The 75th Annual Gaseous Electronics Conference & The 11th International Conference on Reactive Plasmas

October 3 - 7, 2022
Sendai International Center, Sendai, Japan
https://www.apsgec.org/gec2022/

Key Dates
Abstract submissions open: Wed, March 9
Abstract submission deadline: Fri, June 10
Authors notices for acceptance : Tue, August 2

About GEC and ICRP

The 75th Annual Gaseous Electronics Conference (GEC-2022) will be held as an international joint conference with the 11th International Conference on Reactive Plasmas (ICRP-11).

GEC, a special meeting of the APS Division of Atomic, Molecular, and Optical Physics (DAMOP), promotes ideas on the physical and chemical processes and dynamics taking place in partially ionized, collisional plasma and between the atoms, molecules, charged particles, photons, waves, and fields. The GEC has a long leadership history of presenting fundamental and basic science contributions on plasma sources, diagnostics, simulation, plasma chemistry, basic phenomena, atomic and molecular processes. In recent years, GEC has also been a leading venue for reporting on emergent areas of plasma-biotechnology, plasma medicine, multiphase plasmas, environmental applications and atmospheric-pressure plasma systems.

ICRP has been taking place based on the initiative of the Division of Plasma Electronics, the Japan Society of Applied Physics since 1991. The subjects covered in ICRP are the entire field of reactive plasmas and their applications to material, environment, energy, space, bio and medical fields with emphasis on basic phenomena, technologies, and the underlying basic physics and chemistry.

The GEC-2022/ICRP-11 will continue its tradition of offering a truly outstanding venue for leading research in low temperature plasma science and collision physics.

Themes ranging from fundamental plasma research to advanced topics will be discussed at GEC-2022/ICRP-11.

Program

The scientific program occurs from Tuesday-Friday with three to four parallel oral sessions consisting of contributed talks, invited talks, and Prize talks, which are 15 minutes, 30 minutes, and 45 minutes in length. Contributed posters will be presented during the afternoon poster sessions in the middle of the week.

The main program is preceded on Monday by workshops with topics on industrial plasmas, catalytic effects in plasma-liquid interaction, functional processes in plasma-solid reactions, and plasmas for space propulsion.

Awards and Grants Deadlines

The GEC encourages all students to submit applications for the Awards and Grants.

GEC Student Award for Excellence: June 10
GEC Student Poster Prize: September 26
Student Travel Grants: June 10

Conference Venue

GEC-2022/ICRP-11 is planned to be held as an in-person meeting at the Sendai International Center located in Sendai, Japan. If the Covid19 pandemic does not allow to hold an onsite conference, a fully virtual meeting will be organized.

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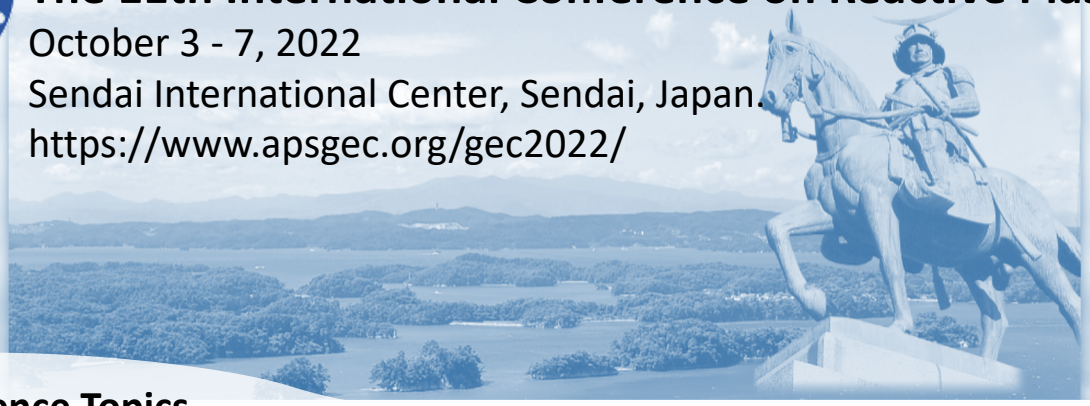

Conference Topics

1. Atomic & molecular process

1.00 Atomic and molecular collisional and dynamical processes
1.01 Electron and photon collisions with atoms and molecules: excitation
1.02 Electron and photon collisions with atoms and molecules: ionization
1.03 Heavy-particle collisions
1.04 Dissociation, recombination and attachment
1.05 Distribution functions and transport coefficients for electrons and ions
1.06 Other atomic and molecular collision phenomena

2. Plasma science

2.01 Nonequilibrium kinetics of low-temperature plasmas
2.02 Basic plasma physics phenomena in low- temperature plasmas
2.03 Plasma boundaries: sheaths, boundary layers, others
2.04 Plasma-surface interactions
2.05 Plasma diagnostic techniques
2.06 Modeling and simulation: computational methods
2.07 Modeling and simulation: validation and verification
2.08 Modeling and simulation: plasma sources
2.09 Modeling and simulation: chemical reactions
2.10 Modeling and simulation: other
2.11 Glows: dc, pulsed, microwave, others
2.12 Capacitively coupled plasmas
2.13 Inductively coupled plasmas
2.14 Magnetically-enhanced plasmas: ECR, helicon, magnetron, others
2.15 Atmospheric and high pressure plasmas: jets and gliding arcs
2.16 Atmospheric and high pressure plasmas: dielectric barrier and corona discharges
2.17 Atmospheric and high pressure plasmas: catalysis and chemical conversion
2.18 Thermal plasmas: arcs, jets, switches, others
2.19 Plasmas in liquids
2.20 Plasma on or contacting liquids
2.21 Plasmas and aerosols
2.22 Negative-ion and dust-particle-containing plasmas
2.23 Gas phase plasma chemistry
2.24 Other plasma science topics

3. Plasma applications

3.01 Plasmas for light production: laser media, glows, arcs, flat panels, and novel sources
3.02 Plasma etching
3.03 Plasma deposition
3.04 Plasma ion implantation
3.05 Green plasma technologies: environmental and energy applications
3.06 Plasma processing for photovoltaic applications
3.07 Biological, medical, and agricultural applications of plasmas
3.08 Plasma propulsion and aerodynamics
3.09 Plasmas for nanotechnologies, flexible electronics, and other emerging applications
3.10 Plasma for other materials processing and synthesis

GEC Executive Committee Officers

Chair: Julian Schulze, Ruhr University Bochum
Chair-Elect: Shahid Rauf, Applied Materials Inc.
Secretary: Toshiro Kaneko, Tohoku University
Treasurer: Aranka Derzsi, Wigner Research Centre for Physics