

**57th Annual Gaseous Electronics Conference
September 26-29, 2004**

Queen's University Belfast and Dublin City University

**GEC04
Executive Committee**

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THIRD and FINAL ANNOUNCEMENT

July 2004

The Fifty-Seventh Annual Gaseous Electronics Conference (GEC) will be held September 26-29, 2004 in the Conference Centre at the Fitzpatrick Bunratty Hotel, Bunratty, Co. Clare, Ireland.

The GEC Executive Committee invites papers on basic phenomena and plasma processes in partially ionized gases, and on the theory and measurement of basic atomic and molecular collision processes. Papers reporting on experimental, theoretical, and computational studies which address either fundamental properties of low-temperature plasmas, or their applications, are encouraged. Applications of interest include, but are not limited to, plasma processing of materials, gas lasers, ion sources, gas discharge lamps, plasma chemistry, plasma-surface interactions, ionospheric phenomena, diagnostics, and similar topics. Although most papers will deal with low-energy processes, papers that concern electronic or radiative processes produced by high-energy electrons or heavy particles are also welcome.

IMPORTANT DEADLINES

Early Registration Deadline:	26 July 2004
Post-deadline Abstracts:	23 July 2004
Assured Banquet and Conference Lunch Bookings:	26 July 2004
Hotel Conference Block Bookings:	27 July 2004
Full Programme Available on APS Website	23 July 2004
Deadline for Abstract Corrections by Authors on APS website	28 July 2004

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POST-DEADLINE ABSTRACT SUBMISSION

Post-deadline abstracts will be considered for poster presentation only until 23 July 2004. They must be submitted using the American Physical Society online web submission process at <http://www.aps.org/meet/abstracts>. If you are not an APS member type "GEC abstract" in the member id box.

If you encounter problems at any point in the abstract submission process, please contact the APS Abstract Help-Line by sending e-mail to abs-help@aps.org or by calling 301-209-3290 during regular business hours, US Eastern Time.

REGISTRATION

The deadline for early registration is 26 July 2004. You are strongly encouraged to register online at gec2004.qub.ac.uk. Registration information, including instructions and forms are included in the second announcement available on the GEC2004 website. If you cannot register on-line please contact Samantha Fahy, Plasma Research Laboratory, School of Physical Sciences, Dublin City University, Glasnevin, Dublin 9, Ireland. Telephone : +353-(0)1-700-5948, Fax : +353-(0)1-700-5951, e-mail: info@prl.dcu.ie

2004 Registration Fees

Note fees are in euros. Only payments in euros can be accepted

	Early*	Late
General	€225	€285
Conference Lunch	€21	
Banquet	€45	
Student/Retiree*	€130	€160

*

The Registration fee includes the opening reception, refreshment breaks and conference materials. For students and retirees the conference lunch on 29 September 2004 is also included in the registration fee.

ACCOMMODATION

The conference will be held in the Conference Centre at the Fitzpatrick Bunratty Hotel, Bunratty, Co. Clare, Ireland. **Blocks of rooms have been reserved at a number of hotels for conference participants and are being held until 27 July 2004. The Bunratty Castle Hotel is already full so please make your hotel reservations asap.** Room rates and contact information for the hotels which have rooms available at the time of writing are shown below. Conference participants must make their own reservations directly with the hotel. Since we have large block bookings at these hotels they may well register full on their website. You should therefore contact the hotel directly and mention the Gaseous Electronics Conference when you make your reservation. This will also insure that you get the conference rate.

