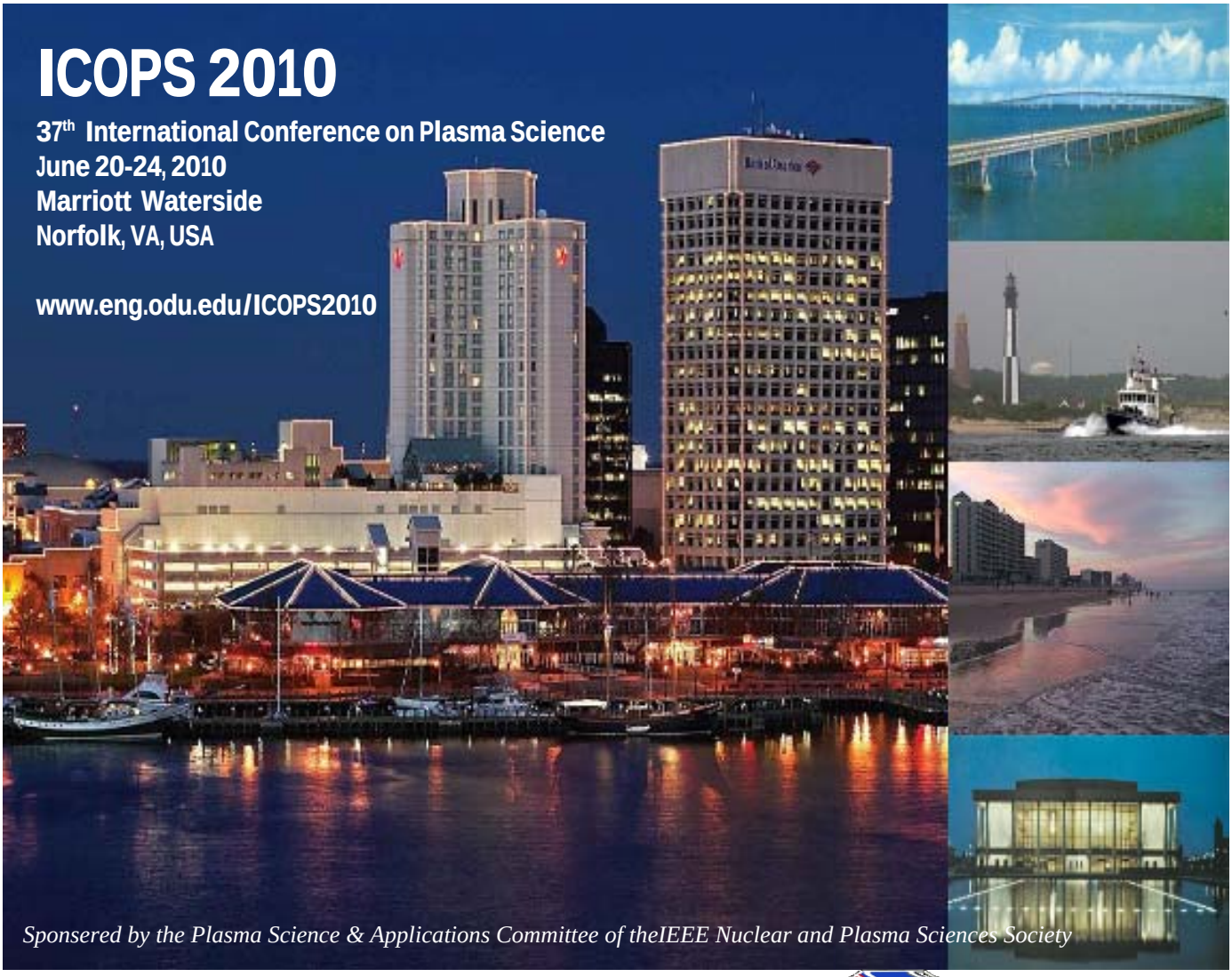


CONFERENCE TOPICS

- **Basic Processes in Fully and Partially Ionized Plasmas**
- **Microwave Generation and Plasma Interactions**
- **Charged Particle Beams and Sources**
- **High Energy Density Plasmas Applications**
- **Industrial, Commercial and Medical Plasma Applications**
- **Plasma Diagnostics**
- **Pulsed Power and Other Plasma Applications**

