



ESCAMPIG XXI

July 10-14, 2012

Viana do Castelo, Portugal

Europhysics Conference on the Atomic and Molecular Physics of Ionized Gases

Conference organization

International Scientific Committee

Jürgen Meichsner (chair), Germany
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Stéphane Pasquiers, France
Peter Hartmann, Hungary
Giorgio Dilecce, Italy
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Mark Bowden, United Kingdom
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Local Organizing Committee

Vasco Guerra (chair), Lisboa
Pedro Almeida, Funchal, Madeira
Luís Lemos Alves, Lisboa
Edgar Felizardo, Lisboa
André Janeco, Lisboa
Luís Marques, Braga
Maria João Martins, Lisboa
Carlos Daniel Pintassilgo, Porto
Rafael Saavedra, Lisboa
Miguel Santos, Lisboa
Mário Lino da Silva, Lisboa

Conference format

The Conference includes plenary invited general and topical lectures, short hot-topic oral presentations selected by the International Scientific Committee among the contributed papers, poster sessions, and workshops on "air plasma chemistry" and "plasma for sustainable environment." All contributions will be published in Europhysics Conference Abstracts (ECA) in electronic form, to be distributed to participants at the beginning of the conference.

escampig2012@ist.utl.pt

Welcome to ESCAMPIG 2012

General information

The Europhysics Conference on the Atomic and Molecular Physics of Ionized Gases - ESCAMPIG - is an international conference being celebrated since 1973. It is now a biennial conference of the European Physical Society (EPS). The wide variety of conference topics on basic and applied plasma science spans from atomic and molecular processes in plasmas and plasma-surface interaction to self-organization in plasmas and to the new research lines with low and high pressure plasma sources.

ESCAMPIG XXI is organized by Instituto de Plasmas e Fusão Nuclear from Instituto Superior Técnico, Universidade Técnica de Lisboa, Universidade do Porto, Universidade do Minho and Universidade da Madeira.

The working language of the conference will be English and, consequently, all the conference oral presentations and the written material will be given in English. According to the tradition of this conference, all activities and events will take place under one roof to help the scientific communication.

The International Scientific Committee and the Local Organizing Committee cordially invite you to attend the conference in Viana do Castelo.

Conference topics

1. Atomic and molecular processes in plasmas
2. Transport phenomena, particle velocity distribution function
3. Physical basis of plasma chemistry
4. Plasma surface interaction (boundary layers, sheaths, surface processes)
5. Plasma diagnostics
6. Plasma and discharges theory and simulation
7. Self-organization in plasmas, dusty plasmas
8. Upper atmospheric plasmas and space plasmas
9. Low pressure plasma sources
10. High pressure plasma sources
11. Plasma and gas flows
12. Laser produced plasmas

<http://escampig2012.ist.utl.pt>



Venue

Location and date

The conference will be held in Castelo de Santiago da Barra, a XVIth century pentagonal fortification in Viana do Castelo, Portugal, which holds a modern congress centre. Its parking lot is available for participants with a car. The conference starts with a welcome reception on tuesday, July 10, 2012, at 7p.m., and finishes at 1p.m. on saturday, July 14.

Viana do Castelo

Viana do Castelo forms an ideal base to explore the beautiful surrounding region. Its well-preserved historical center exhibits a harmonious mixture of architectonic styles, from gothic to art-déco, with beautiful manor houses and tile panels (azulejos). The nearby ruins of the Iron Age settlement "citânia de Sta. Luzia", the medieval center and Gustave Eiffel's iron bridge are further distinctive marks of this lovely town where the extremes meet.

How to reach Viana do Castelo

Viana do Castelo is easily reached by airplane, train, bus, car and boat. The nearest airport is the Francisco Sá Carneiro Airport in Porto (OPO).

A Shuttle service will be organized by "Agência Abreu" from Porto airport to Viana do Castelo and vice-versa. The schedule and price of the shuttle service will be announced very soon on the [conference website](#).

There are daily trains from 6 am to 9 pm, leaving from Porto main railway station (Porto Campanhã) to Viana do Castelo. Price: a one way ticket costs about 8 euros. Travel time: 1h20 (direct) / 1h40 (changing at the station "Nine").

