 Sidikman, K.L. — 2014, 2101
 Sidorenko, A. — 2036
 Sidorov, V.I. — 1054
 Siebert, R. — 1036
 Siefing, C.L. — 1965, 1968
 Sieg, R.M. — 86
 Siegal, Y. — 1743
 Siegel, M. — 636, 752
 Siegel, Michael — 2283
 Siegel, P.B. — 1859
 Siegel, R. — 935
 Siegel, R.B. — 2332
 Sieger, M. — 342
 Siegl, R. — 208
 Sieglaff, D.R. — 1161
 Siegoczynski, R. — 1517
 Siegrist, J. — 1317

- Siekhaus, W.J. — 735
Siemann, R. — 1213
Siemann, R.H. — 1198, 1214, 1371
Sieradzki, K. — 590
Siergiej, D. — 1355
Sietsma, J. — 744
Sievers, A.J. — 216, 263, 367, 521, 743
Sievers, W. — 1227
Siffert, P. — 1404
Sigalas, M. — 372
Sigmar, D. — 1922, 2051
Sigmar, D.J. — 2121
Sigmar, J. — 2075
Signore, P.J.C. — 130, 497
Sigov, Yu. — 1278
Sigov, Yu.S. — 2051
Sigrist, M. — 74, 821, 822
Sikivie, Pierre — 2162
Sikka, M. — 91
Sikka, S.K. — 1514, 1515, 1516, 1557, 1559, 1569
Sikora, R. — 1211
Sikora, R.E. — 1298
Silanoli, M. — 1220
Silbar, Richard R. — 1455
Silberberg, R. — 932, 934
Silbernagel, B.G. — 117, 1608
Silberberg, R. — 933
Silberzan, P. — 350
Silberzan, Pascal — 713
Silin, V. — 1917
Silk, J.D. — 944
Sillanpää, H.M. — 1588
Silling, Stewart — 1599
Silva, J. — 1317
Silva, M.S.T. — 1227
Silver, D.M. — 1445
Silvera, I.F. — 1170, 1476
Silvera, Isaac F. — 1142
Silverberg, R. — 1066
Silverman, David — 1452
Silverman, P.J. — 84
Silverstein, Eva — 939
Silvestri, M. — 216
Silvestri, Markus R. — 743, 808, 1572
Silvestrov, G. — 1367
Silvestrov, I. — 1367
Sim, J.W. — 1295
Simard, M. — 1891
Simha, C.H. — 1555
Simha, R. — 352
Simhony, M. — 1003, 1004
Simicevic, N. — 1818
Similon, P.L. — 2296
Simmon, J. — 1263
Simmons, J.A. — 591
Simmons, J.G. — 633
Simmons, R.O. — 324, 740
Simmons, S. — 420
Simon, A. — 392, 1934, 1935
Simon, Adam — 760
Simon, H.J. — 1662
Simon, M. — 932, 933, 1819, 1967
Simon, M.W. — 1806, 1808, 1857
Simon, P. — 124, 125
Simon, R.E. — 1341
Simonich, Dale M. — 1776
Simonov, A. Yu. — 325, 327, 692
Simons, B.D. — 707
Simons, D.G. — 951, 1148
Simons, L.M. — 935
Simpkins, P.G. — 2291
Simpson, J. — 981, 1276, 1314, 1831, 1856
Simpson, L.J. — 366
Simpson, P.J. — 644
Simrock, S. — 1204, 1392
Simrock, S.N. — 1213, 1226, 1227, 1287, 1357
Sims, R.E. — 1290
Sina, R. — 969
Sinai, J.J. — 521
Sincerbox, G. — 146
Sinclair, C. — 1365
Sinclair, C.K. — 1232, 1372
Sinclair, D. — 1020
Sinclair, M.B. — 257, 258, 815
Sinclair, Peter M. — 1759
Sinclair, P.M. — 1094, 1760
Sinebryukhov, A.A. — 1894
Sinebryukhov, V.A. — 1894
Sinervo, P. — 1039
Sinflot, J.H. — 572
Sing, D. — 1948, 1950
Sing, D.C. — 1950, 1954
Singco, G.U. — 206
Singer, Bart A. — 2297
Singer, C. — 2078, 2125
Singer, D.M. — 535
Singh, A. — 409, 2341
Singh, A.K. — 1597
Singh, Anil K. — 1593
Singh, B. — 2370
Singh, C. — 644
Singh, Chandralekha — 539
Singh, D.J. — 140, 577, 620
Singh, D.P. — 2044
Singh, G. — 1062
Singh, H. — 2118
Singh, J. — 807, 808
Singh, Jagdish P. — 1726
Singh, J.J. — 845
Singh, K.G. — 333
Singh, K.K. — 152, 830
Singh, M. — 81, 843
Singh, M.A. — 1606
Singh, N. — 91
Singh, O. — 1207, 1209
Singh, P.P. — 256
Singh, Prabhakar P. — 256
Singh, Rajiv K. — 59
Singh, Rajiv R.P. — 134
Singh, R.R.P. — 695
Singh, S. — 182
Singh, Surjit — 1677
Singler, T. — 2274
Singleton, J. — 402
Sinha, A.P.B. — 152, 830
Sinha, B.B. — 1856
Sinha, B.B.P. — 914
Sinha, K. — 501
Sinha, Praveen — 220
Sinha, S.K. — 164, 181, 295, 389, 450, 518, 539, 658, 800
Sinitsyn, D. — 1978, 1979
Sinkovits, Robert S. — 1436
Sinkovits, R.S. — 739, 1433, 1524
Sinor, T.W. — 1683, 1684
Siny, I.G. — 845
Siocchi, R.A. — 269
Siopsis, G. — 1054, 1055
Sipe, J.E. — 183, 234, 687, 704, 1717, 1756
Sips, A.C.C. — 1937, 2056
Siqueiros, J. — 367
Sire, C. — 584, 680
Sirignano, W.A. — 2212
Sirivat, A. — 2288
Sirko, L. — 1097, 1109
Sirota, E.B. — 535, 800, 845
Sirota, Yu.V. — 1579
Sirovich, L. — 2197, 2217, 2234, 2264, 2274
Sirtori, C. — 554
Sissakian, A. — 1368
Sissano, J.A. — 484
Sisson, C.J. — 654, 2164
Sita, L. — 189
Sitaud, B. — 1570
Sitnik, I. — 1036
Sivco, D. — 317, 398
Sivco, D.L. — 633, 1742
Sizelove, J.R. — 316
Sjerve, E. — 1745
Sjodin, T. — 118
Sjogren, L.B. — 2110
Sjölund, Ola — 1768
Skachkov, V.S. — 1294
Skadron, G. — 1457
Skaggs, S.R. — 1511
Skalak, R. — 2308
Skalsey, M. — 1111, 1805
Skanthakumar, S. — 73
Skarha, J. — 1017
Skarpaas, K. — 1264, 1312, 1388
Skarsgard, H.M. — 2005, 2006
Skelton, D. — 730
Skelton, E.A. — 242, 346
Skelton, E.F. — 1516, 1543, 1545, 1573
Skeppstedt, O. — 1856
Sketchley, T. — 1896
Skibo, J. — 920
Skiff, F. — 2029
Skiff, F.N. — 1889
Skinner, A.J. — 846
Skinner, C.H. — 2031, 2036, 2037
Skinner, Mark A. — 920
Skinner, S.R. — 579
Skita, V. — 599
Skocpol, W.J. — 172, 459
Skofronick, J.G. — 381, 794
Skolones, Michael S. — 541
Skopik, D.M. — 915, 1820, 1826
Skourtis, S.S. — 268
Skove, M.J. — 345, 453, 454
Skrzypek, M. — 985
Skudlarski, Pawel — 230
Skulski, W. — 1812, 1853
Skupsky, S. — 1885, 1961, 1962, 2084, 2085
Sladen, J.P.H. — 1212
Slamet, M. — 139
Slaney, A.J. — 845
Slanger, T.G. — 1092
Slanina, Z. — 970
Slater, G.W. — 94
Slater, Jim — 908
Slattery, W.L. — 169
Slaughter, J.M. — 515
Slaughter, Milton D. — 964, 1838
Slaughterbeck, C.R. — 395
Šiaus, I. — 1825
Slavnov, N.A. — 595, 1621
Slavsky, David — 354
Slawewski, T. — 143
Sleaford, B. — 1912, 1935
Sleight, A.W. — 175, 791
Sleight, Jeffrey W. — 233, 814
Slichter, C.P. — 173, 277, 572, 825
Sliamani, S. — 2261, 2267
Slimmer, D.A. — 176, 537
Slinker, S.P. — 2047, 2354
Slinker, Steven P. — 1899
Slinkman, J. — 403, 814, 815
Slinkman, J.A. — 82
Sloan, John — 1737
Sloan, N. — 1948
Sloan, T. — 1197, 1245, 1257
Slobodina, V.G. — 1543
Slootmans, W. — 468
Slough, C.G. — 117, 452
Slough, J.T. — 1981
Slovic, Paul — 977
Sluijk, T. — 1201, 1212
Sluiter, M. — 153, 154, 256
Slusher, R.E. — 98, 366, 1734
Sluter, L.J. — 2087
Smalley, R.E. — 221, 1088
Smalley, Richard — 202
Smaoui, N. — 2244
Smarrt, M. — 417
Smedley, J.E. — 1153, 1650
Smedskjaer, L.C. — 274
Smejtek, P. — 632
Smela, E. — 535
Smellie, R. — 1291
Smend, F. — 1860
Smerdyakov, K. — 1992
Smereka, P. — 2189, 2296
Smet, J.H. — 813
Smeulders, P. — 2056
Smiley, B.L. — 455
Smeyers, R.J. — 294
Smilowitz, L. — 205, 211
Smirl, Arthur L. — 745, 763, 764, 1746, 1769
Smirnov, G.V. — 832
Smirnov, V. — 1284
Smirnov, Yu. — 1368
Smirnova, V.N. — 790
Smit, F.D. — 1818
Smith, A. — 271, 471, 982, 1051, 2040
Smith, A.B., III — 253, 369, 653
Smith, A.C.H. — 1157
Smith, A.L. — 253
Smith, A.P. — 63, 64, 309
Smith, A.R. — 182, 568, 1849
Smith, Arthur — 680
Smith, A.V. — 1715, 1721, 1767
Smith, A.W. — 387, 388
Smith, B. — 2346
Smith, C.G. — 696
Smith, Chad S. — 920
Smith, C.H. Llewellyn — 1195
Smith, C.J. — 1088
Smith, C.W. — 328
Smith, D. — 1638
Smith, D.A. — 943, 1816, 1817, 1830
Smith, D.D. — 133, 842, 1283, 1683
Smith, D.K. — 407
Smith, D.L. — 1200, 2045
Smith, D.M., Jr. — 1056
Smith, Doran — 133
Smith, Doran D. — 513
Smith, D.R. — 1390
Smith, D.T. — 379, 512
Smith, D.Y. — 740
Smith, E. — 1562
Smith, G. — 414, 482, 713, 1831
Smith, Gary R. — 1436
Smith, G.C. — 461
Smith, G.D. — 91, 191, 192, 244, 422
Smith, Gerald A. — 2086
Smith, G.J. — 2361
Smith, G.O. — 1750
Smith, G.R. — 1920, 1921, 2016, 2103
Smith, G.W. — 820
Smith, H.G. — 307
Smith, H.V., Jr. — 1321
Smith, J. — 1206, 1209, 1223
Smith, J.C. — 110
Smith, J.D. — 1021, 1223
Smith, J.F. — 1806
Smith, J.L. — 130, 131, 174, 314
Smith, John — 1223
Smith, John R. — 918
Smith, J.P. — 1936
Smith, J.R. — 1302

- Smith, J.S. — 1769
 Smith, K.A. — 1130, 1131, 1134, 1161, 2361
 Smith, Karen R. — 921
 Smith, Ken — 716
 Smith, Kevin E. — 117, 365
 Smith, K.S. — 1321
 Smith, L.C. — 914, 915, 1816
 Smith, L.M. — 132, 283, 2259
 Smith, M. — 1273, 1318
 Smith, M.K. — 2309
 Smith, M.S. — 983, 984, 1802
 Smith, O.I. — 2258
 Smith, P. — 1300, 1335
 Smith, Paul — 158
 Smith, Peter L. — 1129
 Smith, Philip G. — 1731
 Smith, R. — 216
 Smith, R.A. — 229
 Smith, R.D. — 1443
 Smith, R.J. — 498, 781
 Smith, R.M. — 921
 Smith, R. Seth — 2163
 Smith, S. — 1210
 Smith, S.A. — 2014
 Smith, S.D. — 489, 546
 Smith, S.J. — 813, 1093, 1100
 Smith, S.L. — 1325, 1361, 1365
 Smith, S.T. — 2250
 Smith, Steven J. — 1156
 Smith, S.W. — 484
 Smith, V.K. — 294
 Smith, W. — 1263, 1302
 Smith, W.A. — 2293
 Smith, W.H. — 985, 986, 1037
 Smith, W.W. — 1123
 Smithe, David — 1894, 2004
 Smithe, D.N. — 2003
 Smits, A.J. — 2272, 2313, 2317
 Smolarkiewicz, P.K. — 2224, 2308
 Smolek, Ken — 611
 Smoliakov, A. — 2026
 Smolin, J. — 1312
 Smoliner, J. — 400
 Smolucha, J. — 1227, 1274
 Smolyakov, A. — 2125
 Smolyakov, A.I. — 2076, 2116
 Smolyakov, N. — 1220, 1330, 1331, 1332
 Smoot, George F. — 198
 Smoot, G.F. — 949, 1065
 Smyth, J.F. — 765
 Smyth, Kermit C. — 1757
 Smythe, Joseph F. — 430
 Smythe, W.R. — 943, 1389
 Snee, D. — 1386
 Snell, C. — 1481
 Snelling, M. — 948
 Snider, R.T. — 2062, 2063, 2065
 Snipes, J. — 1905, 1956
 Snipes, J.A. — 1955
 Snoke, D.W. — 151, 744, 1746
 Snow, Arthur W. — 1747
 Snow, E.S. — 156, 183
 Snow, W.M. — 913
 Snyder, B. — 2236
 Snyder, C.W. — 232
 Snyder, D. — 1331
 Snyder, H.A. — 2300
 Snyder, J. — 559
 Snyder, Kenneth C. — 574
 Snyder, S. — 930
 Snyderman, N.J. — 1855
 Snydstrup, L. — 1264
 So, I. — 1209
 So, P.T.C. — 599
 Soave, R.J. — 1825
 Šob, M. — 208
 Sobczynski, S. — 1368
 Sobczynski, S. — 1261, 1405
 Sobehart, J.R. — 2079, 2109
 Sobel, H.W. — 1021
 Soboleva, T.K. — 2051
 Sobolewski, M.A. — 2355
 Sobolewski, R. — 128
 Sobolewski, Roman — 689
 Sobolewski, Z. — 1036
 Sobotka, L.G. — 941, 980, 1051, 1852, 1853
 Soggi, E.P. — 423, 486
 Soderholm, L. — 532
 Söderlind, P. — 106, 742
 Södervall, Ulf — 1768
 Sofo, J.O. — 273
 Softky, William — 1456
 Sohn, H. — 693
 Sohn, Y.U. — 1290
 Sohoh, George — 2274
 Sojka, Jan — 498
 Sokol, A. — 391, 464
 Sokol, P.E. — 115, 116, 138
 Sokolik, I. — 109
 Sokoloff, J.B. — 506
 Sokoloff, M.D. — 1038
 Sokolov, J. — 295, 339, 409, 417, 481, 713
 Sokolov, N. — 514
 Sokolov, S.V. — 1251
 Sokolova, T. — 1367
 Sokolowski, J.S. — 1378
 Sokolsky, P. — 1021
 Solano, E.R. — 1922, 1948, 1949, 1951
 Solberg, K. — 1035
 Soldi, A. — 1846
 Söldner, F. — 2055
 Solensten, L. — 1201
 Soles, C.L. — 92
 Soletsky, P.A. — 1155, 1164
 Solheim, N. — 1301
 Solie, D.J. — 1596
 Solin, D.A. — 1968
 Solin, S.A. — 234, 1489
 Solina, S. — 1629
 Soln, J. — 1939
 Soln, Josip — 945
 Solodovnik, F.M. — 1219
 Solomon, L. — 1234, 1326, 1330
 Solomon, P.M. — 578
 Solomon, T.H. — 2307
 Solomons, R. — 1265
 Solovianov, V.L. — 1054
 Soloviev, L.F. — 1054
 Sols, F. — 55
 Sols, Fernando — 328
 Soltz, R. — 1000, 1810
 Solyak, N.A. — 1316
 Somayazulu, M.S. — 1516, 1557
 Some, D. — 1720
 Sommer, F. — 1289
 Sommer, M. — 1635
 Sommerer, Timothy J. — 2373
 Sommermann, H.M. — 1823
 Sommers, J.A. — 107
 Sommers, P. — 1021
 Somorjai, G.A. — 366, 627
 Somov, L. — 1284
 Son, J. — 1715
 Son, S. — 483
 Son, U.T. — 1619
 Sondergaard, R. — 2281
 Sonderkaer, P. — 651
 Sondhi, S.L. — 135, 725
 Sone, Y. — 2212
 Song, B. — 1889
 Song, D. — 690
 Song, D.I. — 424
 Song, E.K. — 844
 Song, H. — 1555, 1992
 Song, H.H. — 411
 Song, I. — 1492, 1588, 1591
 Song, J. — 1201, 1205, 1351, 1389
 Song, J.I. — 1719
 Song, J.J. — 282, 374, 531
 Song, K. — 190
 Song, K.S. — 786
 Song, L. — 2173
 Song, L.W. — 461
 Song, P.H. — 216
 Song, S. — 638, 1568
 Song, S.H. — 437, 448
 Song, S.N. — 638, 694
 Song, Sunho — 267
 Song, S.-W. — 414
 Song, T. — 1039, 1204, 1205
 Song, X. — 1015, 1017, 2277
 Song, Y. — 602, 2047
 Song, Yang — 261
 Song, Y.-Q. — 116, 174, 580
 Soni, Amarjit — 938
 Soo, Y.L. — 84, 461, 798
 Soom, B. — 1987
 Soonpaa, H.H. — 128
 Sooryakumar, R. — 132, 461, 797, 1589
 Soos, Z.G. — 257
 Soramel, F. — 927, 1014, 1049
 Sorbello, R.S. — 841
 Sorensen, A.H. — 1102, 1126
 Sorensen, C.M. — 542, 832
 Sørensen, E.S. — 496
 Sorensen, J. — 2025
 Sorensen, L.B. — 86, 385, 517, 536, 819
 Sorenson, C.M. — 479
 Sorenson, D. — 1062
 Sorenson, D.S. — 1826
 Sorge, H. — 1810
 Sorge, Heinz — 975
 Soriano, S. — 1714
 Sorrell, F.Y. — 1504
 Sorriero, Louis — 604
 Sortais, P. — 1339
 Soruco, D. — 2358
 Sosnick, T.R. — 138
 Sotak, C.H. — 166
 Sotolongo, Evelio — 1019
 Souder, P. — 1801
 Souissi, Kamel — 950
 Soukas, A. — 1400
 Soukas, A.V. — 1403
 Soukiassian, P. — 335, 727, 728, 729
 Soukoulis, C.M. — 372, 547
 Soukup, J. — 1036, 1836, 1847
 Soulen, R.J., Jr. — 223, 327, 460, 835
 Soulen, Robert, Jr. — 693
 Soundranayagam, R. — 1404
 Soures, J.M. — 1961, 2085
 Southerland, Kenneth B. — 2205
 Southern, B.W. — 134
 Southworth, S. — 1150, 1151
 Souza, S.R. — 1853
 Sovinec, C.R. — 1979, 1981
 Sowa, Erik C. — 308
 Sowers, C.H. — 164, 562
 Sowinski, J. — 1321, 1840, 1845, 1847
 Spaccavento, Joseph — 990
 Spädtke, P. — 1336
 Spaepen, Frans — 515
 Spaid, M.A. — 2275
 Spain, E.M. — 1088
 Spal, R.D. — 1584
 Spalart, Philippe R. — 2190
 Spalding, G.C. — 330, 693
 Spalding, R.E. — 1533
 Spalek, G. — 1387
 Spalek, J. — 438
 Spall, R.E. — 2297
 Spangaard, J. — 1220
 Spangler, L.L. — 191
 Spangler, S.R. — 1905
 Sparavigna, A. — 767
 Sparks, D. — 2090
 Sparks, D.O. — 2107
 Sparks, P.D. — 118
 Sparks, William B. — 958
 Sparn, G. — 79
 Sparrow, C. — 1777
 Sparrow, R. — 1101
 Spataro, B. — 1287, 1375
 Spataro, C. — 1296
 Spayd, N. — 1351, 1379, 1390
 Speake, C.C. — 946
 Spears, K.G. — 971
 Specht, E.D. — 385
 Specht, V. — 1281, 1999
 Speciale, Ross A. — 1940
 Speckla, A. — 1218
 Spector, H.N. — 473
 Spector, M. — 265
 Spedding, G.R. — 2254, 2272
 Speidel, K.-H. — 848
 Speller, C.V. — 2342
 Spence, D. — 2363
 Spence, J.C.H. — 403, 620
 Spence, Paul D. — 1901
 Spence, W.L. — 1256, 1257, 1360, 1366, 1371
 Spencer, Alison — 1746
 Spencer, G. — 738
 Spencer, G.F. — 466, 706
 Spencer, J. — 1255
 Spencer, N. — 1225
 Spencer, R.L. — 1943
 Spencer, Ross L. — 1973
 Spencer, T.A. — 2002
 Spencer, T.C. — 913
 Spencer, Thomas A. — 2001
 Spengos, M. — 1034, 1035, 1821
 Spertous, V. — 784
 Sperisen, F. — 986
 Sperrisen, F. — 986, 996, 997
 Speth, J. — 2007
 Spetzler, H. — 1528
 Spetzler, H.A. — 1558
 Speziale, C.G. — 2305, 2307
 Spicer, W.E. — 226, 274, 275
 Spielman, R.B. — 1533, 2090
 Spielman, S. — 74, 227, 839
 Spies, A. — 916
 Spillman, G. — 409
 Spina, E.F. — 2235, 2266
 Spindler, H.L. — 2340
 Spitz, R. — 1394, 1398
 Spofford, A. — 459
 Spong, D.A. — 1986
 Spontak, R.J. — 489, 546
 Spoor, P.S. — 677, 681
 Spornick, L. — 1460
 Sprague, D.T. — 86, 1022
 Spraker, M. — 1034
 Sprangle, P. — 1276, 1278, 1279, 1328, 1331, 1941, 1942, 2081, 2124
 Spreeuw, R.J. — 1142
 Spreeuw, R.J.C. — 934, 1778
 Sprenger, W.O. — 288
 Springer, T. — 143
 Springholz, G. — 179
 Springmann, E. — 2055
 Springsteen, L.L. — 1756
 Sprott, J.C. — 1909
 Sprouse, G.D. — 997

