



The International Information Center for Multiphase Flow

NEWSLETTER

No.32 May 2009

The Japanese Society for Multiphase Flow



The 2nd International Conference on Jets, Wakes and Separated Flows ICJWSF-2008 September 16–19, 2008, Berlin, Germany

by Christian Oliver Paschereit

The 2nd ICJWSF-2008 took place at the Technical University Berlin from September 16th to September 19th, 2008 with Professor Dr. Christian Oliver Paschereit as a Chair. Co-Chairs were Professor Dr. Toshihiko Shakouchi from Mie University, Mie Japan and Professor Dr. Ephraim J. Gutmark from University of Cincinnati, USA. This conference was prompted by the earlier success of the First International Conference on Jets, Wakes and Separated Flows which was held in Japan in 2005. The scope of the conference was to discuss the most recent developments in the research on jets, wakes and separated flows, as well as methods to control them. Subjects of the submitted papers were related to jets, wakes and separated flow including analytical, experimental and numerical work, aero-acoustics, mixing, transition, combustion as well as active/passive flow control.

The conference was attended by about 130 scientists and students from different countries. A large attendance was coming from Japan making more than 40% of the

participants. Invited lectures were given by Prof. Shakouchi, Prof. Wygnanski, Prof. Durst, Prof. Gutmark, Prof. Fuchs, Prof. Nathan, Prof. Polifke, Prof. Miao, Prof. Sakai, Prof. Fukunishi, Prof. Ghoniem, Prof. Uchiyama, Prof. Sakakibara and Dr. K. Kailasanath. The invited talks addressed latest advances in fluid dynamics and combustion using numerical and experimental methods.

During the conference the participants had the opportunity to visit the laboratories of the Chair of Fluid Dynamics, Hermann-Föttinger-Institute. Supporting Organizations beside the Technical University Berlin were the Japan Society of Mechanical Engineers (JSME), the Japan Society for Aeronautical and Space Sciences and The Japan Society for Multiphase Flow.

The social program of the ICJWSF-2008 was rich on interesting activities like an afternoon sight-seeing Ship tour along the river Spree across the historical and modern Berlin and the guided tour “Collection of classical Antiquities” in Pergamon Museum. The

To Join ICeM:

Everybody, who is interested in “multiphase flow”, can be a member of ICeM. You are welcome to join ICeM. Please contact one of the following to register as an ICeM member.

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Tel: +81-78-803-6132
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Conference Dinner took place in the Orangery of the Charlottenburg Palace which was followed by a Concert performed by the Berlin Palace Orchestra. The participants could enjoy this baroque experience with an exclusive candlelight dinner and an unforgettable evening of music with a selection of musical highlights from the 17th and 18th centuries.

Prof. Dr.-Ing. Christian Oliver Paschereit
Chair of Fluid Dynamics
- Hermann-Fottinger-Institute (HFI) -
Technische Universität Berlin
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An Announcement from Editor

The JSMF gives internet-service for ICMF members.
You can read updated ICeM NEWSLETTER by visiting JSMF homepage
<http://www.jsmf.gr.jp/index-en.htm>

**26th Zurich Short Courses on
Modelling and Computation of Multiphase Flows
Part I: Bases
Part IIA: New Reactor Systems and Methods
Part IIB: Computational *Multi-Fluid* Dynamics (CMFD)
Part III: CMFD with Commercial Codes
February 9–12, 2009, Zurich, Switzerland**

by George Yadigaroglu

Another participation record was reached this year with attendees coming from 18 different countries, mainly again from Europe, but also in significant numbers now from the United States, Canada, Korea, Japan, etc.; there were also first-time participants from Cyprus and Malaysia. The courses were hosted, as usual, by ETH Zurich.

While the majority of the participants came again from nuclear industries, institutes, or institutions; many other industries were also represented, well in line with one of the goals of the course, which is the horizontal transfer of knowledge between various industries; clearly multiphase flows find applications in many fields.

The courses (four intensive 90-minute lectures per day) were, as usual, offered the first three days as an introductory module, Part I, followed by two parallel modules (Parts IIA and IIB). Finally all the participants assembled again for Part III that included more presentations this year. Discussions of the participants during the lectures and the coffee breaks with the lecturers and among themselves were encouraged.

The course has evolved since 1984 dramatically. The first courses included only 18 lectures in a single module. The growth of the course reflects progress in the basic approaches, in the interests of the various industries and more recently the greatly renewed interest in nuclear energy (the nuclear “renaissance”) and in computational fluid dynamics. CFD, after having matured in its single-phase version, is now becoming commonplace for multi-phase applications.