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Fitzpatrick Bunratty Hotel
Bunratty
Co Clare
Tel: 00 353 61 361177
Fax: 00 353 61 471252
E-mail: bunratty@fitzpatrick.com
Website: www.fitzpatrick.com
€96 Single B&B
€130 Double/Twin B&B

Great Southern Hotel Shannon Airport
(8 km[†])
Shannon Airport
Co Clare
Tel: +353 61 471122
Fax: +353 61 471982
E-mail: res@shannon-gsh.com
Website: www.gshotels.com
€ 85 Single B&B
€ 110 Double/Twin B&B

Radisson SAS, Limerick
(6 km[†])
Ennis Road
Limerick
Co Clare
Tel: +353 61 456506
E-mail: bridget.kenny@radisson.com
E-mail: www.radisson.com
€105 Single B&B
€120 Double/Twin B&B

[†]There is an approximately half hourly public bus service connection with Bunratty and the conference will provide some transport to and from these hotels. If you wish to hire a car, there is free parking at the conference centre.

You might want to enjoy the more informal atmosphere of the large number of small hotels, guesthouses and bed and breakfast establishments in the area. Information and contact details for most of these accommodations is available at www.shannonregiontourism.ie/clare. Much of this accommodation is well within walking distance of Bunratty. But please remember, if you are planning to stay in this type of accommodation and to walk, this is a rural area and there is no street lighting. We are looking into providing some transportation to local bed and breakfast accommodation so, to help us with this, please send details (name of B&B and dates) to gec2004@qub.ac.uk if you book this type of accommodation.

TRAVEL

Bunratty is 8 km from Shannon International Airport. There are direct flights from over 19 international destinations including: Atlanta, Boston, Brussels, Chicago, Washington, Frankfurt, London, Manchester, Minsk, Moscow, New York, Paris, Philadelphia, Toronto. Airline schedules are available on the Shannon Airport website. Many hotels operate shuttle bus services to and from the airport, so enquire when booking, and in addition Bunratty is served by the local bus service.

Bunratty is 14 km from Limerick City which has bus and rail links to the rest of Ireland, including Dublin (~2 hours), making Dublin Airport an alternative point of entry to Ireland.

There are also ferry services connecting the east coast of Ireland with Great Britain and mainland Europe.

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SPECIAL EVENTS

RECEPTION

An opening reception will be held on the evening of Saturday 25 September 2004 in the Conference Centre at the Fitzpatrick Bunratty Castle starting at 7 pm.

CONFERENCE LUNCH

A conference lunch will be held on 29 September 2004. It will be held in the Bunratty Castle Hotel. This will be a table-served lunch and will be an opportunity for the presentation of prizes and Executive Committee announcements.

BANQUET AT BUNRATTY OR KNAPPOGUE CASTLE

We have block booked the medieval banquets at these castles for the night of Monday 27 September 2004. We have reservations at two locations since each is limited to about 140 persons.

Bunratty Castle is located adjacent to the Fitzpatrick Bunratty Hotel. It was built around 1450. The banquet consists of a 4 course "medieval" Irish meal, with Mead and some craic*.

Knappogue Castle is about 15 miles from Bunratty Village (buses will be provided). This was built in 1467 by Sean MacCon McNamara and is considered a magnificent example of a medieval tower house. The banquet consists of a 5 course "medieval" meal and some craic*.

*An Irish word for fun, entertainment and of course good conversation.

Reservations are on a first come basis. **Closing date for guaranteed reservations at the conference lunch and castle banquets is 27 July 2004.**

SIGHT SEEING

The local committee will be on hand throughout the conference to help participants and accompanying guests organise tours etc. However if you are specifically interested in a tour of some scenic parts of Clare, i.e. the Cliffs of Moher and the Burren on the afternoon of either Saturday 25th (starting at noon) or Wednesday 28th (following the lunch) send an email to gec2004@qub.ac.uk before September 3rd.

POSTER PRESENTATIONS

Please note that the poster board area will be 1 m high and 1.2 m wide.

ORAL PRESENTATIONS

Please arrive at least fifteen minutes before the beginning of the session you are speaking in and report to the conference chair. Let the chair know if you are using a data or overhead projector. A laptop will be available so you may bring power point presentations on a CD or memory stick.

In some of the lecture rooms there will be simultaneous projection onto two screens. If you are planning to use an overhead projector then please bring **both** transparent and paper versions of your slides since the latter often project better in camera-based systems.