- Sprunger, P.T. — 286, 365
 Sprunt, S. — 404, 599
 Spry, R.J. — 110, 411
 Spyropoulos, E.T. — 2231
 Sqalli, D. — 421
 Squire, J.P. — 2068, 2070
 Squires, K.D. — 2228
 Srdanov, B. — 502
 Srdanov, V. — 501
 Sredniawski, J. — 1201, 1322, 1333, 1377
 Sreedhar, M.K. — 2270
 Sreekumar, P. — 988, 989, 1635
 Sreenivasan, K.R. — 2191, 2266, 2296
 Srichaikul, P. — 513
 Sridhar, S. — 70, 120, 804
 Sridharan, K. — 1900
 Srinivas, Sudha — 174
 Srinivas, V. — 399
 Srinivasan, M. — 2342
 Srinivasan, R. — 736
 Srinivasan, Rajani — 1715
 Srinivasan-Rao, T. — 1311
 Srinivasarao, Mohan — 193, 194, 546
 Sritharan, S.S. — 2276
 Srivastava, B. — 998, 999, 1815, 1828, 1853, 1854
 Srivastava, S.K. — 2348
 Srolowitz, D. — 349, 413
 Srolowitz, David J. — 154
 Srolowitz, D.J. — 61, 207, 628
 Stacey, F.D. — 1490
 Stacey, W.M. — 1923, 2051, 2117
 Stachel, J. — 1036
 Stack, C.A. — 1094
 Stacy, A.M. — 117, 1608
 Stacy, H.L. — 1536
 Stacy, T. — 2119
 Stadler, Alfred — 1013
 Staebler, G.M. — 1937, 2061, 2062
 Staehler, J.M. — 1555
 Staehli, J.-L. — 182
 Stafford, C.A. — 223
 Stahl, D.B. — 1539
 Stahl, Kurt — 578
 Stahlbush, R.E. — 1613
 Stair, K. — 181, 1589
 Stalder, K.R. — 2337
 Stallard, B. — 1328
 Stallard, B.W. — 1328, 1967, 2066, 2067
 Stallings, D.C. — 2033, 2049, 2105
 Stalzer, Mark — 1458
 Stambaugh, R. — 2060
 Stambaugh, R.D. — 1936
 Stamper, J.A. — 2085
 Stampke, S. — 1244, 1291
 Stancu, Fl. — 1015
 Standifird, J.D. — 1683, 1684
 Stanev, Todor — 934, 985, 1021
 Stange, T. — 713
 Stanislaus, S. — 914
 Stankiewicz, J. — 121
 Stanley, H.E. — 245, 545, 716, 1438, 1445
 Stanley, H. Eugene — 169
 Stanley, R. — 1627
 Stanners, C.D. — 366
 Stansfield, B. — 1892, 2028, 2335
 Stansfield, B.L. — 2027, 2333
 Stanton, A.C. — 2341
 Stanton, C.J. — 687, 833
 Stanton, C.T. — 1599
 Staples, J.W. — 1337
 Stapleton, G. — 1204
 Stapleton, Shawn — 762
 Stapor, W.J. — 1645
 Starace, A.F. — 1124, 1139
 Starace, Anthony, F. — 1146
 Starace, Anthony F. — 1124
 Starikov, E. — 634
 Starikov, V.I. — 1662
 Stark, T.T. — 1943
 Stark, W.A. — 2036
 Starke, Kai — 831
 Starke, U. — 627
 Starkovich, V.S. — 1390
 Staroselsky, I. — 2215
 Start, D. — 2055
 Start, D.F. — 2107
 Stassi, P. — 1852
 Stassis, C. — 270, 1525
 Stathis, J.H. — 82
 Statiris, P. — 437, 793
 Statman, D. — 367
 Statt, B.W. — 126
 Stauffer, A.D. — 1101, 1104
 Staunton, J.B. — 215, 216
 Stavans, Joel — 614
 Staveley, B.D. — 2204
 Stavig, Mark — 1611
 Stavola, M. — 376
 Stavola, Michael — 377
 Stawiasz, K.G. — 691
 Staynoff, J. — 1842
 Steadman, P.A. — 1849
 Steadman, S. — 1843
 Stearns, M.B. — 163, 733
 Stearns, R. — 1843
 Stebbings, R.F. — 1134, 1161, 2361
 Stebler, B. — 534
 Stechel, E.B. — 89, 786, 1434
 Stechemesser, H. — 1262
 Steck, J.E. — 579
 Steck, M. — 1336
 Stecker, F.W. — 919
 Steckl, A.J. — 282, 283, 565
 Steel, D.G. — 521, 1753
 Steele, A.G. — 706
 Steele, B.E. — 448
 Steele, L.M. — 240, 1023, 1663
 Steele, W.F. — 2052
 Steen, P.H. — 2275
 Stefan, P.M. — 1380
 Stefan, V. — 1912, 1998, 2016, 2019, 2116, 2117, 2118
 Stefani, G. — 1673
 Stefanou, N. — 176
 Stefanovic, D. — 1585
 Steffen, M. — 1627
 Steffens, E. — 1336
 Stege, R.E., Jr. — 1206
 Stegeman, George I. — 164, 1765
 Stegeman, G.I. — 1766
 Steglich, F. — 609
 Stegner, A. — 2315
 Steigerwald, M.L. — 78
 Steimel, J. — 1206, 1308
 Steimle, R.F. — 1950, 1954
 Stein, A. — 1444
 Stein, D.L. — 684
 Stein, H.J. — 377, 571
 Stein, R. — 194
 Stein, Richard S. — 194, 243, 546
 Stein, R.S. — 91, 293, 294
 Stein, T.S. — 1100, 1101
 Steinbach, Ch. — 1252
 Steinbeck, J. — 59
 Steinbeck, L. — 1092
 Steinberg, D. — 1486
 Steinberg, Daniel — 1510
 Steinberg, Stan — 1449
 Steinbrecht, Wolfgang — 1773, 1776
 Steiner, H. — 1203
 Steiner, M. — 114, 544, 564, 1841, 1842, 1844
 Steiner, M.M. — 463
 Steiner, R.L. — 836
 Steinhart, Paul J. — 198, 681
 Steinhauer, J. — 87, 88
 Steinhauer, L. — 1277, 1310, 1311
 Steinhauer, Loren C. — 2073
 Steinhoff, Ronald — 1662
 Steinle, H. — 948, 968, 989
 Steinsheider, J. — 812
 Stek, P.C. — 1956
 Stella, A.L. — 541
 Stellingwerf, R.F. — 1316
 Stelzer, J.E. — 1321
 Stenger, V.A. — 368
 Stenzel, R.L. — 1886, 1887
 Stepanek, P. — 348
 Stepanov, A. — 1217
 Stepanov, G.N. — 1536, 1573
 Stepanov, K. — 2118
 Stepanova, A.N. — 1619
 Stephan, G.M. — 1745
 Stephan, W. — 228, 754
 Stephanakis, S.J. — 2046, 2074
 Stephans, G.S.F. — 1814
 Stephen, E. — 2203
 Stephen, J. — 67
 Stephens, F.S. — 1013, 1014, 1049, 1050, 1805, 1806, 1831
 Stephens, J.A. — 1151
 Stephenson, E. — 1829
 Stephenson, E.J. — 986, 1050, 1052, 1829, 1830, 1845, 1846, 1847
 Stephenson, G.B. — 154
 Stephenson, G.J., Jr. — 1823
 Stephenson, J.C. — 1755
 Stepin, D.L. — 1316, 1358
 Stepp, J. — 1226, 1393, 1399, 1407
 Sterbenz, S.M. — 1051, 1820
 Steren, L.B. — 648
 Sterer, E. — 1519, 1536
 Sterk, Todd — 2241
 Sterling, B.W. — 468
 Stern, Ady — 230
 Stern, E.A. — 267, 386, 457, 458
 Stern, Frank — 54
 Stern, R.A. — 1889, 2112
 Sternberg, S.J. — 1120
 Sterne, P.A. — 224, 225, 241, 309, 831
 Sterner, K.L. — 1641
 Sternlieb, B.J. — 124, 766
 Sterzing, I. — 1948
 Teski, D.B. — 1321
 Stevens, J. — 2034
 Stevens, J.E. — 549, 1907, 2032, 2033, 2034
 Stevens, J.L. — 448, 623
 Stevens, Mark J. — 245
 Stevens, P.D. — 157, 1612, 1671
 Stevens, R. — 1390
 Stevens, Ralph R., Jr. — 1320
 Stevens, R.R., Jr. — 1320
 Stevens, S.B. — 1728
 Stevens Miller, Amy E. — 1100
 Stevenson, Kip P. — 152
 Stevenson, N. — 1335
 Stevenson, N.R. — 1317
 Stewart, D. Scott — 2228
 Stewart, G.R. — 79, 80, 130, 178
 Stewart, J. — 1036
 Stewart, J.A. — 987, 1054
 Stewart, R.A. — 2357
 Stewart, R.E. — 1974, 1986, 1987, 2082, 2117
 Stewart, Richard — 1986
 Stey, G.C. — 1658
 Stiber, M.D. — 318
 Stich, I. — 281
 Stich, Ivan — 1619
 Stickler, James H. — 146
 Stiening, R. — 1240, 1246, 1267
 Stiles, M.D. — 562
 Still, C.H. — 1914
 Stillerman, J. — 1954
 Stillinger, D.K. — 799
 Stillinger, F.H. — 684, 799
 Stillman, A. — 1220
 Stilp, A. — 1506
 Stilp, X. — 1486
 Stimson, J. — 2016
 Stine, K.J. — 652
 Stinson, G.M. — 1036, 1836, 1847
 Stirling, W.G. — 137
 Stishov, S.M. — 1559
 Stith, James — 960
 Stittsworth, D. — 1200, 1201
 St. John, Thomas H. — 1927
 Stixrude, L. — 1508
 St. Jeor, V. — 292
 St John, H. — 1937, 2065, 2066, 2066, 2070
 St. John, H.E. — 1936, 2066
 St-Laurent, M.G. — 1339
 Stochaj, S. — 933
 Stock, D.E. — 2278
 Stockbauer, R.L. — 781
 Stockdale, R. — 2067
 Stockdale, R.E. — 2065
 Stockel, J. — 1927
 Stocki, T. — 1036
 Stocki, T.J. — 1836
 Stöckli, Martin P. — 1164
 Stöckli, M.P. — 1089, 1102
 Stockman, L. — 1615
 Stockman, M.I. — 62, 592
 Stocks, G.M. — 215, 255
 Stodiek, W. — 1924
 Stoebe, T. — 534, 535, 536
 Stoecker, Michael — 2225
 Stoefel, W. — 1855
 Stoffels, E. — 2367
 Stoffels, W.W. — 2367
 Stöhr, J. — 830, 831
 Stojković, Branko P. — 524
 Stokbro, K. — 742
 Stoker, J. — 1994, 1995
 Stokes, S. — 2206
 Stokstad, R. — 1849
 Stokstad, R.G. — 1804, 1829, 1830, 1850, 1855
 Stolarski, D.J. — 318
 Stolarski, V. — 415
 Stoler, P. — 914, 915
 Stolka, M. — 110, 544
 Stoll, S. — 1036
 Stoller, R.E. — 2106
 Stolorz, Paul — 1045
 Stolovitzky, G. — 2191
 Stolte, W.C. — 1163
 Stoltz, P. — 1345
 Stoltz, Peter H. — 1908
 Stoltze, P. — 67
 Stolze, Joachim — 594, 595
 Stempel, S. — 193
 Stone, A.D. — 230, 537, 707
 Stone, E.C. — 947, 948
 Stone, H.A. — 2201, 2250, 2268, 2294
 Stone, J. — 1021
 Stone, Michael — 136
 Stoneking, M.R. — 1978
 St-Onge, L. — 2339, 2343, 2353
 Stoof, H.T.C. — 239, 1172
 Storek, D. — 1949
 Storm, D. — 442, 617
 Stormer, H.L. — 235

- Story, J.G. — 1145, 1749
 Stotler, D.P. — 1919, 1920, 2049
 Stott, M.J. — 164
 Stout, L. — 1237
 Stovall, J.C. — 602
 Stover, G. — 1404
 Støvneng, J.A. — 646
 Stoyer, M.A. — 942, 1013, 1049, 1050, 1806, 1823, 1831, 1832
 St. Pierre, Martin G. — 2205
 Stracener, D.W. — 941, 1852
 Stracener, W. — 980
 Strach, T. — 75, 127
 Strachan, J. — 2029
 Strachan, J.D. — 1905, 1906, 1907, 2030, 2031, 2032
 Stragier, H. — 385, 536
 Strait, E.J. — 1936, 2061, 2062, 2065, 2066, 2067, 2098, 2121
 Strait, J. — 1290
 Strakhovenko, V.M. — 1317
 Stranick, S.J. — 403, 539
 Straton, Jack C. — 1132
 Straton, J.C. — 1132
 Stratt, R.M. — 120
 Stratton, B. — 2029
 Stratton, B.C. — 2029
 Straub, H.C. — 1134
 Straub, J. — 480, 1005
 Straumal, B.B. — 1577
 Strauss, H.R. — 1894, 1926
 Strauss, M. — 748
 Strausz, S. — 1021
 Strayer, D.M. — 70
 Streetman, B.G. — 182
 Streiffer, S.K. — 583
 Streitmatter, R. — 933
 Streitmatter, R.E. — 933
 Streitz, F.H. — 450
 Strelkov, M. — 1243, 1368
 Strickland, J.H. — 2270
 Strickler, D. — 2005
 Stricklett, K.L. — 2365
 Strickman, Mark S. — 1026
 Strickman, M.s. — 989
 Strieb, J.D. — 642
 Striffler, C. — 1280
 Striffler, C.D. — 1281, 1315, 1895, 1999
 Strigazzi, A. — 767
 Stringfellow, B.C. — 1849
 Stringfellow, G.B. — 746
 Stringfield, R. — 1280, 1281
 Stringfield, Ray W. — 1940
 Stringfield, R.M. — 1395
 Strokovsky, E. — 1036
 Stromberg, P. — 1338
 Strong, A. — 989
 Strong, S.P. — 757
 Strongin, M. — 560, 780
 Strongin, R. — 253
 Strongin, R.A. — 369
 Strongin, R.M. — 253
 Stroschio, J.A. — 341
 Stroschio, M.A. — 269, 474
 Stroschio, Michael A. — 55
 Stroud, C.R., Jr. — 1774
 Stroud, D. — 61, 123, 327, 383, 801, 837
 Stroud, R.M. — 681
 Strozewski, K.J. — 184
 Strupp, M. — 805
 Strutt, A. — 1592
 Strutz, V.K. — 1894
 Struve, K.W. — 1533
 Struzhkin, V.V. — 1543, 1572
 Stry, P.E. — 1548
 Strykowski, P.J. — 2220
 Stuart, A. — 2057
 Stuart, C.E. — 1491
 Stuart, L. — 1034, 1821
 Stuart, M.E. — 1335, 2052
 Stubberfield, P.M. — 1937
 Stubbins, Calvin — 1065, 1095
 Stubbs, Christopher — 956
 Stuckey, K.A. — 1832
 Stucki, H. — 1252
 Stumborg, M.F. — 951, 1148
 Stump, N.A. — 1545
 Stumpf, B. — 1105, 1106, 2334
 Stumpf, Bernhard — 2331
 Stupakov, G. — 1243
 Stupp, S.I. — 292, 410, 423, 483
 Sturge, M.D. — 266, 393, 530
 Sturhahn, W. — 113
 Sturm, J. — 251
 Sturm, J.C. — 84
 Stutz, C.E. — 232, 316, 593, 745
 Stutzmann, M. — 56, 157, 560
 Stwalley, W.C. — 1148, 1898
 Su, B. — 471
 Su, Bo — 697
 Su, C. — 287, 365
 Su, J. — 412, 419
 Su, J.J. — 1903, 2017, 2018, 2020, 2115
 Su, Lester K. — 2286
 Su, M. — 2007
 Su, M.C. — 1134
 Su, Quanmin — 450
 Su, Wen-Hui — 1517, 1534, 1550, 1575, 1576
 Su, W.H. — 1534, 1535, 1575, 1578, 1587
 Su, W.P. — 136, 210
 Su, Wu-Pei — 257
 Su, X. — 1910
 Su, X.N. — 1992
 Su, Z.P. — 1618
 Suárez, C. — 616, 1750
 Suarez, I.M. — 935
 Suarez, N. — 545, 741
 Subbarao, D. — 1904, 2118
 Subbarao, D. — 1990
 Subbaswamy, K.R. — 67, 90, 449
 Sube, S. — 2089
 Suberbielle, I. — 527
 Subia, S.R. — 2300
 Subramanian, K. — 781
 Subramanian, M. — 389, 390
 Subramanian, S. — 132
 Subramoniam, G. — 1551
 Sucha, G. — 398, 765, 1742, 1744
 Suchman, J. — 2212
 Suckewer, S. — 1736
 Suda, Y. — 107
 Sudan, R.N. — 2046, 2079
 Sudijono, J. — 232
 Sudit, I.D. — 1897
 Sudo, S. — 1989
 Sudou, M. — 1333, 1401
 Suen, Y.W. — 236, 770
 Suenaga, M. — 189, 801, 1626
 Sueno, T. — 1401
 Suetsugu, Y. — 1261
 Sugahara, R. — 1212, 1219, 1299
 Sugama, H. — 1910
 Sugano, T. — 1549
 Sugarbaker, E. — 982, 1051, 1830
 Sugawara, T. — 1478
 Sugie, T. — 1918
 Sugimoto, H. — 2212
 Sugimoto, S. — 2121
 Sugiyama, J. — 272
 Sugiyama, L. — 1946, 2076
 Sugiyama, L.E. — 1924, 2052, 2115
 Sugiyama, S. — 1514
 Suhl, H. — 811
 Sui, P.-C. — 2227
 Sui, Q. — 1812, 1853
 Sui, Z. — 478
 Suicai, Wang — 1747
 Súilleabháin, L.C.O. — 808
 Suito, K. — 1534
 Suits, Arthur G. — 1756
 Suk, H. — 2119
 Sukaton, R. — 1843
 Sukoriansky, S. — 2215
 Sulaiman, S.B. — 174
 Sulak, L.R. — 1021
 Suleiman, J. — 1120, 1125
 Suller, V.P. — 1325, 1361, 1365
 Sullivan, A. — 518
 Sullivan, C.A. — 1279, 2000
 Sullivan, D.E. — 405
 Sullivan, D.J. — 89, 444
 Sullivan, F. — 541
 Sullivan, J. — 1810
 Sullivan, M. — 1240
 Sullivan, N. — 2168
 Sullivan, N.S. — 138, 186, 527, 2168, 2173
 Sullivan, T.E. — 579
 Sullivan, T.S. — 590, 2210
 Sullivan, W.T., III — 611
 Sulsky, D. — 1455
 Sulsky, Deborah — 2225
 Sultan, G. — 2365
 Sulyaev, R.M. — 1259
 Sulygin, I.I. — 1381
 Sumanasekera, G. — 129
 Sumarlin, I.W. — 74
 Sümmerner, K. — 1841
 Summerfield, George C. — 325
 Summers, D. — 1037
 Summers, D.D.R. — 1919, 2056
 Summers, G.P. — 835
 Summers, P.L. — 467
 Summers, R.L. — 1538, 1562
 Sumner, Richard — 201
 Sumpter, B.G. — 191, 384, 409
 Sun, C. — 1537
 Sun, D. — 1392
 Sun, Haiyin — 1738
 Sun, H.C. — 2370
 Sun, H.J. — 843
 Sun, H.L. — 1669, 1681, 1684, 1685
 Sun, J.Z. — 636, 688
 Sun, M. — 188, 795
 Sun, R.K. — 1035
 Sun, Sheng N. — 208
 Sun, S.L. — 1534, 1578
 Sun, W. — 2173
 Sun, Weiguo — 1100
 Sun, Y. — 278, 311, 1093, 1123, 1148, 2091, 2092, 2093, 2121
 Sun, Ye — 779
 Sun, Yongchen — 469
 Sun, Y.R. — 802, 835
 Sun, Y.Y. — 173, 204, 346, 347, 461, 782, 783
 Sun, Zhan — 142
 Sund, R.S. — 2105
 Sundaram, A.K. — 1927, 1975, 2018
 Sundaram, B. — 590
 Sundaram, Bala — 811, 1146
 Sundaram, M. — 474, 704, 840
 Sundaram, S. — 228
 Sundaram, Shivshankar — 2278
 Sundararajakumar, R.R. — 2219, 2268
 Sundararajan, P.R. — 191
 Sundaun, I.L. — 406
 Sundelin, R. — 1391
 Sundquist, M. — 987, 1265
 Sung, C.S.P. — 145, 602
 Sung, Ruwang — 1005
 Sung, Ted — 1000
 Sungar, N. — 267
 Sunil, D. — 339
 Sunkara, M. — 515
 Sunohara, K. — 846
 Suntzeff, N. — 2175
 Sunyaev, Rashid — 995
 Supek, I. — 942, 1684, 1818
 Superfine, R. — 652, 2166, 2168
 Supronowicz, J. — 1124
 Sur, B. — 1850
 Surace, G. — 1222
 Surdutovich, G.I. — 1754
 Surendra, M. — 1901, 2341, 2354, 2355, 2367
 Suresh, N. — 1569
 Surh, M.P. — 1483
 Surko, C.M. — 1973, 1981
 Surma, I.V. — 1368
 Surowiec, R. — 2329
 Surrey, E. — 2379
 Suslov, S. — 2240
 Sussman, M. — 2189
 Susta, J. — 1389
 Sustich, A. — 1807
 Suzuki, M. — 723
 Suter, L. — 1884
 Suter, L.A. — 1885
 Suter, L.J. — 1885, 1886, 2043
 Suter, R.M. — 652
 Sutherland, Bill — 291
 Sutherland, G. — 1492
 Sutherland, G.T. — 1547, 1564
 Sutherland, R.L. — 1659
 Sutjianto, A. — 68, 445
 Suttus, D.J. — 2204, 2259
 Sutter, R. — 1843
 Sutton, Mark — 206
 Suwada, T. — 1316
 Suzdal'Tsev, A.G. — 1998
 Suzuki, H. — 1367, 1530
 Suzuki, I. — 1478, 1502, 1526
 Suzuki, I.S. — 64
 Suzuki, M. — 64
 Suzuki, R. — 82
 Suzuki, S. — 1287, 2342
 Suzuki, T. — 643, 1387
 Suzuki, Takao — 665
 Suzuki, Y. — 74, 520, 1530
 Svandrlik, M. — 1383, 1393
 Svane, A. — 270
 Svane, Axel T. — 493
 Svensson, E.C. — 155, 1594
 Svinin, M.P. — 1284
 Svintsov, A.A. — 1615
 Svirina, J.V. — 790
 Svoboda, K. — 166
 Svoboda, R. — 1021
 Swahn, T. — 538
 Swain, D. — 2049
 Swain, D.W. — 2049, 2068, 2107
 Swain, G. — 1333
 Swaminarayan, S. — 61
 Swaminathan, N. — 2213
 Swan, A. — 395, 649
 Swan, D. — 1841
 Swanekamp, S.B. — 1988, 1989, 2074
 Swanson, B.D. — 536, 819
 Swanson, B.I. — 258, 502, 616, 664
 Swanson, D.G. — 1991
 Swanson, E.S. — 496
 Swanson, Kirk — 1102
 Swanson, L.S. — 109
 Swanson, M.L. — 740, 741
 Swartz, L.E. — 1606