An introductory “tutorial” text was emailed to all the participants before the beginning of the course to familiarize them with the basic material, definitions and nomenclature and bring them to a common basic level, so that they could more easily and effectively follow the course. The first four chapters of a book being published by G. Tryggvason, R. Scardovelli and S. Zaleski (the first and third being lecturers) were also mailed to the Part IIB participants as an introduction and familiarization with this part of the course.

Part I, Bases covered the common background material and emphasised the latest mechanistic understanding, modelling and computational aspects of multiphase flows. *Part IIA, New Reactor Systems and*

Methods, covered the multiphase phenomena in LWRs and Generation IV reactors, as well as advanced computational modelling of these systems. The latest developments in modelling and simulation methods for core design and accident analysis were presented.

Part IIB, the module on *Computational Multi-Fluid Dynamics (CMFD)* was followed by more than half the participants interested in the application of CFD techniques to multi-phase flows. This part of the course was largely redesigned again this year to include two introductory lectures that better situate the following more specialized ones. The module covered the main interface tracking methods, as well as other approaches like Lattice Gas Cellular Automata with numerous applications.

Finally in the last, common module, *CMFD with Commercial Codes*, the participants had the opportunity to learn, directly from four of the main commercial code developers, about the multiphase capabilities of their codes. The applications every year become more advanced and sophisticated as the computing power and the capabilities of the codes are constantly improved.

The participants particularly like the numerous movies, videos, animations, and computer simulations, some “oldies” and some produced very recently, that are shown during the lectures.

The lecturers in this series of carefully organized and coordinated modules are experts in their respective fields, but are selected also for their pedagogical qualities. This year they included: S. Banerjee, D. Bestion, M.L. Corradini, T. Frank, G. Hetsroni, G.F. Hewitt, D. Lakehal, S. Lo, H.-M. Prasser, G. Tryggvason, S.A. Vasquez, G. Yadigaroglu and S. Zaleski.

The participants receive an extensive set of lecture notes, in addition to handouts produced from the standardised PowerPoint presentations. More details about the course and the contents of the lectures can be found in the Course web site:
<http://www.ascomp.ch/ShortCourse/>.

Prof. George Yadigaroglu
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1st European Conference on Microfluidics - μ Flu2008 December 10–12, 2008, Bologna, Italy

by Stéphane Colin and Gian Luca Morini

The first European Conference on Microfluidics, which was organized by the Hydrotechnic Society of France (SHF), the University of Bologna and the National Institute of Applied Sciences (INSA) of Toulouse, has been held in Bologna, Italy, from 10 to 12 December, 2008.

This event has gathered 265 participants from 33 countries, two times more than for μ Flu2006, the 3rd French Conference on Microfluidics which was behind this first European Conference. During three days, 176 communications have been presented in 10 thematic sessions.

With regard to rarefied microflows of simple gases or gaseous mixtures, the last theoretical models which cover slip-flow, transition and free-molecular regimes, were compared and discussed in the light of recent experimental measurements.

A significant number of works relative to liquid and two-phase microflows, with a large part devoted to thermal aspects, were also presented. Generating and handling of micro drops, on surfaces as well as inside microchannels, are particularly active topics at the present time in the microfluidics community. The control of liquid flows by means of electrokinetic forces, specially adapted to microscale, formed the subject of a series of original works.

New microfabrication techniques applied to the design of fluidic microsystems (micro-actuators,

micromixers, lab-on-a-chip...) were also detailed in presentations which have been appreciated by the mechanical community.

Furthermore, the multidisciplinary of microfluidics was clearly demonstrated through works devoted to chemical or bio-chemical applications, for which microdroplets may play the role of biological or chemical microreactors.

Finally, a special session was devoted to experimental techniques for analysis and visualization of microflows, among which microPIV and holographic microscopy techniques.

Wide time slots were reserved for open discussions around posters, in order to complete debates engaged during oral presentations. The interest of industry for microfluidics was in evidence during scientific talks, as well as around industrial stands.

The second European Conference on Microfluidics will be held in Toulouse, France, in December 2010.