Abstract Deadline: January 15, 2010

Minicourse: Low Temperature Plasma Modeling and Simulation and Application

WELCOME

We wish to extend a cordial invitation to the 37th IEEE International Conference on Plasma Science (ICOPS) to be held in Norfolk, VA, USA, from June 20 to June 24, 2010 with a minicourse scheduled June 24 and 25. The conference venue is the Marriott Waterside hotel located in the center of downtown Norfolk.

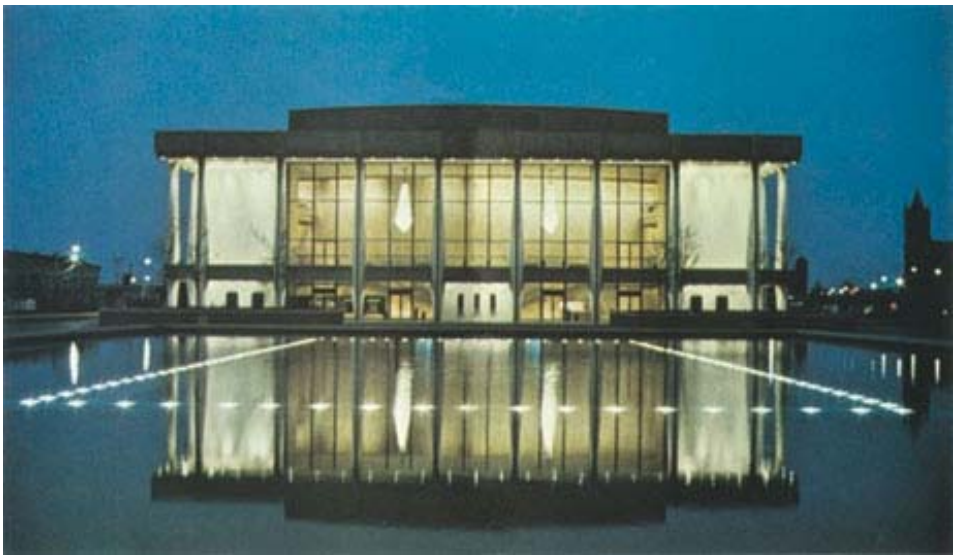
Plasma science covers a wide range of topics. ICOPS 2010 will offer a rich technical program that spans the many fundamental as well as applied aspects of the field. The conference will be followed by a 1.5 days minicourse on low temperature plasma modelling and applications.

Norfolk, VA, is located in a region of eastern Virginia known as “Hampton Roads”. There are 10 cities in Hampton Roads (Norfolk, Portsmouth, Chesapeake, Hampton, Newport News, Suffolk, Franklin, Poquoson, Williamsburg, and Virginia Beach). The total population of the region is in the excess of 1.6 Millions. There are many attractions and historic sites in Hampton Roads. Williamsburg, Jamestown (the oldest English settlement in North America), and the beautiful sandy beaches of Virginia Beach are but a few examples.

The conference organizers, including committee members and session organizers, as well as the IEEE Nuclear and Plasma Sciences Society, welcome and encourage you and your companions to attend the ICOPS 2010 in Norfolk, VA.

Mounir Laroussi
Chair, ICOPS 2010

John Luginsland
Chair, PSAC/ExCom



CONFERENCE LOCATION

ICOPS 2010 will take place in Norfolk, Virginia. Norfolk is a city of some 238,832 residents and more than 100 diverse neighborhoods. It is the cultural, educational, business and medical center of Hampton Roads, hosts the world's largest naval base, the region's international airport and is one of the busiest international ports on the East Coast of the United States.

The city has been undergoing a successful renewal, including new office, retail, entertainment and hotel construction downtown, new residential development along the rivers and bay front, and revitalization projects in many of its neighborhoods. Norfolk has added thousands of new residents to its downtown – turning it into a vibrant, lively place to live, visit or work. A light rail route through the heart of downtown is scheduled to open in late 2010.

