

Second Announcement and Call for Papers



ICRP-7/SPP-28/GEC-63

**October 4 - 8, 2010
Maison de la Chimie
Paris, France**

**7th International Conference on Reactive Plasmas,
28th Symposium on Plasma Processing
and 63rd Gaseous Electronics Conference**



*Sponsored by
The Japan Society of Applied Physics
American Physical Society*

<http://www.plasma.engg.nagoya-u.ac.jp/icrp-7/>

Cooperative Societies

The Ceramic Society of Japan
The Chemical Society of Japan
The Electrochemical Society of Japan
The Fullerenes and Nanotubes Research Society
The Illuminating Engineering Institute of Japan
The Institute of Electrical Engineers of Japan
The Institute of Electronics, Information and Communication Engineers
The Institute of Electrostatics Japan
The Institute of Engineers on Electrical Discharges in Japan
The Iron and Steel Institute of Japan
The Japan Society for Aeronautical and Space Sciences
The Japan Society of Plasma Science and Nuclear Fusion Research
The Japan Institute of Metals
Japan Ozone Association
Japanese Society for Medical and Biological Engineering
Japan Welding Society
The Laser Society of Japan
The Physical Society of Japan
The Society for Atomic Collision Research
The Society of Chemical Engineers, Japan
The Society of Polymer Science, Japan
The Surface Finishing Society of Japan
The Surface Science Society of Japan
The Vacuum Society of Japan

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General Information

The International Conference on Reactive Plasmas (ICRP) has been held in Japan since 1991, organized on the initiative of the Division of Plasma Electronics, The Japan Society of Applied Physics: the 1st in Nagoya, the 2nd in Yokohama, 1994, the 3rd in Nara, 1997 and the 6th in Matsushima, 2006. ICRP have been also held as joint conference, i.e., the 4th ICRP with GEC and the 5th ICRP with ESCAMPIG in Hawaii, 1998 and Grenoble, 2002, respectively. The Symposium on Plasma Processing (SPP) is an annual domestic meeting, which has also been held by the Plasma Electronics Division since 1984. The joint conference ICRP/SPP is aimed at bringing together the researchers and engineers involved in various aspects of reactive plasmas and their applications, and at facilitating the exchange of information and ideas among them within an international framework.

Subjects cover the entire field of reactive plasmas and their applications to surface modification, etching, deposition, and other materials processing, with emphasis on basic phenomena and technologies and the underlying basic physics and chemistry. The conference particularly encourages papers dealing with basic properties of the plasma itself, its generation and control, fundamental processes in the plasma, and plasma-solid interactions; papers dealing with specific results of processing should place emphasis on the related plasma characteristics in obtaining the results.

The 7th International Conference on Reactive Plasmas will be held in October 4-8, 2010, in Paris, France, joined with 63rd Gaseous Electronics Conference and the 28th Symposium on Plasma Processing. The conference site “Maison de la Chimie” is located in downtown of Paris, one of the famous cities in the world.

The ICRP-7/SPP-28/GEC-63, a five-day conference, will consist of parallel oral sessions (composed of both invited and contributed papers), poster sessions, and so on. Sessions will be organized around coherent subjects in order to facilitate useful discussions and focus on appropriate solutions to problems.

The official language of the conference is English, and will be used for all presentations and printed materials.



Scientific Program

Conference Topics

General Sessions:

1 Atomic and Molecular 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 Gas phase plasma chemistry
- 2.5 Plasma-surface interactions
- 2.6 Plasma diagnostic techniques
- 2.7 Modeling and simulation
- 2.8 Glows: dc, pulsed, microwave, others
- 2.9 Capacitively coupled plasmas
- 2.10 Inductively coupled plasmas
- 2.11 Magnetically-enhanced plasmas: ECR, helicon, magnetron, others
- 2.12 High pressure discharges: Dielectric barrier discharges, coronas, breakdown, sparks
- 2.13 Microdischarges: dc, rf, microwave
- 2.14 Thermal plasmas: arcs, jets, switches, others
- 2.15 Plasmas in liquids
- 2.16 Negative ion and dust particle containing plasmas
- 2.17 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 and biomedical applications of plasmas
- 3.8 Plasma propulsion and Aerodynamics
- 3.9 Plasmas for nanotechnologies, flexible electronics and other emerging applications