Co-Chairs of μ Flu2008

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Prof. Gian Luca Morini,
University of Bologna, Italy

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3rd ECI International Conference on Heat Transfer and Fluid Flow in Microscale September 21–26, 2008, Whistler, Canada

by Gian Piero Celata

The 3rd ECI International Conference on Heat Transfer and Fluid Flow in Microscale has been held in Whistler, Canada on 21-26 September 2008, after the previous two editions in Banff, Canada (October 2000) and Castelvecchio Pascoli, Lucca, Italy (2005). The Conference has been chaired by Gian Piero Celata, and co-chaired by Nobuhide Kasagi, Masahiro Kawaji, John Thome and Ken Breuer. The Conference has been organized in oral plenary sessions, and a total of 53 papers and 8 keynote lectures have been presented,

with a participation of 65 delegates coming from numerous Countries, testifying the large world network of heat transfer and fluid flow in microscale area.

Keynote lectures have dealt with:

M.H. Kim, Effects of nano-fluid and surfaces with nano structure on the increase of CHF

T.G. Karayiannis, Saturated flow boiling in small- to micro-diameter metallic tubes: experimental results and

modelling

M. Kawaji, Unique aspects of adiabatic two-phase flow in microchannels

D. Pence, The simplicity of fractal-like flow networks for effective heat and mass transport

G. Ribatski, Film thickness measurement techniques applied to micro-scale two-phase flow systems

G.L. Morini, Single-phase convective heat transfer in laminar and transitional regime in microchannels

R. Lindken, Experimental and numerical investigation of the symmetry-breaking and flow bifurcation in a T-shaped micromixer

Y. Utaka, Contribution of micro-layer in boiling heat transfer

The 53 papers have been grouped in the following sessions: condensation, flow boiling, fluid flow, two-phase flow, heat exchangers, heat transfer, measurement techniques, microfluidic systems, nanofluids, and collected in a CD-ROM. A selection of about 25 papers will be published in two special issues of the Journals 'Experimental Thermal and Fluid Science' (Guest Editor: Gian Piero Celata) and 'International Journal of Heat and Fluid Flow' (Guest Editor: Nobuhide Kasagi).

From the technical viewpoint the following conclusions can be drawn:

a) Single-phase heat transfer and fluid flow: it looks now established that macroscale knowledge can be successfully applied to microscale taking into consideration all scaling effects, such as viscous dissipation, axial conduction, thermal entrance length,.....

b) Two-phase flow with and without phase change: in this case the bubble confinement due to the pipe diameter reduction is largely affecting the flow with respect to large pipe diameters. The less accurate theoretical knowledge of two-phase flow phenomena, more complex than single-phase flow ones, microchannel flow is calling for a more extensive experimentation both fundamental and applied.

c) Measurement techniques: they have been strongly developed over the last years also for two-phase systems, especially PIV techniques and capacitance probe, thus offering more tools for a deeper insight.

d) Industrial applications: they start growing in a systematic way, and some systems based on microchannels (see e.g., the lecture given by Deborah Pence on *fractal-like flow networks*) prove to be of interest for the multipurpose application and the high efficiency.

The Conference will be repeated on a 2-3 years basis.

Dr. Gian Piero Celata, Conference Chair
Enea Casaccia, Roma
E-mail: celata@casaccia.enea.it



The JSMF Annual Meeting 2009 will be held at Kumamoto, Kumamoto University on 7th-9th August, 2009. During the Meeting, **the 28th Multiphase Flow Symposium** will be held 8th.

Please visit

<http://www.mech.kumamoto-u.ac.jp/jsmf2009/>

to check the detail.

**Report on 6th International Symposium on Measurement Techniques
for Multiphase Flow
December 15–17, 2008, Okinawa, Japan**

by Koji Okamoto and Yuichi Murai

The 6th International Symposium on Measurement Techniques for Multiphase flow was held in Okinawa, Japan, December 15-17, 2008. The venue was Okinawa Industrial Support Center located close to Naha international airport. This conference was organized by The Japan Society of Multiphase Flow, and co-organized by The Chinese Society for Measurement, National Nature Science Foundation of China, The Chinese Academy of Science, and The University of Ryukyus, Japan. Prof. K. Okamoto (The University of Tokyo) chaired the conference, Prof. X. Cai (Univ. of Shanghai for Sci. Tech.) and Prof. Y.A. Hassan (Texas A&M Univ.) co-chaired, having been supported by Dr. Y. Murai (Hokkaido University), Dr. M. Ishikawa (The University of Ryukyus), Prof. Z. Huang (Zhejiang Univ.) and Prof. S. Hattori (University of Fukui) as vice-chairs and secretariat.

