



ICOPS 2008

35th IEEE International Conference on Plasma Science

June 15-19, 2008

Congress Center Karlsruhe, Germany



Forschungszentrum Karlsruhe
in der Helmholtz-Gemeinschaft



Universität
Karlsruhe (TH)



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

Minicourse

Microwave Processing of Materials

<http://www.fzk.de/icops2008>

Sponsored by the Plasma Science and Applications Committee of the IEEE Nuclear and Plasma Sciences Society

ABSTRACT DEADLINE 31 JANUARY 2008

WELCOME

We wish to extend a cordial invitation to the 35th IEEE International Conference on Plasma Science (ICOPS) to be held in Karlsruhe, Germany 16-19 June 2008 with a minicourse scheduled 19-20 June. The venue is the Congress Center Karlsruhe. ICOPS 2008 will be preceded by the European Plasma Science Conference (EPS 2008), June 9-13, Hersonissos, Crete, Greece.

Plasma science covers a wide range of topics, both fundamental and applied. ICOPS 2008 will offer a balanced program of technical presentations spanning the range. Overall topics are listed on the first page of this announcement.

ICOPS 2008 will be held at the Congress Center Karlsruhe Monday 16 June through Thursday 19 June 2008. After the ICOPS, there will be a minicourse on Microwave Processing of Materials organized as part of ICOPS.

The conference site, the Congress Center Karlsruhe, is located near the Baroque Palace in the center of Karlsruhe, Germany. Karlsruhe is a hospitable city, in the State of Baden-Württemberg, beautifully located in the upper Rhine valley between the wooded mountains of the Black Forest, the vineyards of the Palatinate (Pfalz), and the Vosges in France with a mild climate. Heinrich Hertz conceived and performed his brilliant fundamental experiments confirming Maxwell's theory at the University of Karlsruhe (1886-1888). The University of Karlsruhe has close scientific and academic relations to the Research Center Karlsruhe (Forschungszentrum Karlsruhe) with the aim of founding the Karlsruhe Institute of Technology (KIT).



Banquet at the Schwetzingen Palace on June 18, 2007.

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 2008 in Karlsruhe, Germany.

Manfred Thumm
Chair, ICOPS 2008

Hansjoachim Bluhm
Co-Chair, ICOPS 2008

Günter Dammertz
Program Chair, ICOPS 2008

Ron Gilgenbach
Chair-Elect, PSAC/ExCom

CONFERENCE LOCATION

Congress Center Karlsruhe
(Karlsruher Messe- und Kongress-GmbH)
Festplatz 9
76137 Karlsruhe
Phone: +49 721 3720-0
Fax +49 721 3720-2106
e-mail: info@kmkg.de
<http://www.messe-karlsruhe.de/>



ICOPS 2008 will be held in the Congress Center Karlsruhe. Karlsruhe has approximately 300,000 inhabitants, and 200,000 of them only came to the city during the last century. The city was founded when Margrave Karl Wilhelm built his palace here in 1715. His tomb on the market square is roofed with a large vaulted stone pyramid which is now Karlsruhe's emblem. From the palace, the streets of the inner-city fan out with the palace tower – which can be climbed – as their focal point. It was the intention of its founding father that the palace should be visible from any point in the city. Karlsruhe has plenty to offer: – from its elite university to the Research Center with the Karlsruhe Institute of Technology, the ZKM or the Art Gallery: Architecture, art, universities and colleges, future technologies, music, restaurants and a delight in just being alive all combine to make an impressive whole. Karlsruhe is blessed by the sun which you can enjoy in the palace gardens or in one of the innumerable beer gardens.

Karlsruhe is an inviting place to visit. The city with its radial layout features an interesting and unique connection of technology, art, education and culture. Enjoy the extensive cultural and gastronomic offerings in the second warmest city of Germany.

The Congress Center Karlsruhe has reserved a sufficient number of rooms at a reduced rate in hotels located within walking distance of the Congress Center Karlsruhe for ICOPS 2008 participants.

A link for booking and a hotel reservation form will be provided by January 2008 (see Conference Website). In case of questions, please contact:

Tourismus office
Phone: +49 721- 3720 5383
e-mail: tourismus@kmkg.de
Please refer to the group name of ICOPS2008.