High-frequency gas breakdown workshop: (4th October, 2010)

Collision data archive project: (4th October, 2010)

Tuesday Evening Session: (5th October, 2010)

History and future of plasma processing and collision physics

Plenary and Invited Speakers (tentative)

<Allis Prize and Plenary>

Allis Prize

M. Kushner, University of Michigan (USA)

"Controlling the Properties of Low Temperature Plasmas: The Role of Modelling in Investigating the Science & Developing the Technology."

ICRP Plenary Speakers

R. Hatakeyama, Tohoku University, Japan

"Plasma Processing Power for Nanocarbon Nanobioelectronics."

J. Meier, Oerlikon Solar AG, Switzerland

"Thin Film Silicon Solar Cells and Modules Deposited by PECVD: From R&D Lab Developments to Large-Area Production Tools."

<General Session>

Modeling and Simulation

A. Fruchtman, Holon Institute of Technology, Israel

"The effect of neutral-gas depletion on the plasma density and momentum."

Particles and Dust

H. Kobayashi, Hitachi Ltd., Japan

"Behavior of particles in plasma etching apparatus."

Microplasmas and Atmospheric Pressure Plasmas

D. O'Connell, Queen's University Belfast, UK

"Interactions of multiple atmospheric pressure plasma jets and DNA."

F. Iza, Loughborough University, UK

"Experimental and computational characterization of He+H₂O plasmas at atmospheric pressure."

Plasma Thrusters

S. Mazouffre, ICARE, France

"Ion and atom flow in a Hall discharge: Impact of operating parameters."

Plasma Production and Control

G. H. Kim, Seoul National University, Korea (*to be confirmed*)

R. Bravenec, Tokyo Electron America, USA

"Simulations of plasma formation and sustainment in an RLSA (radial-line slot antenna) microwave plasma source."

Plasma Diagnostics

G. Hebner, Sandia National Lab, USA

"Energy transport and frequency dependent ion kinetics in a capacitively coupled plasma reactor"

H. Y. Chang, KAIST, Korea

"Advanced plasma sources for large area processes."

J. Boffard, University of Wisconsin, USA

"Optical diagnostics using spectroscopic measurements of rare gases."

Plasma Etching

K. Ono, Kyoto University, Japan

"Plasma-surface interactions in plasma etching processes for nanometer-scaled microelectronic devices."

H. Hayashi, Toshiba Corporation, Japan

"Fine ion energy control for sub-32 nm node device RIE using pulsed-DC superimposed 100 MHz rf CCP."

O. Joubert, CNRS-LTM, France

"Synchronised pulsed plasmas: potential process improvements for patterning technologies."

Plasma Deposition

K. Yasutake, Osaka University, Japan

"Purified Si Film Formation from Metallurgical-Grade Si by Hydrogen Plasma Induced Chemical Transport."

Plasma Interaction and Surface Modification

R. D. Mundo, University of Bari, Italy

"Plasma nanotexturing of polymers in single step processes for superior wetting and optical performance."

H. P. Brinkmann, Ruhr University Bochum, Germany

"The Multiple Resonance Probe-Concept, Theory, Experiments."

Plasma Nanotechnology and Bio

R. M. Sankaran, Case Western Reserve, USA

"Bottom-up approaches to plasma synthesis of nanomaterials."

U. Cvelbar, Jozef Stefan Institute, Slovenia

"Blood--biocompatible materials via Plasma Processing."

J. K. Lee, Pohang University of Science and Technology, Korea

"Plasma Biomedicine: Experiments and Modeling."

Capacitively Coupled Plasmas

Z. Donko, Research Institute for Solid State Physics and Optics, Hungary

"Progress on simulations of multiple-frequency capacitively coupled discharges."

Y. Yamazawa, Tokyo Electron AT Ltd, Japan

"Electrode Impedance Effect in a CCP reactor."