This conference aimed at information exchange on measurement techniques for multiphase flows. The first conference was held in Nanjing, China, 1995. After this launching, we had four conferences in Beijing (China), Fukui (Japan), Hangzhou (China), and Macau (China) before the present conference. Thanks to strong support by Prof. X. Cai and The Chinese Academy of Science, more than half of the participant came from China where Beijing Olympic game was held in the same year. The other participants came from Japan, Canada, Switzerland, UAE, USA, France, Norway and Germany. The total numbers of presented regular papers and the participants were 108, and 139, respectively. There were five plenary lectures given by Prof. K. Hishida (Keio University), Prof. L. Guo (Xian), Prof. Y.A. Hassan (Texas A&M), Prof. C. Tropea (Darmstadt) and Prof. T. Takamasa (Tokyo Univ. of Marine Sci. Tech.). The conference organizing committee appreciates to these speakers for their reviewing of recent achievements in multiphase flow measurement.

In the regular paper presentations, we had 55 papers for optical and laser techniques, 25 papers for acoustic and pressure measurement, and 20 papers for electrical and tomographic techniques. Classifying the papers by the target of measurement, 65 papers were for gas-liquid

two-phase flows, 25 for gas-solid two-phase flows, and 10 papers for liquid-liquid two-phase flows.

The electronic version of the proceedings was distributed to all the participants during the conference. Its official version has been recently published in the IoP (Institute of Physics) Journal of Physics: Conference Series, Vol. 147. This is a world-wide open-access electronic journal located at <http://www.iop.org/EJ/toc/1742-6596/147/1>. Please visit here for getting the latest information on measurement techniques for multiphase flow. All the full papers were peer-reviewed to have improved the quality before the final publication. The content of the journal as the ISMTMF special volume is as follows.

ACOUSTIC AND ELECTRIC SENSORS
BUBBLES AND MICROBUBBLES
COMPUTED TOMOGRAPHY
GAS-LIQUID INTERFACE
LASER, IMAGING, AND PIV
OIL, COAL, DROP AND SPRAY
SOLID AND POWDER
SPECTRAL AND MULTI-PHYSICS

On the final day of the conference, the best presentation awards were announced by the chair and given to three young researchers who made excellent presentations; Dr. M. Damshon (ETH-Zurich), Dr. J. Lu (Chinese Academy of Sci.), and Dr. Y. Oishi (Hokkaido University). During the conference, the organizing committee agreed with the chair and the place of the next conference, which was determined to be Prof. F. Dong in Tienjing, China, 2011.

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Dr. Yuichi Murai
Hokkaido University, Sapporo, Japan
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Future Meetings

Following list includes Conference Name, Place, Date and Contact.

6th American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Controls, and Human Machine Interface Technology (NPIC&HMIT 2009)

Knoxville, Tennessee, USA, April 5-9, 2009
Dr. Richard Wood, ORNL
Tel: (865) 574-8541
E-mail: woodrt@ornl.gov
<http://meetingsandconferences.com/npic-hmit-2009/>

International Symposium on Convective Heat and Mass Transfer in Sustainable Energy (CONV-09)

Yasmine Hammamet, Tunisia, April 26 - May 1, 2009

Dr. Mourad Rebay
University of Reims Champagne-Ardenne,
Tel: +33-3-26913448, Fax: +33-3-26913250
E-mail: mourad.rebay@univ-reims.fr
<http://www.ichmt.org/conv-09/>

7th ECI International Conference on Boiling Heat Transfer (BOILING 2009)

Florianópolis-SC, Brazil, May 3-7, 2009

Prof. Júlio César Passos
University Federal of Santa Catarina
Tel: +55 48 3721 9379 (217)
Fax: +55 48 3721 7615
E-mail: jpassos@emc.ufsc.br
<http://www.boiling2009.com.br/>

2009 International Congress on Advances in Nuclear Power Plants (ICAPP '09)

Shinjuku Tokyo, Japan, May 10-14, 2009

Dr. Takuya Hattori, JAIF
Dr. Ichiro Takekuro, TEPCO
E-mail: info@icapp09.org
<http://www.icapp09.org/>

6th International Conference on Computational Heat and Mass Transfer

Guangzhou, China, May 18-21, 2009
Prof. A. A. Mohamad
Dept. of Mechanical and Manuf. Eng.
Schulich School of Engineering
The University of Calgary
E-mail: mohamad@ucalgary.ca
<http://www.enme.ucalgary.ca/conferences/6icchmt09/>