There are daily bus services between Porto and Viana do Castelo. Travel time is 1h30 and the price is 6.50€ (one way).

You can get a taxi directly between Porto airport and Viana do Castelo (about one hour travel time). Prices range from 80 euros (3 passengers) to 96 euros (8 passengers).

If you are driving from the South (Porto), take highway IC1 to Viana do Castelo. The trip takes about 45 minutes.

More information is available on the website.

Conference programme

General invited lectures

Michael Bonitz (Christian-Albrechts-Universität zu Kiel, Germany)

Complex plasmas - a laboratory for self-organization

Roberto Celiberto (Politecnico di Bari, Italy)

Electron-molecule collision processes in non-equilibrium molecular plasmas

Ute Ebert (Centrum Wiskunde & Informatica in Amsterdam, The Netherlands)

Thunderstorms as electron accelerators and the discharge zoo above the clouds

Carlos Matos Ferreira (IPFN, Instituto Superior Técnico, Lisboa, Portugal)

Microwave driven air-water plasmas

William G. Graham (Queen's University Belfast, UK)

Plasmas in Liquids and their Applications

Kostya Ostrikov (CSIRO Materials Science and Engineering, Australia)

Small energy for small things: plasma nanoscience for a sustainable future

Antoine Rousseau (LPP, Ecole Polytechnique, France)

Crookes Prize lecture

Streamers and discharges at liquid and solid interfaces

Nikolai Trushkin (State Research Center of Russian Federation TRINITI, Russia)

Steady-state and pulsed-periodical regimes for generation of non-thermal plasma jets at atmospheric pressure

Topical invited lectures

Jan Benedikt (Ruhr-Universität Bochum, Germany)

Plasma chemistry in the effluent of a He/O₂ microplasma jet: the role of VUV photons

Thierry Callegari (Université Paul Sabatier, Toulouse, France)

Generation, annihilation and motion of self-organized filaments in dielectric barrier discharges

Olivier Guaitella (Ecole Polytechnique, Palaiseau, France)

N and O atoms adsorbed under plasma exposure: a model system to investigate surface reactivity

František Krcma (Brno University of Technology, Czech Republic)

Generation of pin hole discharges in liquids

Ester Marotta (Università di Padova, Italy)

Decomposition of mixtures of organic compounds in atmospheric plasma

Bogdana Mitu (National Inst. for Lasers, Plasma and Radiation Physics, Romania)

Plasma deposition of carbon-based materials: diagnostic studies

João Santos Sousa (Queen's University Belfast, UK)

Cold atmospheric pressure plasma jets as sources of reactive oxygen species for biomedical applications

Francisco Tabares (As.Euratom/Ciemat. Madrid, Madrid)

Application of nitrogen-containing plasmas to Fusion Plasma Research

Registration

Conference fees

The conference fee includes registration, welcome reception, wine tasting, excursion, coffee breaks, all lunches during the conference and the EPS proceedings. Early registration deadline has passed, but registration is still possible. A late fee reduction will be applied to PhD students.

	Early	Late
Regular participants	450€	500€
EPS Members	400€	500€
Students	300€	410€
Accompanying Persons	150€	150€
Conference dinner	40€	40€

How to register

Registration can be made following the link https://pco.abreu.pt/CLIENTES/abreu/formularios/form_122304079.php. This link is available at the Registration section of the conference website. Payments can be made by credit card or by bank transfer. On-site payments are accepted.

Cancellation policy

Before April 30, 2012: 90% refund

From May 1 to May 15: 50% refund

After May 15: no reimbursement

No-show: no reimbursement

Important deadlines

Early Registration: April 16th, 2012

Payment deadline for inclusion in the proceedings:
May 15th, 2012

Nominations for the EPS poster prize: July 1st, 2012

Submission of papers for PSST: July 30th, 2012

Support

EPS has provided grants for 3 PhD students (pocket money). The LOC has further awarded 12 grants for PhD students (fee waiver), with the contribution of Universidade Técnica de Lisboa.