EXHIBITORS

Once again this year we will be making arrangements to host exhibitors of products of interest to the GEC community. Firms interested in exhibiting at the conference should contact the Conference Secretary at gec2004@qub.ac.uk. Currently Dow Corning, Nor-Cal Products Scientific Systems, Cavendish Instruments, Institute of Physics Publishing and Hiden Analytical have indicated that they will be exhibiting.

GEC INFORMATION ONLINE

The official website for the Gaseous Electronics Conference 2004 is <http://gec2004.qub.ac.uk>. This website contains detailed on the conference and its location. Keep up to date by clicking on latest announcements on the home page.

Additional information may be obtained from the American Physical Society website at <http://www.aps.org>. The GEC maintains a permanent website at <http://www.gec.org/>.

CONFERENCE SECRETARY

Further information on the conference may be obtained from the conference secretary at the following address:

Bill Graham
Department of Pure and Applied Physics
Queen's University Belfast
Belfast BT7 1NN
Northern Ireland

Voice: +44 28 90 973941
FAX: +44 28 90 973110
Email: gec2004@qub.ac.uk

STUDENT TRAVEL ASSISTANCE

The GEC recognizes the importance of student participation and this year has been delighted to provide financial student travel assistance to the 12 students who applied.

GEC STUDENT AWARD FOR EXCELLENCE

This award recognizes the best paper presented by a student at the Gaseous Electronics Conference. In presenting the award the GEC Executive Committee seeks to further encourage student attendance and participation in the GEC.

The GEC Executive Committee has reviewed the nominated abstracts and have selected the following **Student Award Finalists**.

Sergey Belostotsky (Skobeltsyn Nuclear Physics Institute of Lomonosov Moscow State University)
"Investigation of negative ion destruction by $O(^3P)$ atoms and $O_2(a^1\Delta_g)$ molecules in oxygen plasma." [AS1.005]
Sunday 9.30

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Matt Foster (University of Missouri – Rolla)

“Fully Differential Cross Section for Charged Particle Impact Ionization of Helium” [CS2.002] Sunday 14.30

Milica Jelisavcic (Australian National University)

“Electron Scattering from Plasma Processing Gases- C₂F₄ and c-C₄F₈” [DS2.003] Sunday 16.45

Nicholas Plihon (LPTP, Ecole Polytechnique, France)

“Instabilities in electronegative ICP-type discharges” [KM1.001] Monday 14.00

Members from the GEC Executive Committee will serve as judges. They will attend all the finalists' talks and select the award winner. The recipient of the Student Award for Excellence will be announced at the Conference Lunch and will be presented with an award certificate along with a 500 Euro prize. The Executive Committee wish to thank the supervisors who nominated students and would encourage all supervisors to consider nominating their best students at future meetings. They would also encourage conference delegates to attend the student talks. The session and time of their presentations are listed above.

FUTURE GECs

GEC 2005 will be held in San Jose, California. Full details will be available shortly on the GEC 2004 website and the general GEC website. The Executive Committee is always interested in offers to organise future GEC meetings. If you have such a proposal please approach one the Executive Committee members.

SESSIONS AND INVITED SPEAKERS

Saturday, September 25, 2004

1A (19:00) : Registration and Reception

Sunday, September 26, 2004

AS1 (08:30) : Glows.

AS2 (08:30) : Plasma Chemistry.

BS1 (10:30) : Plasma Applications for Nanotechnology I.

“Nanoparticles in process plasmas: Growth, diagnostics, applications”

Jörg Winter, *Ruhr-University Bochum*

“Generation of atmospheric pressure radio-frequency discharge without dielectric barrier and application to nanotubes deposition”

Nozaki Tomohiro, *Tokyo Institute of Technology*

BS2 (10:30) : Lighting I.

“Modeling of the energy balance and transport processes in metal halide lamps using PLASIMO”

Marco Haverlag, *Eindhoven University of Technology*

CS1 (14:00) : Particle and Electrical Diagnostics.

