

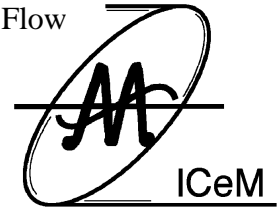


The International Information Center for Multiphase Flow

# NEWSLETTER

No. 51, March 2019

The Japanese Society for Multiphase Flow



## The Fifteenth International Conference on Flow Dynamics (ICFD2018) November 7-9, 2018, Sendai City, Japan

by Hideya Nishiyama

The Fifteenth International Conference on Flow Dynamics was held on November 7-9, 2018 at the Sendai International Center Japan. This conference was hosted by Institute of Fluid Science, Tohoku University on the occasion of its 75<sup>th</sup> anniversary and was in cooperated with the Japanese Society for Multiphase Flow and another 18 scientific societies. The co-chairmen were Professor Yuji Hattori (Tohoku University) and Professor Yiguang Ju (Princeton University). The objectives of this conference are to explore new horizons in science and technology by discussing and exchanging information related to the most advanced scientific fields and to cutting edge technologies in Flow Dynamics. ICFD is now recognized by the researchers and engineers all over the world as one of the largest and the most important international conferences in the field of Flow Dynamics. It has also been playing an important role in promoting international research

collaborations. It should be noted that ICFD provides young researchers and students with unique opportunities to develop themselves through proactive participation in the conference. Flow Dynamics is a comprehensive scientific field which deals with flow and transport phenomena concerning electrons, molecules, and nanoscale particles, any continuum fluid with and without chemical reaction, any material, energy, information, economic activity and so forth. It addresses multiscale, multiphysics and multidisciplinary problems and deals with all natural phenomena including bio-processes, corrosion, weather, volcanic eruptions, earth magnetic field and tectonic motions, and in most human activities such as industrial processes, energy production & saving, and transportation. ICFD is expected to play a significant role in encouraging Flow Dynamics to become a major academic discipline, which deals with various difficult tasks that human society is

### To Join ICeM:

Everybody, who is interested in Multiphase flow, is welcome to join ICeM. Please contact one of the following board members to register in ICeM member.

#### Members (Editor):

Prof. Tomomi Uchiyama (Chairperson)  
Nagoya University  
E-mail: uchiyama@is.nagoya-u.ac.jp

Prof. Tatsuya Hazuku  
Tokyo University of Marine Science  
and Technology  
E-mail: hazuku@kaiyodai.ac.jp

Prof. Kei Ito  
Kyoto University  
E-mail: k-ito@rri.kyoto-u.ac.jp

Prof. Kazumichi Kobayashi  
Hokkaido University  
E-mail: kobakazu@eng.hokudai.ac.jp

facing, such as control of nuclear power generators, global warming, energy, resource and diseases.

The technical program consists of 3 Plenary Lectures, 1 General Session, 19 Organized Sessions including collaborative research forum. 557 papers were presented and 727 people from 28 countries were attended. The plenary lectures were given by Dr. Meyya Meyyappan (NASA Ames Research Center, USA) on “Nanomaterials in Energy Generation and Storage”, Prof. Alexander J. Smits (Princeton University, USA) on “Fast and Efficient Underwater Propulsion Inspired by Biology” and Prof. Chi-Chuan Wang (National Chiao Tung University, Taiwan) on “Recent Progress on the Airflow Management of Data Centers”.

The general sessions were closely related to the academic fields of mechanical engineering, aerospace engineering, nuclear engineering, physics, medical science and engineering, chemistry, chemical engineering and all other areas based on flow dynamics.

The Liaison office session attending from 7 countries, Fluids Science Research Award Lecture from IFS Tohoku University and students’ session were organized. 97 students were presented in the students’ session and “Best Presentation Award”



Participants in ICFD2018

was given to three students from Tohoku University at the banquet.

The Sixteenth International Conference on Flow Dynamics (ICFD2019) will be held on November 6-8, 2019 at Sendai International Center, Japan co-chaired by Professor Takehiko Sato (Tohoku University, Japan) and Professor Jong-Shinn Wu (National Chiao Tung University, Taiwan).