Conference abstracts

Both invited and contributed papers will be published as proceedings in electronic format by EPS as Europhysics Conference Abstracts (ECA), with number 36-A. The corresponding ISBN number is 2-914771-74-6.

Hot topic lectures

Nikolay Dyatko (State Research Center Troitsk Institute for Innovation and Fusion Research, Russia)

Experimental and theoretical study of the influence of nitrogen admixture on characteristics of dc glow discharge in rare gases at intermediate pressures

Uros Cvelbar (Centre of Excellence PoliMat, Ljubljana, Slovenia)

Plasma reshaping carbon: The role of plasma species in surface interactions with carbon

Pedro Almeida (Universidade da Madeira, Portugal)

Self-organization as an intrinsic feature of DC glow microdischarges: modelling appearance of different spot patterns

Tomas Hoder (INP Greifswald, Germany)

Comparison of pulsed and sinusoidal operated barrier discharges

Arnaud Bultel and Julien Annaloro (Université de Rouen, France)

Elaboration of collisional-radiative models: illustration and results for flows related to planetary entry situations into Earth and Mars atmospheres

Julian Schulze (Ruhr-University Bochum, Germany)

Ionization by drift and ambipolar electric fields in electronegative capacitive radio frequency plasmas

Mark J. Kushner (University of Michigan, USA)

Control of Electron, Ion and Photon Distributions in Low Pressure Plasmas Using Pulsed Power

Masaru Hori (Nagoya University, Japan)

High-speed synthesis and crystallinity control of nanographene using inliquid plasma in alcohol

Contributed papers

Contributed papers are to be presented in three poster sessions, taking place on wednesday, July 11, 14:30-16:15, thursday, July 12, 14:30-16:15, and friday, July 13, 11:15-13:00. Board dimensions for posters are 1175 mm (vertical) x 865 mm (horizontal). Please check the conference program available on the conference website for a detailed description of each poster session.

Workshops

Plasmas for sustainable environment

Wednesday, July 11, 17-19h.

Conveners: Antoine Rousseau (LPP, Ecole Polytechnique, Palaiseau, France) and Elena Tatarova (IPFN, Instituto Superior Técnico, Lisboa, Portugal).

Claudia C. Luhrs (Naval Postgraduate School, Monterey, USA)

Plasma-assisted CO₂ processing for energy storage

Jayr Amorim (Laboratório Nacional de Ciência e Tecnologia do Bioetanol, Brazil)

Ozone Measurements by Absorption Spectroscopy Applying Dielectric Barrier Discharges at Atmospheric Pressure for Sugarcane Bagasse Treatment

PSST Special issue

Invited papers, workshop papers and hot topic papers presented at the 21st European Conference on the Atomic and Molecular Physics of Ionized Gases (ESCAMPIG XXI) will be considered for publication in a Special Issue of Plasma Sources Science and Technology. Each paper submitted will be refereed to the usual standards of quality for the journal.

IOP Publishing will manage the peer-review of the special issue. Manuscripts should be submitted electronically, directly to PSST, according to the [guidelines](#) available at the website. The manuscript submission deadline is July 30th 2012. Authors' and referees' main contact throughout the reviewing process will be with the PSST editorial office, at psst@iop.org

All papers submitted to the special issue must include original, unpublished research results. In some cases, it may be necessary to supplement the work presented at the conference with additional new material. Papers which do not meet PSST's requirements for originality and scope will not be included in the special issue.

Prizes

William Crookes prize

ESCAMPIG awards the William Crookes prize to a mid-career researcher who has been recognized to have made major contributions to the scientific topics covered by the ESCAMPIG. Mid-career is here defined as between 10 and 20 years after PhD or the equivalent qualification. The prize is co-sponsored by the European Physical Society (EPS) and Plasma Sources Science and Technology (PSST).

We are pleased to announce that the 2012 William Crookes Prize has been awarded to Dr. Antoine Rousseau, for his major contributions on the coupling plasma-catalysis and its application to air treatment.

EPS poster prize

EPS grants one Poster Prize to award the PhD student (defined by the registration) presenting the best poster at the conference.

Student nominations for the EPS poster prize must include a letter of recommendation from the supervisor and should be sent to the LOC before July 1st, 2012.