Plasma Chemistry

V. Donnelly, University of Houston, USA

"Heterogeneous Reactions in Processing Plasmas."

Inductively Coupled Plasmas

E. Kawamura, UC Berkeley, USA

"2D fluid simulations of inductively/capacitively coupled plasma reactors."

Lighting

G. Kroesen, Technical Univ. Eindhoven, The Netherlands

"Discharge lamps: current challenges, perspectives and threats."

Plasma Assisted Combustion

S. Starikovskaya, LPP CNRS-Ecole Polytechnique, France

"Physics and chemistry of nanosecond pulsed discharges."

Electron-molecule collisions

A. Viggiano, Air Force Research Laboratory, USA

"Teaching an old dog new tricks: Using the Flowing Afterglow Langmuir Probe apparatus to measure electron attachment to radicals and ion-ion neutralization."

M. Allan, Unifr. Switzerland

"Measuring accurate electron-molecule cross-sections for Plasma simulation."

K. Nixon, Manchester University, UK

"Electron Impact Ionization of Molecules and Aligned Atoms."

D. Fursa, Curtin University, Perth, Australia

"Calculation of excitation and ionization processes using relativistic CCC method."

J. Gorfinkiel, Open University, UK

"Low energy electron collisions of relevance to biological radiation damage."

Electron-ion recombination

A. Müller, University of Giessen, Germany

"Electron-ion collisions: precision spectroscopy and plasma rate coefficients."

Heavy Particles

A. Laforge, Missouri ST, USA

"Single Ionization of a "Pure" Three-Body System by Ion Impact."

A. Cassini, CIMAP/CIRIL, Caen, France

"Collision induced water fragmentation: multiple ionization and isotopic effects."

J. Colgan, LANL, USA

"Differential cross sections for ion-impact ionization of helium."

Positrons

Z. Petrovic, Institute of Physics Belgrade, Serbia

"Positron collisions with molecules of biological relevance."



Contributed Papers

Call for Contributed Papers

Contributed papers will be mainly presented in poster sessions and some will be arranged for oral presentations.

GEC Abstracts:

Those who intend to contribute a paper are requested to submit an GEC abstract through the website that appears in the website (<http://gec-icrp2010.polytechnique.fr/home/abstract-submission/>). The due date for receipt of abstracts is 11 June, 2010. The GEC abstract is limited to 1300 characters, including title, author, affiliation, body, spaces, and footnotes. It is essential that abstracts state concisely, but informatively, the objectives, methods, principal findings, and significance of the work to be presented. The abstracts will be refereed by the Program Committee, and the authors will be notified of the acceptance of their papers for presentation in July, 2010, along with the assignment to specific oral and poster sessions.

Post-deadline papers are NOT acceptable.

ICRP Proceedings:

The authors are strongly recommended to submit a two-page paper for the ICRP proceedings volume (a two-column, camera-ready form) by 11 June, 2010, prepared according to instructions those appear in the ICRP webpage (<http://www.plasma.engg.nagoya-u.ac.jp/icrp-7/submission/submission.html>). The conference proceedings containing invited and contributed papers will be available upon arrival at the conference site, and are included in the registration fee. Please be noted that, before the ICRP proceedings paper submission, **acquisition of log number of GEC abstract through the GEC abstract submission is required.**

JJAP Special Issue:

Papers published in a proceedings volume may also be submitted to a special issue “Plasma Processing” of the Japanese Journal of Applied Physics (JJAP), which will be published in July, 2011. The special issue will consist of selected papers presented at the conference, being distributed to all subscribers for JJAP. The authors who want their papers to be included in the JJAP special issue will be requested to submit a manuscript directly to the Publication Office of JJAP by the end of October, 2010.

Each manuscript should be planned to occupy 4-6 journal pages as a full paper, including more data and more detailed interpretations of the findings reported in the proceedings volume. The same manuscripts as in the proceedings volume will not be accepted. The manuscripts will be refereed by the Editorial Board of JJAP before they are accepted for publication, as strictly as those for regular JJAP issues.

