

The International Information Center for Multiphase Flow

# **NEWSLETTER**

No.19

October 2002

The Japanese Society for Multiphase Flow

### The Ninth Asian Congress of Fluid Mechanics Report May 27 to 31, 2002, Isfahan, IRAN

by Ebrahim Shirani

The Ninth Asian Congress of Fluid Mechanics was held on May 27 to 31, 2002, in Isfahan, Iran. The Congress was supervised by the Asian Committee of Fluid Mechanics, which was first formed in 1980 with the objective of organizing the Fluid Mechanics Congresses in Asian countries and to enhance the intensity of fluid mechanics research and promote contacts among the fluid dynamists. The members of the Asian Congress of Fluid Mechanics are the well-known scientists from Asian Countries as well as Australia. The Congress is held in one of the Asian countries every three years and more recently, every other year. But it is not restricted to the Asian countries. The congress is indeed international in character and scientists form all five continents actively participate in this scientific occasion. The previous eight congresses took place in Banglore, India, in 1980, Beijing, China, in 1983, Tokyo, Japan, in 1986, Hong Kong, in 1989, Taejon, Korea, in 1992, Singapore, in 1995, Madras, India, in 1997, and Shenzhen, China, in Dec.1999.

The Ninth Asian Congress of Fluid Mechanics coincided the Seventh Iranian Conference of Fluid Dynamics (7ICFD). The ICFD's have been organized and held in Iran every two years since 1990. The Ninth Congress received 237 papers from which 177 were accepted based on review of every paper by at least three referees. The accepted papers are contributed by scientists from 13 different countries and were presented orally in this Congress. The delegates presented the papers in this congress were from Australia, Azerbaijan, Bangladesh, China, England, Hong Kong, India, Iran, Japan, Pakistan, Singapore, Sri Lanka and USA. The total number of participants in the congress was about 250 persons. The papers were organized into five Plenary lectures, twelve Special lectures, and 39 technical lectures. The special and technical lectures were presented in three parallel sessions.

Time for presenting plenary lectures were 45 minutes, special lectures were 30 minutes, and technical papers were 20 minutes each.

The papers covered a broad range of subjects in fluid mechanics and were classified in 18 different topics. They were instability and transition, computational fluid dynamics, experimental fluid dynamics and flow measurements, aerodynamics, geophysical fluid dynamics, boundary layers, hydrodynamics and hydraulics, combustion and reacting flows, flow control, heat and mass transfer, turbulence modeling, fluid machinery,

#### 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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multiphase flows, industrial flows, visualization and measurements, aeroacoustics and aeroelasticity, bluff body aerodynamics, and atmospherics flows.

The proceeding of the congress consists of two parts. A book of abstract, and a CD of the full papers.

There were some social activities during the Congress and the delegates attending the Congress enjoyed the very worm environment and interesting sight seeing and monuments in the city of Isfahan. A one-day tour of Isfahan was organized and the delegates took this opportunity to visit some of unique and incredible monuments and other historic buildings in the city.

The mayor of Isfahan was the host of the 9ACFM delegates and participants. During this occasion, some Iranian live music program was played. The banquet

party was held in the five-star Abbasi International Hotel. There was also a program organized by the authorities of an aircraft factory near Isfahan. Some every day tours were also available and specially designed for participants and their accompanying persons who wish to enjoy their city cruise privately.

A three-day visit to city of Shiraz was also organized.

Finally, there is an exhibition related to the fluid mechanics subject. This exhibition was active during the five days of the Congress.

Professor Ebrahim Shirani Chairman of the Congress Department of Mechanical Engineering, Isfahan University of Technology (IUT), Isfahan 84154, Iran

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### **Executive Division of The Japanese Society for Multiphase Flow (2001-2002)**

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# Post Conference Report BEM 24: 24th World Conference on Boundary Element Methods incorporating Meshless Solutions Seminar

by Rachel Green

The 24<sup>th</sup> International Conference on Boundary Element Methods took place recently in Sintra, Portugal, organised by the University of Coimbra and the Wessex Institute of Technology.