- Swartz, M. — 1203
 Swartzendruber, L.J. — 161
 Swartzmann, J. — 2111
 Swarup, Govind — 1059
 Swarzendruber, L. — 817
 Sweeney, A. — 1210
 Sweetser, J. — 1734
 Swendsen, R.H. — 1462
 Swenson, D. — 1321
 Swenson, D.A. — 1217, 1218, 1334, 1376, 1378
 Swenson, J.K. — 1091
 Swesty, F.D. — 1638
 Świdorski, J. — 1577
 Świerkowski, L. — 382
 Swift, B.W. — 486
 Swift, D.C. — 1513
 Swift, J.B. — 818, 2239, 2291
 Swift, Michael R. — 115, 651
 Swift, M.R. — 1023
 Swift, R. — 1481
 Swindle, G. — 644
 Swinney, H.L. — 2239, 2291
 Switendick, A.C. — 208
 Swordy, S. — 932
 Swyden, T.A. — 1963
 Syassen, K. — 151, 1498, 1543, 1572
 Sychev, V. — 1291
 Sydora, R.D. — 2014, 2015, 2099
 Syfosse, G. — 1530
 Sykes, A. — 2008
 Sylvania, Ostram — 2356
 Symko, O.G. — 697
 Symon, K. — 1249
 Symons, T.J.M. — 998, 999, 1815, 1828, 1853, 1854
 Synakowski, E. — 1907, 2031
 Synakowski, E.J. — 2029, 2037
 Synek, M. — 1119
 Synolakis, Costas Emmanuel — 2245
 Synowicki, Ronald — 322
 Syono, Y. — 1513, 1568
 Syphers, M. — 1197, 1240, 1241, 1244, 1245, 1257, 1361
 Syphers, M.J. — 1197, 1240
 Syrkin, M. — 950, 1110
 Sytchevsky, S. — 1322
 Sytnikov, V. — 1291
 Szabo, A. — 1662
 Szabo, B.M. — 941, 1812, 1852
 Szalata, Z. — 1034, 1821
 Szczepek, J. — 1530, 1531
 Szebesta, D. — 1726
 Szego, K. — 1905
 Szeri, A.J. — 2310
 Szewczyk, A.A. — 2313
 Szleifer, I. — 414, 715
 Szotek, Z. — 255
 Szott, W. — 647
 Szpala, S. — 181
 Szpunar, B. — 82
 Szymański, J. — 382
 Szymanski, J.J. — 914, 1803, 1804
- Tabak, M. — 2080
 Tabak, Max — 2010
 Tabaris, F. — 2021
 Tabata, H. — 59
 Tabatabaie, N. — 98, 399, 760
 Taber, Robert — 330
 Tabor, S.L. — 1857
 Taborek, P. — 240, 616
 Tabor-Morris, A.E. — 737
 Tabory, C. — 375, 507
 Taccone, A. — 1842
 Tacconi, E. — 1201, 1231
 Tache, N. — 75
- Tacik, R. — 1817
 Tackett, Alan — 741
 Taday, P.F. — 2079
 Tadayon, Pooya — 152
 Taddeucci, T.N. — 982, 1051, 1830
 Tadepalli, Srinivas — 2233, 2245
 Tadokoro, M. — 1250
 Taëb, R. — 1122
 Tagashira, H. — 2344, 2352, 2364
 Tagawa, S. — 1359
 Tagg, Randall — 2316
 Taguchi, H. — 1513
 Tahir, N. — 1996
 Tai, C.Y. — 376
 Tai, K. — 1720, 1723
 Tai, Yu-Chong — 2234
 Taillefer, L. — 129
 Taiwo, Ademola O. — 163
 Tajima, T. — 1309, 1358, 1670, 1908, 1924, 1992, 1998, 2015, 2075, 2100
 Tajima, T.T. — 2121, 2272
 Takada, E. — 1333, 1401
 Takagai, S. — 2225
 Takagaki, Y. — 180
 Takagi, A. — 582, 1321
 Takagi, H. — 212, 222, 388
 Takagi, T. — 1099, 2348
 Takahama, T. — 1614
 Takahashi, A. — 58
 Takahashi, H. — 2092, 2093, 2094
 Takahashi, K. — 1492, 2340
 Takahashi, K.M. — 347, 348
 Takahashi, S. — 72, 1260
 Takahashi, T. — 368, 1331, 1981
 Takai, H. — 1054, 1842
 Takakura, Y. — 2374
 Takano, J. — 1509
 Takano, Kaoru J. — 1550
 Takarabe, K. — 1571, 1572, 1589
 Takasaki, E. — 1393
 Takase, Y. — 1956, 1958
 Takashima, J. — 1453
 Takasu, M. — 1453
 Takats, Martha C. — 1011
 Takayama, K. — 1205, 1301
 Takebe, M. — 2363
 Takeda, O. — 1318
 Takeda, S. — 1402
 Takeda, Y. — 1338
 Takemura, K. — 480, 1566, 1597
 Takenaka, I. — 1545
 Takenaka, T. — 1393
 Takeo, T. — 1216
 Takeuchi, I. — 59, 227
 Takeuchi, J. — 817
 Takeuchi, N. — 509, 510
 Takeuchi, Tatsuo — 1057
 Takeutchi, F. — 1843
 Takigawa, M. — 174
 Takigi, H. — 731
 Takizawa, H. — 1550
 Takuma, H. — 1942, 2087, 2125
 Takumi, M. — 1589
 Talham, D.R. — 497
 Talisa, S.H. — 806
 Tallant, D.R. — 1988
 Tallents, G.J. — 2079
 Tallerico, P. — 1332, 1394
 Tallerico, P.T. — 1396
 Talmadge, J.N. — 1928, 2022, 2023
 Talman, J.D. — 1127
 Talman, R. — 1244, 1246
 Talsky, A. — 2375
 Talvacchio, J. — 260, 519, 806
 Talwar, D.N. — 316, 745
 Tam, A.C. — 735, 1731
 Tam, Christopher K.W. — 2286
 Tamada, K. — 408
- Tamargo, M. — 1589
 Tamargo, M.C. — 366
 Tamayo, Pablo — 1438
 Tambini, F. — 1956
 Tamezane, K. — 1287
 Tamura, E. — 831
 Tamura, H. — 1540
 Tamura, T. — 2236, 2264
 Tan, C. — 1317
 Tan, J.N. — 1086
 Tan, Joseph N. — 1972
 Tan, K.Y.N. — 1170, 2346
 Tan, L. — 822
 Tan, M. — 1964
 Tan, Michael — 1723
 Tan, T.H. — 1513
 Tan, W. — 2331
 Tan, Yong — 397
 Tan, Zhengquan — 224, 451
 Tanabe, J. — 1294
 Tanabe, T. — 1311, 1401
 Tanabe, Y. — 1318
 Tanaka, H. — 280, 452, 1099, 2348, 2369
 Tanaka, Koichi — 1482
 Tanaka, M. — 1253, 1297, 1575
 Tanaka, Motohiko — 1463
 Tanaka, S. — 225, 259, 1165, 1918
 Tanaka, T. — 1510, 2025
 Tanaka, Y. — 826
 Tanatar, B. — 472
 Tanbun-Ek, T. — 473
 Tanczyn, R. — 1048
 Tandy, P.C. — 965, 1016, 1837
 Tang, Chao — 701
 Tang, C.L. — 1729
 Tang, C.M. — 1331, 1963, 2047, 2116
 Tang, D. — 287, 365, 729
 Tang, D.Y. — 1915
 Tang, H. — 1312, 1313, 1342, 1636
 Tang, Henry H.K. — 950
 Tang, H.H.K. — 1825, 1829
 Tang, J. — 178, 932, 1020, 1021, 1574
 Tang, Jinyang — 449
 Tang, J.Z. — 1151
 Tang, K. — 735
 Tang, L. — 1859
 Tang, Lei-Han — 567
 Tang, M.T. — 567, 569
 Tang, P.K. — 1547
 Tang, S. — 1006
 Tang, S.H. — 1570
 Tang, Shaoping — 261, 449
 Tang, Sui-an — 517
 Tang, W. — 1891
 Tang, W.M. — 2075, 2100, 2101
 Tang, Y. — 282, 1209, 1223
 Tang, Y.G. — 172
 Tang, Yi — 1608
 Tang, Y.N. — 1223
 Tang, Y.Q. — 172, 173
 Tang, Zianzhu — 1908
 Tang, Z.P. — 1484, 1529, 1537, 1568, 1580
 Tanga, A. — 2055
 Tanigawa, S. — 82
 Taniguchi, K. — 283
 Tanii, T. — 1205
 Tanimura, K. — 1618
 Tanimura, Y. — 121
 Tanis, J.A. — 1116, 1160
 Tannenbaum, M.J. — 1833
 Tanner, Carol E. — 1758
 Tanner, C.E. — 1120, 1139
 Tanner, D.B. — 75, 227, 825
 Tanner, W.G. — 1525
 Tannerb, Carol E. — 1740
 Tanny, J. — 2294
- Tanoue, T. — 1481
 Tantawi, S.G. — 1288, 1391, 1392
 Tanveer, S. — 2283, 2294
 Tanzosh, John — 2250
 Tao, Hun-Jan — 413
 Tao, L.H. — 1034, 1821
 Tao, N.J. — 263
 Tao, Q. — 1294
 Tao, R. — 63, 344
 Tao, Y.K. — 173, 204, 205, 346, 347, 782, 783
 Tao, Y.-Q. — 1912, 1912
 Tao, Z.C. — 81
 Taoheng, Sun — 1093
 Taoka, T. — 455
 Tapalian, C. — 1123
 Tarakanov, V.P. — 2118
 Taran, A. — 1291
 Tarasenko, A. — 1368
 Tarasov, S.G. — 1387
 Taratin, A. — 1220
 Tarditi, A. — 2103
 Tarditi, A.G. — 2016
 Tarditi, Alfonso — 1446
 Tardy, M. — 1395
 Tarhan, İ.İ. — 76
 Tarhan, İ. İnanç — 1722
 Tarkenton, G.M. — 2121, 2272
 Tarlie, M. — 465
 Tarnovsky, V. — 1117, 2369
 Taroni, A. — 2055
 Tarovik, M.N. — 1270
 Tartakovski, A.V. — 538
 Tashiro, H. — 1605
 Tashiro, S. — 1540
 Tassin, A.L. — 2206
 Tataronis, J.A. — 1947, 2104
 Tatchyn, R. — 1217, 1234, 1327, 1330
 Tate, J. — 175, 459, 806
 Tate, M.W. — 599
 Tatronis, J.A. — 2103
 Tatsuki, Koichi — 1714
 Taub, H. — 650, 747
 Taulbee, D.B. — 2192
 Taulbjerg, K. — 1158
 Tauscher, B. — 1578
 Taut, Manfred G. — 289
 Tavizon, G. — 1625
 Tavoularis, S. — 2298
 Tayal, S.S. — 1105
 Taylor, A.P. — 108, 156
 Taylor, B. — 1392, 1398
 Taylor, Barry N. — 976
 Taylor, B.E. — 110
 Taylor, C.A. — 792
 Taylor, Cyrus — 957
 Taylor, D.R. — 479
 Taylor, Edwin F. — 960
 Taylor, F. — 1066
 Taylor, G. — 1906, 1907, 2031, 2032, 2035, 2037, 2038
 Taylor, J.A. — 449, 919
 Taylor, J.B. — 1985
 Taylor, K.N. — 1683, 1684
 Taylor, L. — 1377
 Taylor, M.J. — 813
 Taylor, M.P. — 186, 192
 Taylor, P.C. — 629, 630, 685
 Taylor, P.L. — 411, 419, 483, 529, 2067
 Taylor, R.D. — 114, 1517, 1519, 1536, 1622
 Taylor, R.J. — 1928, 2007, 2111
 Taylor, R.P. — 698
 Taylor, Theodore B. — 666
 Taylor, T.S. — 1936, 1937, 2061, 2062, 2065, 2066, 2121

- Taysing-Lara, M. — 133
Tazzari, S. — 1286, 1384
Tazzioli, F. — 1286, 1345
Tchurbaev, R.V. — 1578
TdeV RF Team — 2028
TdeV Team — 1892
Te, Ronald L. — 620
Tecchio, L. — 1371
Tecker, F. — 1217, 1352
Tedenac, J.C. — 1549, 1576
Tedeschi, D. — 915
Tedeschi, D.J. — 914, 915
Tedrow, P.M. — 160, 325
Teegarden, B. — 1638
Teegarden, B.J. — 1638
Teepe, M.R. — 112, 637
Teeter, Martha — 495
Tegen, R. — 1639
Tehrani, Saied — 336
Teich, T.H. — 2345
Teichmann, S.G. — 926
Teii, S. — 2337, 2349, 2374, 2378
Teisseyre, H. — 1549
Teitsworth, S.W. — 812, 813, 814
Tejedor, C. — 397
Tekawa, M. — 1265
Tekman, E. — 708
Tekula, M.S. — 1922, 2010
Telegin, Yu. — 1324, 1368
Telesca, G. — 2008
Tello, R. — 271, 689
Temam, R. — 2197
Temkin, A. — 1158
Temkin, H. — 1589
Temkin, R. — 1315
Temkin, R.J. — 1280, 1282, 1283, 1310, 1963, 2002
Temmerman, W.M. — 255
Temnykh, Alexander B. — 1355
Temporal, M. — 2086
Ten Brinke, G. — 486
Tench, R.J. — 735
Tenenbaum, P. — 1294
Teng, L. — 1249, 1324
Teng, L.C. — 1242
Teng, P.K. — 914, 915
Teng, Y.Y. — 1645
Ten Heggeler-Bordier, B. — 1628
Tennyson, Jonathan — 2368
Tenorio, L. — 1065
Tepermeister, I. — 2327
Tepikian, S. — 1197, 1242, 1245, 1257
Tepley, C. — 968
Ter-Akopian, G. — 1858
Ter-Akopian, G. — 2170
Ter-Akopian, G.M. — 1806
Ter-Akopian, G. — 2170
Terakura, K. — 287
Teraoka, I. — 94, 413
Terekhov, V.I. — 1203, 1204
Terminello, L.J. — 364, 792
Terndrup, D. — 2175
Ternovoj, V. — 1584
Terpstra, D. — 637
Terreault, B. — 2027
Terrien, J.C. — 1395
Terris, B.D. — 185
Terrones, Guillermo — 2238, 2239
Terry, D. — 1948
Terry, J. — 1905, 1956, 1957
Terry, J.L. — 1955, 1957, 2038
Terry, P.W. — 1911, 1912
Terry, R.E. — 1895
Terry, T. — 2174
Tersoff, J. — 679
Teryaev, V.E. — 1316
Terzi, F. — 1389
Tešanović, Z. — 189, 237, 523, 771, 1626
Tesar, A. — 574
Tesi, M.C. — 541
Teske, D. — 595
Tessema, G.X. — 345, 453, 454
Tessmer, S.H. — 327
Testelin, C. — 750
Teter, M.P. — 674
Têtu, Michel — 1737
Tew, W.L. — 946
Tewari, P. — 1007
Tewari, S. — 304
Textor Team — 2007
Teyssedre, G. — 603
Tezkraat, R. — 1813, 1852
TFTR Group — 1906, 2033, 2035, 2039
TFTR Project — 1882
TFTR Team — 1906, 2036, 2037
Thachuk, M. — 1626
Thacker, Beth — 1005
Thacker, Hank — 2162
Thaddeus, P. — 989
Thadhani, N.N. — 1504, 1540, 1592
Thakur, M. — 58, 1719
Thaler, R.M. — 1052, 1834
Thalman, E. — 2188
Tham, P. — 1889
Thangam, S. — 2304
The ATF Team — 2020
Theiler, J. — 453
Theis, T.N. — 266
Theis, W.M. — 366
Theisen, W.L. — 1966
Theiss, Silva K. — 678
Theiss, Steven D. — 86
Thelen, D. — 174
Themelis, S.I. — 1140
Theodosiou, C.E. — 1140
Theopistou, P. — 840
Thériault, Sylvain — 1737
Thern, R. — 1220
Thessaloniki, U. — 1615
The TPX Team — 2048
Thévenin, T. — 1570
Thevenot, J. — 758
Thevenot, M. — 1301, 1302
Thevuthasan, S. — 364, 504
Thewalt, M.L.W. — 84, 842
Thiagarajan, V. — 1349
Thiansathaporn, P. — 2166
Thieberger, P. — 1321
Thiel, D.J. — 386, 518
Thiel, F.A. — 625
Thiel, M.R. — 65
Thielemann, F. — 1827
Thielheim, K.O. — 1249
Thiessen, H. — 1266, 1333, 1346, 1387
Thiessen, R. — 1884
Thio, Tineke — 526
Thirumalai, D. — 454
Thivent, M. — 1252
Thiyagarajan, P. — 422
Thode, L.E. — 1964
Thoennessen, M. — 983, 997, 1051, 1835, 1841, 1842
Thoft, N.B. — 323
Thoman, J.W., Jr. — 1650
Thoman, M.R. — 87
Thomanschefskey, U. — 1606
Thomas, B. — 404, 600
Thomas, B.N. — 767, 820
Thomas, C. — 638
Thomas, C.E. — 1952, 2021, 2033
Thomas, D.M. — 1937, 2059, 2060, 2063, 2064
Thomas, Edwin L. — 92, 422
Thomas, E.L. — 420, 485, 546
Thomas, G. — 1546
Thomas, G.A. — 438, 680
Thomas, J. — 1540, 2029
Thomas, Jan — 1649
Thomas, J.C. — 2058, 2111
Thomas, J.H. — 1816, 1833
Thomas, J.M. — 2231
Thomas, M. — 1980
Thomas, M.A. — 1979
Thomas, P. — 1314
Thomas, P.R. — 1883
Thomas, R.C. — 378
Thomas, R.J. — 507, 1589
Thomas, S.B. — 1021
Thomas, T. — 1546, 1592
Thomas, V. — 1280
Thomas, V.A. — 1898
Thomassen, K.I. — 2048, 2049
Thommen-Geiser, V. — 1606
Thompson, A.K. — 913
Thompson, Carol — 772
Thompson, C.R. — 318, 319
Thompson, D.B. — 1134
Thompson, D.J. — 988, 989, 1635
Thompson, Donald L. — 1620
Thompson, H.B. — 1004
Thompson, J. — 929, 1163
Thompson, J.D. — 79, 124, 175, 223, 369, 439, 525, 526, 642, 643
Thompson, Jeffrey — 283
Thompson, J.R. — 272, 802, 835
Thompson, J.S. — 1157, 1163
Thompson, K. — 1266, 1292
Thompson, K.A. — 1348
Thompson, K.M. — 1293
Thompson, L.M. — 1901
Thompson, P. — 1290, 1341
Thompson, P.A. — 1290
Thompson, P.E. — 86
Thompson, R. — 1842
Thompson, S.J. — 2065, 2066
Thomson, D.J. — 1619, 2036
Thomson, R.E. — 185
Thomson, Robb — 789
Thorn, C.E. — 914, 915
Thorndahl, L. — 1352, 1389
Thorndike, Edward — 922
Thorndike, E.H. — 1017
Thorne, A.P. — 1148
Thorne, R.E. — 382, 383
Thorne, Robert E. — 382
Thornhill, J.W. — 2084
Thornton, S.T. — 914, 915
Thoroddsen, S.T. — 2298
Thorpe, J.C. — 740
Thorpe, J.T. — 1744
Thorpe, M.F. — 1177, 214, 833
Thorpe, T.P. — 616
Thorson, T. — 2029
Thorson, T.A. — 2027
Thouless, D.J. — 170, 396, 397
Thrash, R.J. — 1725
Thrush, C.M. — 401
Thumm, U. — 1105
Thundat, T. — 118, 280, 597
Thuot, M. — 1273
Thurgate, S. — 518
Thurston, T. — 338
Thurston, T.R. — 124, 776
Tian, S. — 2054
Tian, Y. — 340
Tian, Z.-J. — 66, 308
Tibbetts, G.G. — 52
Tibbitts, T.T. — 826
Tiberio, R.C. — 118
Tickle, B.S. — 940
Tickle, R.S. — 927, 940, 1842, 1854
Tidwell, I.M. — 438
Tidwell, S. — 1310
Tiedje, T. — 56, 57, 157, 232, 321, 458, 509
Tiefenback, M. — 1286
Tiefenback, M.G. — 1257
Tieger, D. — 1034, 1293, 1295, 1296, 1300, 1368
Tieger, D.R. — 1816, 1818
Tieqiang, Chang — 2087
Tiernan, W.M. — 327
Tiesinga, E. — 1168, 1169
Tigges, C.P. — 345, 815
Tighe, R. — 1213, 1214
Tighe, R.J. — 998, 1808, 1844, 1857
Tighe, T.S. — 464
Tighe, W. — 2094, 2095
Tigner, B. — 743
Tigner, Benjamin — 743
Tigner, M. — 1317, 1354, 1355, 1374, 1381, 1384, 1385, 1408
Tikhonchuk, V.T. — 1913, 1916, 2087
Tilgner, A. — 2210
Till, R. — 263
Tilley, B.S. — 2222
Timberlake, J. — 1905, 2039, 2095
Timerlake, J. — 2039
Timmer, C.A. — 1157, 1342
Timmermans, C. — 1296, 1299, 1364, 1389
Timmermans, C.J. — 1274
Timmermans, E. — 395
Timmermans, R.G.E. — 974
Timofeev, N. — 2355
Timp, Gregory L. — 76
Timusk, T. — 75, 227, 680
Tin, C.C. — 566
Tincknell, M. — 998, 999, 1054, 1815, 1828, 1842
Tincknell, M.L. — 1849, 1853, 1854
Ting, A. — 1278, 1279, 1331, 1890, 1942, 2081
Ting, C.S. — 81, 304, 496, 695
Ting, D.Z.-Y. — 401, 646
Ting, S. — 731
Ting, S.T. — 782
Ting, W.F. — 842
Tinos, G. — 1954, 1955
Tinkham, M. — 464
Tinkle, M.D. — 1973
Tiouririne, T.N. — 1976, 1977
Tipnis, S.V. — 1650, 1652, 1806
Tipton, D.L. — 94
Tirrell, M. — 91, 657, 658, 712, 713
Tirrell, Matthew — 511
Tischler, J.Z. — 113, 678
Tischler, M.A. — 764
Tishchenko, N. — 1970
Tisol Collaboration — 1843, 1844
Tisone, G.C. — 1767, 2045
Titov, N. — 1036
Titov, N.A. — 1836
Tittel, Frank K. — 1732
Tiunov, A.V. — 1368, 1389
Tiunov, M.A. — 1280
Tjeng, L.H. — 426, 525, 642, 643
Tjon, John — 922
Tkachuk, L. — 118
Tkacz, M. — 1576
Tkaczyk, J.E. — 459, 802, 830
Tlali, S. — 565
To, K. — 2267
Toacsan, M.I. — 1613
Tober, E.D. — 364
Tober, R.L. — 133, 473
Tobiason, J. — 1169, 2346