Hideya Nishiyama  
Professor Emeritus of Tohoku University  
Currently, Guest Professor of Osaka University  
E-mail: nishiyama@tohoku.ac.jp

## **The 11<sup>th</sup> Koera-Japan Symposium on Nuclear Thermal Hydraulics and Safety (NTHAS-11) November 18-21, 2018, Busan, Korea**

by Kei Ito

Atomic Energy Society of Japan and Korean Nuclear Society held the 11<sup>th</sup> Korea-Japan Symposium on Nuclear Thermal Hydraulics and Safety (NTHAS-11) from November 11 to 21 at Paradise hotel Busan located next to Haeundae beach, the most famous beach in Korea. Since the first NTHAS, also held in Busan in 1998, NTHAS meetings were held in every two years alternately in Japan and Korea: Fukuoka (2000), Gyeongju (2002), Sapporo (2004), Jeju (2006), Okinawa (2008), Chuncheon (2010), Beppu (2012), Buyeo (2014) and Kyoto (2016). This time, NTHAS marked the 20 years anniversary of providing a unique opportunities to discuss up-to-date technical information and to interact with colleagues from Japan and Korea. The

memorial NTHAS-11 was organized by two honorary chairs, C. H. Song (KAERI) and M. Naito (IEA), two general chairs, Y. S. Bang (KINS) and A. Yamaguchi (Univ. of Tokyo), and was sponsored by Nuclear Engineering Services & Solutions, Korea Hydro & Nuclear Power Co., Ltd, KOPCO E&C, Korea Institute of Nuclear Safety and FNC Technology.

The NTHAS-11 covered various topics related to the nuclear thermal hydraulics and safety, which were categorized into 6 tracks: Track 1. Advances in Computational Thermal-Hydraulics, Track 2. Advances in Engineering Thermal-Hydraulics, Track 3. Advances in Safety Analysis, Track 4. Advances in Severe Accident Analysis, Track 5. Advances in Reactor and Plant Technologies, Track 6. Engineering



Plenary Lecture

Technologies in Thermal-Hydraulics and Safety. Each Track had 2 to 6 sessions with 4 to 7 presentations in each session. In addition, each track had keynote lectures related to the subjects of tracks. According to the organizing committee, 200 persons attended to NTHAS-11 and 131 papers, the new record in NTHAS history, were presented.

The speeches to celebrate the 20 years anniversary of NTAHS were held in the opening ceremony, and then, honorary and general chairs made 4 plenary lectures in regard to History of Nuclear Thermal-Hydraulic Safety and Nuclear Thermal-Hydraulic Safety for the Future. As the future prospective of the nuclear thermal-hydraulic, some challenges were declared, e.g. the challenges related to multi-physics phenomena or the answer to the safety concern (how safe is safe enough?). 24 technical sessions of various research subjects were held, and in each technical session, interesting presentations and fruitful discussions were held,



Haeundae Beach

which were highly useful to enhance the knowledge of the audiences, especially for students and young researchers.

Prior to NTHAS-11, the student seminar was held in Pusan National University on November 16 and 17. 38 students (19 from Japan) attended the seminar. Each of them had poster presentations with 5 minutes summary presentations. In addition, 4 keynote lectures by specialists provided the students good opportunity to touch the latest research works about nuclear thermal-hydraulics.

The next NTHAS (NTHAS-12) will be held in Yokohama or Izu (Hakone), Japan, in 2020, just after Tokyo Olympic.

Kei Ito

Associate Professor

Institute for Integral Radiation and Nuclear Science,  
Kyoto University

E-mail: k-ito@rri.kyoto-u.ac.jp

## **The 29<sup>th</sup> International Symposium on Transport Phenomena (ISTP29) October 30 – November 2, 2018, Honolulu, USA**

by Naruki Shoji

The 29th International Symposium on Transport Phenomena (ISTP29) was held from October 30 to November 2 at the Hawaii Convention Center in Honolulu, USA. The symposium was organized by PCTFE, and the cooperating societies were JSME and HTSJ. It was chaired by Prof. Masaru Ishizuka (Toyama Prefectural University, Japan) and co-chaired by Prof. Kazuyoshi Fushinobu (Tokyo Institute of Technology, Japan).