Founded in 1682, Norfolk grew up on the water, and its miles of lake, river and bay front are central to many of its neighborhoods. The city's popular logo -- an elegant young mermaid, which can be spotted in outdoor sites from Downtown to Ocean View -- symbolizes 300 years of maritime and naval heritage and its modern reputation as a city on the move.

Attractions -- such as the battleship U.S.S. Wisconsin, a salute to the city's long-standing relationship with the Navy, Nauticus, the Hampton Roads Naval Museum, and the new Cruise and Celebration Center dot Norfolk's easily-walked downtown waterfront. Here, tugboats and visiting cruise ships share the waters with sailboats and merchant ships. The waterfront is also home to Town Point Park, a recently refurbished green space that houses summer festivals, fountains, walkways, and tributes to the City's naval history. Other treasures -- The Chrysler Museum, Norfolk Botanical Garden and the Virginia Zoological Park -- are close by.

Norfolk is home to the Virginia Port Authority. Norfolk-Southern Railway. the Virginia Symphony, Virginia Stage Company, Old Dominion University, Eastern Virginia Medical School,. Norfolk State University and Tidewater Community College, Tides baseball in the summer and the Admirals hockey in the winter, state of the art research facilities, shipping companies and an exuberant arts and cultural community.

CONFERENCE FORMAT

The conference will include plenary, oral, and poster sessions. There will be four plenary talks presented by international leaders in the plasma physics community; one plenary presentation will be an address by the 2010 IEEE Plasma Science and Applications Award recipient. In addition, for this conference, we plan to have a special oral session on the emerging field of "**Plasma Medicine**".

Oral presentations will include both invited and contributed papers. Invited talks will be 30 minutes and contributed talks 15 minutes including time for questions. Oral talks will be loaded onto presentation computers prior to each session. The expected applications are Microsoft Powerpoint and Adobe Acrobat (pdf files). Presentations are to be submitted on a CD or flash memory and will be transferred to the database. Posters should fit within a space of 4x6 feet.

PUBLICATIONS

The Conference Record will be on a USB memory stick. Manuscripts of plenary and invited oral presentations can be submitted for a special issue of the IEEE Transactions on Plasma Science to be published in early 2011. The Guest Editors of this special issue are Prof. Ravindra Joshi, Old Dominion University, Prof. Xinpei Lu, HuaZhong University, and Prof. Yukinori Sakyama, UC Berkeley.

EXHIBITS

The ICOPS 2010 exhibition will take place at the Marriott Waterside hotel, which is also the venue of the conference. The exhibition room is a high traffic area where the conference poster sessions, coffee breaks, and internet cafe will be located. Exhibition packages ranging from $2,800 to $7,200 are offered. If you are interested in participating in our exhibits please contact a member of our exhibit management team:

Juergen Kolb, Exhibit Chair
jkolb@odu.edu

Lukrecija Lelong, CMP, Meeting Planner
IEEE Meeting & Conference Management
l.lelong@ieee.org

MINICOURSE

Low Temperature Plasma Modeling & Simulation and Applications

As part of ICOPS 2010, a 1.5-day minicourse on low temperature plasma modeling and simulation will be offered on Thursday afternoon June 24th and Friday June 25th. The minicourse will be held at the Marriott hotel. A group of international experts from academia and industry will provide a set of comprehensive lectures on modeling techniques for low temperature plasmas and their applications.

Plasma modeling and simulation are powerful tools to address fundamental questions of plasma physics and chemistry and to interpret experiments. This short course is designed to introduce students, researchers, and engineers to the concepts and methods used in plasma modeling and simulation.
Low temperature plasmas can be modeled from a variety of perspectives, including analytical models, fluid models, Boltzmann models and particle simulations such as Particle-in-Cell/Monte Carlo models. So-called 'hybrid' models combine various aspects of these models; for example a kinetic description of electrons using Monte Carlo methods, with fluid models of heavy species.
Interactions of plasmas with surfaces can be treated with Monte Carlo-based binary collision models or molecular dynamics (MD). MD methods are further classified in terms of the interatomic potentials used, from classical to ab-initio.
Chemically reactive plasmas are generally treated with extensions of approaches taken for other reaction flow problems, including combustion, atmospheric chemistry and chemical vapor deposition. These equations are coupled to the plasma dynamics models and to the appropriate sub-set of Maxwell's equations for electromagnetic effects.

