



First Announcement

ICRP-11 / GEC 2022

**11th International Conference
on Reactive Plasmas /
2022 Gaseous Electronics Conference /
40th Symposium
on Plasma Processing (SPP-40) /
35th Symposium on Plasma Science
for Materials (SPSM35)**

**October 3-7, 2022
Sendai International Center
Sendai, Japan**



**Organized by
International Organizing Committee of ICRP-11
GEC Executive Committee**

**Sponsored by
American Physical Society**

**Co-sponsored by
The Japan Society of Applied Physics**

**ICRP-11 Supported by:
Division of Plasma Electronics, The Japan Society
of Applied Physics**

<https://www.ecei.tohoku.ac.jp/plasma/ICRP-11/>

General Information

The International Conference on Reactive Plasmas (ICRP) has taken place by the initiative of the Division of Plasma Electronics, the Japan Society of Applied Physics since 1991. The 1st ICRP was held in Nagoya, the 2nd in Yokohama (1994), the 3rd in Nara (1997), and the most recent conference (10th ICRP) in Sapporo (2019). Some former ICRPs were held as international joint conferences: the 4th ICRP was with the Gaseous Electronics Conference (GEC) at Maui in 1998, the 5th was with ESCAMPIG at Grenoble (2002), the 7th was with GEC at Paris in 2010, 9th was with GEC at Honolulu in 2015, and 10th was with International Conference on Phenomena in Ionized Gases (ICPIG) at Sapporo in 2019. The Symposium on Plasma Processing (SPP) is a domestic annual Japanese meeting that has been held by the Division of Plasma Electronics since 1984. The joint ICRP and SPP conference aims to gather researchers and engineers, involved in various aspects of reactive plasmas and their applications. The joint conference also aims to facilitate the exchange of information and ideas among them within an international framework. The subjects covered in this conference are the entire field of reactive plasmas and their applications to various materials processing such as surface modification, etching and deposition with emphasis on basic phenomena, technologies, and the underlying basic physics and chemistry. Furthermore, the subjects have been extended to bio- and/or medical application of plasmas. This conference particularly encourages papers dealing with basic properties of the plasma itself, its generation and control, fundamental processes in the plasma, and plasma-solid/liquid interactions. Papers dealing with specific results of processing should place emphasis on the related plasma characteristics in obtaining the results. The 11th ICRP will take place in October 3-7, 2022, in Sendai, Japan, as a joint conference with the 75th GEC. This conference will also be held as a joint conference with the 40th Symposium on Plasma Processing and 35th Symposium on Plasma Science for Materials (SPSM35). The conference site will be at Sendai International Center at Sendai.

Topics

The ICRP-11 / GEC 2022 will consist of a series of oral sessions (composed of both invited and contributed papers), poster sessions, and several arranged sessions on selected topics. Sessions will be organized around coherent subjects in order to facilitate useful discussions and focus on appropriate solutions to problems.

Conference Topics

1 Atomic and molecular collisional and dynamical processes

- 1.1 Electron and photon collisions with atoms and molecules: excitation
- 1.2 Electron and photon collisions with atoms and molecules: ionization
- 1.3 Heavy-particle collisions
- 1.4 Dissociation, recombination and attachment
- 1.5 Distribution functions and transport coefficients for electrons and ions
- 1.6 Other atomic and molecular collision phenomena

2 Plasma science

- 2.1 Nonequilibrium kinetics of low-temperature plasmas
- 2.2 Basic plasma physics phenomena in low-temperature plasmas
- 2.3 Plasma boundaries: sheaths, boundary layers, others
- 2.4 Plasma-surface interactions
- 2.5 Plasma diagnostic techniques
- 2.6 Modeling and simulation: computational methods
- 2.7 Modeling and simulation: validation and verification
- 2.8 Modeling and simulation: plasma sources
- 2.9 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

- 3.1 Plasmas for light production: laser media, glows, arcs, flat panels, and novel sources
- 3.2 Plasma etching
- 3.3 Plasma deposition
- 3.4 Plasma ion implantation
- 3.5 Green plasma technologies: environmental and energy applications
- 3.6 Plasma processing for photovoltaic applications
- 3.7 Biological, medical, and agricultural applications of plasmas
- 3.8 Plasma propulsion and aerodynamics
- 3.9 Plasmas for nanotechnologies, flexible electronics, and other emerging applications
- 3.10 Plasma for other materials processing and synthesis

Contributed Papers

Contributed papers will be presented as 15-minute oral talks or in poster sessions. Authors are requested to submit a GEC-style abstract to the AIP website by June10, 2022. A preference for oral/poster may be indicated. The final decision will be communicated to the corresponding author. In addition to GEC abstract submission, authors are required to submit a manuscript (up to two pages) for ICRP proceedings volume (in a two-column, camera-ready form) no later than June10, 2022. Further details will be given in the second announcement.

Abstracts and Proceedings

Regular participants will be available both the GEC abstracts and the ICRP conference proceedings, which contain invited and contributed papers.

JJAP Special Issue

Papers published in the ICRP conference proceedings may also be submitted to a special issue "Plasma Processing" of the Japanese Journal of Applied Physics (JJAP).

Language

The official language of the conference is English. All presentations and printed materials should be prepared in the official language.

Conference Site

The conference will be held at the Sendai International Center in Sendai, Japan. Other site information, such as accommodations around the conference site, will be provided at our web site:

<https://www.ecei.tohoku.ac.jp/plasma/ICRP-11/index.html>

Accommodation

Please visit our web site for more details.

<https://www.ecei.tohoku.ac.jp/plasma/ICRP-11/travel.html#hotel>

Second Announcement

The second announcement will contain more details, such as the scientific program, registration procedure, accommodation, transportation, visa information, and guidelines for preparing abstracts. It will be issued in April/May 2022.

Calendar of Events

First announcement	Feb 2022
Second announcement	April/May 2022
GEC abstract deadline	June 10, 2022
Paper deadline for a ICRP proceedings (up to two pages, a two-column, camera-ready form)	June 10, 2022
Deadline for student travel support	June 10, 2022
Registration starts	July, 2022
Notification of acceptance	August 2022
Final announcement/program	September 2022
ICRP-11 / GEC 2022	October 3-7, 2022
Papers deadline for JJAP special issue	November 2022

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