The symposium scope treated wide range of

topics comprised of following tracks: (1) Bioengineering and Bio-thermal Fluid Dynamics, (2) Boiling and Multi-Phase Flow, (3) Combustion and Reacting Flows, (4) Electronics Packaging and Thermal Management, (5) Experimental/Computational Fluid Dynamics, (6) Fuel Cells and Battery Technology, (7) Heat and Mass Transfer, (8) Heat Exchangers, (9) Industrial Aerodynamics, (10) Manufacturing and Materials Processing, (11) MEMS, (12) Micro- and Nano-Scale

Transport, (13) Noise and Vibration in Fluid, (12) Sustainable & Renewable Energy, (13) Thermal-Fluids Machinery, (14) Thermal Hydraulics of Energy Reactors, (15) Transport in Porous Media, (16) Transport phenomena in solid mechanics and fluid-structure interaction, (17) Turbulence and Flow Instabilities, and (18) Visualization/Imaging Techniques.

The total number of participant was 226 people who be included 108 general participants, 106 students, 8 companions and 4 VIPs. There were 3 plenary lectures given by Prof. Samuel Graham (Georgia Institute of Technology, USA), Prof. Josua Meyer (University of Pretoria, USA) and Prof. Katsunori Hanamura (Tokyo Institute of Technology, Japan). And also, there were 164 technical presentations over 4 days.

During the symposium term, Honolulu was on Halloween season, so the conference receptionists disguised simple costumes. And also, Honolulu city bustled by the festival (Photo 1). The conference became unique one and the participants enjoyed an atmosphere of Halloween of Honolulu.

On Day 3 (Thursday, November 1), the banquet of ISTP29 was held on the conference venue, Hawaii Convention Center. To get the participants to experience a Hawaiian atmosphere, a traditional Hawaiian dance, hula dance, was shown off with an ukulele music (Photo 2). And also, various Hawaiian meals were treated them with a buffet style.

As a next symposium, ISTP30 will be held from November 1-3, 2019 at Vinpearl Halong Bay Resort in Ha Long City, Vietnam.



Photo 1 Appearance of the Halloween festival in Honolulu during the symposium term.



Photo 2 Banquet at Hawaii Convention Center on Day 3.

Naruki Shoji,  
Tokyo Institute of Technology  
E-mail: shoji@us.nr.titech.ac.jp

## Future Meetings

Following list includes conference name, place, date and contact information.

### Potential und Entwicklungsbedarf von CFD für die Verfahrenstechnik

Frankfurt am Main, Germany, March 18 - 20, 2019  
[https://processnet.org/JTR\\_CFD2019.html](https://processnet.org/JTR_CFD2019.html)

### Workshop on Fluid-Structure Interaction

Milan, Italy, March 18 - 20, 2019  
 Organizers: D. Bonheure (Bruxelles),  
 F. Gazzola (Milano)  
<http://www1.mate.polimi.it/~gazzola/fs.html>

### 10th Nordic Workshop on Statistical Physics: Biological, Complex and Non-Equilibrium Systems

Stockholm, Sweden, March 20 – 22, 2019  
 Chairs: R. Eichhorn, A. Imparato  
<https://www.nordita.org/events/nwsp2019/index.php>

### 4<sup>TH</sup> Thermal and Fluids Engineering Conference (TFEC 2019)

Las Vegas, NV, United States, April 14 - 17, 2019  
 Chair: D. W. Pepper (University of Nevada)  
 Co-chair: W. Strasser (Eastman Chemical Company)  
<https://www.astfe.org/tfec2019/>

### International Congress on Advances in Nuclear Power Plants (ICAPP 2019)

Juan les Pins, France, May 12 - 15, 2019  
<https://www.sfen-icapp2019.org/>

### International Conference on Properties and Phase Equilibria for Product and Process Design

Vancouver, Canada, May 12 - 16, 2019  
<http://ppeppd2019.org/>

### 10th International Conference on Multiphase Flow (ICMF2019)

Rio de Janeiro, Brazil, May 19 - 24, 2019  
 Chair: O. Rodriguez (Universidade de São Paulo)  
 Chair: N. Mangiavacchi (Universidade do Estado do Rio de Janeiro)  
<http://www.icmf2019.com.br/>

### 27th International Conference on Nuclear Engineering (ICONE27)

Tsukuba, Ibaraki, Japan, May 19 - 24, 2019  
 Chair: K. Okamoto (The University of Tokyo)  
 Chair: L. Cizelj (Jozef Stefan Institute)  
 Chair: Z. Lei (China National Nuclear Corporation)  
<http://www.icone27.org/>