Who should attend

The course is designed for students, engineers, and scientists from academia and industry. The instructors will provide both introductory and advanced coverage of modelling techniques.

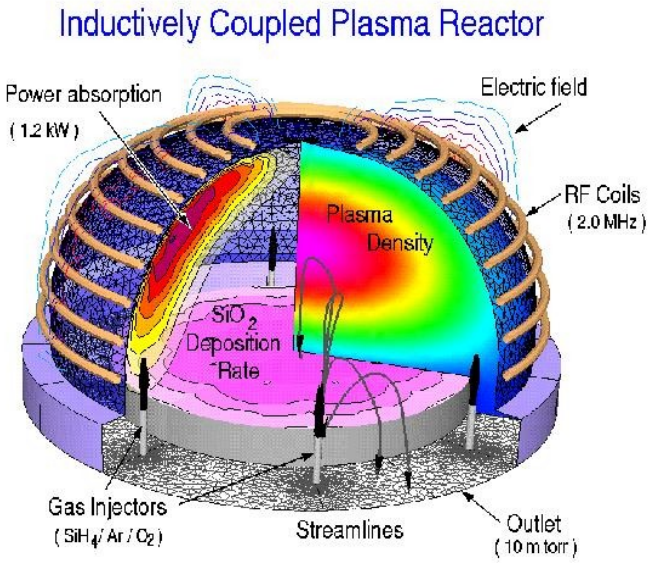
Minicourse Topics Include:

- Plasma Reactors
- Plasma Surface Interactions
- Deterministic Methods for Solving Kinetics Equations
- Multi-dimentional Simulations of Industrial Plasmas
- Capacitively Coupled Discharges
- High Pressure Discharges and Microdischarges
- Fluid Modeling of Atmospheric Pressure Plasmas
- Plasma Chemistry in Atmospheric Pressure Plasmas

More Information

Further information on the minicourse registration fees, student tuition grants, and instructors will be posted on the conference website.

Conference Organizer:
Prof. Demetre Economou
Department of Chemical and Biomolecular Engineering
University of Houston
Email: Economou@uh.edu



SOCIAL EVENTS

Welcome Reception

A welcome reception will be held at the Marriott hotel on Sunday June 20 from 5 to 10 pm. There is no charge for conference registrants and companions.

Reception at Old Dominion University

On Monday evening June 21 there will be a reception for IEEE members hosted by the President of Old Dominion University (ODU). There is no charge for conference registrants who are IEEE members and their companions.

The reception will take place at the open air Kaufman Mall of Old Dominion Un iversity. ODU is a Carnegie/Doctoral Research Extensive institution with a total student body of about 23,000 and having its main campus only few minutes drive from downtown Norfolk and the Marriott hotel. There will be buses that will shuttle attendees from the hotel to the ODU campus and back.

Boat Cruise aboard the Spirit of Norfolk

A cruise is scheduled on Tuesday evening June 22 on board of the Spirit of Norfolk. Dinner, soft drinks, fruit juices, and water will be served. A no-host cash bar for alcoholic drinks will also be available. The cost of the cruise is $20 for conference registrants.

Banquet

The conference banquet will be held Wednesday (June 23) evening, in the Marriott Ballroom on the fourth floor of the conference hotel. A limited number of tickets are available. A nominal payment of $40 will be charged for conference registrants and companions. Tickets can be purchased during on-line registration and at the Registration Desk on a first-come basis

COMPANION ACTIVITIES

The following tours for accompanying persons will be organized:

Williamsburg

A day trip to historic colonial Williamsburg will be arranged. Williamsburg is less than an hour drive from Norfolk.