28th Annual International Conference on Thermal Treatment Technologies (2009 IT3)

Cincinnati, OH, USA, May 18-22, 2009

Dr. Carrie Hartz
Air & Waste Management Association

Tel: 412-904-6008, Fax: 412-232-3450

E-mail: chartz@awma.org
<http://www.awma.org/IT3/>

Thermodynamics of phase changes

Namur, Belgium, May 24-27, 2009
Prof. François Dupret
Prof. Miltiadis Papalexandris
Université catholique de Louvain, Unité TERM
Tel: +32(0)10 47 22 00, Fax: +32(0)10 45 26 92
E-mail: eurotherm84@uclouvain.be
<http://www.uclouvain.be/sites/term/eurotherm84/>

Fundamentals of Microscale Heat Transfer: Boiling, Condensation, Single- and Two-phase Flows

Lausanne, Switzerland, May 25-29, 2009
Prof. John R. Thome
Laboratory of Heat and Mass Transfer (LTCM),
École Polytechnique Fédérale de Lausanne (EPFL)
Tel: (+41 21) 693 59 81/82, Fax: (+41 21) 693 59 60
E-mail: john.thome@epfl.ch
http://termserv.casaccia.enea.it/mht_course/

FMHT 2009: International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics

Tokyo, Japan, May 27-29, 2009
<http://www.waset.org/wcset09/tokyo/fmht/>

The 8th International Congress on Thermal Stresses

Urbana-Champaign, Illinois, USA, June 1-4, 2009
<http://thermalstresses.mechse.illinois.edu/>

Sixth Mediterranean Combustion Symposium (MCS-6)

Corsica, France, June 7-11, 2009
Dr. Federico Beretta, Istituto di Ricerche
E-mail: beretta@irc.cnr.it
Prof. Nevin Selcuk,
Middle East Technical University
E-mail: selcuk@metu.edu.tr
Prof. Mohy S. Mansour, Cairo University
E-mail: mansour@niles.edu.eg
Prof. Andrea d'Anna, University Federico II
E-mail: andrea.danna@unina.it
<http://www.ichmt.org/mcs-09/>

ANS Annual Meeting

Atlanta, GA, USA, June 14-18, 2009
Dr. Jeffrey T. Gasser, Southern Nuclear Operating Company
<http://www.ans.org/meetings/index.cgi?c=n>

Multiphase Flow 2009

New Forest, UK, June 15-17, 2009
Prof. C A Brebbia
Wessex Institute of Technology, UK
Prof. A A Mammoli
University of New Mexico, USA
Tel: +44 (0) 238 029 3223,
Fax: +44 (0) 238 029 2853
E-mail: rswinburn@wessex.ac.uk
<http://www2.wessex.ac.uk/09-conferences/multiphase-flow-2009.html>

2009 ASME Summer Heat Transfer Conference

San Francisco, CA, USA, June 19-23, 2009
Dr. Timothy W. Tong
The George Washington University
E-mail: tong@gwu.edu
Dr. Yong X. Tao
Florida International University
E-mail: taoy@fiu.edu
<http://www.asmeconferences.org/HT09/>

The 6th International Symposium on Turbulence and Shear Flow Phenomena (TSFP-6)

Seoul, Korea, June 22-24, 2009
Prof. N. Kasagi, University of Tokyo
E-mail: tsfpsixth@gmail.com
<http://www.tsfp6.org/>

7th International Conference on Nanochannels, Microchannels and Minichannels

Pohang, South Korea, June 22-24, 2009
Dr. Satish G. Kandlikar, Rochester Institute of Technology, Rochester, NY, USA
E-mail: sgkeme@rit.edu
Dr. Moo-Hwan Kim, Pohang University of Science and Technology, Pohang, South Korea
E-mail: mhkim@postech.ac.kr
<http://www.asmeconferences.org/ICNMM09/>

The Third Conference on Thermophysical Properties and Transfer Processes of Refrigerants

Boulder, Colorado, USA, June 23-26, 2009
Dr. Piotr A. Domanski, NIST, Gaithersburg, Maryland
Dr. Mark O. McLinden, NIST, Boulder, Colorado
Tel: 301 975-5868, Fax: 301 975-8973
E-mail: david.yashar@nist.gov
<http://www.iirboulder2009.org>

