

# XXXI International Conference on Phenomena in Ionized Gases

14th July – 19th July 2013

Granada, Spain



The International Scientific Committee and the Local Organizing Committee are pleased to invite you to participate in the XXXI International Conference on Phenomena in Ionized Gases (ICPIG), which will be held in Granada, Spain on **July 14th- July 19 2013**. The XXXI ICPIG will cover a wide range of fundamental and applied aspects of ionized gases. This conference emphasises interdisciplinary research and Fosters Exchange between different communities around the world. All interested participants are invited to present the latest results of their scientific work in one of the ICPIG subject areas.

## Scientific Programme

The ICPIG scientific programme covers nearly all aspects of phenomena in ionized gases. It explores the fundamentals of all kinds of plasmas, electrical discharges and their applications, such as plasma semiconductor processing, surface treatment and thin film technology, plasma medicine, environmental protection and pollution control, light sources, atmospheric and astrophysical plasmas, low temperature edge fusion plasmas and novel plasma applications in plasma assisted combustion and plasma flow control.

### Main scientific topics of ICPIG

#### A. Fundamentals

1. Elementary processes and fundamental data
2. Thermodynamic and transport phenomena
3. Plasma wall interactions, electrode and surface effects
4. Collective and nonlinear phenomena

#### B. Modelling, Simulation, and Diagnostics

5. Modeling and simulation techniques
6. Plasma diagnostic methods

#### C. Plasma Sources and Discharge Regimes

7. Astrophysical, geophysical and other natural plasmas
8. Low pressure plasmas
9. High frequency discharges
10. Non-equilibrium plasmas and microplasmas at high pressures
11. Thermal plasmas
12. Complex and dusty plasmas, ion – ion plasmas, mixed phase plasmas

#### D. Applications

13. Plasma processing of surfaces and particles
14. High pressure and thermal plasma processing
15. Plasma lamps and radiation sources
16. Medical, biological, environmental and aeronautical applications
17. Plasma power and pulsed power Technology, particle sources

The scientific programme will consist of 10 invited general lectures and 24 invited topical talks together with lectures from the winners of the *von Engel & Franklin Prize* and the *IUPAP Young Scientist Medal and Prize in Plasma Physics*; there will also be two special sessions and four poster presentations.

The organizers have provided assurance that the conference will be conducted in accordance with the principles of the *International Union of Pure and Applied Physics* (IUPAP) regarding the free circulation of scientists for International purposes. In particular, no *bona fide* scientist will be excluded from participation on the grounds of national origin, nationality or political considerations unrelated to science.

## General Invited Speakers

<b>Jean Paul Booth</b>	France	<b>Walter Lempert</b>	USA
<b>Giorgio Dilecce</b>	Italy	<b>Wei Lu</b>	China
<b>Christophe Hollesntein</b>	Switzerland	<b>George Naidis</b>	Russia
<b>Ulf Helmersson</b>	Sweeden	<b>Isabel Tanarro</b>	Spain
<b>Holger Kersten</b>	Germany	<b>Kazuo Terahima</b>	Japan

## Topical Invited Speakers

<b>Yuri Akishev</b>	Russia	<b>Luis Alves</b>	Portugal
<b>Manuel Arrayás</b>	Spain	<b>Avinash Khare</b>	India
<b>Peter Bruggeman</b>	USA	<b>Hong Young Chang</b>	Korea
<b>Cormac Corr</b>	Australia	<b>Claudiu Costin</b>	Romania
<b>Sylvain Coulombe</b>	Canada	<b>Mário Lino da Silva</b>	Portugal
<b>Emilie Despiau-Pujo</b>	France	<b>Richard Engeln</b>	Netherlands
<b>Alessandro de Giacomo</b>	Italy	<b>Nao Itagaki</b>	Japan
<b>Tommi Kääriäinen</b>	Finland	<b>Petr Lukes</b>	Czechia
<b>Stefan Matejcik</b>	Slovakia	<b>Anton Nikiforov</b>	Belgium
<b>Nevena Puac</b>	Serbia	<b>Chris Rennick</b>	UK
<b>Masaya Shigeta</b>	Japan	<b>Tsanko Vaskov Tsankov</b>	Germany
<b>James Walsh</b>	UK	<b>Dirk Wuenderlich</b>	Germany

## Special Session Topics

### 1.- Plasma Space Propulsion

(convenor: Prof. Dr. E. Ahedo, UPM, Madrid, Spain)

### 2.- Plasma Flow Control and Combustion

(convenor: Dr. A. Starikovskiy, Princeton Univ., USA)

## von Engel & Franklin Prize 2013

The prize is named in honour of two distinguished colleagues who have had a major role in ICPIG and its community since the original meeting in 1953.