Virginia Beach

A half day trip to Virginia Beach is planned. The beach is less than 30 minutes drive from the conference hotel. Virginia Beach is a major vacation resort on the US east coast. The beach area offers a variety of restaurants, bars, shops, and entertainment.

BEST STUDENT PAPER AWARDS

The "Best Student Presentation Awards" were established in 2005 by the IEEE Nuclear and Plasma Sciences Society.

The purpose of these awards is to encourage both outstanding student contributions and greater student participation as principal or sole authors of papers as well as to acknowledge the importance of student contributions to the fields embraced by the NPSS umbrella.

The two best submissions (two awards) will receive cash awards of $250, book vouchers worth $250 from Springer-Verlag, and a Certificate. The two runners-up will receive a certificate only.

Any student who is the principal author/researcher and the presenter of either an oral or poster paper at the ICOPS 2010 conference and who has been identified as an eligible student author will be eligible. If there is a tie, preference will be given 1) to IEEE NPSS members, 2) to IEEE members; 3) to non-IEEE members.

All candidates for selection must have identified themselves at the time of abstract submission. Upon notification of acceptance of the abstract, the award candidate should arrange to have his/her advisor or research supervisor provide an endorsement of the work to the awards committee (contact details will be provided at a later date). At the conference, the on-site awards committee will rank the papers for technical content and originality first. Other criteria such as graphic display and clarity of data presentation may be considered.

For information contact:

Prof. Ravindra Joshi
Old Dominion University
rjoshi@odu.edu

STUDENT TRAVEL GRANT

A limited number of travel grants are available to encourage students who are IEEE members to attend ICOPS 2010. Applicants should submit the following information by February 15, 2010.

- Copy of submitted abstract
- IEEE membership number
- Proposed travel budget to the conference (cost sharing with other students is encouraged)

Two letters of recommendation, one of which is from the student's advisor, stating the importance of the research to be presented.

Applications have to be done online (see conference web site). For more information contact:

Keith Cartwright
studenttravel2010@ieee.org

LIST OF TOPICS AND SESSION ORGANIZERS

Session Area	Organizer	Email	Phone
1. Basic Processes in Fully and Partially Ionized Plasmas	Kurt Becker Polytech NY	kbecker@poly.edu	718-260-3608
1.1 Basic Phenomena	Kurt Becker Polytech NY	kbecker@poly.edu	718-260-3608
1.2 Computational Plasma Physics	John Verboncoeur UC Bekeley	johnv@eecs.berkeley.edu	510-642-3477
1.3 Space Plasmas	Greg Howes Univ. Iowa	Gregory-howes@uiowa.edu	319-335-1221
1.4 Partially Ionized Plasmas	Weidong Zhu St. Peter's College	wzhu@spc.edu	201-761-6343
1.5 Dusty Plasmas	Holger Kersten Univ. Kiel, Germany	kersten@physik.uni-kiel.de	0431-880-3872
2. Microwave Generation and Plasma Interactions	Monica Blank CPII	Monica.blank@cpii.com	650-846-3557
2.1 Intense Beam Microwave Generation	Adrian Cross Strathclyde Univ., UK	a.w.cross@strath.ac.uk	44 141-548-4614
2.2 Fast-Wave Devices	Lawrence Dressman NSWC Crane	Lawrence.dressman@navy.mil	812-854-4804
2.3 Slow-Wave Devices	Adam Balckum CPII	Adam.balkcum@cpii.com	650-846-3448
2.4 Vacuum Microelectronics	Lawrence Ives CCR	rli@calcreek.com	650-312-9575
2.5 Codes and Modeling	Alexander Vlasov NRL	vlasov@ccs.nrl.navy.mil	202-767-0034
2.6 Non-Fusion Microwave Systems	Arne Fliflet NRL	Arne.fliflet@nrl.navy.mil	202-767-2469
2.7 Microwave Plasma Interaction	Tim Bigelow ORNL	bigelowts@ornl.gov	865-576-5959
2.8 THz Sources, Radiation, & Applications	Baruch Levush NRL	Baruch.levush@nrl.navy.mil	202-405-4513
3. Charged Particle Beams and Sources	Robert Commisso NRL	Robert.commisso@nrl.navy.mil	202-404-8984
3.1 Plasma, Ion and Electron Sources	Edward Barnat SNL	evbarna@sandia.gov	505-2849828
3.2 Intense Electron and Ion Beams	Bryan Oliver SNL	bvolive@sandia.gov	505-284-7876
4. High Energy Density Plasmas and Applications	Farhat Beg UCSD	fbeg@ucsd.edu	858-822-1266