### The 15th International Conference on Fluid Control, Measurements and Visualization (FLUCOME 2019)

Naples Italy, May 27 - 30, 2019  
 Chair: G. Cardone (University of Naples Federico II)  
<https://flucome2019.unina.it/index.php/2019/FLUCOME>

### CSME-CFDSC Congress 2019

London, Ontario, Canada, June 2 - 5, 2019  
 Co-Chair (CSME): K. Siddiqui  
 Co-Chair (CFDSC): C. DeGroot  
 Co-Chair (CFDSC): C. Zhang  
<https://www.eng.uwo.ca/csme-cfdsc/>

### XXVI Sitges Conference on Statistical Mechanics

Sitges, Spain, June 3 - 7, 2019  
<http://www.ffn.ub.es/sitges/>

### 9th International Symposium on Radiative Transfer (RAD-19)

Athens, Greece, June 3 - 7, 2019  
 Chair: B. W. Webb (Brigham Young University)  
 Chair: D. Lemonnier (ISAE-ENSMA)  
<http://www.ichmt.org/site/2/rad-19>

### AIAA Atmospheric Flight Mechanics Conference

Dallas, United States, June 17 - 21, 2019

### Quantum ThermoDynamics Conference (QTD 2019)

Espoo, Finland, June 23 - 28, 2019  
 Chair: J. Pekola (Aalto University)  
<https://qtd2019.aalto.fi/>

### 9th International Granulation Workshop (2019)

Lausanne, Switzerland, June 26 - 28, 2019  
<https://www.sheffield.ac.uk/agglom/2019/index>

### Thermodynamics 2019

Punta Humbria, Huelva, Spain, June 26 - 28, 2019  
<http://efce.info/Thermodynamics+2019.html>

### International Conference. Mechanisms and Non-Linear Problems of Nucleation and Growth of Crystals and Thin Films (MGCTF'19)

Saint-Petersburg, Russia, July 1 - 5, 2019  
 Chair: S.A. Kukushkin (IPME RAS)  
<http://www.mgctf.ru>

**Frontiers of Quantum and Mesoscopic Thermodynamics 2019 (FQMT19)**

Prague, Czech Republic, July 14 - 20, 2019  
Chair: V. Špička (Czech Academy of Sciences)  
<http://fqmt.fzu.cz/19/>

**Mathematical Theory of Water Waves**

Oberwolfach, Germany, July 14 - 20, 2019  
<https://www.mfo.de/www/schedule/2019/all>

**14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics (HEFAT 2019)**

Wicklow, Ireland, July 22 - 24, 2019  
Chair: JP Meyer (University of Pretoria)  
<https://www.eiseverywhere.com/ehome/349879/752623/?&t=37e84e64acfd67aa345e8e3046e4d5ab>

**27th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS2019)**

Beijing, China, July 28 - August 2, 2019  
<http://www.icders2019.pku.edu.cn/>

**The 11th International Symposium on Turbulence and Shear Flow Phenomena (TSFP11)**

Southampton, UK, July 30 - August 2, 2019  
Chair: M. Oberlack (Technische Universität Darmstadt)  
<http://tsfp11.org/>

**3rd International Symposium on Convective Heat & Mass Transfer (CONV-19)**

Cesme, Turkey, August, 2019

**5th International Workshop on Heat-Mass Transfer Advances for Energy Conservation and Pollution Control (IWTH-2019)**

Novosibirsk, Russia, August 13 - 16, 2019  
Chair: A.N. Pavlenko (Kutateladze Institute of Thermophysics)  
Chair: S.V. Alekseenko (Kutateladze Institute of Thermophysics)  
<http://iwht2019.org/>

**18th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-18)**

Portland OR, United States, August 18 - 23, 2019  
Chairs: J. Reyes (NuScale Power)  
M. Peters (Idaho National Laboratory)  
K. Muftuoglu (GE Hitachi Nuclear Energy)  
[http://www.ans.org/meetings/m\\_285](http://www.ans.org/meetings/m_285)

**The 7th Asian Symposium on Computational Heat Transfer and Fluid Flow- 2019 (ASCHT2019)**

Tokyo, Japan, September 3 - 7, 2019  
Chair: K. Suga (Osaka Pref. Univ., Japan)  
<http://www.ascht2019.com/>

**The 14th International Symposium on Numerical Analysis of Fluid Flows, Heat and Mass Transfer - Numerical Fluids 2019**