CONFERENCE FORMAT

The conference will include plenary, oral, and poster sessions. There will be seven plenary talks presented by international leaders in the plasma physics community, one plenary presentation will be an address by the 2008 IEEE Plasma Science and Applications Award recipient. 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 presentations should be delivered using a computer and LCD projector. 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 have a height of 1.20 m and width of 0.9 m (dimensions in feet: 3.94 by 2.95).

PUBLICATIONS

The Conference Record will be 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 2009.

Microwave Processing of Materials

As part of the International Conference on Plasma Science 2008 (ICOPS 2008), a special two-day minicourse on microwave processing technologies will be offered on Thursday June 19th and Friday June 20th. ICOPS 2008 will be held at the Congress Center Karlsruhe and the minicourse will be held at the Research Center Karlsruhe, Germany. A group of international experts from academia and industry will provide a set of comprehensive lectures on industrial microwave processing and systems, avionic applications, antennas, energy efficient waveguides and transmission devices as well as computational methods.

Microwave processing is extremely important for a variety of industrial applications. These include high performance materials used in automotive, aerospace, electronic and medical applications, chemical industry, environmental technologies, as well as advanced materials development and materials processing. This minicourse presents a unique opportunity to learn from leading, international microwave processing experts.

The course is structured in three sessions. A single session on the first day will cover some fundamentals of microwave processing technologies with a main focus on development, energy efficiency and devices.

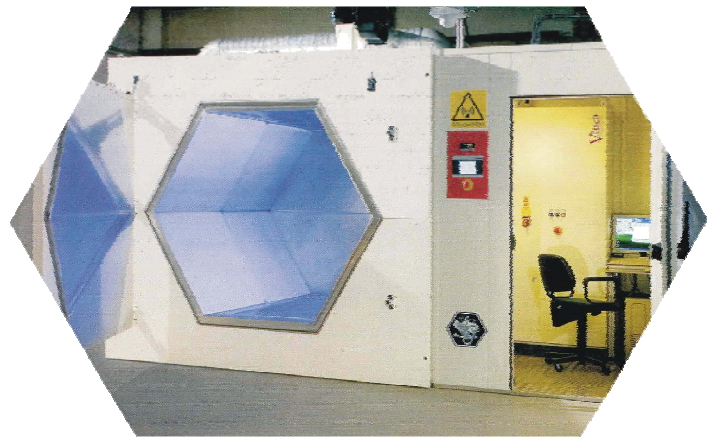
Two parallel sessions will run on the second day. These sessions will focus on avionic and automotive applications as well as on simulations and dielectric measurements.

Who should attend

The course is designed for engineers/scientists from industry and research, technicians, and graduate level engineering/science students with an interest in applied microwave technologies and applications. At the same time, for the audience, the instructors will provide the most current information and will provide laboratory visits on the latest technology developments in their respective areas.

Minicourse Topics

- Industrial microwave systems
- Waveguides and transmission devices
- Avionic and automotive applications
- Microwave Chemistry
- Sintering of Materials
- Plasma and Nanomaterials Applications
- Dielectric measurements
- Electromagnetic Modelling and Simulation



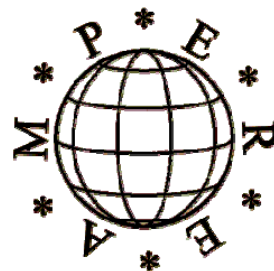
More Information

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

For further information, contact

Lambert Feher
Forschungszentrum Karlsruhe, IHM
Karlsruhe
Phone: +49 7247 – 82 4330
Fax: +49 7247 – 82 6595

lambert.feher@ihm.fzk.de



Welcome Reception

A welcome reception will be held Sunday 15 June from 5 to 9 pm. There is no charge for conference registrants and companions.

Reception at the Karlsruhe City Hall

At Monday 16 June evening there will be a reception by the mayor at the City Hall in Karlsruhe. There is no charge for conference registrants and companion.

In 1805, the city fathers decided to build a new Town Hall. Called upon to assist in putting the project into practice was Friedrich Weinbrenner who planned to include also the meat depot and the salt and flour hall inside the new building. Thus, facing the Evangelical Municipal Church, a building was constructed in Weinbrenner's typical neoclassical style.



Wine Tasting Evening



A wine tasting evening with local food will be organized at Tuesday 17 June at the vineyard Wilker in the Palatinate (Pfalz). Transportation will be by buses. There is no charge for registrants and companions.