5th International Conference on Diffusion in Solids and Liquids - Mass Transfer, Heat Transfer and Microstructure and Properties (DSL-2009)

Rome, Italy, June 24-26, 2009
Prof. Dr. Ing. A. Öchsner

University of Malaysia, Malaysia
E-mail: contact@dsl2009-rome.com
<http://www.dsl2009-rome.com/>

7th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics (ExHFT-7)

Krakow, Poland, June 28 - July 3, 2009
Prof. Janusz S. Szmyd
AGH - University of Science and Technology
Tel: + (48)-12-6172694, Fax: + (48)-12-6173767
E-mail: janusz@agh.edu.pl, exhft-7@agh.edu.pl
<http://www.exhft-7.agh.edu.pl/>

16th International Conference on Thermal Engineering and Thermogrammetry (THERMO)

Budapest, Hungary, July 1-3, 2009
Dr. Imre Benko
Tel/Fax: +361 310-0999
E-mail: ibenko@freestart.hu
<http://www.mate.mtesz.hu/eng/Pages/2009/THERMO2009/>

International Symposium on Transport Phenomena (ISTP-20)

Victoria, Canada, July 7-10, 2009
Dr. Ned Djilali
E-mail: ndjilali@uvic.ca
University of Victoria
Institute for Integrated Energy Systems (IESVic)
Tel: 1-250-721-6295, Fax: 1-250-721-6323
E-mail: istp20@uvic.ca
<http://www.istp-20.org/>

6th International Symposium on Multiphase Flow, Heat Mass Transfer and Energy Conversion (ISMF2009)

Xi'an, China, July 11-15, 2009
Prof. L. J. Guo, Xi'an Jiaotong University
Tel: 86-29-82668767, Fax: 86-29-82669033
E-mail: ismf@mail.xjtu.edu.cn;
mfoffice@mail.xjtu.edu.cn
<http://www.ismf2009.xjtu.edu.cn>

17th International Conference on Nuclear Engineering (ICONE17)

Brussels, Belgium, July 12-16, 2009
E-mail: dolane@asme.org
<http://www.asmeconferences.org/ICONE17/>

InterPACK'09

San Francisco, CA, USA, July 19-23, 2009
Prof. Jeffrey C. Suhling, Auburn University, USA
Prof. Masaru Ishizuka,
Toyama Prefectural University, Japan

Dr. Sandeep Tonapi, Anveshak Solutions, USA
E-mail: pasutton@email.arizona.edu
<http://www.interpackconference.org/>

ASME Summer Heat Transfer Conference

San Francisco, USA, July 19-23, 2009

Dr. Timothy W. Tong

The George Washington University

E-mail: tong@gwu.edu

<http://www.asmeconferences.org/HT09/>

20th International Conference on Structural Mechanics in Reactor Technology (SMiRT20)

Espoo, Finland, August 9-14, 2009

Dr. Rauno Rintamaa

Dr. Seppo Vuori

VTT Technical Research Centre of Finland

Tel: +358-20-722 111, Fax: +358-20-722 7053

E-mail: smirt20@vtt.fi

<http://www.vtt.fi/smirt20>

10th International Conference on Fluid Control, Measurements, and Visualization (FLUCOME2009)

Moscow, Russia, August 17-21

Academician Vladimir Fortov

Prof. Victor Golub

Joint Institute for High Temperatures

Russian Academy of Sciences

E-mail: golub@ihed.ras.ru

Prof. Sergey Frolov

Semenov Institute of Chemical Physics

Russian Academy of Sciences

E-mail: smfrol@chph.ras.ru

E-mail: flucome10@ihed.ras.ru

<http://www.ihed.ras.ru/flucome10/>

7th International Symposium on Cavitation (CAV2009)

University of Michigan, Ann Arbor, USA, August 17-22, 2009

Prof. Steven Ceccio

Prof. Joseph Katz

Dr. Georges Chahine

<http://cavitation.engin.umich.edu/>

14th International Conference on Environmental Degradation of Materials in Nuclear Power Systems

Virginia Beach, VA, USA, August 23-27, 2009

Dr. Todd R. Allen

University of Wisconsin

Tel: 608-265-4083, Fax: 608-263-7451

E-mail: allen@engr.wisc.edu

http://www.new.ans.org/meetings/c_2

8th International Symposium on Particle Image Velocimetry (PIV09)