Rhodes, Greece, September 23 - 28, 2019  
<http://icnaam.org/nafluids>

**Advanced Autumn School in Thermal Measurements & Inverse Techniques (METTI 7)**

Porquerolles, France, September 29 - October 4, 2019  
<http://iusti.cnrs.fr/metti7/program/>

**The Fifth International Symposium on Innovative Materials and Processes in Energy Systems 2019 (IMPRES2019)**

Kanazawa, Ishikawa, Japan, October 20 - 23, 2019  
General Chair: Y. Kato (Tokyo Tech)  
Chair: A. Kodama (Kanazawa Univ.)  
<http://www.knt.co.jp/ec/2019/impres2019/index.html>

**2019 International Conference on Power Engineering (ICOPE 2019)**

Kunming, China, October 21 - 25, 2019  
Chair: M. Ni (CSPE, Zhejiang University)  
Chair: H. Wang (Kunming University of Science and Technology)  
<http://icope2019.kmust.edu.cn/toIndex.php>

**Second International Workshop on the APPLICATIONS OF FINE AND ULTRAFINE BUBBLES**

Halifax NS, Canada, October 24 - 25, 2019  
K. Terasaka (Keio University)  
M. Schluter (Hamburg University of Technology)  
A.M. Al Taweel, A. Donaldson, J. Haelssig (Dalhousie University)  
<https://registration.dal.ca/Registration/Welcome.aspx?e=8093D127456D8CE9B7D7B7B11C23F423>

**The 11th International Symposium on Measurement Techniques for Multiphase Flows (ISMTMF2019)**

Zhenjiang, Jiangsu, China, November 3 - 7, 2019  
<http://ismtmf2019.ujs.edu.cn>

**International Gas Turbine Congress (IGTC) 2019 Tokyo**

Tokyo, Japan, November 17 - 22, 2019  
Chair: T. Nishizawa (Japan Aerospace Exploration Agency)  
<http://igtc2019.org/>

**72nd Annual Meeting of the APS Division of Fluid Dynamics**

Seattle, United States, November 24 - 26, 2019  
<http://www.aps.org/meetings/index.cfm>

**The 7th International Conference on Jets, Wakes and Separated Flows (ICJWSF-2019)**

Hong Kong, December 1 - 5, 2019  
<http://icjwsf2019.ust.hk/index.html>

**The 2nd Pacific Rim Thermal Engineering Conference (PRTEC2019)**

Maui, Hawaii, United States, December 13 - 17, 2019  
 Co-Chair (JSME): M. Tanahashi (Tokyo Institute of Technology)  
 Co-Chair (KSME): J.T. Chung (Korea University)  
 Co-Chair (ASTFE): S. Acharya (Illinois Institute of Technology)  
<https://www.jsme.or.jp/ed/PRTEC2019/index.html>

**16th Asian Congress of Fluid Mechanics**

Bangalore, India, December 13 - 17, 2019  
 Chair: G.S. Bhat (India)  
<https://acfm.iisc.ac.in/index.php>

----- 2020 -----

**5th Thermal and Fluids Engineering Conference (TFEC 2020)**

New Orleans, LA, United States, April 5 - 8, 2020  
 Chair: T. Wang (University of New Orleans)  
 Co-Chair: M.W. Plesniak (The George Washington University)  
<https://www.astfe.org/tfec2020/>

**73rd Annual Meeting of the APS Division of Fluid Dynamics**

Chicago, United States, November 22 - 24, 2020  
<http://www.aps.org/meetings/index.cfm>

----- 2021 -----

**74th Annual Meeting of the APS Division of Fluid Dynamics**

Phoenix, United States, November 21 - 23, 2021  
<http://www.aps.org/meetings/index.cfm>

**Executive Division of The Japanese Society for Multiphase Flow (2018)**

President T. Tanaka (Osaka University)  
 Vice Presidents C. Iwaki (Toshiba Energy Systems & Solutions Corporation)  
 A. Kawahara (Kumamoto University)  
 K. Katoh (Osaka City University)

Chair of Informatics Division  
 T. Uchiyama (Nagoya University)

Chair of Planning Division  
 K. Hayashi (Kobe University)

Chair of International Intercourse Division  
 S. Takagi (The University of Tokyo)

Chair of General Affairs Division  
 T. Tsuji (Osaka University)