Banquet

The conference banquet will be held Wednesday (18 June) evening, in the Schwetzingen Palace. A limited number of tickets are available. A nominal payment of €35 will be charged for conference registrants and companions which includes bus transportation from Karlsruhe to Schwetzingen and back. Tickets can be purchased during on-line registration and at the Registration Desk on a first-come basis.



COMPANION ACTIVITIES

Following tours for accompanying persons will be organized:

- Monday 16 June **Historical walk in Karlsruhe**

We offer a guided tour of the city with a visit to the palace gardens, botanical gardens, orangery, and buildings along the Circle. The two highest German courts, the Federal Constitutional Court and the Federal Supreme Court, are located in Karlsruhe.



- Tuesday 17 June **Sightseeing Speyer**



The tour will lead you to the venerable imperial town of Speyer on the river Rhine. The imperial cathedral, the construction of which started before 1030, is one of the most significant Romanesque buildings in Germany. The crypt that has been preserved nearly unchanged accommodates the graves of eight German emperors and kings. In 1981, the cathedral was included in the UNESCO list of world heritage sites. One of the most beautiful and highest town towers of Germany is the “Altpörtel”. A lunch and later walk on Speyer’s shopping mall, the Maximilianstrasse, will complete your visit of the vital and hospitable town of Speyer.

- Wednesday, 18 June **Heidelberg Tour**

The tour will start with sightseeing at the castle of Heidelberg and the apothecary museum. Experience the Electors’ residence at the height of their power, and its destruction in the year 1689. Hear the fascinating story of the great love between the Winter King and the “Winter Queen“, Elizabeth Stuart, about the wine-bibbing dwarf Perkeo, and about Elisabeth Charlotte of the Palatinate, Duchess of Orléans, famous for her candid letters from the Sun-King’s court. Enjoy the historical charm of the romantic ruins above the Neckar River. A lunch and a walk to the shipping pier for a round trip on the Neckar river including coffee and cake make this tour to a highlight.



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 €450 each and a Certificate. The two runners-up will receive a certificate only.

Any student who is the principal or sole author/researcher and the presenter of either an oral or poster paper at the ICOPS 2008 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:

Dave Abe
Naval Research Laboratory
E-mail: david.abe@nrl.navy.mil

STUDENT TRAVEL GRANT

A limited number of travel grants are available to encourage students who are IEEE members to attend ICOPS 2008. Applicants should submit the following information by 29 February 2008.

- 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.

Application information should be sent to:

John Luginsland
Numerex
401 East State Street #304
Ithaca, New York 14850
Fax: 607-697-0212
E-mail: ICOPSstudentTravel@ieee.org