Evgenia Benova (Sofia University, Bulgaria)

Cylindrical and coaxial surface-wave-sustained plasma for environmental applications

María Dolores Calzada (Universidad de Córdoba, Spain)

Hydrogen production from ethanol decomposition by a surface wave discharge at atmospheric pressure

Igor Kossyi (A.M.Prokhorov General Physics Institute of RAS, Russia)

Multispark discharge in water as a method of environmental sustainability problems solution

Richard Engeln (Eindhoven University of Technology, The Netherlands)

Plasma-assisted CO₂ processing for energy storage

Xavier Duten (Université Paris 13, France)

Diphasic process combining a fluidized catalytic bed and a plasma at atmospheric pressure for the degradation of volatile organic compounds

Workshop Boris F. Gordiets: air plasma chemistry

Thursday, July 12, 17-19h.

Conveners: Fabrizio Esposito (Istituto di Metodologie Inorganiche e Plasmi, Bari, Italy) and Mário Lino da Silva (IPFN, Instituto Superior Técnico, Lisboa, Portugal).

Carlos Matos Ferreira (IPFN, IST Portugal) and Mario Capitelli (CNR, Bari)

The contributions of B. Gordiets to plasma kinetics

António Varandas (Universidade de Coimbra, Portugal)

Recent progress on accurate ab initio-based potentials and dynamics: atmospheric NxOy triatomic systems and beyond

Annarita Laricchiuta (CNR, Bari, Italy)

Electron-impact excitation cross sections for air kinetics

Fabrizio Esposito (CNR, Bari, Italy)

Rovibrationally detailed cross sections of atom-diatom collisions concerning air species

Mário Lino da Silva (IPFN, IST, Portugal)

Modeling of diatom-diatom collisions using the Forced Harmonic Oscillator method, and application to high temperature kinetics applications

Christophe Laux (Ecole Centrale de Paris, France)

Radiative transition probabilities and electron-impact excitation cross-sections for the VUV systems of N₂

Accommodation

A number of rooms have been reserved in various hotels at special prices for the accommodation of the participants and their accompanying persons. Rooms can be booked using the same link as for the registration. Detailed information on the hotels and booking is available on the website. Early booking is strongly recommended.

A map with the recommended hotels is available at the [website](#).

In case you have a car you may want to consider staying at one of the many farms and manor houses available in the region.

Social programme

All registered participants and accompanying persons are invited to the welcome reception, the wine tasting event and the conference excursion.

Welcome reception

The welcome reception will be held at Convento de São Domingos on tuesday July 10th, 7-8 pm. The convent is located at Largo de São Domingos, 5 minutes walking both [from the Castelo de Santiago da Barra](#) congress centre and [from the city center](#). It will include tasting Solar de Merufe green wine ("vinho verde").

Wine tasting

A short wine tasting event will be held at Castelo de Santiago da Barra on wednesday July 11th, from 7 to 7:30 pm, right after the workshop Boris F. Gordiets. Alvarinho wine of Palácio da Brejoira will be served.

Conference dinner

The conference dinner will take place on the evening of thursday, July 12th, at Quinta de São João, just 5 kms from the centre of Viana do Castelo. The "Quinta" has a lovely open air garden with grapevines, various trees and traditional granite benches. It belongs to Restaurante Camelo, well-known for serving regional specialties. Quinta de São João has been awarded several gastronomic prizes for the quality of its excellent food. Participants are required to register to the conference dinner using the registration form.

Excursion

The conference excursion will be a guided tour to the historical center of Guimarães, declared World Heritage by UNESCO. Founded in the 4th century, Guimarães became the first capital of Portugal in the 12th century. Guimarães is the European Capital of Culture in 2012.

Accompanying persons

For now three programs are planned, depending on the number of participants: the historic center of Porto (Oporto) including a cruise; Barcelos and Ponte de Lima; and Santiago de Compostela. Additional information can be found on the conference [website](#).

Spread the word!

Help us publicize the ESCAMPIG XXI! Download the ESCAMPIG XXI announcements and poster from our [website](#) and distribute them in your network of contacts. Include a link to the ESCAMPIG XXI website on your web pages!

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