**Executive Office of JSMF**

Academic Publication & Printings Co.  
 2-14-9 Kasugadenaka, Konohana-ku, Osaka, 554-0022, JAPAN  
 Tel : +81-6-6466-1588 Fax : +81-6-6463-2522  
 E-mail : [office@jsmf.gr.jp](mailto:office@jsmf.gr.jp)  
 URL: <http://www.jsmf.gr.jp/>



## 10<sup>th</sup> International Conference on Multiphase Flow

Rio de Janeiro, Brazil, May 19 - 24, 2019

<http://www.icmf2019.com.br/>

### Conference Overview

The 10th ICMF will be held in Rio de Janeiro, Brazil, from May 19 – 24, 2019 at Windsor Barra Hotel, and will be devoted to all aspects of Multiphase Flow. Experts and professional researchers from all over the world will attend and make presentations of their research results and recent advancements. It will be a great opportunity to share and promote the exchange of new ideas, results and techniques, but also to extend social networking.

The first edition of ICMF was held in Tsukuba (Japan) in 1991. The second edition took place in Kyoto (Japan) in 1995. During this conference, it was decided to establish an International Governing Board which oversees the major aspects of the conference and makes decisions about future conference locations. Due to the great importance of the field, it was furthermore decided to hold the conference every three years successively in Asia including Australia, Europe including Africa, Russia and the Near East and America. Since the first edition ICMF has grown into the largest conference in the field of multiphase flow.

### Scientific Topics

Bio-Fluids  
Bubbly Flows  
Boiling, Condensation, Evaporation  
Cavitation/Nucleation  
Collision, Agglomeration and Breakup  
Colloidal and Suspension Dynamics  
Computational Techniques for Multiphase Flows  
Droplet Flows  
Environmental and Geophysical Flows  
Experimental Methods for Multiphase Flows  
Fluidization

Fluid-Structure Interactions  
Granular Media  
Industrial Applications  
Interfacial Flows  
Instabilities  
Micro- and Nano-Scale Multiphase Flows  
Mixing  
Modelling of Multiphase Flows  
Multiphase Flow in Heat and Mass Transfer  
Non-Newtonian Multiphase Flows  
Particle, Bubble and Drop Dynamics  
Particle-Laden Flows  
Reactive Multiphase Flows  
Turbulence in Multiphase Flows

### Venue

Windsor Convention & Expo Center  
Avenida Lúcio Costa, 2630 - Barra da Tijuca, Rio de Janeiro - RJ. CEP 20031-204  
<http://windsorexpocenter.com.br/en/>

### Key Dates

Early registration rate: on or before January 31, 2019  
Regular registration rate: March 29 - May 17, 2019  
Cancellation deadline: April 12, 2019  
Abstract deadline: October 10, 2018  
Notification of abstract acceptance: December 14, 2018  
Full paper submission: February 22, 2019

### Contact Address

Congress Secretariat  
Eventus Planejamento e Organização  
[www.eventus.com.br](http://www.eventus.com.br)  
[icmf@eventus.com.br](mailto:icmf@eventus.com.br)  
55 11- 3361 3056 / fax 55 11 3361 3089



# The 11<sup>TH</sup> International Symposium on Measurement Techniques for Multiphase Flow – 2019

## ISMTMF

November 3--7, 2019. Zhenjiang, Jiangsu, China

### 1st ANNOUNCEMENT

Sponsored by Jiangsu University  
 Organized by The Chinese Society for Measurement Techniques on Multiphase Flow  
 The Japanese Society for Multiphase Flow  
 National Natural Science Foundation of P.R.China



Conference Website:  
[ismtmf2019.ujs.edu.cn](http://ismtmf2019.ujs.edu.cn)

*Invitation Letter*

### BACKGROUND

After enthusiastic responses to the past ten ISMTMFs held in Nanjing (1995), Beijing (1998), Fukui (2001), Hangzhou (2004), Macau (2006), Okinawa (2008), Tianjin (2011), Guangzhou (2013), Sapporo (2015) and Hong Kong (2017), the 11th International Symposium on Measurement Techniques for Multiphase Flows (ISM TMF) will be held in Zhenjiang at November, 2019. The focus of this symposium will be on the latest progress in the development of measurement techniques for multiphase flows and exchanging new information among scientists and engineers working in universities, industries and other fields.