The Conference Co-Chairmen were Prof Antonio Tadeu from the University of Coimbra; Prof Carlos Brebbia, Director of Wessex Institute of Technology, UK and Dr Viktor Popov, Head of the Environmental Modelling and Fluid Mechanics Division at Wessex Institute of Technology.

Prof Brebbia opened the conference by welcoming the delegates and pointing out the importance of BEM research carried out at the University of Coimbra. He said, "Portugal is one of the countries where the technique was accepted at an early stage and it is fitting that a highlight of BEM 24 is a special session organised by Antonio on the state of BEM Research in Portugal."

The BEM Series of conferences has always reflected the most recent advances in the technique. BEM 24 continued with the tradition by concentrating on developments that are nowadays, attracting the attention of the community, in particular, dual reciprocity, some advanced formulations and meshless methods. Other conference papers covered a wide range of applications, many dealing with the solutions of complex problems, which would have been impossible to solve using boundary elements a few years ago.

Prof Brebbia highlighted that "the maturity achieved by boundary elements in the last few years has resulted in their application for the solution of many real engineering problems.

The conference also celebrated a quarter of a century since the first paper on Boundary Element methods appeared, written by Brebbia C.A. and Dominguez J., "Boundary Element

Methods for Potential Problems", Applied Mathematical Modelling Journal, Vol. 1, No. 7, 1977.

Prof Brebbia spoke of how rewarding it was to see "the seminal importance that this series of conferences has had in the development of the method. It has led to the publication of more than 40 volumes of Proceedings, which are often referred to as the original source for most developments that have taken place since 1978 when the first volume was published. The BEM 24 volume will also add to our understanding of the BEM

and, like the others, will be a source of new ideas and applications."

The conference included a particularly interesting session dealing with meshless methods, organised by Professor C.S. Chen from the University of Nevada, Las Vegas. While not all meshless methods are based on boundary integral equations, a large number of them use radial basis function techniques, originally developed for dual reciprocity.

"Meshless methods", said Prof Brebbia, "are a logical extension of the concept of reducing the mesh which originated boundary elements. There is now the need for a better understanding of the relationship between boundary solutions in general, including BEM and meshless methods. Their common ground is that they are all mesh reduction techniques, which should perhaps be the future name for all of them."

The success of BEM 24 is apparent from the substantial number of papers and invited contributions that were presented. The full conference report is available at: www.wessex.ac.uk/conferences/2002/be02.

Papers are now being encouraged for presentation at BEM 25, which is taking place in Split, Croatia from 8 – 10 September 2003. Initial enquiries can be made by contacting the Conference Secretariat, Rachel Green at Wessex Institute of Technology, telephone: 44 (0) 238 029 3223. Email: rgreen@wessex.ac.uk

The conference book, "Boundary Elements XXIV", 776 pages, priced at £239 or \$369 or Euros388.97, ISBN 1-85312-914-3, has been published by WIT Press and can be ordered by FAX on 44 (0) 238 029 2853, by E-mail: marketing@witpress.com or via the WIT Press web site: www.witpress.com (an automatic 10% discount will be applied to credit card orders placed via this site).

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# 13<sup>th</sup> International Symposium on Transport Phenomena (ISTP'13) Report July 14-18, Victoria, British Columbia, CANADA

by Sadik Dost

The Thirteenth International Symposium on Transport Phenomena, ISTP13, was held from July 14 to 18, 2002 in Victoria, British Columbia, Canada. The conference was located at the Victoria Conference Centre in downtown Victoria. The Symposium was organized by the Department of Mechanical Engineering, University of Victoria under the auspice of the Pacific Center of Thermal-Fluids Engineering (PCTFE), Hawaii, USA.

136 delegates from 21 different countries were attended the Symposium. Presented articles were published by Elsevier in the Conference Proceedings, "Progress in Transport Phenomena" (Eds. S. Dost, H. Struchtrup, I. Dincer). The chapters featuring 141 articles are organized in sequence beginning with fluid flow and progressing towards the blending of transport phenomena with relevant disciplines in the pursuit of recent research results, reflecting the development of this very active field. The contributors cover a wide spectrum of educational backgrounds and research orientations, from engineering to physics, and from fundamentals to actual industrial applications.