The von Engel and Franklin Prize is awarded biennially to an individual for work in the field of physics and Technology of plasmas and ionized gases, as covered by ICPIG meetings. Hans von Engel and Raoul Franklin have provided the funds from which the prize is drawn. This election procedure is conducted by the International Scientific Committee taking account of recommendations from the community based on either long-standing and important contributions to the field, or an outstanding achievement giving new impulse to the field, or both. The nomination cycle begins around September of the year before an ICPIG meeting.

## ICPIG 2013 Student Poster Prizes

The International Scientific Committee (ISC) of ICPIG will select the three best posters presented by PhD students. In addition to the quality of the scientific content and the graphical presentation of the poster, its compliance with the related paper will be taken into account, irrespective of the topic, or whether it is predominantly experimental, computational or theoretical.

The student's supervisor, whether attending ICPIG or not, must nominate her/his student for the prize. Eligible students should not be defending their PhD thesis **before January 2013**. The nomination letter (500 – 1000 words), briefly describing and evaluating the specific work should reach the ISC Chair before 3<sup>rd</sup> June 2013.

**Prof. Nicholas Braithwaite**

Professor of Engineering Physics

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## Contributed Papers

All interested scientists working in the field of ionized gases are invited to present the results of their recent work in one of the ICPIG conference topics listed above.

The contributions will be evaluated by the ISC on strictly scientific grounds. The decision will be communicated to the authors within 2 – 3 weeks after receiving the contributed paper. The **abstract submission deadline** is **1<sup>st</sup> March, 2013**.

Guidelines for preparing and submitting the contributions are given on the conference website (<http://www.icpig2013.net/Paper-Submission.php>). The accepted contributed papers will be presented in poster sessions, arranged according to subject areas.

Please note that **each registered participant** is entitled to submit a **maximum of two contributed papers**.

## Conference Venue

XXXI ICPIG will be held from **14<sup>th</sup> July to 19<sup>th</sup> July 2013** in Granada, Spain. The conference venue is the **Granada Congress Centre** (<http://www.pcgr.org/flash.htm>). The conference will begin with registration on Sunday, July 14 followed by a welcome reception during the evening of July 14. The Granada Congress Centre is located in a privileged position in downtown Granada (see location map in [http://www.icpig2013.net/conference\\_venue.php](http://www.icpig2013.net/conference_venue.php)), surrounded by the most modern hotels within walking distance. The historical and commercial city centre can be reached in less than a ten minute walk.

## Accommodation

Several hotels have been arranged for the accommodation of the participants attending the XXXI edition of ICPIG in Granada as well as their accompanying persons. Due to the agreement between these hotels and the local organizing committee, the hotels listed below offer **special reduced prices during the conference days**. The list of hotel and the agreed rates (in euros) are:

HOTEL (Walking Time to VENUE in minutes)	Double (single use)	Double (two people)
HESPERIA GRANADA **** (20)	113 €	130 €
M.A. NAZARIES **** (20)	103 €	113 €
ANDALUCÍA CENTER **** (5)	100 €	115 €
NH INGLATERRA *** (20)	91 €	97 €
M.A. PRINCESA ANA **** (25)	83 €	93 €
MELIÁ GRANADA **** (10)	81 €	91 €
SARAY **** Sup (1)	75 €	85 €
M.A. ALHAMAR **** Sup (7)	75 €	85 €
SAN ANTÓN **** (2)	73 €	83 €
CARMEN **** (5)	70 €	90 €
M.A. ABEN HUMEYA *** (20)	63 €	73 €
MACIÁ MONASTERIOS DE LOS BASILIOS *** (3)	55 €	65 €

Prices **include breakfast and taxes** and are subjected to **early booking**. This information is also available at ([http://www.icpig2013.net/hotel\\_information.php](http://www.icpig2013.net/hotel_information.php)). In order to make your hotel reservations please download the **participant acomodation form**, fill it in and send it by e.mail ([icpig2013@viajeseci.es](mailto:icpig2013@viajeseci.es)) or fax (+34 91 547 88 87) as soon as possible. An interactive map of Granada with the location of conference hotels and the Conference Center can be found at [http://www.icpig2013.net/hotel\\_information.php](http://www.icpig2013.net/hotel_information.php).