LIST OF TOPICS AND SESSION ORGANIZERS

Session Area	Organizer	Email	Phone
Basic Processes in Fully and Partially Ionized Plasmas	K-D. Weltmann INP Greifswald	weltmann@inp-greifswald.de	P: +49 3834 554 311
1.1 Basic Phenomena	A. Fruchtman H.I.T. Israel	fnfrucht@hit.ac.il	P: +972 3 5026617
1.2 Computational Plasma Physics	C.-D. Munz U Stuttgart	munz@iag.uni-stuttgart.de	P: +49 711 685 3433
1.3 Space Plasmas	R. Schlickeiser U Bochum	rsch@tp4.rub.de	P: +49 234 32 22032
1.4 Partially Ionized Plasmas	I. Alexeff U Tennessee	alexeff@mail.ee.utk.edu	P: +1 865 974 5467
1.5 Dusty Plasmas	A. Melzer U Greifswald	melzer@physik.uni-greifswald.de	P: +49 3834 86 4790
Microwave Generation and Plasma Interactions	M. Q. Tran EPFL Lausanne	minhquang.tran@epfl.ch	P: +41 21 693 3482
2.1 Intense Beam Microwave Generation	A.D.R. Phelps U Strathclyde	a.d.r.phelps@strath.ac.uk	P: +44 141 5483166
2.2 Fast-Wave Devices	J.-P. Hogge EPFL Lausanne	jean-philippe.hogge@epfl.ch	P: +41 21 693 5497
2.3 Slow-Wave Devices	D. Whaley L-3 Communications	david.whaley@L-3com.com	P: +1 650 591 8411
2.4 Vacuum Microelectronics	J. Booske U Wisconsin-Madison	booske@engr.wisc.edu	P: +1 608 262 8548
2.5 Codes and Modeling	T. Antonsen U Maryland	antonsen@umd.edu	P: +1 301 405 1635
2.6 Non-Fusion Microwave Systems	G.G. Denisov IAP Nizhny Novgorod	den@appl.sci-nnov.ru	P: +7 8312 365810
2.7 Microwave Plasma Interaction	A. Lunk U Stuttgart	lunk@ipf.uni-stuttgart.de	P: +49 711 68562499
Charged Particle Beams and Sources	V. Engelko NIIIEFA St. Petersburg	engelko@niiefa.spb.su	P: +7 812 464-4608
3.1 Plasma, Ion and Electron Sources	Y. Krasik Technion Israel	fnkrasik@physics.technion.ac.il	P: +972 4 8293666
3.2 Intense Electron and Ion Beams	G. Müller FZK	georg.mueller@ihm.fzk.de	P: +49 7247 82 4669
High Energy Density Plasmas and Applications	D. H.H. Hoffmann GSI Darmstadt	d.hoffmann@gsi.de	P: +49 6159 712664
4.1 Fusion - Inertial, Magnetic and Alternate Concepts	C. Deutsch U Paris Sud II	claude.deutsch@pgp.u-psud.fr	
4.2 Particle Acceleration with Laser and Beams	M. Roth GSI Darmstadt	m.roth@gsi.de	P: +49 6159 712294
4.3 Radiation Physics	B. Jones Sandia National Lab	bmjones@sandia.gov	P: +1 505 284 9481
4.4 High Energy Density Matter	S. Rose U Oxford	s.rose1@physics.ox.ac.uk	P: +44 1865 282639
4.5 Laser Produced Plasmas	A. Pukhov U Düsseldorf	pukhov@thphy.uni-duesseldorf.de	P: +49 211 81 10777
4.6 Fast Z-Pinches, X-Ray Lasers	M. Cuneo Sandia National Lab	mecuneo@sandia.gov	P: +1 505 845 8767

LIST OF TOPICS AND SESSION ORGANIZERS

Session Area	Organizer	Email	Phone
Industrial, Commercial and Medical Plasma Applications	M. Laroussi U Old Dominion	mlarouss@odu.edu	P: +1 757 683 6369
5.1 Nonequilibrium Plasma Applications	M.G. Kong U Loughborough	m.g.kong@lboro.ac.uk	P: +44 1449 227075
5.2 High-Pressure and Thermal Plasma Processing	J. Heberlein U Minnesota	jvrh@umn.edu	P: +1 612 625 4538
5.3 Plasma Thrusters	M. Auweter-Kurtz U Hamburg	praesidentin@hvn.uni-hamburg.de	P: +49 40 42838 4475
5.4 Plasmas for Lighting	P. Flesch OSRAM GmbH	p.flesch@osram.de	P: +49 30 3386 2120
5.5 Flat-Panel Displays	K. Blankenbach FH Pforzheim	karlheinz.blankenbach@hs-pforzheim.de	P: +49 7231 28 6658
5.6 Medical, Biological and Environmental Applications	M. Laroussi U Old Dominion	mlarouss@odu.edu	P: +1 757 683 6369
Plasma Diagnostics	B. Weber NRL Washington D.C.	bruce.weber@nrl.navy.mil	P: +1 202 767 8373
6.1 Optical and X-ray Diagnostics	J. Bailey Sandia National Lab	jebaile@sandia.gov	P: +1 505 845 7203
6.2 Microwave and FIR Diagnostics	G. Conway IPP MPG	Garrard.Conway@ipp.mpg.de	
6.3 Particle Diagnostics	Ch. Li MIT	ckli@mit.edu	P: +1 617 253 0934
Pulsed Power and Other Plasma Applications	H. Akiyama U Kumamoto	akiyama@eecs.kumamoto-u.ac.jp	P: +81 96 342 3808
7.1 Insulation and Dielectric Breakdown	J. Dickens U Texas Tech	jdickens@coe.ttu.edu	P: + 1 806 742 1254
7.2 Switching	G.-H. Rim KERI	ghrim@keri.re.kr	P: +82 55 280 1450
7.3 Plasma Lasers	A. Goertler Coherent GmbH	andreas.goertler@coherent.com	P: +49 89 89407214
7.4 Compact Pulsed Power and Applications	W. Jiang Nagaoka University	jiang@nagaokaut.ac.jp	P: +81 258 47 9892