The Symposium was a successful multidisciplinary international conference, providing a forum for researchers and practitioners from all over the world to disseminate information, present new ideas and developments, and discuss future directions and priorities in the field of transport phenomena. It served as nourishment to the cooperation and collaboration between academia and industry in terms of developing various research activities in the areas of transport phenomena.

The symposium also included a MINI SYMPO-SIUM on "Computational Solid/Liquid Phase Change: Transitions and Interfaces" comprising of a number of articles on recent developments in the field, and an OPEN FORUM that provided a unique opportunity for scholars to present their latest, as yet, unpublished research findings before a conference audience that serves as a "sounding board" to provide constructive feedback.

#### ORGANIZING COMMITTEE

Symposium Chair: Sadik Dost Honorary Chair: David S. Scott Technical Chairs: Henning Struchtrup

Ibrahim Dincer

Members: Zuomin Dong

Ned Djilali Hamdi Sheibani

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### 13th International Symposium on Transport Phenomena (ISTP'13) Short Meeting Report July 14-18, Victoria, British Columbia, CANADA

by Sadik Dost

The Thirteenth International Symposium on Transport Phenomena (ISTP13) was successfully held in Victoria, BC, Canada on July 14-18, 2002 featured keynote and general papers on:

Fluid Flow

Heat Transfer

Thermodynamics

Mass Transfer

Solidification and Crystallization

Combustion

Heat Exchangers

Thermal Processes

Energy and the Environment

The Conference featured 141 papers organized in sequence beginning with fluid flow and progressing towards the blending of transport phenomena with relevant disciplines in the pursuit of recent research re-

sults, reflecting the development of this very active field. The speakers covered a wide spectrum of educational backgrounds and research orientations, from engineering to physics, and from fundamentals to actual industrial applications.

In fact, the Conference became a multidisciplinary international conference, providing a forum for researchers and practitioners from all over the world to disseminate information, present new ideas and developments, and discuss future directions and priorities in the field of transport phenomena. We belive that it served as nourishment to the cooperation and collaboration between academia and industry in terms of developing various research activities in the areas of transport phenomena.

The Conference also included a mini symposium on COMPUTATIONAL SOLID/LIQUID PHASE CHANGE: TRANSITIONS AND INTERFACES comprising of a number of papers on recent developments in the field, and an OPEN FORUM that provided a unique opportunity for scholars to present their latest, as yet, unpublished research findings before a conference audience that serves as a "sounding board" to provide constructive feedback.

Thanks and best wishes, Ibrahim Dr. Ibrahim Dincer ISTP-13 Technical Chair

Professor

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### Repot of The Twelfth International Heat Transfer Conference August 18-23, Grenoble, FRANCE

by Yutaka Abe

The Twelfth International Heat Transfer Conference was held in Grenoble, France during August 18 – 23, 2002.

The International Heat Transfer Conference (IHTC) has a long history. It had its origins in the Conferences held in London and Atlantic City in 1951 and in Boulder and London in 1961-1962. The sites of the following IHTC were, at four-yearly intervals, Chicago, Versailles, Tokyo, Toronto, Munich, San Francisco, Jerusalem, Brighton, and finally Kyung Ju in 1998. The Twelfth Conference being held in Grenoble in 2002 is the first one to be held in France for over thirty years. The next Conference is scheduled in Sydney in 2006.

In the Twelfth IHTC, 32 keynote lectures and the 513 posters were presented. A variety of keynote lectures were provided every day for one hour each. All general presentations are made by poster presentation for four hours in the day for the presentation after one minutes short presentation. The keynote lectures and the general papers are included in the official CD-ROM published by Editions scientifiques et Medicales Elsevier SAS, under the ISBN 2-84299-307-1 and is also be published by Editions scientifiques et Medicales Elsevier SAS in the four volumes of the Proceedings.