Melbourne Victoria Australia, August 25-28, 2009

Prof. Julio Soria

Mechanical and Aerospace Engineering

Monash University (Clayton Campus), Melbourne

Tel: +61 3 9905 3829, Fax: +61 3 9905 1825

E-mail: PIV2009@gmail.com

<http://ltrac.eng.monash.edu/PIV09/Home.html>

2nd Micro and Nano Flows Conference

Brunel University, Uxbridge, UK, September 1-2, 2009

Prof. M.W. Collins, Brunel University, UK

Tel: ++44(0)1895 266906

Fax: ++44(0)1895 274608

E-mail: mnf2009@brunel.ac.uk

<http://www.mnf2009.com/>

4th International Conference on Spray Deposition and Melt Atomization (SDMA 2009) and 7th International Conference on Spray Forming (ICSF VII)

Bremen, Germany, September 7-9, 2009

Prof. Dr.-Ing. Udo Fritsching

E-mail: sdma2009@iwt.uni-bremen.de

<http://www.sdma-conference.de>

Conference on Modelling Fluid Flow (CMFF'09) The 14th International Conference on Fluid Flow Technologies

Budapest, Hungary, September 9-12, 2009

Univ. Prof. Dr.-Ing. habil. R. Schilling

Prof. T. Lajos

Department of Fluid Mechanics

Budapest University of Technology and Economics

Tel: +36 1 463 40 72, Fax: +36 1 463 34 64

E-mail: conference@ara.bme.hu

<http://www.cmff.hu>

6th International Symposium on Scale Modeling (ISSM-6)

Kauai, Hawaii, USA, September 13-16, 2009

Prof. Yuji Nakamura, Hokkaido University

Tel & Fax: +81-11-706-6386

E-mail: issm6_faq@mech-me.eng.hokudai.ac.jp

<http://york-me.eng.hokudai.ac.jp/issm6/>

6th International Symposium on Turbulence, Heat and Mass Transfer

Rome, Italy, September 14-18, 2009

Prof. K. Hanjalic,

E-mail: hanjalic@dma.ing.uniroma1.it

Prof. Y. Nagano,

E-mail: nagano@heat.mech.nitech.ac.jp

Prof. F. Rispoli,
E-mail: f.rispoli@dma.ing.uniroma1.it
<http://www.thmt-09.org/>

The IV International Conference on Computational Bioengineering (ICCB2009)

Bertinoro (Forli), Italy, September 16-18, 2009
Prof. Marco Viceconti, Istituto Ortopedico Rizzoli
Prof. Luca Cristofolini, DIEM, University of Bologna
Prof. Rita Stagni, DEIS, University of Bologna
<http://www.iccb2009.org/>

13th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-13)

Kanazawa, Japan, September 27 - October 2, 2009
Prof. Neil E. Todreas, MIT
Dr. Hideki Nariai, JNES
Prof. Jong H. Kim, KAIST/EPRI-W.W.
E-mail: info@nureth13.org
<http://www.nureth13.org/>

Short Course on Boiling Heat Transfer and Boiling Equipment

Darmstadt, Germany, October 5-9, 2009
Prof. Dr.-Ing. Peter Stephan
Institute for Technical Thermodynamics,
Darmstadt University of Technology
Tel: 49-6151-16-3159, Fax: 49-6151-16-6561
E-mail: pstephan@ttd-tu-darmstadt.de
<http://termserv.casaccia.enea.it/boiling-course-2009/>

FILTECH 2009

Wiesbaden Germany, October 13-15, 2009
Dr. Harald Anlauf, Karlsruhe, Germany
Prof. Eberhard Schmidt, Wuppertal, Germany
E-mail: info@filtech.de
<http://www.filtech.de/>

ICFMTE 2009: International Conference on Fluid Mechanics and Thermal Engineering

Chicago, USA, October 28-30, 2009
<http://www.waset.org/wcset09/chicago/icfimte/>

6th CNS International Steam Generator Conference

Toronto, Canada, November 8-11, 2009
Dr. John Roberts, Bruce Power
Tel: 416-977-7620, Fax: 416-977-8131
E-mail: cns-snc@on.aibn.com
<http://www.cns-snc.ca>

ANS Winter Meeting and Nuclear Technology Expo

Washington D.C., USA, November 15-19, 2009
Dr. Mark H. Ayers, Building & Construction Trades,
AFL-CIO

Dr. Carl Rau, Bechtel Corporation
<http://www.ans.org/meetings/index.cgi?c=n>

The 7th Pacific Symposium on Flow Visualization and Image Processing (PSFVIP-7)