4.1 Fusion - Inertial, Magnetic and Alternate Concepts	Kazuo Tanaka GSE/ILE	katanaka@eei.eng.osaka-u.ac.jp	81-66879-7232
4.2 Particle Acceleration with Laser and Beams	Markus Roth Tech Univ. Darmstadt	m.roth@gsi.de	49 (0)6151/165417
4.3 Radiation Physics	John Apruzese NRL	apruzese@ppd.nrl.navy.mil	202-767-2939
4.4 High Energy Density Matter	Pravesh Patel LLNL	pravpatel@llnl.gov	925-423-7450
4.5 Laser Produced Plasmas	Mongshen Wei UCSD	mswei@ucsd.edu	858-534-6997
4.6 Fast Z-Pinches, X-Ray Lasers	Jerry Chittenden Imperial College	j.chittenden@imperial.ac.uk	44-20-7594-7654
5. Industrial, Commercial and Medical Plasma Applications	Michael Kong Loughborough Univ.	m.g.kong@lboro.ac.uk	44-1449-227075
5.1 Nonequilibrium Plasma Applications	Satoshi Hamaguchi Osaka Univ.	hamaguch@ppl.eng.osaka-u.ac.jp	81-6-6879-7913
5.2 High-Pressure and Thermal Plasma Processing	Alexander Fridman Drexel Univ.	Fridman@drexel.edu	215-895-1542
5.3 Plasma Thrusters	Lax Raja UT Austin	lraja@mail.utexas.edu	512-471-4279
5.4 Plasmas for Lighting	Sun-Jin Park Univ. Illinois, Urbana	sjinpark@uiuc.edu	217-333-6686
5.5 Medical, Biological and Environmental Applications	Michael Kong Loughborough Univ.	m.g.kong@lboro.ac.uk	44 1449 227075
6. Plasma Diagnostics	Jean-Michel Pouvesle GREMI	Jean-michel.pouvesle@univ-orleans.fr	33-0-238-41-7123
6.1 Optical and X-ray Diagnostics	Jeff Koch LLNL	Koch1@llnl.gov	925-422-3956
6.2 Microwave and FIR Diagnostics	Xinpei Lu HuaZhong Univ.	luxinpei@hust.edu.cn	86-27-87558104
6.3 Particle Diagnostics	Johan Frenje MIT	jfrenje@psfc.mit.edu	617-452-4941
7. Pulsed Power and Other Plasma Applications	Edl Schamiloglu Univ. New Mexico	edl@ece.unm.edu	505-277-4423
7.1 Insulation and Dielectric Breakdown	Hulya Kirkici Auburn Univ.	kirkih@eng.auburn.edu	334-844-1822
7.2 Switching	Naz Islam Univ. Missouri	islamn@missouri.edu	573-882-7570
7.3 Generators	Joshua Leckbee SNL	jileckb@sandia.gov	505-284-9951
7.4 Compact Pulsed Power and Applications	Ravindra Joshi ODU	rjoshi@odu.edu	757-683-4827

PLACEMENT CENTER

A job placement center will be set up at the conference. Individuals interested in employment opportunities in plasma physics and related areas should send their resumes (marked "ICOPS") to the email address below. Employers with plasma-related technical positions available should contact

William White
will.white@kirtland.af.mil

This is a free service that has been a success at past ICOPS in hiring graduates into industry, academia and national laboratories.

REGISTRATION

	In Advance On or before April 30, 2010	On Site and After April 30, 2010
IEEE Members	**$ 550**	**$ 650**
Non-members	**$ 700**	**$ 800**
Student Members	**$ 160**	**$ 210**
Student Non-members	**$ 160**	**$ 210**
Retired / Unemployed	**S 160**	**$ 210**

Registration will be done online at the Website. The online registration facility will be activated by March 1 2010.