The general papers are classified in five sections:

- Transfer Modes under Local Thermal Non-Equilibrium (Non LTE)
- 2. Single Phase Heat Transfer
- 3. Two-Phase Heat Transfer
- 4. Heat transfer in Nonhomogeneous Media
- 5. Heat transfer in Engineering Systems

Each section is divided into subsections. In Transfer Modes under Non-LTE appears an emerging topics of the Conference, which deals with Transfer Modes at Ultra Short Scales in Time or in Space. Radiation, generally characterized by a non-LTE field, has been also entered in this section. The Section Single Phase Heat Transfer mainly deals with all types of convection problems from specific experiments to direct numerical simulations or non-conventional fluid flows. The Section Two-Phase Heat Transfer is more precisely devoted

to scientific approaches of liquid-vapor systems generally with boiling or condensation, even at the bubble or drop scales or at a larger scale. The Section Heat transfer in Non-homogeneous Media gathers works on melting, solidification or freezing and also on porous media and on media characterized by a non-homogeneous composition. The last section Heat transfer in Engineering Systems gives a rather good idea of the relative importance of the considerable number of applications treated by the Heat Transfer Community worldwide

Conference Officers are

President: S.T. Ro, Korea
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The international scientific committee members are J. Taine, France (Chair), A.R. Balakrishnan, India, Z.Y. Guo, China, A. Bar Cohen, USA, E. Hahne, Germany, M. da Graça Carvalho, Portugal, G. Hetsroni, Israel, M.S. Carvalho, Brazil, G.F. Hewitt, UK, M. Choi, Korea, A.I. Leontiev, Russia, M. Cumo, Italy, P.H. Oosthuizen, Canada, G. De Vahl Davis, Australia, A.A.M. Delil, The Netherlands and M. Shoji, Japan.

The selection and the validation of the general papers of a Conference was conducted by the members of the International Scientific Committee in each country. The number of the presentation is limited for each area in the world. As the results, it can be recognized that the papers presented in the IHTC were kept at really high standard from the scientific and engineering points of view.

Professor Yutaka Abe Institute of Engineering Mechanics and Systems University of Tsukuba Tsukuba, Ibaraki, 305-8573, Japan FAX: 0298-53-5266 E-mail: abe@kz.tsukuba.ac.jp.

### 15th International Congress of Chemical and Process Engineering CHISA 2002 August 25-29, Prague, CZECH REPUBLIC

by Jiri Drahos

The popular CHISA Congress celebrated its 40th anniversary and continued the tradition of a major European and world congress of chemical and process engineering (see www.chisa.cz/2002). The Congress with all its topics and specialised symposia supported the concept of sustainable development. Participation, also traditionally about 1000 from 60 countries, was distributed between the Czech Republic (17%), Central Europe (15%), Western Europe (26%), Eastern Europe (11%), Southern Europe (9%) and outside Europe (22%). Students comprised over 25% of all participants.

In addition to the general topics (Reaction engineering, Separation processes, Fluid flow and multiphase systems, Heat transfer processes, Phase equilibrium and fluid properties, Computer aided process engineering, Food processing and technology, Particulate solids, and Chemical engineering education), another nine specialised symposia were organized on Environmental engineering and management, Process safety, Transient multiphase flows, Micro- and mesoporous materials, Supercritical fluids, Chemical technology for sustainable future, Mixing of suspensions, Cyclic operation of trickle bed reactors, and Synergies of various engineering branches. An important part of the Congress was a 5th Conference PRES 2002 on Process integration, modelling and optimisation for energy saving and pollution reduction.

Totally 7 plenary and 53 keynote lectures were presented together with more than 1200 standard contributions (both oral and poster). Congress proceedings were issued on a fully searchable CD-ROM and supported by a printed book of abstracts.

The main topics and respective keynote lecturers in the session Fluid Flow and Multiphase Systems were: Gas-liquid flow (A. Tamir), Bubbles, particles and jets, Multiphase CFD (M. Sommerfeld), Film flow and rheology (O. Wein), Mixing, Fluidisation, and Particulate systems (J. Zakin). A specialised Symposium on transient multiphase flows was organised together with the EFCE Working Party 'Multiphase Fluid Flow' (keynotes by G. Hetsroni, I. Zun, M. Giot and H. M. Prasser). The program of the both events comprised of 63 oral and over 80 poster contributions.

The next CHISA Congress will take place in Prague at the end of August 2004.

Prof. Jiri Drahos

Director

Institute of Chemical Process Fundamentals AS CR

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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://flow.human.nagoya-u.ac.jp/JSMF/index-e.html.