You can download in ([http://www.icpig2013.net/forms\\_and\\_info.php](http://www.icpig2013.net/forms_and_info.php)) the conference **hotel registration form**.

## Hotel Cancellation Policy

Confirmation of booking and receipt of payment will only be sent (by e-mail, fax or regular air mail) **when both the participant accommodation form and payment in full are received.**

All cancellations and changes to reservations should be made in writing by e-mail, fax or regular air mail.

The cancellations policy for the accommodation is as follows:

- **Free** of charge until **1<sup>th</sup> May 2013**.
- Between **May 2 and May 18, 2013**, **50% of total accommodation payment** will be charged.
- Between **May 19 and June 13, 2013**, **75% of total accommodation payment** will be charged.
- **After June 14, 2013**, **no refund** will be made in case of cancellation.

**All payments** should be made **in euros** (€) **by credit card or bank transfer**. VISA, Master Card, American Express and Dinners club are accepted.

When using the hotel registration form and if you wish to use a credit card, please submit your credit card number including the three last digits on the signature panel (on the reverse of the card) and the expiry date on your personally signed registration form to enable the transaction.

Please note that **all banking cost must be paid by the participant**. The name and address of the participant as well as the details of the payment should be clearly indicated when completing the bank transfer. A duplicate or a photocopy of the bank transfer invoice must be sent by fax or e-mail to the Congress Secretariat.

## Travel

Granada is located next to the Sierra Nevada mountains in Andalusia in the southeast of Spain. It is about 70 km from the coast. Granada gives the unique opportunity to visit both the highest mountain in continental Spain (above 3400 m) and the sunny beaches of the Costa del Sol.

**By plane:** The **airport of Granada**, at only a 15 minute drive from the Conference Center, serves Madrid and Barcelona with four daily flights. The International **Airport of the Costa del Sol (Málaga)**, at 130 km from Granada (1 hour by bus approximately), is connected with most European and American destinations by daily flights. On arrival it is better to get a taxi at the airport so that you can get to your accommodation. The taxi costs about 25 euros from the airport to downtown Granada. There is also a regular bus service which takes you to the city center for 4 euros.

**By train:** The train station is fairly central. The Spanish National Railway Company (**RENFE**) has a good website giving full information in English about trains in Spain.

**By Bus:** There are daily **buses** connected to almost all cities in Spain. The bus station is not close to the city centre but there are taxis and public transportation that can take you downtown.

**By car:** Granada is well communicated by freeway road with all main Spanish cities. It takes about 5 hours from Madrid and 90 minutes from Málaga.

## Visas and Letters of Invitation

For information regarding Spanish Visa eligibility and process, please visit the web of the Spanish Ministry of Foreign Affairs at

<http://www.maec.es/en/MenuPpal/Consulares/ServiciosConsulares/InformacionaExtranjeros/Paginas/Nacionalidad.aspx>

The spanish visa is processed in your country of residence prior to your departure. Visa applications are currently subject to a greater degree of scrutiny than in the past. Many applicants may be required to appear in person for an interview as a part of the visa process. Conference participants are advised to apply for visa **no later than 3 months** prior to the conference. If you need a visa, you can request an invitation letter by sending e-mail to:



[icpig2013@iaa.es](mailto:icpig2013@iaa.es) as soon as you have submitted your abstract and **have paid in full your registration fee.**

### **Visa invitation letters will only be issued to:**

- 1.- People the Committee knows
- 2.- Speakers/Presenters/Exhibitors
- 3.- Committee members
- 4.- Attendees who have paid their registration fees in full.

Those **registered participants** that meet any of the above points needing a visa to travel to Spain may wish to ask the LOC for a formal letter of invitation making it clear whether an electronic and/or hard copy are required.

## **Registration**

The registration process will be done in two steps:

1.- **Registration:** This will be done by filling out the following on line **registration form**. Once you have sent your data, you can check them by using your password. If you need to change some data, please send electronic mail to [icpig2013@iaa.es](mailto:icpig2013@iaa.es).

2.- **Confirmation of Registration:** Once you have filled out the on line registration form, your registration will be confirmed upon receipt of **payment by bank transfer (credit cards can not be accepted)**. A copy of the bank transfer invoice should be send by e.mail ([icpig2013@viajeseci.es](mailto:icpig2013@viajeseci.es)) or fax (+34 91 547 88 87) before **April 15th 2013** (early registration) or **June 15th 2013** (late registration with higher fee). Registration will be acknowledged by electronic mail.