This symposium aims to provide an international forum for presentation, exchange of ideas and creation of knowledge in recent advances on various aspects of theories, analyses, and applications of measurement techniques in complex multiphase/multicomponent flows. It will bring together researchers and practitioners from academia, research institutions and industry to exchange experiences, disseminate up-to-date information, and explore new opportunities in the field; in particular, it will expose young or new researchers to the state of the art in the field by means of the symposiums. It is anticipated that the 11th International Symposium on Measurement Techniques for Multiphase Flows-2019 (ISM TMF 2019) will provide an opportunity for stimulation of the researchers as well as for furthering cooperation among the investigators in the field of advanced Multiphase Flow Measurement Techniques.

### CALL FOR PAPERS

ISM TMF'19 will focus on the following topics (include but not limited to):

- \* Fundamentals of multiphase flow measurement techniques and experimental methods
- \* Novel sensors and measurement methods of multiphase systems
- \* Information technology for multiphase flow
- \* Process tomography and flow visualization
- \* Intelligent instruments and monitoring systems
- \* Optical, non-intrusive and other advanced measurement techniques
- \* Micro/nanoscale multiphase flow measurement techniques
- \* Bio multiphase flow measurement techniques

### ABSTRACT SUBMISSION

Papers will be selected based on one page abstracts (A4, single space, Times New Roman letters of 10 font size) including results and figures. Papers submitted should include the title of the paper, authors' names and affiliations, a concise statement of the problem, method of approach, results and discussion, and conclusions. Please identify the corresponding author. Electronic submissions are strongly encouraged. Template is available from the symposium website ([ismtmf2019.ujs.edu.cn](http://ismtmf2019.ujs.edu.cn)) which will be available in December 2018. Please submit your abstract in a Word or PDF format to the ISM TMF'19 Secretariat via ISM TMF'19 website (online submission) or e-mail. The file size is limited to 5MB.

### Important Dates

Deadline of abstracts	Jun.1st, 2019
Notification of acceptance	Jul.15th, 2019
Full paper submission (Optional)	Aug.1st, 2019
Full paper acceptance	Sep.1st, 2019
Final paper submission	Sep.15th, 2019



*Welcome to Zhenjiang  
 ISM TMF 2019*

*We encourage you to explore this city with  
 your family and friends.*

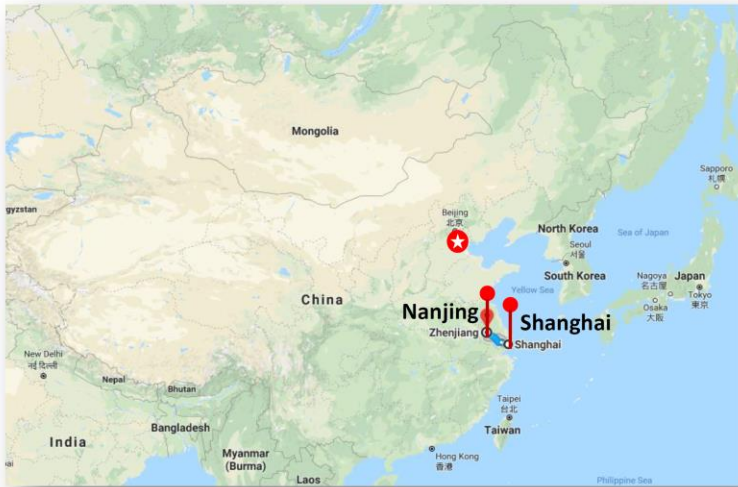
# The 11<sup>TH</sup> International Symposium on Measurement Techniques for Multiphase Flow – 2019

## ISM<sup>TM</sup>F

November 3--7, 2019. Zhenjiang, Jiangsu, China

### 1st ANNOUNCEMENT

Conference Website: [ismtmf2019.ujs.edu.cn](http://ismtmf2019.ujs.edu.cn)



### VISITING ZHENJIANG

Zhenjiang is a well-known historical beautiful city who locates on the south bank of Yangtze River. The Yangtze River and Grand Canal set cross at the side of the city. The citizen with Eastern and Western Chinese culture background live together here. Zhenjiang is a superposition of Shanghai Economic zone and Nanjing Metropolitan Belt. Zhenjiang covers an area of 3843 km<sup>2</sup> with the people of 2.92 million. Zhenjiang is situated in Yangtze River Delta which is the most developed and active area in China. It is famous for its convenient transportation of railway and boats, with the fertile land of honey. From early times, Zhenjiang was known as the port city for business. Zhenjiang is a national historical culture city, one of the birth places of Eastern Chinese culture. With the civilized history more than 3000 years, the city is full of different customs and cultural backgrounds. Zhenjiang is one of the top tourism cities in China. It is best known as "The City With Hills and Woods" and "The Landscape by Yangtze River". The mountains from West China are ended in Zhenjiang, the rivers and canals go through and surround the city.