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| Prof. YADIGAROGLU, G. (Vice chair) | Switzerland |

#### Venue

The Conference will be held in the PACIFIC CONVENTION PLAZA YOKOHAMA Conference Center, Japan. Yokohama is an international port city located in the Metropolitan Area of Japan, which was opened to the foreign countries in 1859. Since then, this city has been keeping an international, exotic and entrepreneurial atmosphere. PACIFICO YOKOHAMA is a part of the newly developed water front area in Yokohama. know as "Minato Mirai 21" or "Future Port 21."

### **Local Organization**

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### **ICMF-2004**

www.jsmf.gr.jp/icmf/

5th International Conference
on
Multiphase Flow

Announcement and Call for Papers



May 31-June 3, 2004

Yokohama Pacifico Conference Center,

JAPAN

Website: www.pacifico.co.jp/index-e.htm

### **ICMF-2004**

### 5th International Conference on Multiphase Flow

Website: www.jsmf.gr.jp/icmf/

### Scope

This Conference, ICMF-2004, is the 5th in a series of International Conferences on Multiphase Flow: the first one was held in TSUKUBA, Japan in 1991; the second ICMF'95 in KYOTO, Japan in 1995; the third ICMF'98 in LYON, France in 1998; and the 4th ICMF-2001 in NEW ORLEANS, USA in 2001. The aim of these conferences is to bring together researchers from all countries and experts from all disciplines and applications involving multiphase flow in promoting the exchange of new ideas, results and techniques.

The scope covered by the Conference will be divided into five major areas:

- A. Constituent Elements of Multiphase Flows
- B. Adiabatic Multiphase Flows
- C. Diabatic Multiphase Flows
- D. Advanced Models and Instrumentations
- E. Applications

We hope that this Conference will facilitate and encourage communications between all those working on multiphase flows, especially towards new ideas and approaches in multiphase flow research.

### **Technical Program**

The Program will consist of:

- 1) Four Plenary lectures,
- 2) Ten Keynote lectures for Scope A through E, and
- 3) Oral and poster presentations.

#### Presentation

The official language of the Conference will be English. Overhead projectors and multimedia projectors with PCs will be available for lectures and orals. Posters will be displayed on a board (details will be announced later in the website).

#### Registration

The registration fee covering the conference participation, conference proceedings, banquet and coffee breaks is 65,000 yens (on-site registration) or 55,000 yens (early registration). For students, it will be 30,000 yens (on-site registration) or 25,000 yens (early registration). Accommodation is NOT included. Specific information about accommodation will be available due course in the website.

### **Conference Proceedings**

All accepted contributions will appear in the proceedings (in CD-ROM) of the Conference. The proceedings will be made available to participants during the registration at the Conference.

#### **Contributions**

Abstracts of the proposed contributions should be sent to the local organization, *via Web*, no later than September 1, 2003. An abstract should be on one A4 (or letter) page, including tables and figures if any, with two-column format given in the website and contain the title of the proposal and the name(s) of author(s).

All contributors will be informed before November 1, 2003 whether their proposal was accepted, in Oral or Poster presentation, by the scientific committee. Further information on the preparation of full-length manuscripts for the Conference proceedings will also be provided to the contributors in November, 2003 on the website.

#### **Deadlines**

September 1, 2003 Receipt of one-page abstracts

November 1, 2003 Notification of acceptance

March 1, 2004 Receipt of full-length manuscripts

### **Supporting Organization**

The Japanese Society for Multiphase Flow (JSMF)

### **Future Meetings**

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

### 8th Symposium on Temperature: Its Measurement and Control in Science and Industry

Chicago, IL, USA, October 21-28, 2002

E-mail: ts2002@nist.gov

## Fall Meeting(Annual) of Korean Institute of Chemical Engineers

Seoul National University, Seoul, October 24-26,

2002

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# 8th Asian Conference on Fluidized-Bed and Three-Phase Reactors

Mandarin Hotel, Bangkok, Thailand, November 3-

6, 2002

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land

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### **AIChE 2002 Annual Meeting**