- Tobin, J.B. — 226
Tobin, J.G. — 364, 831
Tobin, Mary S. — 1754
Tobin, M.S. — 592, 704
Tobin, S.J. — 2058
Tobiyama, M. — 1216
Tobochnik, J. — 526, 1460
Todd, A.M.M. — 1338
Todd, Paul — 2201
Todt, M.L. — 350
Toellner, T. — 113, 518
Toellner, T.S. — 111
Toennies, J.P. — 147, 682
Togaya, M. — 1514
Toge, N. — 1237, 1238, 1239, 1407
Toigo, F. — 650, 748
Toigo, Flavio — 115, 651
Tojyo, E. — 1338
Tokarek, R. — 1037
Tōke, J. — 941, 998, 1812, 1852
Tōke, J.T. — 1036
Tokheim, R.E. — 1528
Tokizaki, T. — 1618
Tokuchi, A. — 1301
Tokuda, N. — 1338
Tokuda, S. — 2054
Tokuhiko, T. — 455
Tokumaru, P.T. — 2313
Tokumoto, H. — 1612
Tokumoto, Hiroshi — 568
Tokumoto, M. — 778, 826
Tokumoto, S. — 1396
Tokura, Y. — 1605
Tokuyasu, Taku — 304
Toldo, F. — 1398
Tolk, N. — 281, 508, 627, 676, 735, 740, 2166
Tolk, N.H. — 182, 474, 498, 2166
Toll, John S. — 1056
Tollier, L. — 1566
Tolstikova, Z.G. — 1512
Tolstun, N.G. — 1284
Tolton, Boyd T. — 1759
Tom, D.W. — 175, 459
Tománek, D. — 52, 257
Tománek, David — 222, 440
Tomasi-Gustafsson, E. — 1036
Tomaszewski, P. — 1552
Tombrello, T.A. — 70, 834
Tomita, Akihisa — 764
Tomizawa, M. — 1197, 1338
Tomlin, R. — 1206, 1360
Tommasini, D. — 1293, 1405
Tompkins, J.C. — 1290
Tompkins, P. — 1234
Tomsovic, S. — 759, 935
Toncich, S.S. — 689
Tondiglia, V.P. — 1659
Tondra, M. — 371
Tondra, Mark — 323
Toner, John — 535
Toney, M.F. — 323, 488, 733, 785
Toney, Michael — 359
Tong, M. — 1130
Tong, P. — 530, 2210
Tong, S.Y. — 364, 448, 578, 728
Tong, X. — 515
Tong, Xiao — 1576
Tong, Yie — 1747
Tonks, D.L. — 1510, 1511
Tonks, O.L. — 1481
Tonner, B.P. — 160, 624, 830
Tonse, S. — 1816
Tonse, S.R. — 1833
Tooker, J. — 1334
Tool, G. — 1290, 1407
Toomre, J. — 2318
Toporkov, D.K. — 997
Topp, Michael R. — 1731
Toprakcioglu, C. — 414
Toral, R. — 2306
Toral, Raul — 715
Torczynski, J.R. — 2206
Torelli, G. — 1318
Torgeson, D. — 626
Torgeson, D.R. — 262, 313, 314
Torikai, E. — 174
Torkelson, J.M. — 144, 189, 190, 191, 414
Tornoe, R. — 1231
Tornow, W. — 1062, 1063, 1064, 1825, 1846
Torr, D.G. — 990
Torus Experiment Group — 2021
Tosatti, E. — 219, 406, 509, 510
Toscano, S. — 442
Tosolini, P. — 1403
Tossell, J.A. — 2348
Toth, C.A. — 318
Totland, K. — 504
Toto, Joseph L. — 1153
Tough, J.T. — 1042
Tour, J.M. — 158
Touryan, K.J. — 2242
Touzeau, M. — 2335
Tovar, M. — 125, 648
Towler, M.D. — 1582
Towner, F.J. — 283
Townsend, John — 1459
Townsend, H.E. — 162
Townsend, L.W. — 1062, 1063, 1848
Tōyama, S. — 1199
Toyama, T. — 986
Toyoda, H. — 2335, 2377
Toyoda, K. — 1311
Toyoshima, T. — 2356
Tozer, S.W. — 480
TPX Design Team — 2049
TPX Team — 2049
Tracy, E.R. — 1908, 2104
Tracy, M.D. — 2014
Trahan, M.W. — 1767
Trahern, G. — 1246
Traiber, A.J.S. — 256
Trail, C. — 1684
Trail, Steven S. — 576, 1575
Trail, W.K. — 1105
Trainoff, Steven — 469
Trainor, T.A. — 1833, 1843
Trakhtengerts, V.Yu. — 1968
Tralshawala, N. — 583
Trammell, G. — 395
Trammell, G.T. — 519
Tramontin, L. — 1980, 2012
Tran, H.J. — 1351
Tran, P. — 1242, 1323
Tran, T.C. — 545
Tran, T.T. — 231
Tranchet, J.Y. — 1563
Tran Khanh, C. — 2343
Tran-Ngoc, T. — 1377, 1388
Tranquada, J.M. — 647
Trantham, K.W. — 1117
Trappe, C. — 734
Trautman, J. — 146
Trautman, J.K. — 806
Trautmann, W. — 1853
Trautvetter, H.P. — 1844
Travier, C. — 1314
Travish, G. — 1234, 1285, 1323, 1327, 1997
Trayanov, A. — 961
Traynor, C.A. — 1127
Trbojevic, D. — 1238, 1242, 1270
Treas, P. — 1287
Trebek, J. — 2044
Trebek, J.E. — 2044
Trebek, H.R. — 681
Trebino, Rick — 1758
Trebinski, R. — 1593
Trees, B.R. — 758
Trelle, R.P. — 1859
Tremaine, Scott D. — 1046
Tremblay, A.-M.S. — 124, 584
Tremblay, B. — 2368
Tremblay, D. — 2368
Trent, B.C. — 1591
Tretyakova, Ch.A. — 948
Trevino, S.F. — 262
Trezeciak, R. — 1818
Triantafyllou, G.S. — 2196, 2203, 2216
Triantafyllou, M.S. — 2203
Tribaldos, V. — 2021
Tribble, J. — 120
Tribble, R. — 998
Triboulet, R. — 1579
Trifonov, D.E. — 1301
Trigatti, I.M.B. — 2318
Trigui, N. — 2243
Tringides, M.C. — 263, 569, 623, 625, 650
Trinh, E.H. — 2226
Tripathi, R.K. — 1062, 1848
Tripp, S. — 580
Triscone, J.-M. — 520
Tritt, T.M. — 453
Tritz, K. — 2007
Trivedi, N. — 463
Trivedi, Nandini — 526, 587
Troian, Sandra M. — 539, 591
Troischt, P. — 1844
Tromp, Rudolf M. — 623
Tron, A.M. — 1215, 1216
Tronc, D. — 1337
Tronc, P. — 321
Trost, H.-J. — 1283, 1683
Trotsenko, V. — 1324
Trott, W.M. — 1534
Trotta, L. Robert — 2229
Trotz, S. — 1282, 1310
Troullier, N. — 620, 796, 1128
Troutt, T.R. — 2278
Trouw, F.R. — 63, 64
Troxler, Thomas — 1731
Trucano, T.G. — 1481
Trudel, A. — 982, 1830
True, R. — 1938, 1939
Truemper, J. — 1635
Trugman, S.A. — 153
Trujillo, S.M. — 2217
Trukhin, V.M. — 2070
Truelsen, K. — 2245
Truman, C.R. — 2204, 2217, 2260
Trunin, I.R. — 1513
Trunin, R.F. — 1580, 1591
Tryggvason, G. — 2187, 2189, 2200
Trzcinski, W. — 1593
Trzeciak, W. — 1249
Tsai, C.C. — 570, 1901
Tsai, Chaochieh — 107
Tsai, D.H. — 1456
Tsai, J. — 1228
Tsai, M.-H. — 446, 509, 622
Tsai, S. — 122
Tsai, S.T. — 1944
Tsai, W.T. — 2282
Tsang, James — 149
Tsang, K. — 2343
Tsang, K.T. — 1344, 1969
Tsang, L. — 647, 764
Tsang, M.B. — 941, 942, 1824, 1828, 1853, 1854
Tsao, C. — 1169
Tsao, C.H. — 933, 934
Tsarik, S.V. — 1259
Tsau, L.M. — 285
Tschalaer, C. — 1368
Tse, J.S. — 56
Tsen, K.T. — 251
Tseng, J. — 1018
Tseng, P.K. — 104
Tseng, W.F. — 1769
Tseng, Y.T. — 453, 454
Tserepi, A.D. — 2336
Tsiang, E.Y. — 1363
Tsiopenyuk, Dmitry — 1759
Tsironis, G. — 168, 529, 1246
Tso, H.C. — 592
Tso, K. — 1812, 1853
Tsong, I.S.T. — 448, 509, 623, 728
Tsong, T.T. — 1618
Tsoukatos, A. — 784
Tsoupas, N. — 1297
Tsu, R. — 57, 278, 841
Tsubakimoto, K. — 2085
Tsubota, H. — 915
Tsuchidate, H. — 1326
Tsuchiya, M. — 1260
Tsuei, C.C. — 112, 458
Tsuei, K.-D. — 287, 365, 729, 834
Tsuge, S. — 2202
Tsui, D.C. — 80, 179, 235, 471, 591
Tsui, F. — 443, 672
Tsui, H. — 1924
Tsui, H.Y.W. — 1948, 1951, 1952, 1953
Tsuiji, K. — 1557, 1565, 1571, 1574
Tsuiji, S. — 1918
Tsujnetsugu, H. — 821
Tsukamoto, J. — 58
Tsukumoto, J. — 159
Tsunetsugu, H. — 822
Tsung, F.S. — 2103, 2109
Tsunoda, Y. — 534
Tsvelik, A. — 500
Tsvelik, A.M. — 500
Tsyganov, E. — 1219, 1220
T-10 Team — 2069
Tu, Charles — 1743
Tu, C.-S. — 151, 845
Tu, C.W. — 282, 531, 1611
Tu, J.F. — 464
Tu, K.N. — 206
Tu, Yuhai — 186, 668
Tucholski, M. — 1517
Tuck, Eric — 1644
Tucker, E. — 2120
Tucker, Roy — 816, 817
Tuckerman, L.S. — 2187
Tuckmantel, J. — 1376
Tudisco, O. — 2009
Tugarinov, S. — 2059
Tulchinsky, D.A. — 765
Tull, C. — 1828
Tull, C.E. — 949, 999
Tulupov, A.V. — 1276, 1331
Tuncel, E. — 182
Tung, Wu-Ki — 1641
Tung, Y.S. — 713
Tuominen, M.T. — 464
Tupa, D. — 1321
Tur, Yu.D. — 1316, 1358
Turan, O.F. — 2317
Turban, G. — 2329, 2339
Turchetti, G. — 1249
Turchi, P.E.A. — 153, 154, 256
Turchi, P.J. — 1896
Turchin, V.I. — 1321
Turchinets, W. — 1034, 1035
Turkel, E. — 2218
Turkevich, L.A. — 651

- Turkevich, Leonid A. — 651
Turley, P.J. — 813, 814
Turley, R. Steven — 1458
Turlington, L. — 1232, 1382
Turmel, W. — 1813
Turnbull, A. — 2066
Turnbull, A.D. — 1936, 2061, 2065, 2066, 2067, 2121
Turnbull, M.M. — 533
Turner, B. — 1685
Turner, B.C. — 1064
Turner, B.R. — 285
Turner, Dave — 795
Turner, Grenville — 1750
Turner, J. — 1636
Turner, J.E. — 84
Turner, J.L. — 1312, 1313, 1342
Turner, L. — 1292, 1976, 1977
Turner, Leaf — 1976
Turner, L.R. — 1293
Turner, M.F. — 2008
Turner, Michael S. — 2165
Turner, M.M. — 2353, 2365, 2370
Turner, R.E. — 1885
Turner, W. — 1261, 1263
Turner, W.C. — 1374
Turski, L.A. — 847
Turvan, L. — 1685
Turzhevsky, S.A. — 675
Tuszewski, M. — 2366
Tuthill, G.F. — 768
Tuts, P.M. — 984
Tuve, C. — 998, 999, 1815, 1828, 1853, 1854
Tweet, D.J. — 536
Twin, P.J. — 981
Tyagi, S. — 416, 838
Tycko, R. — 253, 1622
Tyler, J.M. — 83
Tyliszczak, T. — 451
Tylka, A.J. — 933, 948
Tynan, G. — 1912, 1937, 2008, 2063, 2095
Tynan, G.R. — 1912, 2007, 2008, 2095, 2111
Tynelius-Diez, K. — 2339
Tyson, E.L. — 1342
Tyunyaev, Y. — 1580
Tyuterev, V. G. — 1662
- Überall, H. — 952
Überall, Herbert — 951
Uchida, H. — 455
Uchida, K. — 1618
Uchida, T. — 72, 1502, 1519
Uchimoto, E. — 1979
Uchino, K. — 2332, 2338
Uchinokura, K. — 454
Uckan, N. — 2124
Uckan, N.A. — 2050
Uckan, T. — 1951, 2021, 2058
Udagawa, T. — 1858
Udo, Maria K. — 1743
Udovic, T.J. — 313
Ueda, A. — 182, 474, 627, 676, 735, 1244, 2166
Ueda, K. — 822, 1942, 2087, 2125
Ueda, Kazuo — 499, 821
Ueda, S. — 1264
Ueda, T. — 1359
Uedono, A. — 82
Uehara, Y. — 108
Ueng, T.S. — 1367
Ueno, M. — 1566
Ueyama, Y. — 1367
Uftring, S. — 377
Ugarte, D. — 52, 1605
- Uggerhoj, E. — 1197, 1404
Uglum, J. — 1948
Uglum, J.R. — 1948, 1954
Ugras, N.G. — 688
Uher, C. — 213, 443, 619
Uher, Ctirad — 127
Uher, T. — 1214
Uhlman, J.S. — 2271
Uhm, Han S. — 931, 932, 1276, 1277, 1281, 1939, 2114
Uhrig, M. — 1104
Uji, S. — 178
Ukeiley, L. — 2247
Ukhanov, M.N. — 1054
Ulc, S. — 1310
Ulitsky, M. — 2213
Ulivi, L. — 1594
Ullah, S. — 526, 772
Ullman, F.G. — 407
Ullmann, J.L. — 1062, 1826
Ulloa, S.E. — 399, 441
Ulloa, Sergio E. — 180, 281, 573
Ulrich, H. — 1818
Ulm, E.R. — 331
Ulmer, M.P. — 638, 694, 989
Ulmer, P. — 1034
Ulrich, A. — 2362
Ulrickson, M. — 1905, 2049
Uma, R. — 1990, 2118
Umezawa, H. — 1387
Umezawa, T. — 583, 2337
Umnov, A. — 1323
Umrigar, C.J. — 381
Umstadter, D. — 1279, 1998, 2081
Underwood, J.H. — 182
Underwood, K. — 1225
Underwood-Lemons, T. — 2348
Unertl, W.N. — 378, 379, 543
Ung, Kim-Chau — 585
Ungarish, M. — 2190, 2268
Ungashe, S.B. — 258
Unites, W. — 572
Unkelbach, W. — 962
Ünlü, Kenan — 1675, 1676
Unnikrishnan, K. — 1147
Unold, T. — 630
Unrau, P. — 1838
Unruh, K.M. — 746
Unser, K. — 1204, 1215
Upasani, R. — 779
Updegraff, S. — 1812
Uphaus, R.A. — 122
Urabe, Katsufumi — 1550
Urakawa, S. — 1519
Urasawa, S. — 1331
Urbach, J.S. — 694
Urbach, Lynn E. — 1775
Urbahn, J. — 1957
Urban, K. — 333, 334, 1611
Urban, M.W. — 511
Urbanczyk, W. — 1530
Urbina, J. — 218, 1817
Urlin, V.D. — 1512, 1555
Urrutia, J.M. — 1887, 1932
Uryupin, S. — 1917
Ushakov, V. — 1285, 1405
Usher, M. — 702
Ushigusa, K. — 2054
Ushioda, S. — 108, 827
Ushkov, V. — 1285
Usikov, D. — 1364
U.S. Iter Home Team — 2050
Usov, A. — 1332
Usov, Yu.A. — 1054
Uthuppan, J. — 2279
Utjuzh, A.N. — 1531
Utkin, A.V. — 1512, 1538, 1539
- Utku, S. — 982, 983, 1841
Utleid, D. — 1813, 1852
Utsumi, W. — 1502, 1519, 1574, 1587
Utterback, J. — 1228
Uyama, T. — 1975, 2057
- Vacaru, D. — 123, 171, 821
Vacatello, M. — 714
Vacca, L. — 1908
Vaccarezza, C. — 1265
Vaccaro, P.H. — 1168
Vaccaro, V.G. — 1202
Vacquie, S. — 2372
Vadlamannati, S. — 171
Vaecck, N. — 1095
Vagarali, S.S. — 1594
Vagarali, Suresh S. — 676
Vager, Z. — 1090, 1170
Vagner, I.D. — 1609, 1610
Vaguine, A. — 1203
Vahala, G. — 2108
Vahala, George — 2296, 2304
Vahala, L. — 2108
Vahedi, V. — 1899, 2353, 2365, 2366
Vaidya, Rajendra U. — 1586
Vainshtein, L.A. — 1128
Vaishnava, P.P. — 114
Vajnai, T. — 1090
Vakhrameev, Ju.S. — 1555
Vakhrushin, Yu.P. — 1301
Vaknin, D. — 122, 455
Valanju, P.M. — 1893, 1922, 1928, 1949, 1952
Valbuena, R. — 1205
Valdivia, J.A. — 2019
Vale, L.R. — 172
Valenti, R. — 588, 820
Valentine, Daniel T. — 2190
Valentini, H.-B. — 2348, 2374, 2378
Valentini, J.J. — 1760
Valeo, E.J. — 1888, 2094
Valicenti, R.A. — 1319
Valin, P. — 1437
Valiño, Luis — 2192
Valisa, M. — 1980
Val'Kov, A.E. — 1270, 1336
Valles, J.M., Jr. — 129, 693
Vallette, D.P. — 790
Valls, Oriol T. — 524, 580
Valls, O.T. — 188
Valovic, M. — 2008
Valyanskaya, T.V. — 1573
Van Alsten, J.G. — 657
Van Asselt, W. — 1266, 1363
Van Atta, C.W. — 2253, 2254, 2298
Van Bibber, K. — 1034, 1821
Van Bockstal, L. — 402
Van Brunt, R. — 2329
Van Brunt, R.J. — 2347, 2365
van Buren, E. — 941
Van Buren, G. — 1051, 1853
Van Buuren, T. — 56, 57, 157
Van Camp, P.E. — 321, 505, 632, 1587
Van Campen, D.G. — 503
Van Campen, S.D. — 176, 537
Vancso, G.J. — 1630
Van Dalen, A. — 1066
Van Dam, J.W. — 1944, 2054
Van den Berg, L. — 746
van den Berk, F. — 1274
Van den Bossche, M. — 1339
Vanden-Broeck, J.-M. — 2225
Vanderah, T.A. — 242, 1543, 1573
van der Beek, C.J. — 69
Vanderbilt, D. — 674
Vanderbilt, David — 493, 505, 507, 563, 571
- Vanderborgh, Craig — 1579
Van der Gagg, B.P. — 393
Vanderhaegen, D. — 2079
Vanderhart, D.L. — 413
Van der Heide, J. — 1389
Vanderhoff, John W. — 1735
Van Der Kamp, B. — 2370
Van der Laan, J. — 1226, 1275
van der Marel, D. — 273
Vandermeulen, D.L. — 971
VanderMolen, A. — 927, 940, 1854
Vander Molen, A.M. — 940, 941, 1815, 1828
VanderMolen, S. — 998, 1852
Van Der Mullen, J.A.M. — 2366, 2371
Vanderplaats, N.R. — 2003
Vanderpool, A.O. — 1817
Van Der Sanden, M.C.M. — 2371
van der Steenhoven, G. — 1818
van der Stok, P.D.V. — 1274
Van der Vaart, N.C. — 1614
Van der Veen, J.K. — 963
Van der Vegt, Jaap J. — 2233
Van der Velde, J.C. — 1020
Vandervoort, K.G. — 597
Van Der Woude, F. — 365
Van Der Zande, W.J. — 2363
van der Zant, H.S.J. — 804
Van De Sanden, M.C.M. — 2362, 2376
Vandeusen, A. — 1200, 1201
VanDeusen, A.L. — 1200
van de Vijver, Y. — 1274
Van de Walle, C. — 660
Van Dijk, R. — 989
Vandiver, R.J. — 1117
Van Doren, J.M. — 1103
Van Doren, V.E. — 321, 505, 632, 1587
Van Dover, B. — 113
Van Dover, R.B. — 835
Van Driel, H.M. — 315, 316, 808, 1746, 1775
Vandromme, D. — 2247
Vandsburger, Uri — 2275
Vandyck, O. — 1253
Van Dyck, Robert, Jr. — 1044
Van Dyck, R.S., Jr. — 946, 947
Vanecek, D. — 1303, 1994, 1995
Van Eck, A. — 2302
Van Ek, J. — 309
van Elp, J. — 268
Van Elp, Jan — 151
Van Es, J. — 1201
Van Garderen, G. — 1226
Van Haesendonck, C. — 393, 670, 1615, 1623
Van Harlingen, D.J. — 112, 327, 637, 691, 1625
van Heerden, P.J. — 769
Van Hieu, Le — 2355
Van Hinsberg, M.G.E. — 1506
Van Hook, Stephen J. — 2291
Van Hove, M.A. — 364, 504, 627
Vanhoy, J.R. — 1818
Van Hutten, P.F. — 414, 418
Vanka, S.P. — 2206, 2285
Van Kempen, H. — 826
Van Keuls, F.W. — 1022
VanLandingham, M.R. — 351
Van Leeuwen, R.A. — 618
Van Leeuwen, Robert A. — 371
Van Lierde, Patrick — 1750
Van Nieuwenhove, R. — 2058
Vannucci, A. — 1924, 1950
van Oers, W. — 1836