*We welcome and invite you to ISM<sup>TM</sup>F 2019 held in beautiful city Zhenjiang*

## Corresponding Members

### AUSTRALIA

Hubert Chanson University of Queensland  
 Jiyuan Tu RMIT University  
 Aibing Yu University of New South Wales

### AUSTRIA

Stefan Pirker Johannes Kepler University  
 Alfredo Soldati TU Wien

### BRAZIL

Gherhardt Ribatski Universidade de São Paulo  
 Oscar M. H. Rodriguez Universidade de São Paulo

### CANADA

Jovica Riznic Canadian Nuclear Safety Commission

### CHINA

Xu Cheng Shanghai Jiao Tong University  
 Liejin Guo Xi'an Jiaotong University  
 Jinghai Li Chinese Academy of Sciences  
 Lixing Zhou Tsinghua University

### CZECH REPUBLIC

Jiří Drahoš Academy of Science of the Czech Republic

### FRANCE

Alain Cartellier LEGI,  
 CNRS and University Grenoble Alpes  
 Catherine Colin IMFT, University of Toulouse, CNRS  
 Michel Lance École Centrale de Lyon  
 Jacques Magnaudet IMFT, University of Toulouse, CNRS  
 Olivier Simonin IMFT, University of Toulouse, CNRS  
 Anne Tanière LEMTA, Nancy University  
 Stéphane Zaleski University Pierre et Marie Curie

### GERMANY

Dirk Lucas HZDR  
 Michael Schlüter TU Hamburg-Harburg  
 Martin Sommerfeld Otto von Guericke Universität  
 Magdeburg  
 Peter Stephan Darmstadt University of Technology  
 Markus Uhlmann Karlsruhe Institute of Technology

### GREECE

Vasilis Bontozoglou University of Thessaly

### INDIA

Gargi Das Indian Institute of Technology  
 Kharagpur

### ISRAEL

Neima Brauner Tel Aviv University  
 Yehuda Taitel Tel Aviv University

### ITALY

Gian Piero Celata ENEA  
 Paolo di Marco University of Pisa  
 Cristian Marchioli Università di Udine

### KOREA

Moo Hwan Kim KINS  
 Sang Yong Lee KAIST  
 Chul-Hwa Song KAERI

### NETHERLAND

J.A.M. (Hans) Kuipers Eindhoven University of  
 Technology  
 Robert Mudde Delft University of Technology

### NORWAY

Ole Nydal NTNU

### RUSSIA

Sergey V. Alekseenko Novosibirsk State University

### SPAIN

Carlos Martinez-Bazan University of Jaén

### SWEDEN

Henryk Anglart Royal Institute of Technology

### SWITZERLAND

Horst-Michael Prasser ETH Zürich  
 John R. Thome EPFL

### TAIWAN

Chih-Chen Chen National Tsing Hua University

### TURKEY

Can Fuat Delale Isik University

### UK

Panagiota Angeli University College London  
 Tassos G. Karayiannis Brunel University  
 Omar K. Matar Imperial College London  
 Mike Reeks Newcastle University  
 Jos Derksen University of Aberdeen

### USA

Steven L. Ceccio University of Michigan  
 Jennifer Sinclair Curtis University of Florida  
 Vijay K. Dhir University of California, Los  
 Angeles  
 John K. Eaton Stanford University  
 Rodney O. Fox Iowa State University  
 Dimitri Gidaspow Illinois Institute of Technology  
 Yassin A. Hassan Texas A & M University  
 Takashi Hibiki Purdue University  
 Melany Hunt California Institute of Technology  
 Satish Kandlikar Rochester Institute of Technology  
 Masahiro Kawaji City College of Newyork  
 Jungho Kim University of Maryland  
 Ellen K. Longmire University of Minnesota  
 Efsthathios E. (Stathis) Michaelides

Texas Christian University  
 Michael Podowski Rensselaer Polytechnic Institute  
 Gretar Tryggvason Johns Hopkins University