The authors are requested to indicate their probable choice about submission of a paper to the JJAP special issue, on the *ICRP Proceedings Submission Form* in the website, when submitting a two-page paper for a proceedings volume. The authors (or their institution) will be requested to pay the publication charge of JJAP, when the paper is accepted. Further instructions will also be provided with the notification of acceptance of ICRP Proceedings.

ICRP Committees

Organizing Committee

(Domestic Members)

M. Hori (Chair)	Nagoya University
M. Shiratani (Vice-Chair)	Kyushu University
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K. Terashima	The University of Tokyo

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(Domestic Members)

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Local Steering Committee

T. Ishijima	Nagoya University
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GEC Executive Committee

GEC Executive committee 2009 - 2010

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Local Organizing Committee

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Ane Aanesland	LPP, CNRS - Ecole Polytechnique
Jean-Paul Booth	LPP, CNRS - Ecole Polytechnique

Social Events

Reception: on Monday, October 4th, 2010, beginning at approximately 6:00 pm with refreshments and finger food.

Conference Banquet: on Thursday evening, October 7th, 2010. The banquet will be held on a boat cruising on the Seine River. The Chair of GEC and ICRP will present the conference awards for best student oral and poster and make Executive committee announcements. **The number of banquet participants is limited to 400.**

Registration

Conference fees for early and late registrations are listed below, along with the additional banquet fees. The conference fees include: admittance to scientific sessions, all coffee breaks, and one copy of the GEC abstract and ICRP proceedings. The reduced conference fee for students will be applied to those who give official proof of their student status.

	before 15 August	after 16 August
Conference Fee		
Regular:	350 Euro	440 Euro
Students/Retiree:	180 Euro	220 Euro
Banquet Fee *	60 Euro	-

*Banquet fee is not included in the registration fees.

Please complete your registration and payments through the website
<http://gec-icrp2010.polytechnique.fr/home/registration/>.

Awards

The international organizing committee gives the Best Paper Award to recognize excellence among the contributing papers. Based on scientific relevance, two oral presentations will be selected as a GEC Award and two poster presentations will be selected as an ICRP Award. To nominate your student, please send a nomination letter and the student's abstract (before June 11, 2010). Detailed information is described in the below website

<http://gec-icrp2010.polytechnique.fr/home/student-awards-and-support/>.

Hotel Accommodation

Paris has a wide choice of hotels with a full range of prices, offering something for everyone. On the links below you can find a short list of two, three or four stars hotels in walking distance from the Maison de la Chimie. Here you will find the hotel websites and telephone numbers where direct booking is possible. However, booking directly from the hotel web site is more expensive than going through internet booking sites like <http://www.expedia.fr/> or <http://www.booking.com>. Note also that October is a very busy period in Paris and we recommend strongly to book your hotel well ahead.

Visas

All foreign visitors entering France must possess valid passports. Citizens of some countries may be required to apply for entry visas in advance. Depending on the country, visa applications can take up to ONE MONTH to be processed. It is therefore recommended that participants contact their local Consular Offices to determine whether or not a visa is required, as soon as possible.

Calendar of Events

GEC abstract deadline	11 June, 2010
Two pages ICRP proceedings volume deadline (a two-column, camera-ready form)	11 June, 2010
Notification of acceptance	July, 2010
Early registration deadline	15 August, 2010
Third (final) announcement / program	September, 2010
Papers deadline for a special issue of JJAP	October 31, 2010

Further Information

Details of the scientific program, daily schedule, and transportation to Paris will be given in the third (final) announcement. All questions for further information regarding this conference should be directed to the Conference Chair.

Also available is the ICRP-7/SPP-28 URL:

<http://www.plasma.engg.nagoya-u.ac.jp/icrp-7/>

If you know of individuals who may have a paper to contribute and have not received this *Second Announcement and Call for Papers*, please bring it to their attention.

Travel Information

How to get there ?

For any information on the parisian public transport network (RER, metro, bus), visit the website : <http://www.ratp.fr/>

BY AIR

Paris is served by many international and regional carriers, besides a range of charter flights departing from Europe. You will land in one of Paris' major airports : Paris-Charles de Gaulle (CDG), Paris-Orly (ORY), or perhaps Paris-Beauvais (BVA) specializing in charter flights. The airports are all within easy reach of the capital.