- Van Oers, W.T.H. — 1036, 1343, 1847
 Vanolst, D. — 1225
 Van Oost, G. — 2058
 van Paradijs, J. — 1635
 Van Schilfgaarde, M. — 208, 443, 561, 687
 Van Schilfgaarde, Mark — 105, 730
 Van Schilfgaarde, M. — 560
 Van Sciver, Steven W. — 346
 Van Scoy, F. — 310
 Van Scyoc, J.M. — 260, 746
 Van Staagen, Peter K. — 1237
 Vansteenbergh, M.L. — 1660
 Van Steenberg, A. — 1310
 Van Stryland, E.W. — 1772
 van Swol, Frank — 1446
 Van Thiel, M. — 478, 1507
 Van Vechten, Deborah — 690
 Van Vechten, J.A. — 843
 Van Vechten, James A. — 446, 675
 Van Veenendaal, M.A. — 699, 700
 Van Verst, S. — 1034
 van Wees, Bart — 492
 Van Westrum, D.C. — 1389
 Van Wijngaarden, W.A. — 1123, 1737
 van Wormer, L. — 2175
 van Zeijts, J. — 1286
 Varatharajah, P. — 1763
 Vardeny, Z. — 57, 501
 Vardeny, Z.V. — 57, 206, 210, 211, 257, 258, 502
 Vareka, W. — 502
 Vareka, W.A. — 104
 Varendorff, M. — 968
 Varias, A. — 2021
 Varin, R.A. — 1577
 Varley, B.J. — 1807, 1856
 Varma, C.M. — 500
 Varma, S. — 160, 624
 Varner, R. — 1829, 1846
 Vartuli, C. — 64
 Vary, J.P. — 1822, 1838
 Vasconcelos, Giovanni — 2200
 Vaselli, M. — 2044
 Vashishta, Priya — 441, 574, 673, 675, 757, 795
 Vasilev, A. — 2070
 Vasil'ev, A.N. — 1251
 Vasiliev, A. — 1284
 Vasiliev, A.N. — 1054
 Vasilkov, V. — 1486
 Vasilopoulos, P. — 401, 592, 593
 Vasin, N.L. — 1954
 Vaska, P. — 980, 981, 1856
 Vasko, F.T. — 593, 647
 Vasques, R.P. — 156
 Vasquez, D.A. — 470, 1637, 2276, 2277, 2310
 Vasquez, R.P. — 688
 Vass, T. — 1048, 1844
 Vasseur, Georges — 1018
 Vassileva, I. — 711
 Vassiliou, John K. — 217
 Vassiliou, K. — 1566
 Vaterlaus, A. — 231
 Vattulainen, I. — 1450
 Vatutin, V. — 1203
 Vaughan, G.B.M. — 253
 Vaughan, M.T. — 1593
 Vaughn, G. — 1273
 Vavasour, J.D. — 604
 Vavra, W. — 619
 Vawter, G.A. — 1713, 1724
 Vaziri, K. — 914, 915
 Vazquez, C. — 216
 Veal, B.W. — 188, 226, 242, 273, 274
 Veale, J.R. — 1109
 Vecchio, K.S. — 1480, 1592
 Vedensky, D. — 2190
 Vedrenne, G. — 1638
 Veeck, A. — 1812
 Veerasingam, R. — 1661, 1898
 Veerasingam, Ramana — 2354
 Vega, J. — 2021
 Vega-Carrillo, Hecotr Rene — 929
 Vega-Carrillo, Hector Rene — 928
 Vega-Carrillo, H.R. — 2172
 Vejcik, S. — 1204, 1205
 Vekić, M. — 289, 585
 Velarde, M.G. — 2292
 Velasquez, Steven — 366
 Veliadis, J.V.D. — 1754
 Velkovska, J. — 926, 812
 Vella, M.C. — 1320, 2052
 Veltrop, R.G. — 2357
 Vemuri, S. — 1635
 Vender, D. — 2355, 2367
 Venegas, P.A. — 73
 Venezia, V. — 1669
 Venkataraman, C.T. — 324
 Venkatasubramanian, N. — 409, 417
 Venkatesan, T. — 59, 212, 227, 388, 461, 805, 806, 838
 Venkatesan, T.C.A. — 1646
 Venkatesen, T. — 247
 Venkateswaran, C. — 1531, 1573
 Venkateswaran, U. — 265
 Venkateswaran, U.D. — 797, 1572, 1589
 Venkateswarlu, P. — 1735
 Venkateswarlu, Putcha — 1715, 1728
 Venturini, E.L. — 68, 173, 749
 Ventzek, Peter L.G. — 2330, 2356, 2369
 Ventzek, P.L.G. — 2368
 Venugopal, G. — 190
 Venus, D. — 287
 Verastegui, R. — 1671
 Verbaarschot, J. — 1824
 Verbist, G. — 289
 Verboncoeur, J.P. — 1893
 Verdeyen, J.T. — 2352, 2359, 2375
 Verdico, C. — 1386
 Verdier, A. — 1241, 1247
 Verdier, Peter H. — 488
 Verdon, C.P. — 1885, 1961, 1962, 2010, 2084, 2085
 Vergamini, T. — 1396
 Verghese, S. — 1624
 Verhaar, B.J. — 1111, 1168, 1169, 1172
 Vershkov, V.A. — 1954
 Vervisch, L. — 2247, 2268
 Verzicco, R. — 2312
 Vescovi, M. — 1287
 Vesenska, James — 51
 Vesey, Roger — 1919
 Veshcherevich, V. — 1354, 1384, 1397
 Vessot, R.F.C. — 1170
 Vetoulis, G. — 2019
 Vetter, A.M. — 1390
 Vetter, P. — 1111, 1121
 Vetterman, B. — 1197
 Veytsman, Boris — 192, 820
 Vezie, D.L. — 418
 Viana, C.A.N. — 1521
 Viano, Ann M. — 681
 Viano, J.B. — 1852
 Vibert, J-F. — 318
 Victor, G.A. — 1159
 Vidal, F. — 2087
 Vidal, François — 2124
 Vidal, P. — 1563
 Vidali, G. — 650
 Vidali, Gianfranco — 799
 Vidali, Gianfranco — 800
 Vidoni, Thomas J. — 2204
 Viel, D. — 935
 Vier, D. — 125
 Vierheller, T.R. — 1660
 Viescas, A.J. — 122, 642, 699
 Viesti, G. — 1813
 Vigdor, S.E. — 1847
 Viggiano, A.A. — 1103, 2361, 2371
 Viggiano, Albert — 2370
 Viggiano, J.M. — 636
 Vighiante, A. — 235, 252
 Vignale, G. — 187, 848
 Vignale, Giovanni — 230
 Vignola, G. — 1275, 1287, 1368
 Vihsalo, J.T. — 1588
 Vijayakumar, V. — 1514
 Vijayalakshmi, S. — 508, 740, 2166
 Vijayaraghavan, R. — 326
 Vijaya Sankar, M.K. — 2006, 2006
 Vikhrov, V. — 1036
 Vilches, O.E. — 747, 748
 Vilchez, Cabrerizo M.A. — 121
 Villafuerte, M. — 648
 Villalobos, J. — 157, 1671
 Villani, M.F. — 1652
 Villarba, M. — 793
 Villarreal, J. — 1671
 Villarreal, J.R. — 1672
 Villate, D. — 1200, 1301, 1302
 Villeneuve, A. — 1766
 Villeneuve, Pierre R. — 1722
 Villeneuve, R. — 106
 Villeret, M. — 797, 798
 Viñals, J. — 470, 542, 590, 2245, 2306
 Vincena, S. — 1965
 Vincent, A. — 1461
 Vincent, E. — 475
 Vincent, R.V. — 2267
 Vinnik, V. — 1401
 Vinokur, V.M. — 69, 170, 171, 388, 636, 802, 836
 Vinokurov, N.A. — 1234
 Viola, R. — 1298
 Viola, V.E. — 1828
 Virgil, M. — 1849
 Virshup, G.F. — 327
 Visani, P. — 130
 Vise, J. — 1841
 Visher, John — 1458
 Vishnevsky, I.N. — 1270, 1336
 Visnjic, V. — 1269, 1270
 Visotsky, S. — 1316
 Viswanath, V.S. — 594, 595
 Vitek, V. — 208, 269
 Vitela, J. — 1928
 Vitello, P. — 2357
 Vitello, P.A. — 2345, 2361
 Vithana, Hemasiri — 1659
 Vithana, H.K.M. — 652
 Vithana, H.M.K. — 653, 768
 Vithayathil, J.P. — 175
 Vitiello, S.A. — 69, 137
 Vitomirov, Ilija — 102
 Vitomirov, I.M. — 284
 Vittitoe, C.N. — 1533
 Vittoria, C. — 331, 751
 Vitus, C. — 184
 Vivien, J.P. — 981
 Vizcarra, S. — 1685
 Vizkelethy, G. — 1675, 1684, 1685
 Vlad, G. — 1944
 Vlahovic, B. — 1825, 1835, 1846
 Vlasov, A. — 931, 1282
 Vlastou, R. — 1049
 Vlieds, A. — 1232
 Vlieds, A.E. — 1230, 1288, 1391, 1396
 Vloerberghs, H. — 393
 v. Löhneysen, H. — 129
 Vo, D. — 1050
 Vo, D.T. — 1014, 1049, 1050
 Vobly, P. — 1290
 Vodopianov, F. — 1390
 Voelker, S. — 1021
 Vogel, H. — 1390
 Vogel, P. — 1854
 Vogel, V. — 455
 Vogelaar, R.B. — 983, 1841, 1850
 Voges, W. — 994
 Vogt, J.M. — 915, 1820
 Vohra, Yogesh K. — 254, 676, 1531, 1566, 1594, 1595
 Voigt, J.A. — 749
 Voitsekhovich, I.A. — 1927
 Vojtech, R.J. — 926
 Vold, Terje G. — 317
 Volin, K.E. — 390
 Volk, K. — 1319
 Völkel, A.R. — 648
 Volkov, A. — 75
 Volkov, S. — 1896
 Vollmayr, H.T. — 263
 Volokhov, V. — 1367
 Volokitin, V.S. — 1494
 Voloshin, R.N. — 1557
 Volzhev, A.A. — 1301
 Vonach, H. — 1051
 Von Ballmoos, P. — 1638
 Von Delft, J. — 766
 Vong, F. — 1226
 von Goeler, S. — 2092, 2093
 von Goeller, S. — 2094
 von Klitzing, K. — 393, 402
 von Meerwall, E. — 93, 348, 527, 603, 1654, 1661
 Von Molnar, S. — 183, 528
 Von Montigny, C. — 988, 988, 989, 1635
 Von Olst, D. — 1225
 Von Oppen, Felix — 707
 von Ortenberg, M. — 595
 Von Przewoski, B. — 986
 Von Rosenvinge, T.T. — 947, 948
 Voorhees, P.W. — 305
 Vormann, H. — 1319
 Vorobieff, P. — 2301
 Vorobjev, O.Yu. — 1494
 Vorontsov, A.N. — 1577
 Vorontsov, A.A. — 1574
 Voroshilov, A. — 1365, 1367
 Vos, L. — 1210
 Vos, W.L. — 169, 255, 1500
 Vosen, D. — 1092
 Voshall, R.E. — 2344
 Vosko, S.H. — 88
 Voss, D. — 1249
 Voss, Heike — 1714
 Voss, Jeffrey M. — 1732
 Voss, K.E. — 2093
 Voss, K.F. — 457
 Vossnack, O. — 1811
 Votaw, A. — 1200, 1274
 Voter, Arthur F. — 373, 506
 Vouillot, J.M. — 1221
 Vourvopoulos, G. — 928
 Vouzoukas, S. — 1841, 1844, 2175
 Vredendregt, E. — 1155
 Vreeland, W.B. — 511
 Vretenar, M. — 1318
 Vrtis, J. — 544
 Vsevolozhskaya, T. — 1367
 Vu, H. — 1915
 Vu, Hoanh X. — 1447

- Vu, H.X. — 1898, 1916
 Vu, L.N. — 691
 Vu, M.N. — 132
 Vu, T.Q. — 1849
 Vugmeister, B. — 351
 Vugmeister, B.E. — 194
 Vuillermoz, P. — 1435
 Vukovic, M. — 2024, 2025, 2026
 Vukovic, T.M. — 2024
 Vulcan, W. — 1317
 Vuppuladhadium, Rama — 1715
 Vurgaftman, I. — 807, 808
 Vušković, L. — 2331
 Yu-Tien, G. — 2120
 Vvedensky, D.D. — 379, 670
 Vylet, V. — 1234
 Vylov, Ts. — 1368
- Wachter, P. — 104
 Wackerle, Jerry — 1536, 1548
 Wada, H. — 2364
 Wada, R. — 1813, 1852
 Wada, S. — 1605
 Waddill, G.D. — 162, 226, 364, 831
 Waddington, C.J. — 949, 999, 1061
 Waddington, J.C. — 1805
 Waddon, A.J. — 92
 Wade, M. — 2067
 Wade, M.R. — 1935, 1936, 1937, 2021, 2058, 2059, 2064, 2071
 Wade, T.J. — 2107
 Wadehra, J.M. — 1102, 1994, 2364
 Wadhwa, S. — 1014
 Wadlinger, E.A. — 1273
 Wadsworth, B. — 1831
 Wadsworth, D.C. — 2263
 Wadsworth, R. — 980, 981, 1049, 1856
 Waelbroeck, F. — 1926
 Waelbroeck, F.L. — 1945
 Waganaar, W. — 1988
 Waganaar, W.J. — 1988
 Wagener, D. — 346
 Waghmare, U.V. — 406
 Wagner, D. — 2336
 Wagner, J. — 173
 Wagner, J.L. — 242
 Wagner, J.S. — 1361, 1767
 Wagner, L.S. — 1968
 Wagner, O.E. — 456, 1041, 2158
 Wagner, Paul — 349
 Wagner, R. — 2081
 Wagner, W. — 1294
 Wagon, F. — 1538
 Wagshul, M. — 934, 1169
 Wählin, E.K. — 1157
 Wahnström, G. — 313
 Wahnström, Göran — 264
 Wai, P.K.A. — 1738, 1748
 Waisman, E. — 2088
 Wait, G.D. — 1351, 1393, 1395, 1403
 Wakatani, M. — 1944
 Wakatsuki, M. — 1588
 Wakatsuki, Masao — 1509, 1550
 Wake, D.R. — 282, 593
 Wake, M. — 1290
 Walba, D.M. — 768
 Walch, Bernhard P. — 1103
 Walch, Bob — 1964
 Walch, R. — 920, 921, 996
 Walck, S.N. — 570
 Walczak, Wanda J. — 420
 Wald, J.S. — 964
 Wald, K. — 393
 Walden, P. — 1859
 Waldram, J.R. — 840
 Walecki, W.J. — 1720
- Waleffe, Fabian — 2290
 Walend, D. — 1300, 1385
 Walet, R. — 1015
 Walhout, M. — 934
 Waligorski, G. — 1094
 Walkenhorst, A. — 806
 Walker, A. — 2175
 Walker, A.C. — 1766
 Walker, D.J.C. — 222
 Walker, D.N. — 1965
 Walker, D.T. — 2216
 Walker, D.W. — 1900
 Walker, E. — 1624
 Walker, F.J. — 385
 Walker, G.E. — 1016, 1858
 Walker, J. — 508
 Walker, J.C. — 442, 617
 Walker, J.D. — 1538, 1562
 Walker, K. — 409
 Walker, M. — 2068
 Walker, Mark L. — 1460
 Walker, M.B. — 252
 Walker, N. — 1243
 Walker, N.J. — 1237, 1238, 1239, 1256
 Walker, R. — 1034, 1037, 1821
 Walker, R.P. — 1294, 1329, 1330
 Walker, T. — 1169, 2346
 Wallace, C.D. — 1170, 2346
 Wallace, D. — 2303
 Wallace, D.C. — 632
 Wallace, E. — 1386, 1997
 Wallace, J. — 1398, 1915, 2262, 2270, 2313
 Wallace, J.D. — 1388, 1399
 Wallace, J.M. — 2083
 Wallace, J.P. — 182
 Wallace, R.J. — 1885, 1961
 Wallace, S.C. — 1628
 Waller, J.M. — 423
 Wallin, M. — 239
 Wallin, Mats — 462
 Walling, L. — 1263, 1351, 1377, 1379, 1390
 Walling, Rosemary — 1986
 Walling, R.S. — 1986, 1987, 2082, 2117
 Wallis, C.R. — 813, 814
 Wallis, R.F. — 728, 848
 Wallyn, P. — 1638
 Walmsley, I.A. — 1734
 Walpe, J.C. — 980, 1819
 Walser, R. — 1758
 Walsh, J. — 931
 Walsh, M. — 2008
 Walsh, M.J. — 1922
 Walsh, T.D.G. — 1735, 1740, 1749
 Walstedt, R.E. — 368
 Walstrom, P. — 1387
 Walsworth, R.L. — 1170
 Walter, C.W. — 1092
 Walter, Diane Powell — 1732
 Walter, M. — 1348
 Walter, M.T. — 1282, 2002
 Walter, R.L. — 1063, 1064, 1825
 Walter, W. — 1092
 Walters, C.F. — 286
 Walters, G.K. — 1155, 1164
 Walters, W.B. — 980, 1805, 1818
 Walters, W.P. — 1538, 1562
 Walti, M. — 1206
 Walton, Donnell — 1748
 Walton, J. — 1205
 Waltz, R.E. — 1945, 2014, 2100, 2102
 Walukiewicz, W. — 508, 1611
 Walz, D. — 1242
 Walz, H.V. — 1294
 Wamsley, P.R. — 468
- Wan, H. — 673, 784
 Wan, W. — 1241
 Wan, Yi — 120
 Wan, Y.M. — 224
 Wander, A. — 627
 Wanderer, P. — 1290, 1340, 1341
 Wandzura, Stephen — 1458
 Wang, C. — 338, 351, 1276, 1277, 1329, 1463
 Wang, C.H. — 190
 Wang, Chen — 1607
 Wang, Ching-yue — 1735
 Wang, C.L. — 138
 Wang, C.S. — 110, 238, 1225
 Wang, C.W. — 238
 Wang, C.Z. — 153, 372, 440, 505, 794
 Wang, D. — 619, 672, 928, 1212, 1261, 1352, 1366, 1368, 2170
 Wang, D.B. — 1858
 Wang, D.S. — 370, 830
 Wang, D.X. — 1236, 1345, 1363, 1365, 2119
 Wang, D.Y. — 1229, 1234
 Wang, E.Y. — 2025, 2026
 Wang, F. — 457, 458, 1254, 2110
 Wang, Feng — 1540
 Wang, F.H. — 1404
 Wang, G. — 211, 1315
 Wang, G.-C. — 370, 794
 Wang, G.J. — 269
 Wang, H. — 142, 540, 1089, 1128, 1132, 1151, 1163
 Wang, Hailin — 1753
 Wang, Hao — 2168, 2174
 Wang, H.C. — 235, 1617
 Wang, H.H. — 316, 825
 Wang, Hong — 468
 Wang, Hua — 2188
 Wang, H.X. — 58
 Wang, J. — 122, 526, 568, 688, 828, 930, 1091, 1128, 1133, 1163, 1223, 1455, 1772, 2091, 2103
 Wang, J.G. — 1236, 1345, 1363, 1365, 1991, 2119
 Wang, Jia — 360
 Wang, Jian — 1617
 Wang, Jian-Qing — 733, 784
 Wang, Jiebing — 1129
 Wang, Jihai — 1525
 Wang, J.K. — 471
 Wang, J.L. — 336
 Wang, J.P. — 1663, 2076
 Wang, J.-Q. — 708, 810
 Wang, J.T. — 122, 642, 817
 Wang, J.W. — 1230, 1288, 1381, 1390, 1396
 Wang, J.-Z. — 317
 Wang, K. — 1034, 1035, 1320, 1821
 Wang, K.A. — 204, 368, 501
 Wang, Kai-An — 501, 502
 Wang, K.L. — 84, 285, 706
 Wang, Kwanghsi — 1151
 Wang, L. — 53, 153, 781, 982, 1051, 1955
 Wang, Lai-Sheng — 221
 Wang, Lei — 56
 Wang, Lilih — 1537
 Wang, Lin-Wang — 140
 Wang, L.-P. — 2243
 Wang, M. — 1817, 1818
 Wang, M.H. — 1228, 1818
 Wang, P. — 2043, 2083, 2086
 Wang, Q. — 2228
 Wang, Qiaoling — 1146
 Wang, Qingyu — 1772
 Wang, Q.J. — 252
 Wang, Q.S. — 2000
 Wang, R.G. — 682
- Wang, Roy — 1018
 Wang, R.P. — 175, 791
 Wang, R.W. — 504
 Wang, S. — 78, 367, 632, 998, 999, 1022, 1815, 1853, 1854
 Wang, S.C. — 1719, 1724
 Wang, Shi-Qing — 94, 95, 715
 Wang, Shumin — 1768
 Wang, S.J. — 2044
 Wang, S.-K. — 650
 Wang, S.Q. — 750
 Wang, T. — 466, 693, 1346
 Wang, T.F. — 1013, 1050, 1356
 Wang, T.G. — 2226
 Wang, T.-S. — 1207
 Wang, W. — 93, 418
 Wang, W.C. — 235
 Wang, W.I. — 180
 Wang, W.P. — 487
 Wang, W.Q. — 1568
 Wang, X. — 334, 383, 437, 703, 1200, 1368, 2025, 2026
 Wang, X.-D. — 395, 617
 Wang, X.-H. — 1819
 Wang, Xing-Ke — 759
 Wang, X.J. — 1220, 1311
 Wang, X.K. — 53, 111, 205
 Wang, X.-N. — 1823
 Wang, X.Q. — 1388, 1399
 Wang, X.Y. — 483, 529, 1668, 1670
 Wang, X.-Z. — 1015, 1819
 Wang, Y. — 115, 138, 204, 394, 540, 698, 982, 1051, 1052, 1169, 1197, 1245, 1257, 1593, 1655, 1662, 1841, 1956, 2267, 2363
 Wang, Yan — 208, 313
 Wang, Yang — 93, 222, 440, 1661
 Wang, Y.F. — 1575
 Wang, Ying — 502
 Wang, Y.J. — 442
 Wang, Y.L. — 1199
 Wang, Yongjiang — 1617
 Wang, Y.Q. — 346
 Wang, Y.R. — 272, 628, 694
 Wang, Z. — 171, 504, 638, 1089, 1095, 1132
 Wang, Zeping — 1537
 Wang, Z.F. — 1815
 Wang, Z.H. — 368
 Wang, Zhenming — 1621
 Wang, Zifu — 254
 Wang, Ziqiang — 500, 638
 Wang, Z.Q. — 61
 Wang, Z.W. — 1118
 Wang, Z.Z. — 691
 Wangler, T. — 1334, 1362, 1365, 1390
 Wansley, K. — 2174
 Waran, Anitra — 2201
 Warburton, R.J. — 528
 Ward, B.F.L. — 985, 1054, 1055
 Ward, D. — 980, 1805, 1857
 Ward, D.J. — 2013
 Ward, H. — 942
 Ware, A.S. — 1911
 Ware, K. — 1716
 Wargelin, B.J. — 1152
 Waring, M.P. — 980, 981
 Wark, C.E. — 2261
 Wark, J.S. — 2043, 2079, 2082
 Warmack, B. — 280
 Warmack, R.J. — 118, 597
 Warman, L.K. — 766
 Warn, C. — 1215
 Warner, D. — 1290
 Warner, D.D. — 1856
 Warnes, R.H. — 1510
 Warnock, J. — 373