Kaohsiung, Taiwan, ROC, November 16-19, 2009
Prof. Liou, T. M., National Tsing Hua Univ.,
Taiwan, ROC
Prof. C.H. Tai
National Pingtung University of Science and Technology
Tel: +886 8 7740431, Fax: +886 8 7740398
E-mail: chtai@mail.npust.edu.tw
<http://psfvip7.npust.edu.tw/>

International Conference on Power Engineering (ICOPE-09)

Kobe, Japan, November 16-20, 2009
Prof. Mamoru Ozawa, Kansai University
E-mail: matumoto@kansai-u.ac.jp
<http://www.jsme.or.jp/pes/ICOPE-09/>

10th Asian Symposium on Visualization (ASV-10)

Vijayawada, Andhra Pradesh, India, December 7-10, 2009
Prof. E. Rathakrishnan
Department of Aerospace Engineering
Indian Institute of Technology Kanpur, India
E-mail: erath@iitk.ac.in
<http://www.10asv.org/Home.html>

ASME 2009 2nd Micro/Nanoscale Heat & Mass Transfer International Conference

Shanghai, China, December 18-21, 2009
Dr. Ping Cheng, Shanghai Jiaotong University
MNHMT09@sjtu.edu.cn
<http://www.asmeconferences.org/MNHMT09/>

ICCFD 2009: International Conference on Computational Fluid Dynamics

Bangkok, Thailand, December 25-27, 2009
<http://www.waset.org/wcset09/bangkok/iccfd/>

----- 2010 -----

9th International ISHMT-ASME Heat and Mass Transfer Conference

Bombay, India, January 4-6, 2010
Prof. S. Srinivasa Murthy
IIT Madras, Chennai, India
E-mail: ssmurthy@iitm.ac.in
<http://www.me.iitb.ac.in/~ishmt2010/>

European Nuclear Conference (NC 2010)

Barcelona, Spain, May 30 - June 3, 2010
Prof. Frank Deconinck, SCK-CEN, Belgium
Dr. José Emeterio Gutiérrez,

Westinghouse Technology Services, Spain
Tel: +32 2 505 30 54, Fax: +32 2 502 39 02
E-mail: enc2010@euronuclear.org
<http://www.enc2010.org>

E-mail: vafai@enr.ucr.edu
<http://www.engconfintl.org/10ap.html>

----- 2011 -----

**International Conference on Multiphase Flow
2010 (ICMF-2010)**

Tampa, Florida, USA, May 30 - June 4, 2010
E-mail: icmf-2010@ufl.edu
<http://conferences.dce.ufl.edu/ICMF2010/>

ITherm 2010

Las Vegas, Nevada, USA, June 2-5, 2010
Dr. Tom Lee
E-mail: tleea@tsmc.com
Tel: 408-382-8070 (office)
TSMC North America, San Jose, CA
<http://www.ithermconference.org/>

**3rd ECI International Conference on Porous
Media and its Applications in Science, Engineer-
ing and Industry**

Tuscany, Italy, June 20-24, 2010
Prof. Kambiz Vafai
Department of Mechanical Engineering, University
of California, Riverside, USA

**The 8th ASME-JSME Thermal Engineering Joint
Conference (AJTEC2011)**

Honolulu, Hawaii, USA, March 13-17, 2011
Prof. Koichi Hishida, Keio University
E-mail: hishida@sd.keio.ac.jp
Prof. James Klausner, University of Florida
E-mail: klaus@ufl.edu
Prof. Isao Satoh, Tokyo Institute of Technology,
E-mail: satohi@mep.titech.ac.jp
<http://www.jsme.or.jp/conference/AJTEC2011/>

----- 2012 -----

11th World Filtration Congress (WFC11)

Graz, Austria, April 14-18, 2012
Prof. Wilhelm Höflinger, Vienna University of
Technology
Prof. Gerd Mauschwitz, Vienna University of Technology
E-mail: info@wfc11.at
<http://www.wfc11.at>

Executive Division of The Japanese Society for Multiphase Flow (2008)

President A. Yabe (National Institute of Advanced Industrial Science
and Technology)

Vice Presidents T. Shakouchi (Mie University)
T. Ueno (Mitsubishi Heavy Industries, Ltd.)
Y. Abe (University of Tsukuba)

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T. Saito (Shizuoka University)

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T. Ishii (JFE R&D Corporation)

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F. Takemura (National Institute of Advanced Industrial Science
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