From Paris-Charles de Gaulle airport (CDG)

RER B (Paris by train) : provides the cheapest and fastest route between CDG airport and Paris.

There are 2 RER stations at the airport : CDG 1 (T1,T3) and CDG 2 (T2). Trains depart every 10-15 minutes between 5am and 11.55pm. Estimated fare & journey time to Châtelet-Les Halles metro connection : 8€/ 45 min.

Air France Coaches : provide services every 20-30 minutes to Paris-Porte Maillot, Arc de Triomphe, Paris-Gare de Lyon and Gare Montparnasse metro connections (15-20€)

Roissybus : provide service every 15-20 minutes to Paris-Place de l'Opéra metro connection (9 €)

Taxi : The trip can take around 30-40 minutes to an hour to the center. Fare is about 45-50€

From Paris-Orly airport (ORY)

Orlyval + RER B : *OrlyVal* provides a frequent shuttle link (every 4-8 min between 6am and 11pm) to Anthony station, where RER B line runs to central Paris and has metro connections.

The estimated journey time to Châtelet-Les Halles metro station is 35 min and the combined ticket Orlyval + RER B costs 9.85€

ADP shuttle + RER C : *ADP Shuttle* provides a shuttle link (every 15-30 min) to Pont de Rungis station, where RER C line runs to Gare d'Austerlitz, St Michel, Invalides and Porte Maillot metro stations. Estimated fare : 6.20€(shuttle) + 5€(RER).

Orlybus : runs every 15-20 min to Denfert-Rochereau RER and metro station (6.40€)

Air France Coaches : provide services every 15 min to Gare Montparnasse, Duroc and Gare des Invalides metro stations (11.50€)

Taxi: Expect an average fare of 25€ during the day (7am to 7pm) and 30€ at the night rate for a journey to central Paris in normal traffic conditions.

From Paris-Beauvais airport (BVA)

An hour from Paris by the A16 motorway.

By bus : special link Beauvais/Paris-Porte Maillot available exclusively for passengers in possession of a valid flight ticket. Every day, every 15-30 minutes following the arrival of your flight.

By TER train : from Beauvais train station, take the TER train to Gare du Nord in Paris. Departures every day between 6.30am and 8pm. Expect a wait of 30 minutes to 1 and a half hours between each departure and just over €10 for a single fare.

BY TRAIN

Paris can be reached by train in a matter of hours from elsewhere in France and all major European cities. All 7 stations bring you right into the heart of the city. Centrally located and each with specific destinations, they offer smooth connections with the public transport network (metro, RER, bus).

Gare du nord

Trains from: northern France and Europe (UK, Belgium, the Netherlands, northern Germany, etc.)

Metro: lines 2 (La Chapelle station), 4 and 5

RER: lines B, D and E (Magenta station)



Gare de l'est

Trains from: eastern France and Europe (southern Germany, Switzerland, Austria...).

Metro: lines 4, 5 and 7

Conference Location

The Maison de la Chimie is one of the oldest conference centers in France, dating back to 1708 with renovations in the 1930s. It has an exceptional location in the heart of Paris, near the Boulevard Saint-Germain.

The conference center includes 27 conference rooms, three large amphitheaters and one reception hall. It also has a private garden of 900 m².



Address

28 rue Saint-Dominique 75007 Paris, France

Phone: + 33 (0)1 40 62 27 00

Public Transportation

RER Line C :

Invalides (600 m)

Métro Line 8:

Invalides (600 m),

La Tour-Maubourg (600 m)

Métro Line 13:

Invalides (600 m), Varennes (700 m)

Métro Line 12:

Assemblée Nationale (400 m),

Solférino (600 m)

Bus Lines 63, 69, 83, 93



Map: <http://www.ratp.info/orienter/cv/carteidf.php?lang=uk>

Conference Chair

Prof. M. Hori

Department of Electrical Engineering and Computer Science,
Plasma Nanotechnology Research Center, Nagoya University

Conference Secretary

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