- Warnock, R.L. — 1249
 Warnock, Robert L. — 1349
 Warren, Gary — 1894, 2004
 Warren, Harry P. — 1966
 Warren, James A. — 589
 Warren, M.E. — 1724
 Warren, M.S. — 1463
 Warren, P. — 998, 999, 1815, 1828, 1853, 1854
 Warren, W.W. — 1582
 Warren, W.W., Jr. — 80, 175, 376, 527, 731, 791
 Wartak, M.S. — 586
 Warthen, B. — 1499
 Warwick, T. — 1208
 Waschewsky, G.C.G. — 549
 Washburn, S. — 128, 229, 230
 Washiyama, J. — 419
 Wasilewski, Z.R. — 706
 Wasserman, E.G. — 913
 Wasson, O.A. — 1051
 Waszczak, J.V. — 113, 835
 Watanabe, A. — 1328
 Watanabe, H. — 107, 256, 657, 658, 713
 Watanabe, K. — 1260
 Watanabe, M. — 1326, 2045
 Watanabe, Nobuaki — 1612
 Watanabe, S. — 1151, 1197
 Watanabe, T. — 1197
 Watanabe, Y. — 1572
 Watanabe, Yoichi — 2351
 Waters, G. — 1393, 1395
 Waters, J. — 1234
 Waters, L. — 1440
 Watkins, G.D. — 376, 843, 844
 Watkins, J.G. — 1937, 2059, 2060, 2063
 Watkins, R.B. — 1109, 2163
 Watmuff, J.H. — 2237
 Watson, D. — 944
 Watson, Deborah — 250
 Watson, Deborah K. — 1158
 Watson, D.K. — 1127
 Watson, D.L. — 943, 1817
 Watson, Gavin M. — 437
 Watson, George H. — 1722
 Watson, G.H. — 76
 Watson, G.I. — 581
 Watson, J. — 982
 Watson, John — 1746
 Watson, J.W. — 982, 1034, 1841
 Watson, R.E. — 207
 Watson, Richard W. — 1443
 Watson, R.L. — 1813
 Watson, S. — 1218, 1314
 Watt, R. — 1884, 2083
 Watt, R.G. — 1916, 2083
 Watterson, R. — 1956
 Watts, Christopher — 1909
 Watts, G. — 930
 Watts, R. — 1621
 Watts, Robert — 149
 Watts, Robert O. — 152, 169, 682
 Waugh, D.W. — 2224
 Way, B.M. — 56, 57, 157
 Waymouth, John F. — 2360
 Wayner, Peter C., Jr. — 979
 Weare, J.H. — 68
 Weart, Spencer — 978
 Weatherford, C.A. — 1100, 2369
 Weatherford, Charles A. — 197, 1441
 Weatherly, D.C. — 2266, 2304
 Weathers, D.L. — 1674, 1675, 1684, 1685
 Weathers, M.S. — 1489, 1527
 Weaver, B.D. — 835
 Weaver, D.P. — 2263
 Weaver, H.J. — 1257
 Weaver, J. — 1283, 1955
 Weaver, J.N. — 1312
 Weaver, T. — 1814
 Weaver, W.D. — 1159
 Webb, A.W. — 1516, 1543, 1545, 1573
 Webb, D.J. — 1606
 Webb, G.W. — 516
 Webb, M.B. — 509
 Webb, R.A. — 393
 Webb, R.L. — 736, 786
 Webber, R. — 1200
 Webber, R.C. — 1214
 Webber, Robert C. — 1308
 Webber, W.R. — 933, 949
 Weber, B.V. — 1989, 2074
 Weber, C. — 921, 996
 Weber, E. — 1618
 Weber, E.R. — 693, 1611
 Weber, F. — 917
 Weber, G. — 1485
 Weber, J. — 56
 Weber, K. — 1296, 1406
 Weber, M.J. — 578
 Weber, S. — 220
 Weber, S.V. — 1961, 2085
 Weber, Werner — 633
 Weber, W.H. — 669, 834
 Webers, G. — 1352, 1368, 1369
 Wedeking, M. — 1321
 Wedlock, M.R. — 1760
 Weeks, J.D. — 671, 701
 Weerasooriya, T. — 1599
 Weertman, J. — 789
 Weerts, Harry — 1641
 Wefel, J.P. — 932, 949
 Wegner, A.B. — 1767
 Wegner, G. — 1660
 Wehring, Bernard W. — 1676
 Wehring, W. — 1675
 Wei, C.M. — 364, 578, 1618
 Wei, D. — 176
 Wei, D.H. — 650
 Wei, J. — 1247, 1358, 1364
 Wei, K. — 1251
 Wei, Siqing — 219
 Wei, Su-Huai — 737
 Wei, T. — 2217, 2218
 Wei, W. — 454
 Wei, X. — 206, 210, 211, 258
 Wei, Y. — 1537
 Wei, Yi — 509, 728
 Wei, Y.Z. — 120
 Wei, Z. — 1105, 2334
 Weichold, M.H. — 706, 763
 Weidenmüller, H.A. — 1823
 Weidhaas, P. — 1892
 Weidman, D.J. — 2047
 Weidman, P.D. — 2238, 2245, 2250
 Weidmann, Matthew R. — 514
 Weidner, D.E. — 2200
 Weidner, D.J. — 1593
 Weidner, Donald J. — 1516
 Weidner, H. — 467
 Weigand, A. — 2282
 Weihe, F. — 1736
 Weihreter, E. — 1324
 Weil, J.L. — 1051
 Weiland, Jan — 2038
 Weiland, R.M. — 2038
 Weill, G. — 1530
 Weimann, G. — 400
 Weimer, Carl — 1121
 Weimer, M. — 231, 233, 335
 Weinberger, Doreen — 960
 Weinberger, P. — 799
 Weiner, A.M. — 1774
 Weiner, J. — 1169
 Weiner, J.H. — 244, 416
 Weiner, J.S. — 393, 807
 Weiner, M. — 1716, 1720
 Weiner, V.S. — 844
 Weinert, M. — 207
 Weinert, R.W. — 806
 Weingarten, A. — 1895
 Weingarten, Don — 1459
 Weingarten, W. — 1376
 Weinstein, B. — 181, 1589
 Weinstein, B.A. — 512
 Weinstein, John — 1013
 Weinstein, L. — 1034
 Weinstein, Roy — 907
 Weinstock, J. — 2215
 Weir, S.T. — 186, 1520, 1551
 Weisel, G.J. — 1064
 Weisend, J., II — 1290
 Weisgerber, W. — 1511
 Weisheit, J. — 1118
 Weisler, D. — 658
 Weislogel, M.M. — 2199
 Weiss, A. — 579, 800
 Weiss, A.H. — 728, 800
 Weiss, H. — 670
 Weiss, L.I. — 1052
 Weiss, M.S. — 1807
 Weiss, P.S. — 403, 539
 Weiss, R. — 1273, 1859
 Weiss, S. — 1744
 Weisse, E. — 1197
 Weissenberger, D. — 1326
 Weissenburger, D. — 1234
 Weisshaar, Andreas — 842
 Weisskopf, Victor H. — 971
 Weissman, L. — 1831
 Weissman, M.B. — 370, 453, 475, 533, 534, 619, 818
 Weisz, S. — 1197
 Weiszflog, M. — 980
 Weitekamp, D.P. — 1142
 Weitering, H. — 726
 Weitering, H.H. — 451, 2161
 Weitz, D.A. — 115, 165, 405, 435
 Weitzner, H. — 2076
 Weizhong, Wang — 1093
 Welbourne, L.A. — 1325, 1361, 1365
 Welch, B. — 1956, 1957
 Welch, B.L. — 1943, 1955, 1957
 Welch, David O. — 801
 Welch, D.O. — 345
 Welch, D.R. — 1359, 2046, 2074
 Welch, James J. — 1355
 Welge, Karl E. — 1735
 Welipitiya, D. — 816
 Weller, D. — 785
 Weller, Horst — 301
 Weller, H.R. — 1846, 1858
 Weller, Robert A. — 2168
 Wellman, J. — 671
 Wells, A. — 965
 Wells, B.C. — 1928, 2007, 2111
 Wells, B.O. — 152, 274, 275
 Wells, F. — 1211
 Wells, J. — 113
 Wells, J.C. — 1014
 Wells, R.P. — 1320, 1335, 2052
 Wells, S. — 1050, 1829
 Wells, S.P. — 1830, 1845, 1846
 Wellstood, F.C. — 519, 690, 691, 806
 Welnak, J.T. — 182
 Welp, U. — 72, 345, 347, 635, 771, 782, 802
 Welsh, D.J. — 689
 Welsh, J.A. — 1727
 Welsh, R. — 1815
 Wertz, J. — 1624
 Wen, A.T. — 2368
 Wen, C.Y. — 2232
 Wen, F. — 2240, 2263
 Wen, G.Z. — 474
 Wen, X.-G. — 588
 Wen, Xiao-Gang — 237
 Wen, Y. — 1630
 Wen, Yizhi — 1949
 Wenbing, Pei — 2087
 Wendelken, J.F. — 670
 Wender, S.A. — 1826
 Wendt, J.P. — 160
 Wendt, J.R. — 591
 Weng, W.T. — 1244, 1266, 1344, 1363, 1372
 Weng, Z.Y. — 304, 695
 Wenninger, J. — 1366
 Wensell, M. — 309
 Wentzcovitch, R. — 725
 Wentzcovitch, Renata — 619
 Wentzcovitch, Renata M. — 306
 Wentzcovitch, R.M. — 674
 Wenzel, K.W. — 1954, 2109, 2110
 Wenzel, W. — 753
 Wenzien, B. — 218
 Werkema, S. — 1346, 1360
 Werley, K. — 2049
 Werley, K.A. — 2051
 Werne, J. — 2210, 2317
 Werner, M. — 1441
 Werner, S. — 946
 Werner, S.A. — 766
 Wernham, Joseph — 1654
 Werntz, Carl — 1801
 Wertheim, G.K. — 303
 Wertheimer, M.R. — 2376
 Werthimer, Dan — 611
 Wesfreid, J.E. — 2223, 2304, 2315
 Wesolowski, W. — 1287
 Wessel, F. — 2090
 Wessel, F.J. — 2088, 2090
 West, K. — 179
 West, K.W. — 180, 235, 236, 265, 393, 591, 691, 705, 738, 807
 West, P. — 2049
 West, R. — 1976
 West, R.N. — 224, 225
 West, W.P. — 1936, 2059, 2060, 2061, 2062, 2064, 2071
 Westblom, Ulf — 1727
 Westbrook, C.I. — 934, 1142, 1778
 Westenskow, G. — 1277
 Wester, W.C. — 916
 Westerfield, Wayne — 549, 1672
 Westerhof, E. — 2077
 Westerlind, M. — 1092, 1125, 1133, 1160
 Westervelt, P. — 1651
 Westervelt, R.M. — 706, 814, 840, 1616
 Westfall, G. — 998, 1852
 Westfall, G.D. — 927, 940, 941, 1815, 1828, 1854
 Westin, K. Johan A. — 2207
 Westling, L.A. — 1714, 1744
 Westphal, M.J. — 407
 Westphal, M.S. — 949
 Wetherholt, D.M. — 1220
 Wetmore, B. — 1841
 Wetsel, A.E. — 629
 Wetsel, G.C., Jr. — 184, 706, 813
 Wettlaufer, J.S. — 261, 2276
 Wetzel, S. — 1299
 Wevers, J. — 2362
 Wexler, C. — 396
 Weyand, H. — 1820
 Weyer, H.J. — 1818
 Weygandt, J.H. — 2272

- Weynants, R.R. — 2058
 Whaley, J.A. — 2060
 Whalley, M. — 1640
 Whan, C.B. — 803
 Whang, E. — 1609
 Whang, E.-J. — 580, 1616
 Whang, M.D. — 1540
 Whealton, J.H. — 1921, 2379
 Wheat, R. — 1280
 Wheatley, J. — 587
 Wheaton, Don — 1654
 Wheeler, Mary — 1449
 Wheeler, R. — 242
 Wheeler, R.G. — 179
 Wheeler, R.M. — 1681
 Wheeler, S. — 987
 Whelen, C. — 1342
 Wherrett, B.S. — 745, 763
 Whetten, Robert L. — 249, 786
 Whiddon, C. — 1847
 Whisnant, C.S. — 914, 915
 Whisnant, S. — 1860
 Whitaker, H. — 1037
 Whitaker, J.F. — 316, 1715
 Whitaker, John F. — 127, 840
 White, Alice E. — 84, 322
 White, B. — 518
 White, Benjamin — 809
 White, Bill — 1986
 White, C. — 1812
 White, C.A. — 933
 White, C.C. — 145
 White, C.T. — 53, 796, 1456, 1536
 White, D. — 412
 White, G. — 1225
 White, G.S. — 379
 White, J. — 804, 1034, 1821
 White, J.A. — 1007
 White, J.D. — 748
 White, M. — 1287
 White, M.G. — 1167
 White, Michael G. — 1730
 White, R. — 1040, 1948
 White, R.B. — 1944, 2037, 2077, 2096, 2124, 2125
 White, R.C. — 450
 White, R.R. — 1951
 White, Sebastian N. — 909
 White, S.R. — 148, 289, 332, 584, 585
 White, Steven R. — 499
 White, T.A. — 444
 White, W.H. — 1986
 White, Whitney — 719
 White, W.R. — 520, 521, 636, 694
 Whitehead, C.A. — 1672
 Whitehead, J.A. — 2254
 Whitehead, J.B., Jr. — 846
 Whitehead, J.P. — 118
 Whitehead, M.C. — 1534, 1564
 Whitehead, S. — 1528
 Whitely, C. — 1817
 Whiteway, James A. — 1776
 Whitham, K. — 1287, 1398
 Whitley, C. — 942
 Whitley, C.R. — 943, 1036
 Whitlock, S.T. — 2250
 Whitman, Lloyd J. — 2162
 Whitmore, M.D. — 604
 Whitmore, Michael — 743
 Whitnell, R.M. — 1112
 Whitney, C.A. — 1460
 Whitney, Charles A. — 1047
 Whitney, K.G. — 1157, 2081, 2082
 Whitney, R. — 1034
 Whitney, R.L. — 532
 Whitson, J.C. — 2122
 Whittaker, E.A. — 2370
 Whitten, B.L. — 1105
 Whitten, C.A., Jr. — 982
 Whitten, J.L. — 444
 Whittenberg, W.A. — 1220, 1319
 Whitton, R.M. — 942, 943, 1036, 1037, 1684, 1818
 Whittum, D. — 1301, 1345, 1359
 Whittum, D.H. — 1351
 Whyte, D. — 2059, 2062
 Whyte, D.G. — 2064
 Whytje, D.G. — 2064
 Wickenden, A. Estes — 446, 566
 Wickenden, D.K. — 446, 566
 Wicker, T. — 2356
 Wickesberg, E. — 2376
 Wickesberg, E.B. — 2346
 Wickramasinghe, H.K. — 402
 Wickramasinghe, Kumar — 556
 Widmann, K. — 2040
 Widmer, M. — 1155
 Widom, A. — 267, 288, 331, 344, 751
 Widom, M. — 209
 Widom, Michael — 824
 Wie, C. — 181, 1589
 Wiederrecht, G.P. — 168
 Wiedman, Michael H. — 371
 Wiedmann, M.H. — 618
 Wiedmann, Michael H. — 371
 Wiedmann, Ralph T. — 1730
 Wiegand, D.A. — 1567
 Wiegand, K. — 162
 Wiegmann, P.B. — 131
 Wieland, R.M. — 1906, 2037
 Wieman, C.E. — 1113, 1141
 Wieman, H. — 1837
 Wieman, H.H. — 998, 999, 1815, 1828, 1836, 1853, 1854
 Wienands, U. — 986, 1247, 1267, 1268
 Wier, S.T. — 1476
 Wierenga, H. — 651
 Wiescher, M. — 983, 1802, 1841, 1844, 2175
 Wieser, J. — 2362
 Wiesinger, G. — 1670
 Wiesinger, J. — 311
 Wiesler, D.G. — 572
 Wiess, S. — 1762
 Wiest, J.E. — 2176
 Wietefeldt, F.E. — 1804
 Wietefeldt, F.E. — 1829, 1830, 1855
 Wiggins, S. — 2194
 Wignall, G.D. — 579
 Wiik, B.H. — 1195
 Wijekoon, W.M.K.P. — 1755
 Wijekumar, V. — 1661
 Wikswo, J.P., Jr. — 2159
 Wilbanks, W. — 2372
 Wilburn, W.S. — 1063, 1846, 2172
 Wilby, M.R. — 379
 Wilcoxon, J.P. — 68, 220
 Wilczak, James — 2296
 Wilczek, F. — 271, 391
 Wilde, B. — 1915
 Wildeman, J. — 410
 Wildenhain, P.S. — 1040
 Wilder, J.W. — 470, 1637, 2277, 2310
 Wildes, E.L. — 984
 Wildgoose, Christopher — 1102
 Wildi, M. — 1818
 Wildman, D. — 1255, 1344, 1397
 Wile, J.L. — 1808, 1812
 Wilen, L. — 747
 Wilets, L. — 1015
 Wiley, B.J. — 1628
 Wiley, J. — 368
 Wiley, J.C. — 1893, 1922, 1937, 1953
 Wilgen, J.B. — 2020, 2033, 2034, 2096
 Wilhoit, D. — 784
 Wilkinson, R. Allen — 979
 Wilk, D.E. — 366
 Wilk, G.D. — 515
 Wilke, C. — 1907
 Wilke, M. — 1916, 2124
 Wilke, M.D. — 1220, 1257, 1371, 1916, 2083
 Wilkens, Lon — 318
 Wilkerson, J.F. — 913
 Wilkes, R.J. — 396, 769, 1021
 Wilkins, John W. — 382, 687
 Wilkins, J.W. — 382, 544, 687, 763
 Wilkins, R. — 231, 233, 335
 Wilkinson, C. — 1206, 1253, 1346
 Wilkinson, N.A. — 1225, 1298
 Wilkinson, R.A. — 480, 1005
 Wilks, Carlos W. — 694
 Wilks, S.C. — 1914, 1935, 2080
 Willaims, Ellen D. — 567
 Willard, S. — 918
 Wille, K. — 1248
 Willeke, F. — 1265
 Willems, P.A. — 1141
 Willemsen, B.A. — 70
 Willen, E. — 1290, 1291, 1341
 Willert, Christian, E. — 2215
 Willett, J.E. — 1940
 Willett, R.L. — 235
 Willett, Roger — 1621
 Willey, S.J. — 350
 Willi, O. — 1886, 2081
 Williams, A.L. — 942, 1816, 1817, 1830
 Williams, A.R. — 89, 1434
 Williams, B.D. — 129
 Williams, C. — 941, 1828, 1853, 2158
 Williams, Carl — 1121, 1169
 Williams, C.C. — 403
 Williams, C.J. — 1170
 Williams, Clayton C. — 540
 Williams, David A. — 382
 Williams, D.R. — 2303
 Williams, E. — 1223
 Williams, E.A. — 1914, 1915, 1935
 Williams, Edward A. — 1914
 Williams, Edwin R. — 697
 Williams, Ellen — 718
 Williams, F.A. — 2226, 2249
 Williams, G.P. — 730
 Williams, J. — 566
 Williams, J.M. — 825
 Williams, J.R. — 566
 Williams, J.S. — 2341
 Williams, J.Z. — 1817
 Williams, K. — 2211
 Williams, K.K. — 179
 Williams, L.M. — 590
 Williams, M.D. — 1897
 Williams, O.R. — 968
 Williams, P. — 820
 Williams, P.A. — 767
 Williams, P.C. — 395
 Williams, P.E. — 818, 1121, 1154, 1777
 Williams, P.M. — 376, 844
 Williams, R.H. — 103, 232
 Williams, Richard T. — 785
 Williams, R.L. — 1889
 Williams, Robert H. — 925
 Williams, S.H. — 1294
 Williams, Skip — 1739
 Williams, S.M. — 111
 Williams, T.J. — 1446, 2015, 2016
 Williams, W. — 122
 Williams, W.P. — 632
 Williamson, C. — 1035
 Williamson, C.H.K. — 2303
 Williamson, D.L. — 266
 Williamson, F. — 646
 Williamson, S.J. — 317
 Williamson, W., III — 120, 531, 1572
 Williamson, W., Jr. — 2351
 Williams, C. — 2029
 Willingham, R.A. — 1719
 Willins, J. — 984
 Willis, A. Peter — 1738
 Willis, Courtney — 1005
 Willis, J. — 2258
 Willis, R.F. — 231, 369, 443, 561
 Willis, W. — 1054, 1842
 Williams, P.S. — 108
 Wills, E.L. — 114
 Wills, H.H. — 92
 Wills, J.M. — 106, 382, 742, 1569
 Willsau, P. — 1831
 Wilson, A. — 812
 Wilson, B.G. — 1456, 2083
 Wilson, Craig — 968
 Wilson, D.C. — 1316
 Wilson, Doug M. — 1738
 Wilson, H.R. — 2008
 Wilson, I. — 1289
 Wilson, James R. — 1058
 Wilson, J.N. — 981
 Wilson, J.R. — 1802, 1907, 2032, 2033, 2034, 2035
 Wilson, J.W. — 1063, 1064
 Wilson, K.E. — 1818
 Wilson, K.R. — 1112
 Wilson, L. — 184
 Wilson, M. — 1102, 1150
 Wilson, M.D. — 1668
 Wilson, M.L. — 694
 Wilson, M.T. — 56
 Wilson, P. — 1281
 Wilson, P.B. — 1230, 1288, 1395, 1396
 Wilson, R. — 1638, 2035
 Wilson, R.B. — 989, 1638
 Wilson, Richard — 978
 Wilson, R.J. — 118, 503, 596
 Wilson, R.M. — 1533
 Wilson, R.V. — 2246
 Wilson, W.H. — 1564
 Wilson, W.J. — 1460
 Wilson, W.K. — 927, 940, 1815, 1854
 Wilson, W.L. — 211, 258
 Wiltse, J.M. — 2275
 Wiltzius, P. — 435
 Wimer, N. — 926, 1811
 Wimer, N.G. — 926
 Winchel, D. — 1014, 1015
 Winchell, D. — 980, 1013
 Winchell, D.F. — 1014, 1015, 1049
 Wincik, H. — 1242
 Wind, S.J. — 465
 Winecki, S. — 1089
 Winecki, Slawomir — 1164
 Wineland, D.J. — 1121, 1140, 1142, 1972
 Wines, R. — 1317
 Winey, J.M. — 1598
 Winey, K.I. — 603, 657
 Winfield, J. — 998
 Winfield, J.S. — 927, 940, 941, 983, 1828, 1841, 1842, 1854
 Winfree, A. — 99
 Winful, Herbert G. — 1745, 1748
 Wingate, C.A. — 1316
 Winger, J. — 1842, 1844
 Winger, J.A. — 983, 1842
 Winger, Donald E. — 1058
 Wingreen, N.S. — 641, 754, 756
 Winhold, E.J. — 914, 915
 Winick, H. — 1234, 1330