Indianapolis Convention Center, Indianapolis, IN,

USA, November 3-8, 2002

Dr. G.V. Reklaitis Purdue University

Email: aiche02@ecn.purdue.edu

Dr. Jennifer Sinclair Purdue University

E-mail: aiche02@ecn.purdue.edu http://www.aiche.org/annual/index.htm

### ANS Winter Mtg.

Omni Shoreham Hotel, Washington, DC, USA, November 17-21, 2002

http://www.ans.org/meetings

### The Fifth JSME-KSME Fluids Engineering Conference

Nagoya, Japan, November 17-21, 2002

Prof. Yasuhiko SAKAI (Nagoya University)

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http://www.flow.human.nagoya-u.ac.jp/FEC5/

# Int. Mech. Engineering Congress & Exposition, The Winter Annual Mtg. of ASME (WAM)

New Orleans, LA, USA, November 17-22, 2002

Dr. June Leach-Barnaby

Meetings Manager

**ASME International** 

Three Park Avenue

New York, NY 10016 E-mail:imece@asme.org

http://www.asme.org/congress/

Space Technology & Applications International

# Forum (STAIF-2003) Session A07. Boiling in Microgravity

Albuquerque, New Mexico, USA, February 2-6,

2003

Prof. Walter Grassi

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E-mail: w.grassi@ing.unipi.it

http://www.unm.edu/~isnps/

### The 6th ASME-JSME Thermal Engineering Joint Conference

Hapuna Beach Prince Hotel, Kohala Cost, Hawaii

Island, Hawaii, USA, March 16-20, 2003

Prof. Shigefumi Nishio

The University of Tokyo

Co-Chair (JSME)

Prof. Adrienne Lavine

University of California, Los Angeles

Co-Chair (ASME)

http://www.jsme.or.jp/ted/AJ2003.html

## Thermodynamics Heat and Mass Transfer of Refrigeration Machines and Heat Pumps

Valencia, Spain, March 31 - April 2, 2003

Prof. Corberán Salvador, José Miguel

Dept. of Thermodynamics

Catedrático/a de Universidad PDI

Universitat Politècnica de Valencia

Higher Technical School of Industrial Engineering Camino de Vera s/n, 46020 Valencia, Spain

- 9 -

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# M&C 2003: Nuclear Mathematical and Computational Sciences: a Century in Review, a Century Anew

Gatlinburg, TN, USA, April 6-10, 2003

Dr. Bernadette Kirk E-mail: kirkbl@ornl.gov

http://meetingsandconferences.com/MC2003/

# 11th International Conference On Nuclear Engineering (ICONE-11/2003)

Tokyo, Japan, April 20-23, 2003

http://www.conferencetoolbox.org/icone11/

### First International Conference on Microchannels and minichannels

Rochester Institute of Technology, Rochester, NY, USA, April 24-25, 2003

Sponsored by ASME Rochester Heat Transfer Chapter and M. E. Department, RIT

### 5th International Conference on Boiling Heat Transfer

Montego Bay, Jamaica, May 4-8, 2003

Prof. James F. Klausner University of Florida

Department of Mechanical Engineering

Gainesville, FL 32611 Tel: 352-392-3506 Fax: 352-392-1071 E-mail: klaus@ufl.edu

http://www.doce-conferences.ufl.edu/ICBHT/

### The 7th Asian Symposium on Visualization (7ASV)

National University of Singapore, Singapore, May 26-

30, 2003

7th ASV Secretariat

c/o Integrated Meetings Specialist Pte Ltd

1122A Serangoon Road Singapore 328206 Tel: (65) 62955 790 Fax: (65) 62955 792

Email: 7ASV@inmeet.com.sg

http://www.eng.nus.edu.sg/PACentre/7ASV/

# The Third International Mediterranean Combustion Symposium

Marrakech, MOROCCO, June 8-13, 2003

Dr. Federico Beretta

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Consiglio Nazionale delle RicercheNapoli - ITALY

E-mail: beretta@irc.na.cnr.it

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E-mail: mansourm@aucegypt.edu http://www.ichmt.org/Mcs-03

### Turbulence and Shear Flow Phenomena-2003 (TSFP-3)

Sendai, Japan, June 25-27, 2003 http://www.tsfp3.mes.titech.ac.jp

### 14th Int. Symp. on Transport Phenomena (ISTP-14)

Bali, Indonesia, July 6-10, 2003 http://www.eng.ui.ac.id/istp/

### 4th ASME/JSME Joint Fluids Engng. Conf.

Hawaii, USA, July 6-10, 2003

http://www.asme.org/divisions/fed/events/ SymposiumFinalCall.pdf

### Microscale heat transfer 2

Reims, France, July 8-10, 2003

Dr. Thierry Duvaut Laboratoire L.E.O.