Affiliate members of the IEEE Nuclear and Plasma Science Society (NPSS) qualify of the lower Members rate. For membership information, contact IEEE Member Services at 800-678-IEEE.

REGISTRATION CANCELLATION POLICY

Registrants wishing to cancel their registrations may receive a refund if requested in writing to Romina Samson (rsamson@odu.edu). If the request is received by May 31, 2010, it will be processed without charge. A cancellation fee of $100 will accrue for refund requests received after that date. Refund requests will not be honoured after June 15, 2010.

ABSTRACTS

Abstracts must be submitted online at the Website. The submission website is expected to be operational by mid-October, 2009. The abstract submission deadline is January 15, 2010. Presentations submitted after that date will be placed in a poster session and the abstracts are not guaranteed to appear in the Conference Record.

Abstract submission deadline is January 15, 2010

ORGANIZING COMMITTEES

Conference Executive Committee

General Chair:
Mounir Laroussi
Old Dominion University

Technical Chair:
Christine Coverdale
Sandia National Laboratories

Treasurer:
Shirshak Dhali
Old Dominion University

Minicourse Organizer:
Demetre Economou
Univ. Houston

Students Awards:
Ravindra Joshi
Old Dominion University

Publications Chair:
Ravindra Joshi
Old Dominion University

Student Travel:
Keith Cartwright
Air Force Research Labs

Local Organizing Committee

Sacharia Albin, ODU
Ravindra Joshi, ODU
Mounir Laroussi, ODU
Nicole Laroussi, ODU
Shirshak Dhali, ODU
Juegen Kolb, Exhibits Chair, ODU
Romina Samson, ODU
Linda Marshall, ODU

Technical Program Committee

Chair:
Christine Coverdale
Sandia National Laboratories

Technical Area Coordinators:

Kurt Becker
Polytechnic New York

Monica Blank
CPII

Robert Commisso
Naval Reseach Labs

Farhat Beg
UC San Diego

Michael Kong
Univ. Loughborough, UK

Jean-Michel Pouvesle
GREMI, France

Edl Schamiloglu
Univ. New Mexico

FREE INTRODUCTORY IEEE MEMBERSHIP

In order to encourage participation in the activities of the IEEE and the Plasma Science and Applications Section of the IEEE Nuclear and Plasma Science Society, free half-year memberships will be given to all interested non-IEEE members (including students) registering for this conference. This free half-year membership includes a subscription to IEEE Spectrum and Transactions on Plasma Science. The regular cost of a full year's membership can be found at www.ieee.org

Membership includes:

1. Subscription to Transaction on Plasma Science, a journal devoted to all aspects of plasma science and technology.
2. Subscription to IEEE Spectrum, a magazine covering engineering topics of general technical, economic, political, and social interest.
3. Subscription to Society Newsletter with news items about the Conference on Plasma Science, the Particle Accelerator Conference, and the Symposium on Fusion Engineering.
4. Eligibility to participate in a broad range of IEEE activities.
5. Opportunities for IEEE educational services such as video-conferences and individual learning packages.

To receive our free membership, fill out an application at the Registration Desk or call 800-678-IEEE.

GETTING TO NOFOLK, VIRGINIA

Travel by plane

The Norfolk airport (ORF) is within 30 minutes to an hour flight from major hubs such as Washington DC, Philadelphia, New York, and Atlanta. For more details please visit ORF web site at: www.norfolkairport.com

Travel by train (Amtrak)

Travellers should use the Newport News Central Station (NPN) located at:
9304 Warwick Boulevard
Newport News, VA, 23601
Travellers can then take a taxi to the conference hotel, which is located in Norfolk (about 30 minutes car ride).

The Amtrak web site is: www.amtrak.com

Travel by car

Driving directions from a starting address to the hotel can be found on:

http://www.marriott.com/hotels/maps/travel/orfws-norfolk-waterside-marriott/

SPONSORS(preliminary list)