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 address below. Employers with plasma-related technical positions available should contact

Wolfgang Frey
Forschungszentrum Karlsruhe, IHM
Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen
Phone: +49 7247 – 82 2453
wolfgang.frey@ihm.fzk.de

William White
Z Operations Group
Ktech (Sandia National Laboratories)
P.O. Box 5800, MS 1192
Albuquerque, NM 87185
Phone: +1 505-844-0081
wmwhite@ktech.com

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 30 April 2008	On Site After 30 April 2008
IEEE Members	€400	€500
Non-members	€550	€650
Student Members	€110	€125
Student Non-members	€150	€175
Retired / Unemployed	€110	€125

Registration will be done online at the Website. The online registration facility will be activated by January 2008.

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 Georg Müller at Forschungszentrum Karlsruhe (georg.mueller@ihm.fzk.de). If the request is received by 1st May 2008, it will be processed without charge. A cancellation fee of € 80 will accrue for refund requests received after that date. Refund requests will not be honoured after 15 May 2008.

ABSTRACTS

Abstracts must be submitted online at the Website. The submission website is expected to be operational in early December. The abstract submission deadline is 31 January 2008. Presentations submitted after that date will be placed in a poster session and the abstracts are not guaranteed to appear in the Conference Record.

Conference Executive Committee

Chair
Manfred Thumm
Forschungszentrum Karlsruhe
and
University of Karlsruhe

Co-Chair
Hansjoachim Bluhm
Forschungszentrum Karlsruhe

Conference Managers
Gabriela Bertsch
Forschungszentrum Karlsruhe

Martina Huber
Forschungszentrum Karlsruhe

Treasurer
Georg Müller
Forschungszentrum Karlsruhe

Minicourse Co-Chair
Lambert Feher
Forschungszentrum Karlsruhe

Conference Abstracts
Stefan Illy
Forschungszentrum Karlsruhe

Exhibition
Wolfgang Frey
Forschungszentrum Karlsruhe

Poster Sessions
Bernhard Piosczyk
Forschungszentrum Karlsruhe

Laboratory Visits
Guido Link
Forschungszentrum Karlsruhe

Companion Program
Manuela Wettstein
Forschungszentrum Karlsruhe

Technical Program Committee

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Günter Dammertz
Forschungszentrum Karlsruhe

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INP Greifswald

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EPFL Lausanne

Vladimir Engelko
NIEFA St. Petersburg

Dieter H.H. Hoffmann
GSI Darmstadt

Mounir Laroussi
U Old Dominion

Bruce Weber
NRL Washington D.C.

Hidenori Akiyama
U Kumamoto

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 Karlsruhe (more details see www.fzk.de/icops2008)

Travel by plane

Frankfurt Airport

Frankfurt Airport is located directly adjacent to the A 5 motorway, Frankfurt – Karlsruhe. About 1 hour and 15 minutes by car from Karlsruhe. The Deutsche Bahn AG offers rail connections to and from Karlsruhe from Frankfurt Airport and from Frankfurt Main Station. The Deutsche Bahn AG gives information about arrival and departure times.

Stuttgart Airport

Stuttgart Airport is situated directly adjacent to the A 8 motorway, Munich – Karlsruhe. About 1 hour by car from Karlsruhe. There is a local rail connection from Stuttgart Airport to Stuttgart Main Station.

Travel by train

Karlsruhe forms an important junction of the Deutsche Bahn (German national railway) and is situated directly on the ICE (high-speed train) route of Hamburg – Frankfurt – Basel. The east-west axis of Karlsruhe – Stuttgart – Munich starts here.

Travel by car

Karlsruhe lies directly at the A 5 motorway. The city center is less than ten minutes drive away from the exits for “Durlach” and “Karlsruhe Mitte” either via the Durlacher Allee or the round the southern by-pass.

A routing system – green signs with white lettering – assists new arrivals to find their booked or chosen hotel. In the same way, the parking guide system leads the way to the many multi-story car parks in the city center.