The registration fee brings a complete package including a copy of the conference abstract brochure, conference material, coffee breaks, invitation for the welcome reception and a complete tourist guide. [Accompanying persons will be able to participate in all social events as well as in the coffee breaks.](#) **Early payment** of the fee (**before April 15th, 2013**) has a 50 Euro discount for regular participants and students. The registration fees are in euros as follows:

	<b>Early Fee</b> <b>(April 15th, 2013)</b>	Late Fee (June 15th, 2013)
<b>Regular Participants</b>	430 €	480 €
<b>Students</b>	260 €	310 €
<b>Accompanying persons</b>	60 €	60 €
<b>Conference Dinner</b>	50 €	50 €

The FEE for accompanying person includes: **Welcome reception, excursion and coffee during lecture breaks.** Information on the parallel social program for accompanying persons is available in the section of Social Events of this website.

## Payment

In order to complete registration full payment is required. Payment must be done by bank transfer. Only "free of charge" bank transfers will be accepted. Any bank charges to LOC accounts will be asked for reimbursement at the conference venue.

## To consider for registration process

- 1.- Each participant must register and pay individually.
- 2.- First time you access the registration pages you will need to create an account **by filling in the online registration form.** A confirmation email will be sent to you.
- 3.- **Please indicate** whether you will be attending the conference dinner or not. It is advisable to book tickets for the conference dinner well in advanced as places may be limited.
- 4.- The **payment cancellation and refund policiy** is that cancellations of payment received before May 1st will be fully refunded (bank transfer charges will be deducted). Cancellations

before June 1st, 70 % of conference fee will be refunded; before June 20th, 50 % of conference fee will be refunded and those cancellations done after June 20th will NOT be refunded.

## Dates and Deadlines

Second announcement	15th January 2013
LOC financial support	15th February 2013
Nomination for IUPAP Young Scientist Prize	1st March 2013
Abstract submission	1st March 2013
EARLY registration (reduced fee)	15th April 2013
Nomination for Student Poster Prizes	1st May 2013
LATE registration (higher fee)	15th June 2013
Final announcement	15th June 2013
Accommodation booking	15th June 2013 (no refund)
Paper for PSST	30th June 2013

## Committees

### International Scientific Committee (ISC)

N. Braithwaite (Chair)	UK and Ireland
Y. K. Pu (Secretary)	China, Taiwan and Korea
E. Stamate	Norway, Sweeden, Finland and Denmark
S. Bhattacharjee	India, Australia, Indonesia, New Zeeland and South Africa
E. Son	Russia and the area of the former SU

M. Kushner	USA and Canada
J. de Urquijo	Mexico, Spain, South and Central America and Portugal
M. Hori	Japan
L. Boufendi	France and North Africa
D. Bruno	Italy, Greece and Israel
U. Fantz	Germany, Austria, Lichtenstein and Switzerland
A. Bogaerts	Belgium, Netherlands and Luxembourg
M. Simek	Czech Republic and Slovakia, Hungary and Poland
G. Popa	Romania, Bulgaria, Serbia, Bosnia, Montenegro, Croatia and Slovenia

### Local Organizing Committee (LOC)

F. J. Gordillo-Vázquez (Chair)	IAA – CSIC	Granada
A. Luque	IAA – CSIC	Granada
M. Passas	IAA – CSIC	Granada
F. C. Parra-Rojas	IAA – CSIC	Granada
I. Tanaro	IEM – CSIC	Madrid
V. Herrero	IEM – CSIC	Madrid
J. Ballesteros	UCO	Córdoba
E. Ahedo	UPM	Madrid
R. Martínez	UPV	Bilbao
C. Hidalgo	CIEMAT	Madrid
F. L. Tabarés	CIEMAT	Madrid

**CSIC:** Spanish National Research Council; **IAA:** Institute of Astrophysics of Andalusia; **IEM:** Institute of Structure of Matter;

**UCO:** University of Córdoba; **UPM:** Polytechnic University of Madrid; **UPV:** University of Vasc Country; **CIEMAT:** Research Center for Energy, Environment and Technology

## Contact

### LOC Secretary:

If you have any specific questions please do not hesitate to contact us at.

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### Management Secretary:

**Ms. Arantxa Fernández and Ms. Elena Usón**

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