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### IEEES-1 The First International Exergy, Energy And Environment Symposium

IZMIR, TURKEY, July 13-17, 2003

Prof. Ibrahim Dincer

Department of Mechanical Engineering

King Fahd University of Petroleum and Minerals

(KFUPM)

Box 127, Dhahran 31261, Saudi Arabia

Tel: 966-3-860-4497 Fax: 966-3-860-2949

E-mail: idincer@kfupm.edu.sa http://www.geocities.com/ieees03

# 7th Triennial International Symposium on Fluid Control, Measurement and Visualization (FLUCOME'03)

Sorrento, Italy, July 21-24, 2003 Prof. Giovanni M. Carlomagno Facoltà di Ingegneria DETEC P.le Tecchio, 80, 80125 Napoli - ITALY

Tel (39) 081 7682178 Fax (39) 081 2390364 E-mail: flucome@unina.it http://www.flucome.unina.it

# 6th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering

University of British Columbia, Vancouver, Canada, August 17-20, 2003

GLS-6 Secretariat Fax: +1-604-822-1069

E-mail: registration @housing.ubc.ca

### Transient Convective Heat and Mass Transfer in Single and Two-phase Flows

Cesme, Turkey, August 17-22, 2003

Professor Faruk Arinc ICHMT Secretary General

Mechanical Engineering Department Middle East Technical University

06531 Ankara, Turkey

Tel: +90-312-210 5214 & 1429 Fax: +90-312-210 1331 & 1266 E-mail: arinc@metu.edu.tr http://www.ichmt.org/Trcon-03

### Third European-Japanese Two-Phase Flow Group Meeting

Certosa di Pontignano, Pontignano - 53010 Vagliagli

, Italy

September 21-27, 2003 Dr. Gian Piero Celata ENEA Casaccia

E-mail: celata@casaccia.enea.it,

Prof. Iztok Zun

University of Ljubljana E-mail: iztok.zun@fs.uni.lj.si Prof. Akio Tomiyama

Kobe University

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## International Conference on Supercomputing in Nuclear Applications (SNA 2003)

Paris, France, September 22-24, 2003

http://sna-2003.cea.fr/

### Tenth International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-10)

Seoul, Korea, October 5-9, 2003

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http://www.nureth10.org

### 4th International Symposium on Turbulence, Heat and Mass Transfer

Antalya, Turkey, October 12-17, 2003

Prof. K. Hanjalic, Chairman

Department of Applied Physics, Delft University of

Technology

Lorentzweg 1, 2628 CJ Delft, The Netherlands

Tel: +31 15 278 1735 Fax: +31 15 278 1204

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### **AIChE 2003 Annual Meeting**

San Francisco, CA, USA, November 16-21, 2003 http://www.aiche.org/conferences/

### CHT-04 Advances in Computational Heat Transfor

Kirkenes, Norway, April 1-6, 2004 Prof. Graham de Vahl Davis Prof. Eddie Leonardi

CFD Research Laboratory,

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The University of NSW, Sydney, NSW, Australia 2052

Tel: (+61 2) 9385 4099 / 4254 Fax: (+61 2) 9663 1222

Email: cht04@cfd.mech.unsw.edu.au

### 5th International Conference on Multiphase Flow (ICMF-2004)

Yokohama Pacifico Conference Center, Yokohama, Japan,

May 31- June 3, 2004 Conference Chairperson: Prof. Y. Matsumoto University of Tokyo

Temporary web site: http://www.fel.t.u-tokyo.ac.jp/

ICMF2004/

First circulation will be e-mailed soon.

#### **AIChE 2004 Annual Meeting**

Austin, TX, USA, November 7-12, 2004

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