- Winkelmann, C.T. — 73
Winkler, C. — 968, 989
Winkler, D. — 688
Winkler, D.C. — 2348
Winkler, G. — 1301
Winkler, Karl-Heinz — 1452
Winkler, P. — 1095, 1172
Winkler, Peter — 1033
Winkler, W.D. — 1481
Winnewisser, B.P. — 1662
Winnewisser, Brenda P. — 1662
Winnewisser, M. — 1662
Winnewisser, Manfred — 1662
Winnicka, M.B. — 1577
Winokur, Michael J. — 158
Winokur, M.J. — 157, 158, 159, 311
Winske, D. — 1901, 1916, 2341
Winsor, D. — 419
Winstead, C. — 2348
Winter, J. — 2007, 2062
Winter, R. — 1485
Winter, T.G. — 1159
Winters, Robert R. — 254, 681
Winters, R.R. — 1654, 1661
Wintgen, D. — 1143
Winz, G. — 2025, 2026
Winz, G.R. — 2025, 2026
Wirans, J. — 1229
Wirner, C. — 400
Wirtz, D. — 421
Wise, F.W. — 808
Wise, J. — 942, 1818, 1859
Wise, J.E. — 944, 1817, 1820
Wise, J.L. — 1505
Wise, T. — 996, 997
Wischart, V. — 1134
Wiseman, A.B. — 1807
Wiseman, M. — 1299, 1378, 1389
Wisniewski, R. — 1517, 1530, 1531
Wisnivesky, D. — 1234, 1390
Wissink, S. — 1829
Wissink, S.W. — 1830, 1845, 1846, 1847
Wissler, J.B. — 2204, 2224
Wistrom, M.S. — 637
Witala, H. — 1063
Witczak, P. — 1530
Witczak, Z. — 1530, 1531, 1577
Witherow, William K. — 1735
Withers, J.C. — 152
Witt, A.N. — 1636
Witte, A. — 934
Witte, K. — 1313
Wittel, Fred — 844
Witten, T.A. — 543
Witteveen, J. — 368
Witthoff, E. — 113
Wittig, C. — 1085, 1630
Wittig, Curt — 150
Wlodarczyk, E. — 1593
Wochner, P. — 252
Woestman, J.T. — 288, 344
Wohn, F.K. — 1049
Woicik, J.C. — 320, 385, 1151
Wojak, G.J. — 1619
Wojciechowski, M. — 2306
Wolanski, M. — 1806
Wolanski, Mark — 1809
Wolbers, Stephen — 976
Wolf, D.E. — 1461
Wolf, E.L. — 642
Wolf, G.H. — 310, 742, 2058
Wolf, H. — 1133
Wolf, H.E. — 1163
Wolf, J.A. — 618
Wolf, K. — 998, 999, 1815, 1828, 1853, 1854
Wolf, N. — 1966
Wolf, N.S. — 1966
Wolf, R.J. — 2159, 2160
Wolf, S. — 462
Wolf, S.A. — 276, 327, 392, 805
Wolfe, A. — 790
Wolfe, D.H. — 631, 632
Wolfe, D.M. — 1843
Wolfe, J.C. — 272, 836, 838, 839
Wolfe, J.P. — 282, 593, 745, 809, 810
Wolfe, S. — 1627, 1954, 1955, 1958
Wolfe, S.M. — 1954
Wolfenstein, L. — 1797
Wolff, D. — 2348, 2378
Wolff, E.G. — 416
Wolff, W. — 1163
Wölfle, P. — 130
Wolford, D.J. — 85, 282, 473, 474, 687, 746
Wolfs, F.L.H. — 933, 1812
Wolk, J.A. — 1611
Wolochuk, M.C. — 2242
Wolverton, C. — 209
Womble, P.C. — 1857
Won, J. — 411
Won, S. — 1222, 1286
Wong, A. — 312, 585, 1888, 1967
Wong, A.P.Y. — 47, 435
Wong, A.Y. — 1152, 1905, 1969, 1970, 1989
Wong, C.L. — 1628
Wong, E.K.L. — 628
Wong, E.W. — 780
Wong, G. — 1621
Wong, G.K. — 190, 205, 235, 1617
Wong, H. — 2225
Wong, J. — 792
Wong, K.-L. — 1171, 1905, 2034, 2035
Wong, K.W. — 223, 260, 519, 524, 750
Wong, M.K.W. — 1499
Wong, Po-Zen — 772
Wong, P.T.T. — 1485
Wong, S.K. — 1975
Wong, Tony — 2069
Wong, V. — 2075, 2277
Wong, Vernon H. — 1947
Wong, V.K. — 986
Wong, W.H. — 779, 780
Wonnell, S.K. — 744
Woo, H. — 2091
Woo, J.C. — 702
Woo, J.T. — 2113
Wood, B.P. — 1900
Wood, C.E.C. — 399
Wood, F. — 1200
Wood, H.G. — 2205
Wood, J.L. — 1806, 1819
Wood, J.W. — 407, 744
Wood, Kent S. — 690
Wood, Mark L. — 1001
Wood, R. — 1328, 1334, 1390
Wood, R.D. — 2058, 2059, 2060, 2062, 2064
Wood, R.F. — 520, 1900
Wood, Robert P. — 1096, 1150
Wood, R.P. — 1091
Wood, S. — 1518
Wood, S.A. — 1816
Wood, V.A. — 1857
Woodall, J.M. — 103, 231, 284, 316
Woodbury, K. — 1227
Woodgate, P.E. — 294
Woodle, M. — 1234, 1311, 1326
Woodley, D.M. — 94
Woodley, M. — 1229, 1237, 1239
Woodley, M.D. — 1257, 1360
Woodruff, Roy — 1024
Woodruff, S. — 2238
Woods, J.P. — 816
Woods, K. — 931
Woods, M. — 1203, 1312, 1313, 1342, 1636
Woods, M.B. — 1312
Woods, P.J. — 1814
Woods, R. — 1266
Woodworth, E. — 1204
Woody, C. — 1036, 1054, 1842
Woody, D. — 1586
Wool, R.P. — 192, 351, 483, 659, 714
Woolf, D.A. — 232
Woollam, John A. — 322
Woolsey, J.M. — 2341
Woolsey, N.c. — 2082
Woon, D.E. — 1630
Woosley, S.E. — 1802
Wooten, C.L. — 370
Wootton, A.J. — 1950, 1951, 1952, 1953, 2021
Wootton, Alan J. — 1948
Workman, J. — 2081
Worley, J.F. — 2087
Worm, T. — 1404
Worsham, A.H. — 688
Worster, M.G. — 2276, 2280
Worth, G.T. — 1318
Worthington, M.S. — 623
Wortis, M. — 405, 598
Wosik, J. — 838, 839
Woskov, P. — 2095
Woskov, P.P. — 2039
Wouchuk, J.G. — 2086
Wouters, E.R. — 2363
Wouters, M.J. — 2379
Wozniak, G.J. — 1808, 1812, 1828, 1842, 1853
Wozny, C.E. — 409
Wraback, M. — 133
Wray, A.A. — 2228
Wright, A.F. — 66, 1438
Wright, B. — 1385
Wright, B.L. — 1499
Wright, D. — 974
Wright, D.A. — 188
Wright, D.H. — 913
Wright, E. — 1232
Wright, E.L. — 1399
Wright, E.M. — 1740
Wright, John C. — 1725
Wright, L.E. — 915, 1034, 1859
Wright, M.C. — 65, 322
Wright, N.G. — 1532, 1533, 1573
Wright, S. — 1200, 1201
Wright, Edward L. — 954
Wrobel, Jerzy M. — 1607
Wroblewski, B. — 2360, 2372
Wróblewski, D. — 1936, 1937, 2061, 2066, 2066, 2067, 2121
Wroblewski, K. — 2372
Wróblewski, M. — 1504, 1576
Wrróblewski, D. — 2066
Wu, C.C. — 1720, 1723
Wu, C.H. — 841
Wu, ChunMeng — 1713
Wu, Chwan-Hwa — 2345
Wu, Chwan-Hwa "John" — 2354, 2360
Wu, C.Y. — 1806, 1808, 1819, 1857, 2237
Wu, D. — 1242
Wu, D.H. — 71, 95, 805
Wu, Dong Ho. — 330
Wu, D.Q. — 142
Wu, F.M. — 1670
Wu, G. — 1206, 1207, 1219, 1315
Wu, G.L. — 2187
Wu, G.-W. — 293, 412
Wu, G.Y. — 756
Wu, H. — 232, 728
Wu, Hong — 747
Wu, Hui — 70
Wu, J. — 232, 272
Wu, J.C. — 513, 542, 842
Wu, J.L. — 423
Wu, Jong — 842
Wu, J.-S. — 2272
Wu, Judy — 750
Wu, J.Z. — 171, 213, 750
Wu, K. — 384
Wu, M.K. — 212
Wu, N.J. — 272
Wu, P. — 1655, 1663
Wu, Q. — 1087
Wu, Q.W. — 984
Wu, R. — 58, 205
Wu, Ren — 2234
Wu, R.-J. — 143
Wu, Ruqian — 830
Wu, Sau Lan — 922
Wu, S.S. — 93
Wu, S.Y. — 63, 67, 521
Wu, T. — 1489
Wu, T.C. — 1574
Wu, T.W. — 546
Wu, T.Y. — 2210, 2237
Wu, W. — 1102, 1567
Wu, Wen-Li — 418
Wu, X. — 224, 226, 780, 1247, 1255, 1769, 1831
Wu, X.D. — 160, 731
Wu, X.G. — 237
Wu, Xiaoguang — 180
Wu, Xiaoju — 441
Wu, Xing "Peter" — 2354
Wu, X.-L. — 166, 187, 405
Wu, X.P. — 1066
Wu, Xu Monica — 1651
Wu, X.Z. — 164, 800
Wu, Y. — 67, 461, 637, 680, 830, 1226, 1245, 1275, 1296, 1551, 2173, 2310
Wu, Y.A. — 1724
Wu, Yanlin — 1944, 2077, 2125
Wu, Y.C. — 1646, 2175
Wu, Y.H. — 1570
Wu, Z. — 650, 747, 970, 1636, 2261
Wu, Z.-C. — 108
Wu, Zhiqiang — 54
Wudl, F. — 58, 205, 206, 501, 502, 616
Wuensch, W. — 1212, 1289
Wuenske, C.A. — 963
Wuerker, R. — 1967
Wuerker, R.F. — 1152, 1905, 1989
Wuest, C. — 1826
Wuilleumier, F.J. — 1139
Wukitch, S. — 2024, 2025
Wulff, M. — 323
Wunder-Lich, B. — 152, 191, 409, 481, 603
Wunderlich, F.J. — 847
Wundrow, D.W. — 2288
Wuosma, A.H. — 927
Wuosmaa, A. — 926, 1806
Wuosmaa, A.H. — 1809, 1818, 1842, 1845
Wuosmaa, B. — 926
Wur, S.L. — 484
Wurden, G. — 2009, 2049
Wurden, G.A. — 2038, 2110
Wurnig, Jason — 783
Wurtele, J.S. — 1280, 1282, 1283, 1310, 1347, 1351, 1916, 1998
Würthwein, Frank — 1001

- Wurzburg, E. — 2336
 Wüstefeld, G. — 1266, 1324
 Wuttig, M. — 307
 Wuttig, Manfred — 450
 Wuttke, M. — 2008
 Wyatt, A.F.G. — 137
 Wybourne, Martin — 513, 842
 Wybourne, M.N. — 110, 322, 542, 842
 Wygnanski, I. — 2196, 2285
 Wylie, M. — 1223
 Wyngaard, J.C. — 2189
 Wynn, C.M. — 533, 1621
 Wynveen, A.S. — 630
 Wysin, G.M. — 371, 648
 Wysong, Ingrid J. — 1727
 Wyss, C. — 1366
 Wyss, R. — 1014
- Xenikos, D.G. — 70
 Xenopoulos, A. — 152, 481, 603
 Xhang, X.L. — 1050
 Xi, B. — 1296, 1364
 Xi, H.W. — 470
 Xi, X.X. — 59, 212, 227, 387, 388, 806, 838
 Xi, Z. — 154
 Xia, B. — 560
 Xia, Bin — 649
 Xia, Bo — 560
 Xia, H. — 1904
 Xia, Hui — 254, 1515, 1517, 1579
 Xia, Q. — 1544
 Xia, Qing — 254, 1515, 1517
 Xia, T.K. — 653
 Xia, X. — 728
 Xia, Y.-M. — 119, 162
 Xiang, X.-D. — 104, 104, 105, 502, 617, 1622
 Xiangdong, Li — 1532
 Xianxi, Dai — 170, 173, 847
 Xiao, B. — 1813, 1852
 Xiao, C. — 413, 2005, 2006, 2029, 2057, 2110
 Xiao, Gang — 329, 731, 733, 784
 Xiao, H. — 1928
 Xiao, John Q. — 451
 Xiao, J.Q. — 733
 Xiao, Liang-Zhi — 1576
 Xiao, Min — 1728
 Xiao, N. — 319
 Xiao, Q. — 2006, 2007
 Xiao, Qingjun — 2006
 Xiao, T.D. — 816
 Xiao, X. — 84
 Xiao, Xu-Dong — 334, 730
 Xiao, Y.M. — 528
 Xiao, Y.Y. — 1168
 Xide, Xie — 1624
 Xie, C. — 1141, 1155
 Xie, H. — 54
 Xie, J. — 1315
 Xie, J.J. — 281
 Xie, J.P. — 2009
 Xie, L. — 141, 349, 413
 Xie, L.M. — 838, 839
 Xie, M. — 1234, 1327
 Xie, P. — 1744
 Xie, Sunney X. — 1762
 Xie, X.C. — 398
 Xie, Y. — 418, 479
 Xie, Y.H. — 84
 Xie, Yuanlin — 334, 730
 Xie, Z. — 1335, 1808
 Xin, Y. — 223, 260, 519, 750
 Xing, L. — 163, 1609, 1626
 Xing, Lei — 323
- Xing, Qirong — 1747
 Xing, W. — 125
 Xiong, Peng — 329, 731, 733, 784
 Xiong, Q. — 346
 Xiong, S. — 537
 Xiong, W. — 128, 689
 Xiong, Y.M. — 1510, 1512
 Xiu, L. — 1320
 Xu, B.C. — 529
 Xu, B.R. — 223, 260
 Xu, C.I. — 1260
 Xu, D. — 119, 330, 2158
 Xu, Da-Peng — 1550, 1576
 Xu, F. — 997
 Xu, G. — 716, 1524, 1828, 1836, 1847
 Xu, G.T. — 1139
 Xu, H. — 982
 Xu, Hang — 616, 617
 Xu, H.M. — 1828
 Xu, Hongwei — 231
 Xu, J. — 2199
 Xu, J.H. — 496
 Xu, Jian-Hua — 261
 Xu, J.M. — 708, 761, 1732
 Xu, Jun — 627, 682
 Xu, Ming — 171
 Xu, N. — 1061
 Xu, S. — 679, 817
 Xu, W. — 225, 402
 Xu, X. — 349
 Xu, Xie — 816, 817
 Xu, X.Q. — 223, 438, 1924, 2016
 Xu, Xumou — 216
 Xu, X.-Z. — 407
 Xu, Y. — 640, 1320
 Xu, Y.-N. — 104, 565
 Xu, Youwen — 327, 783, 829
 Xu, Z. — 1089, 1132, 1165
 Xu, Zhaopeng — 1743
 Xu, Z.S. — 539
 Xu, Z.Y. — 205
 Xue, D.P. — 329
 Xue, J.-Z. — 288, 288, 615
 Xue, Q. — 117, 183, 452
 Xue, Y.Y. — 123, 170, 241, 346, 347, 461, 532
 Xun, Hou — 1747
- Yablonovitch, E. — 1106
 Yacoby, Y. — 386, 457, 458
 Yadav, M. — 1817, 1820
 Yagi, M. — 1926
 Yagi, T. — 1502, 1519, 1523, 1574, 1587
 Yagn, Hai-Shou — 1040
 Yakhot, V. — 2259, 2304, 2317
 Yakimenko, V. — 1259
 Yakovenko, V.M. — 588
 Yakovlev, S. — 1379
 Yakovlev, V.P. — 1280
 Yakymyshyn, C.P. — 1721
 Yaltkaya, S. — 1160
 Yamada, H. — 2021
 Yamada, K. — 124
 Yamada, Kazuyoshi — 45
 Yamada, M. — 1927, 2032, 2037, 2038
 Yamada, Masaaki — 1931
 Yamada, S. — 1333, 1401
 Yamada, T. — 85, 1323, 1333, 1401
 Yamagishi, Kiyoshi — 1721
 Yamaguchi, M. — 283
 Yamaguchi, S. — 1384
 Yamaguchi, W. — 454
 Yamakata, M. — 1502, 1574, 1587
 Yamakawa, K. — 1309
 Yamakawa, T. — 1244, 1331
- Yamaki, S.B. — 1227
 Yamamoto, A. — 933
 Yamamoto, K. — 2364
 Yamamoto, N. — 1212, 1260, 1299
 Yamamoto, R.K. — 2376
 Yamamoto, T. — 485
 Yamamoto, Y. — 1557
 Yamanokuchi, H. — 1533
 Yamashita, Y. — 1301
 Yamauchi, H. — 225, 272
 Yamauchi, T. — 2008
 Yamawaki, H. — 1496
 Yamazaki, K. — 1550
 Yamazaki, Y. — 1316
 Yampol'skii, V.A. — 809
 Yampolsky, I. — 1402, 1403
 Yan, C. — 1201, 1317
 Yan, Cui — 1747
 Yan, H. — 214, 677
 Yan, Hong — 163
 Yan, M. — 210, 258
 Yan, Mingdi — 542
 Yan, Q. — 740
 Yan, Qun — 281, 2166
 Yan, Y. — 1197, 1245, 1257
 Yan, Y.F. — 223, 388, 1625
 Yan, Y.J. — 1112
 Yan, Y.T. — 1197, 1246, 1247, 1257, 1358
 Yan, Zong-Chao — 1127
 Yanagi, Y. — 1260
 Yanagida, K. — 1287
 Yanagisawa, C. — 984
 Yandon, J.C. — 1227
 Yandrofski, R.M. — 271, 689
 Yaney, P.P. — 1662, 1663, 2342
 Yang, A. C.-M. — 351, 546
 Yang, B. — 1371
 Yang, C.H. — 812
 Yang, Chao — 1500
 Yang, D. — 369, 1618
 Yang, G. — 670, 728, 800
 Yang, Guozhen — 67
 Yang, H. — 416
 Yang, H.J. — 244
 Yang, Hsinjin — 425
 Yang, J. — 136
 Yang, Jaeho — 482
 Yang, J.C. — 293, 2212
 Yang, Jian — 1735
 Yang, Jing-Hai — 1575
 Yang, Kun — 766
 Yang, L. — 349, 413, 1014
 Yang, L.H. — 63, 64, 279, 309, 1496
 Yang, Long — 1723
 Yang, M. — 519
 Yang, M.H. — 791
 Yang, Moonbong — 682
 Yang, M.S. — 1529
 Yang, Q. — 671, 734
 Yang, Rui Q. — 708, 761
 Yang, S. — 403, 670, 728, 1676, 2369
 Yang, Scott — 840
 Yang, Shilian — 266
 Yang, S.J. — 1943
 Yang, Song — 1038
 Yang, S.Q. — 134
 Yang, S.-R. Eric — 180, 279
 Yang, T. — 1645
 Yang, T.-Y.B. — 2017
 Yang, W. — 1486, 1561, 1580
 Yang, W.H. — 217
 Yang, X. — 676, 982, 1051, 1062, 1730
 Yang, X.-F. — 1219
 Yang, Xiazhou — 1119
 Yang, X.Q. — 539
 Yang, X.Z. — 1950
- Yang, Y. — 2278
 Yang, Ying Jay — 1719
 Yang, Y.J. — 1724
 Yang, Yumin — 2209
 Yang, Z. — 109, 2192
 Yaniv, Zvi — 1664
 Yanka, R.W. — 181
 Yankelevsky, D.Z. — 1567
 Yannoni, C.S. — 152
 Yannouleas, C. — 220
 Yao, B. — 1534, 1535, 1587
 Yao, Bin — 1575
 Yao, C. — 2301
 Yao, C.G. — 1376, 1391
 Yao, C.Y. — 1217, 1239
 Yao, G. — 1091, 1128
 Yao, Hongbing — 2297
 Yao, Huade — 765
 Yao, Jin — 2228
 Yao, T. — 374
 Yao, Wei-Ming — 916
 Yao, Y. — 498
 Yaoita, K. — 1574
 Yap, D. — 1728
 Yarger, F.L. — 1493
 Yariv, A. — 1713
 Yariv, Amnon — 1717
 Yarlagadda, Sudhakar — 638
 Yasar, O. — 1483
 Yasir, M. — 1684
 Yasuda, T. — 205
 Yasui, H. — 1536
 Yater, J. — 393
 Yater, J.A. — 807
 Yates, S.W. — 1832
 Yates, T. — 1035
 Yatsui, K. — 1902
 Yau, W.-F. — 693
 Yavas, O. — 735
 Yazdani, Ali — 636
 Yaziv, D. — 1510
 Yazynin, I.A. — 1255, 1405
 Ye, H. — 740
 Ye, J. — 476
 Ye, L. — 307, 781
 Ye, Y.-Y. — 208
 Ye, Z. — 828
 Yeager, C.J. — 240, 1023, 1663
 Yee, A.F. — 92, 141, 349, 413, 717
 Yee, J. — 927, 940, 941, 998, 1815, 1828, 1852, 1854, 2114
 Yeganeh, M.S. — 366
 Yegneswaran, A. — 1815
 Yeh, Chin-Yu — 56
 Yeh, N.-C. — 70, 458, 834
 Yeh, W.J. — 519
 Yelk, J. — 1369
 Yen, S. — 982
 Yen, W.M. — 1615
 Yen, Yi-Fen — 2171
 Yenen, O. — 1161
 Yenice, K.M. — 265, 531, 1572, 1664
 Yennello, S. — 927, 940, 941, 998, 1828, 1854
 Yennello, S.J. — 1828, 1842
 Yeo, Y.H. — 1619
 Yeo, Y.K. — 264, 686
 Yeomans, J.M. — 671
 Yepez, E. — 522
 Yeremian, A.D. — 1312, 1314, 1342
 Yeremian, D. — 1636
 Yergin, P.F. — 915
 Yethiraj, A. — 144, 244, 485
 Yethiraj, M. — 579
 Yetter, W. — 416
 Yeung, Chuck — 541, 714
 Yeung, K.S. — 1214
 Yeung, P.K. — 2228