CS2 (14:00) : Ionization.

“Reaction microscopes: The Cloud Chambers of atomic and molecular physics”

Joachim Ullrich, *Max-Planck-Institut für Kernphysik*

DS1 (16:00) : Optical Emission Diagnostics.

“Optical measurements of plasma breakdown”

Mark Bowden, *Eindhoven University of Technology*

DS2 (16:00) : Interactions With Molecules.

“Ionization in strong electric fields”

Ian Williams, *Queen's University Belfast*

ES1 (19:30) : Poster Session I.

Recombination, Other plasma topics, Glows, Electron - atom scattering, Atomic lifetimes, Heavy particle interactions, Capacitively coupled plasmas.

ES2 (19.30) : Poster Session II.

Materials processing in low temperature plasmas, Plasma chemistry, Diagnostics I,

Monday, September 27, 2004

FM1 (08:30) : Plasma Applications.

FM2 (08:30) : Electron-Molecule Interactions.

“Dissociative ionization of biomolecules”

Winifred Huo, *NASA Ames Research Center*

GM (10:30) : The Will Allis Prize Lecture.

“Colliding electrons - Workhorses of Gaseous Electronics”

Bill McConkey, *University of Windsor*

HM (11:45) : Business Meeting.

JM1 (14:00) : Plasma Applications for Nanotechnology II.

JM2 (14:00) : Dissociative Attachment / Dissociative Recombination.

“High resolution studies of dissociative electron attachment to molecules”

Hartmut Hotop, *Technische Universitaet, Kaiserslautern*

KM1 (16:00) : Negative Ions & Instabilities.

KM2 (16:00) : Material Processing in Low Pressure Plasmas I.

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Tuesday, September 28, 2004

LT1 (08:30) : Biological and Emerging Applications of Plasmas.
"Electron interactions with biological molecules and their clusters"
Kit Bowen, *Johns Hopkins University*

"Resonances and bond-breaking in bio-molecules"
Paul Burrow, *University of Nebraska-Lincoln*

LT2 (08:30) : Plasma Surface Interactions.

MT1 (10:30) : Plasma Boundaries.

MT2 (10:30) : Capacitively Coupled Discharges.

NT1 (14:00) : Laser Diagnostics. "Probing low temperature plasmas with diode lasers"
Gus Hancock, *Oxford University*

NT2 (14:00) : Cold Collisions.
"Making molecules at microKelvin"
William Stwalley, *University of Connecticut*

PT1 (16:00) : Poster Session III.
Inductively coupled plasmas, Magnetically enhanced plasmas, Electron-molecule interactions, Ionization, Distributions and transport coefficients, Photoionization

PT2 (16:00) : Poster Session IV.
Dielectric barrier discharges, Displays, Thermal plasmas, Lighting plasmas, Diagnostics II, Innovative plasma applications, Dusty pPlasmas, Plasma applications for nanotechnology, Environmental applications, Biological and emerging applications of plasmas, Coronas, breakdown and sparks, Laser media-processes, High pressure glow discharges.

Wednesday, September 29, 2004

QW1 (08:30) : Pulsed Plasmas.

QW2 (08:30) : Lighting II.
"Chemi-ionization of mercury in lighting environments"
Lee Collins, *Los Alamos National Laboratory*

RW1 (10:30) : High Pressure Discharges.
"Characteristics of high-pressure microwave glow discharge in a microgap aimed at VUV light source"
Akihiro Kono, *Nagoya University*

"On branching streamers and sprites: channel head dynamics in laboratory and high atmosphere"
Ute Ebert, *CWI Amsterdam and TU Eindhoven*

RW2 (10:30) : Material Processing in Low Pressure Plasmas II.
"Stable processing with unstable plasmas?"
Neil Benjamin, *Lam Research*

"Multidimensional plasma sheaths over electrically inhomogeneous surfaces"
Demetre Economou, *University of Houston*

SW (12:30) : Conference Lunch.