- Yeveck, D. — 1448
 Yhakovlev, S. — 1377
 Yi, Jae-Yel — 440
 Yi, Jaichul — 754
 Yi, S.H. — 1670, 1676
 Yi, X.J. — 235, 1617
 Yildirim, T. — 369
 Yin, A. — 374
 Yin, Fuxian — 2008
 Yin, Guimei — 131
 Yin, K.Q. — 810
 Yin, Rui — 92, 409
 Yin, Shi — 537
 Yin, Y. — 1217, 1351
 Yin, Yi-Yian — 1730
 Yinbao, Chen — 1250
 Ying, C.H. — 2331
 Ying, J.F. — 549, 683, 1134, 1152
 Ying, S.C. — 67
 Ying, X.J. — 471
 Ying, Z.C. — 828
 Ying, Z. Charles — 1775
 Yip, S.K. — 330
 Yip, Sungkit — 328
 Ynzunza, R.X. — 364
 Yoakum, S. — 1094, 1109
 Yodh, A.G. — 287, 288, 366, 1754
 Yodh, Arjun — 615
 Yodh, G. — 1031
 Yoganathan, M. — 565
 Yokkaichi, S. — 1843
 Yokomizo, H. — 1287, 1367
 Yokota, M. — 1316
 Yokouchi, S. — 1260
 Yokoya, K. — 1353
 Yokoyama, R. — 2344
 Yokoyama, S. — 997, 1051, 1835
 Yoneda, A. — 1528
 Yoneda, C. — 1288
 Yoneda, H. — 1942, 2087, 2125
 Yoneda, T. — 2338
 Yonehara, H. — 1367
 Yonemitsu, K. — 584
 Yoneyama, K. — 1367
 Yonnet, J. — 1036
 Yoo, B.S. — 284, 336
 Yoo, C.S. — 307, 1490, 1548, 1598
 Yoo, J.Y. — 1719
 Yoo, K.M. — 1747
 Yoo, M. — 596
 Yoo, M.H. — 208
 Yoo, Sam-Im — 783
 Yoo, S.H. — 1817
 Yoon, C.O. — 311
 Yoon, D.Y. — 191, 192, 244, 409, 422, 714
 Yoon, H. — 190
 Yoon, H.J. — 2337
 Yoon, H.W. — 593
 Yoon, J.-H. — 1801, 1802
 Yoon, Jongsoo — 1022
 Yoon, J.R. — 1292
 Yoon, M. — 1345
 Yoon, S. — 596
 Yoon, Y.D. — 227
 York, G.A. — 142
 York, R. — 1247, 1255, 1321
 York, R.A. — 1741
 Yorke, J.A. — 2194
 Yoshida, H. — 1519, 1535
 Yoshida, K. — 1338
 Yoshida, M. — 1481, 1492, 1566, 1588, 1591, 2332
 Yoshida, Y. — 1359
 Yoshikawa, H. — 1287
 Yoshimura, K. — 173
 Yoshino, K. — 1148, 1152
 Yoshioka, M. — 1331
 Yoshizawa, J. — 1333, 1401
 Yoshizawa, M. — 1197, 1338
 Yoshizawa, N. — 1527
 Yost, G. — 1317
 Yost, S.A. — 985
 You, D. — 1720
 You, J.H. — 1682
 You, Li — 1098
 You, S.J. — 416, 602
 You, Z. — 2261
 Younes, W. — 980
 Young, A. — 1396, 1400
 Young, A.R. — 1803
 Young, A.T. — 1313, 1335, 1897, 2047, 2336
 Young, Bing Lin — 952
 Young, B.K.F. — 1456, 1986, 1987, 2082, 2117
 Young, B.M. — 1842
 Young, Bruce — 1986
 Young, C. — 1303
 Young, D. — 2029
 Young, D.A. — 121, 1507
 Young, F.C. — 1902, 2046
 Young, Fongray Frank — 2354
 Young, G.W. — 2242
 Young, J. — 122, 2313
 Young, J.A. — 412
 Young, Jeff — 764
 Young, Jeff F. — 1757
 Young, J.F. — 686
 Young, K. — 396, 1905
 Young, K.M. — 2030
 Young, L. — 997, 1139, 1319, 1390
 Young, Linda — 1030, 1758
 Young, L.M. — 1375
 Young, M.J. — 818
 Young, P. — 2082
 Young, P.E. — 1318, 1337, 1913, 1986, 1987, 2082, 2117
 Young, P.G. — 1051
 Young, R.D. — 263
 Young, Robert — 1541, 1599
 Young, R.T. — 260
 Young, T.F. — 473
 Young, T.R., Jr. — 1460, 2205
 Young-Hwa Kim — 94
 Yount, J.T. — 634
 Yousfi, M. — 2344, 2349
 Yousif, F.B. — 1116
 You-Wu, Ma — 1331
 Yovanovitch, D. — 1037
 Yovanovitch, D.D. — 985, 986
 Yu, Albert I. — 1649
 Yu, B.W. — 2372
 Yu, C.-H. — 1013, 1014, 1015, 1818, 1819
 Yu, Clare — 684
 Yu, Clare C. — 499
 Yu, D. — 1214, 1281, 1382
 Yu, E.T. — 231
 Yu, F. — 188, 466
 Yu, G. — 1886
 Yu, H. — 408, 713
 Yu, H.H. — 412
 Yu, Hong — 232
 Yu, I. — 1039
 Yu, I.A. — 185, 1170
 Yu, Jane — 542
 Yu, Jin — 441
 Yu, J.S. — 2249
 Yu, J.X. — 1335
 Yu, K. — 1263, 1264
 Yu, Kin Man — 508
 Yu, L.-H. — 1234, 1326, 1330, 1592
 Yu, L.K. — 519
 Yu, L.S. — 1617
 Yu, M. — 1913
 Yu, M.-K. — 188, 386
 Yu, N. — 85, 213
 Yu, Naichang — 278
 Yu, P.K.L. — 1617
 Yu, P.W. — 316, 593, 745
 Yu, P.Y. — 1618, 1622
 Yu, Q. — 383
 Yu, R.C. — 163
 Yu, R.H. — 283, 702
 Yu, Ri-Cheng — 1550
 Yu, Ricci — 270
 Yu, S. — 1303, 1322, 1994, 1995
 Yu, S.S. — 1304
 Yu, Wenbin — 837
 Yu, W.Y. — 373, 532
 Yu, X. — 220
 Yu, X.T. — 1347, 1351
 Yu, Z. — 812, 2335
 Yu, Zhen Z. — 1759
 Yu, Z.Q. — 519
 Yuan, B. — 118
 Yuan, C. — 692
 Yuan, G. — 1537, 1943
 Yuan, S.X. — 703
 Yuan, T. — 331
 Yuan, V. — 1273
 Yuan, V.W. — 2171
 Yücel, A. — 1263
 Yucel, S. — 401
 Yudin, I.P. — 1226, 1243, 1250
 Yue, D.K.P. — 2282
 Yue, K.T. — 566
 Yueh, Fang-Yu — 1726
 Yugami, N. — 1309, 1359
 Yugo, J.J. — 2049, 2107
 Yuh, E.L. — 380, 815
 Yuino, Tatsuya — 1509
 Yukich, J.N. — 1124
 Yu-Kuang Hu, Ben — 833
 Yule, T. — 1334
 Yun, T.J. — 2295
 Yunn, B. — 1226, 1257, 1328, 1365, 1391
 Yunn, B.C. — 1242
 Yupinoy, Yu. — 1285
 Yurek, P. — 943, 1036, 1817
 Yurke, B. — 1630, 1631
 Yurkon, J. — 1841
 Yushmanov, P. — 1992
 Yushmanov, P.N. — 1923, 1959, 2077, 2123
 Yvert, B. — 2088
 Z., J. — 124
 Zaanen, J. — 78
 Zabel, H. — 618
 Zabel, I.H.H. — 383
 Zabinsky, S.I. — 457
 Zabransky, B.J. — 1140
 Zabusky, N.J. — 2194, 2209, 2271, 2297
 Zacek, F. — 1927
 Zach, M. — 1393
 Zachariah, M. — 1065
 Zacharias, H. — 1755
 Zachary, D. — 1000
 Zachau, M. — 764
 Zacher, R.A. — 577
 Zacher, Robert — 690
 Zacher, Robert A. — 690
 Zachvatkin, M. — 1367
 Zadoks, R. — 2260
 Zagarola, M.V. — 2317
 Zagel, J. — 1204
 Zager, E.L. — 1021
 Zagouri, D. — 1484
 Zah, C.E. — 1713
 Zahar, M. — 1841, 1842
 Zaharakis, K.E. — 1116
 Zahurak, S. — 113
 Zaidar, Marco — 1632
 Zaidman, E.G. — 2003
 Zaitsev, S.I. — 1615
 Zajac, D. — 1844
 Zajc, W.A. — 1811
 Zajfman, D. — 1090, 1170
 Zakharov, L. — 2037, 2038
 Zaki, T. — 2263
 Zakrzewski, Z. — 2343, 2352, 2372
 Zaleski, S. — 2187
 Zaltsman, A. — 1398
 Zambre, Y./ — 1238
 Zamfir, N.V. — 1832, 1845
 Zamick, L. — 1822, 1823
 Zamora, David — 1611
 Zander, W. — 752
 Zang, Jun — 77
 Zang, J.X. — 336
 Zangrando, D. — 1294, 1329
 Zangwill, A. — 65, 670, 722
 Zante, T. — 1287
 Zao-Ming, Chang — 1331
 Zapalac, G. — 1203
 Zapata-Arauco, J. — 1640
 Zapka, W. — 1731
 Zaplatin, E. — 1266, 1391
 Zapolsky, V.N. — 1259
 Zapotocky, M. — 709
 Zapryagaev, I.A. — 1280
 Zarand, G. — 744
 Zarate, R. — 107
 Zarccone, M.J. — 1321
 Zare, Richard N. — 1739
 Zarella, E. — 400
 Zarestky, J. — 270
 Zarnstorff, M. — 2031, 2040
 Zarnstorff, M.C. — 1906, 1907, 1959, 2033, 2036, 2037, 2038
 Zaruba, A.F. — 982
 Zaruhechsky, V.G. — 1259
 Zasadzinski, J. — 583
 Zasadzinski, J.F. — 583
 Zasadzinski, R.K. — 597
 Zaslavsky, A. — 812
 Zaslavsky, G.M. — 1909
 Zaspel, C.E. — 648
 Zastrow, K.-D. — 1980
 Zatopek, J. — 1223
 Zau, G.C.H. — 2343
 Zavodszky, P.A. — 1160
 Zavriyev, A. — 1751
 Zawadowski, A. — 744
 Zawalski, W. — 2057
 Zbasnik, J. — 1261, 1264
 Zbasnik, J. — 1263
 Zborowski, J.T. — 235
 Zdetsis, A. — 569
 Ze, F. — 1885, 2086
 Ze, Frederic — 2086
 Zebib, A. — 1060, 2199, 2237, 2292
 Zee, A. — 237
 Zegenhagen, J. — 157, 172, 514, 623, 624, 728
 Zeger, L. — 52
 Zehner, David — 436
 Zehner, D.M. — 286, 437, 1164
 Zehnter, P. — 1943, 2089
 Zeidler, Th. — 618
 Zeidman, B. — 997
 Zeijlmans Van Emmichoven, P.A. — 1160, 1164
 Zeitlin, B.A. — 836
 Zeitnitz, B. — 956
 Zelaya, O. — 214
 Zelaya-Angel, Orlando — 321

- Zelazny, M. — 1225
 Zeldov, E. — 122
 Zel'dovich, B.Ya. — 1739, 1771
 Zelenski, A. — 1836, 1847
 Zelenski, A.N. — 1343
 Zelyevsky, V.G. — 1639
 Železný, V. — 75, 227, 825
 Zelinsky, A. — 1243, 1324, 1368
 Zeller, P.J. — 1661
 Zelmon, David E. — 1715
 Zempo, Y. — 620
 Zeng, C. — 766
 Zeng, Hong — 799
 Zeng, L. — 2286
 Zeng, S.-X. — 324
 Zeng, Y. — 88, 320
 Zenhausern, F. — 1628
 Zeps, V. — 1843
 Zerilli, F. — 1509, 1599
 Zerilli, F.J. — 1500, 1509
 Zerilli, J. — 1582
 Zernike, Frits — 911
 Zerr, A. — 1488
 Zerr, A.Yu. — 1574
 Zerwekh, W.D. — 1513
 Zethoff, M. — 2354
 Zettl, A. — 104, 105, 387, 454, 502, 617, 1622
 Zeuli, A.R. — 1804, 1855
 Zewail, A.H. — 299
 Zewail, Almed H. — 197
 Zganjar, E.F. — 2170
 Zghiche, A. — 997
 Zha, C.S. — 477, 1483
 Zha, Yuyao — 175, 227
 Zhan, H.B. — 1095
 Zhang, B. — 1021
 Zhang, Bao-Ping — 1500
 Zhang, B.L. — 153, 440, 794
 Zhang, B.Z. — 1950, 1951
 Zhang, C. — 187, 1037, 1251, 2010, 2047, 2282
 Zhang, C.Y. — 599, 1993
 Zhang, D. — 1817
 Zhang, F. — 364
 Zhang, F.C. — 74, 283, 398
 Zhang, G. — 1037
 Zhang, G.P. — 2044
 Zhang, H. — 212, 965, 1726
 Zhang, Hai-Tao — 439
 Zhang, H.L. — 1157, 1942
 Zhang, H.M. — 575
 Zhang, Honglin — 1128
 Zhang, H-T. — 439
 Zhang, J. — 160, 452, 624, 750, 781, 1671
 Zhang, Jian — 1671
 Zhang, Jiandi — 286, 672, 699
 Zhang, Jian-Kang — 961
 Zhang, Jianluo — 1747
 Zhang, J.T. — 1915
 Zhang, J.-Y. — 1818, 1819
 Zhang, K. — 71, 171, 173, 329
 Zhang, K.J. — 644
 Zhang, Kuan — 805
 Zhang, L. — 1016, 1112, 1125, 1315, 1489, 2005, 2006, 2376
 Zhang, Lijun — 1098
 Zhang, Lizeng — 166, 263
 Zhang, Lizhong — 451, 793
 Zhang, Lu — 171, 222
 Zhang, L.Y. — 2110
 Zhang, M. — 113, 534, 685
 Zhang, P. — 1242
 Zhang, P.L. — 1197, 1245, 1257
 Zhang, Q. — 622, 1620, 2022
 Zhang, Qiang — 2209
 Zhang, Q.-M. — 338
 Zhang, Q.R. — 1943
 Zhang, R. — 1285, 1286, 1323, 1997
 Zhang, Renji — 262, 452
 Zhang, Renshan — 1311
 Zhang, R.S. — 1941
 Zhang, Ruo-bing — 1735
 Zhang, S. — 1595, 2212
 Zhang, S.B. — 56, 698
 Zhang, S.C. — 236
 Zhang, Sheng — 1007
 Zhang, Sheng-Bai — 443
 Zhang, Shiwei — 69
 Zhang, Shu — 594
 Zhang, Shuhua — 671, 1637
 Zhang, S.L. — 703
 Zhang, S.Y. — 1344, 1400
 Zhang, T. — 281, 760, 1250, 1294
 Zhang, T.G. — 205
 Zhang, T.M. — 86, 517
 Zhang, Tu — 399
 Zhang, T.X. — 1943
 Zhang, V. — 241
 Zhang, W. — 533, 1655, 2005, 2006, 2110, 2123, 2245
 Zhang, Wanru — 1621
 Zhang, Wei — 2008
 Zhang, W.J. — 1567
 Zhang, W-M. — 1034, 1841, 2110
 Zhang, X. — 681, 818, 1164, 1234, 1251, 1294, 1316, 1330, 1335, 2287
 Zhang, X.-C. — 1716, 1720, 1721
 Zhang, X.D. — 2104
 Zhang, X.-G. — 256, 383
 Zhang, Xiaxian — 229
 Zhang, Xin — 1677
 Zhang, Xingguo — 984
 Zhang, X.L. — 1829, 2352
 Zhang, Xuesong — 344
 Zhang, X.X. — 467
 Zhang, X.Y. — 750, 821
 Zhang, Y. — 82, 267, 619, 688, 986, 1165, 1172, 2311
 Zhang, Y.D. — 816
 Zhang, Y.H. — 531, 703
 Zhang, Yong — 266, 393
 Zhang, Youzhu — 237, 238, 239
 Zhang, Y.S. — 1888, 2122
 Zhang, Y.Z. — 1928, 2104
 Zhang, Z. — 373, 1550, 1618, 1620
 Zhang, ZE. — 309, 952
 Zhang, Zhao-Qing — 176, 809
 Zhang, Zhenyu — 67, 793, 1493
 Zhang, Z.-Y. — 628
 Zhang Shouyun, C. — 1302
 Zhao, C. — 1037
 Zhao, F. — 1493, 1537
 Zhao, G. — 2119
 Zhao, G.L. — 83, 533
 Zhao, H. — 541
 Zhao, H.L. — 1614
 Zhao, J. — 1830, 1847
 Zhao, L. — 1989
 Zhao, Q. — 942, 1818, 2219
 Zhao, S. — 577, 676, 677
 Zhao, W. — 76, 295, 409, 713
 Zhao, W.W. — 114
 Zhao, X. — 295, 409, 417, 481, 998, 1036, 1155, 2172
 Zhao, Xu-Dong — 1517, 1576
 Zhao, Xue Shu — 808, 808, 1572
 Zhao, X.W. — 1015, 1915
 Zhao, Y. — 756, 1388, 1399, 2302
 Zhao, Yi — 2104
 Zhao, Z. — 984, 1294, 1675, 1684, 1685
 Zhao, Z.Y. — 1674, 1681
 Zhen, M. — 1149
 Zheng, D.C. — 1822, 1823
 Zheng, L. — 136, 592, 593
 Zheng, L.X. — 57, 128
 Zheng, M. — 1641
 Zheng, S.H. — 1104
 Zheng, W. — 2269
 Zheng, X. — 295, 409, 417, 481
 Zheng, Xiao-Lu — 56
 Zheng, X.Y. — 597
 Zheng, Y. — 365
 Zheng, Z.J. — 1915
 Zheng, Z.S. — 835
 Zhenhai, Zhang — 1250
 Zhenyu, Zhang — 1493
 Zhernokletov, M.V. — 1584
 Zhidkov, A.G. — 2361
 Zhigunov, D.I. — 74
 Zhizhong, Xu — 1624
 Zhmendak, A.V. — 1270, 1336
 Zholents, A. — 1240
 Zhong, C. — 213, 596
 Zhong, F. — 1006
 Zhong, Fan — 844
 Zhong, Hua — 279
 Zhong, J. — 126, 392
 Zhong, W. — 52, 257
 Zhong, X. — 2233
 Zhong, Z.Z. — 419, 422, 484
 Zhongxi, Hui — 1328
 Zhou, B. — 188
 Zhou, Bin — 1151
 Zhou, D. — 2173
 Zhou, Dawei — 525
 Zhou, G.Q. — 1484, 1568, 1580
 Zhou, H. — 125, 1655, 1663
 Zhou, H.B. — 2018
 Zhou, H.-L. — 1105, 1139
 Zhou, H.Q. — 670
 Zhou, H.T. — 651
 Zhou, J. — 1267, 1351
 Zhou, J.B. — 279, 280
 Zhou, L. — 320, 519, 2009
 Zhou, Lei — 1095
 Zhou, M. — 1529
 Zhou, M.D. — 2285
 Zhou, Minyao — 384, 809
 Zhou, O. — 369, 1622, 1625
 Zhou, P. — 159, 204, 533, 1345, 1346, 1359, 1360, 1628
 Zhou, Ping — 501, 502
 Zhou, S. — 1100, 1101
 Zhou, Weimin — 133
 Zhou, X. — 998, 2375
 Zhou, Xiang — 2197
 Zhou, X.-Q. — 315, 316, 531, 1746
 Zhou, Y. — 674, 845, 1037, 2244, 2296, 2304
 Zhou, Ya-Dong — 468
 Zhou, Yu — 375
 Zhou, Z. — 94, 413
 Zhou, Z.-K. — 412
 Zhu, C. — 1621
 Zhu, Da-Ming — 322
 Zhu, F. — 123, 1828
 Zhu, G. — 1002
 Zhu, Guodong — 262
 Zhu, Jing — 336
 Zhu, J.X. — 288
 Zhu, L. — 510, 549
 Zhu, Lin — 1855
 Zhu, Lizhi — 1149
 Zhu, Q. — 252, 253, 1625
 Zhu, Qiang — 944
 Zhu, Qing — 426
 Zhu, S. — 272, 802, 2170
 Zhu, S.J. — 1858
 Zhu, X. — 472, 970
 Zhu, X.D. — 312, 313, 585
 Zhu, Xuejun — 472
 Zhu, X.W. — 1118, 1126
 Zhu, Y.D. — 74
 Zhu, Yifu — 1728
 Zhu, Yimei — 327, 801
 Zhu, Yun — 2174
 Zhu, Zhangxiao — 262
 Zhu, Zheng-Kun — 1823, 1838
 Zhu, Z.Q. — 374
 Zhuang, H. — 928
 Zhuang, W. — 119
 Zhukov, A.V. — 1580
 Zhuo, Q. — 93
 Zhuravlev, D.A. — 948
 Zhuravlev, V. — 2096
 Zia, R.K.P. — 601
 Zibold, A. — 76
 Ziebarth, R. — 368
 Ziegler, K. — 1266, 1272
 Ziegler, M.G. — 1658
 Ziegler, W. — 812
 Zielinski, J.J. — 2021
 Zielke, D.M. — 2271
 Ziemann, V. — 1237, 1238, 1239, 1324
 Zieve, R.J. — 88
 Zilka, M. — 1859
 Ziman, T. — 584
 Zimanyi, G.T. — 277, 333, 594
 Zimmer, G. — 1622
 Zimmer, M.F. — 134
 Zimmerman, B. — 1844
 Zimmerman, B.E. — 980, 1805, 1818, 1819
 Zimmerman, E. — 1976
 Zimmerman, G. — 612
 Zimmerman, G.B. — 2082
 Zimmerman, G.O. — 743
 Zimmerman, Neil M. — 322
 Zimmerman, U. — 79
 Zimmermann, H.U. — 1635
 Zimmermann, N. — 1820
 Zinchenko, A. — 1219, 1220
 Zinkann, G.P. — 1333
 Zinkin, Martin P. — 1722
 Zinkin, M.P. — 76
 Zinkle, S.J. — 2106
 Zinkovsky, V. — 757
 Zinn, R.R. — 2367, 2377
 Zineman, T. — 1323, 1334
 Zintl, M. — 1890, 1966
 Ziolkowski, R.W. — 1445
 Ziolo, R.F. — 217
 Ziomek, C. — 1323, 1393
 Ziomek, C.D. — 1215
 Zisman, M.S. — 1366
 Zissis, G. — 2355
 Zitter, R.N. — 344
 Zlimen, I. — 1804, 1829, 1830, 1849, 1855
 Zolfaghari, A. — 1212, 1261, 1368, 2092, 2095
 Zolfaghari, Z. — 1377
 Zolfaharia, A. — 1377
 Zoller, P. — 1098, 1122
 Zolotorev, M. — 1203, 1312, 1313, 1636
 Zolotorev, M.S. — 1110, 1312, 1313, 1342
 Zolper, J.C. — 1724
 Zomlefer, K. — 1153
 Zonca, F. — 1944, 2075
 Zoni, G. — 1389
 Zook, J. David — 446, 675
 Zoric, I. — 729
 Zotos, X. — 821
 Zotter, B. — 1352, 1353
 Zou, C. — 1036
 Zou, G. — 1516

Zou, J. — 209
 Zou, X. — 470, 701
 Zou, Z. — 271, 391, 836
 Zouros, T.J.M. — 1089, 1103, 1171
 Zrenner, A. — 236
 Zschack, P. — 252, 435, 436, 625, 678
 Zschack, Paul — 510
 Zschack, P.R. — 93
 Zubarev, A.L. — 1802
 Zucht, B. — 1860
 Zuegel, J.D. — 1717
 Zueger, O. — 185

 Zumberge, Mark A. — 923
 Zumbro, J. — 944, 1035, 1293, 1300,
 1333, 1387
 Zumbro, J.D. — 943, 1817
 Zumer, S. — 767, 819, 846
 Zumloh, A. — 1262
 Zunger, Alex — 56, 140, 698, 736,
 737
 Zuo, F. — 171
 Zuo, J.-K. — 670
 Zuo, M. — 1156
 Zuo, T. — 1739, 1752

 Zuppiroli, L. — 517, 2077
 Zurek, Anna K. — 1506, 1586
 Zurek, W.H. — 1463
 Zurek, Wojciech H. — 491
 Zurek, Wojciech — 2170
 Zurmühle, R. — 926, 1811
 Zurmühle, R.W. — 926
 Zusi, C. — 2236
 Zutavern, F.J. — 516
 Zvanut, M.E. — 791
 Zwartz, G. — 1805
 Zweben, S. — 1906, 1907, 2031, 2034,
 2037, 2039, 2052
 Zweben, S.J. — 1905, 1906, 1985,
 2034, 2035, 2039, 2121
 Zweibel, Ellen — 1926
 Zybert, R. — 1843
 Zydzik, G.J. — 633
 Zygelman, B. — 1099, 1128, 1161,
 1162
 Zypman, F.R. — 543
 Zypman, Fredy — 597
 Zysler, R.D. — 125

CALENDAR OF MEETINGS

December 1993

General Meetings

Place

Pittsburgh, PA
Crystal City, VA (joint w/ AAPT)
San Jose, CA
Washington, DC

Meeting Dates

21-25 March 1994
18-22 April 1994
20-24 March 1995
18-21 April 1995

Deadline Dates

3 December 1993
7 January 1994

Divisional Meetings

Place

Albuquerque, NM

Division

Particles & Fields

Meeting Dates

2-6 August 1994

Deadline Dates

Topical Group Meetings

Place

Dallas, TX

Topical Group

Laser Science (joint w/OSA)

Meeting Dates

2-7 October 1994

Deadline Dates

Past

Sectional Meetings

Place

Dallas, TX
Cambridge, MA
Cleveland, OH
Toledo, OH
Dallas, TX
Newport News, VA

Section

Texas
New England
Ohio
Ohio
Texas
Southeastern

Meeting Dates

11-12 March 1994
8-9 April 1994
13-14 May 1994
14-15 October 1994
5-6 November 1994
10-12 November 1994

Deadline Dates

11 February 1994

Sponsored Conferences

Place

Raleigh, NC
New Paltz, NY
Orlando, FL
Shanghai, CHINA
Rochester, NY
Gaitlinburg, TN
St. Petersburg, FL
San Diego, CA
Chengdu, CHINA
Albuquerque, NM
Snowmass, CO
Amsterdam, NETHERLANDS
Surrey, U.K.
Cancun, MEXICO
Orlando, FL

Conference Name

Cornelius Lanczos Intl. Centenary Conf.
21st Conf. on the Physics and Chemistry
of Semiconductor Interfaces
1994 North American Conf. on Smart
Structures and Materials
2nd Intl. Conf. on Thin-Film Phys. & Appl.
10th Topical Conf. on High-Temperature
Plasma Diagnostics
Intl. Conf. on Nuclear Data for Science
and Technology
5th Conf. on Intersections of Particle &
Nuclear Physics
World Congr. on Neural Networks '94
Intl. Conf. on Plasma Science &
Technology '94
6th Joint MMM-Intermag Conference
Particle & Nuclear Astrophysics in the
Next Millennium
Intl. Conf. on Strongly Correlated
Electron Systems
8th Intl. Conf. on Quantitative Surface
Analysis QSA-8)
Canadian-American-Mexican Meeting
of the Physical Societies (CAM94)
4th Conf. on Radiation Protection
& Dosimetry

Meeting Dates

12-17 December 1993
24-28 January 1994
13-18 February 1994
15-17 April 1994
8-12 May 1994
9-13 May 1994
31 May-6 June
5-9 June 1994
13-17 June 1994
20-23 June 1994
29 June-14 July 1994
15-18 August 1994
23-26 August 1994
26-30 September 1994
24-27 October 1994

Deadline Dates

Past
10 December 1993
Past

Reminder!!! We've Moved!!

In October, The American Physical Society relocated to the American Center for Physics building in College Park, Maryland. Please note our new address for all future correspondence:

**The American Physical Society
One Physics Ellipse
College Park, MD 20740-3844
Telephone: (301) 209-3200**

MARK JAY KUSHNER
136 EVERITT LAB
UNIV OF ILLINOIS
1406 W GREEN ST
URBANA, IL 61801