

## *Executive Committee Members*

Toshiyuki Takagi (General Co-Chair of ICFD2013,  
Tohoku University)  
Jean-Yves Cavaille (General Co-Chair of ICFD2013,  
INSA-de Lyon)  
Toshiyuki Hayase (Director of Institute of Fluid Science,  
Tohoku University)

## *International Scientific Committee Members*

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Masud Behnia  
Gary Rosengarten

### **Canada**

Javad Mostaghimi

### **China**

XinGang Liang  
Xing Zhang

### **France**

Patrick Bourgin  
Jean-Yves Cavaille  
Philippe Kapsa

### **Germany**

Serge A. Shapiro

### **India**

Subhash C. Mishra

### **Italy**

Gian Piero Celata

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Yu Fukunishi  
Masato Furukawa  
Toshiyuki Hayase  
Nobuhide Kasagi  
Chisachi Kato  
Yoichiro Matsumoto  
Junichiro Mizusaki  
Kazuhiro Nakahashi  
Masami Nakano  
Tomohide Niimi  
Hideya Nishiyama

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Masaaki Sato  
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Michio Tokuyama  
Takashi Yabe  
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Joon Sik Lee  
Hyung Jin Sung

### **Russia**

Mikhail Ivanov  
Oleg P. Solonenko  
Alexander Vasiliev

### **Sweden**

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### **Switzerland**

Bastien Chopard  
Dimos Poulikakos

### **Taiwan**

Wu-Shung Fu

### **UK**

Yiannis Ventikos

### **USA**

Louis N. Cattafesta III  
Yiguang Ju  
Ishwar K. Puri  
Kozo Saito  
John P. Sullivan  
Rongia Tao  
Satish Udpa

## *Locations*

### **Sendai International Center**

Aobayama, Aoba-ku, Sendai, 980-0856  
TEL (81)22-265-2211 FAX(81)22-265-2485

<http://www.sira.or.jp/icenter/english/index.html>

## *Registration Fee*

Advanced Registration Fee (on or before Oct.3, 2013):

General 20,000 JPY Student 2,000 JPY

On-site Registration Fee

General 25,000 JPY Student 3,000 JPY

## *Important Dates*

**July 1, 2013:** Deadline for **Presentation Submission**.  
**July 31, 2013**  
**(extended)** Please present your paper title / author's  
name / keywords through  
PRESENTATION SUBMISSION page of  
ICFD2013 website  
**Sep. 1, 2013:** Deadline for **Short Paper (A4, 2pages)**  
**Submission**  
**Oct. 3, 2013:** Deadline for **Advanced Registration**

## *Publication & Special Issues of International Journals*

Proceedings will be distributed to the conference  
participants with USB memory sticks. Selected papers are  
being planned to be published after the conference.  
Please visit ICFD2013 website for the details.

## *ICFD Secretariat*

For further details and related questions, please contact

ICFD2013 Secretariat: [icfd2013@fmail.ifs.tohoku.ac.jp](mailto:icfd2013@fmail.ifs.tohoku.ac.jp)

ICFD2013 Secretariat, Institute of Fluid Science,  
Tohoku University  
2-1-1, Katahira, Aoba-ku, Sendai, 980-8577, JAPAN  
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<http://www.ifs.tohoku.ac.jp/icfd2013/>

# Tenth International Conference on Flow Dynamics

Second Circular

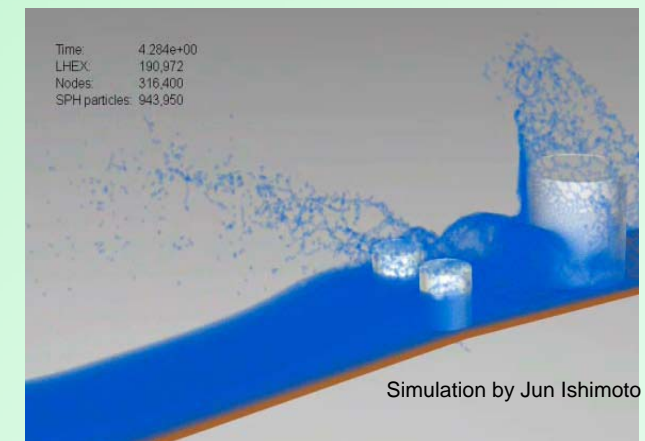
As of Oct. 8, 2013

<http://www.ifs.tohoku.ac.jp/icfd2013/>

Hosted by  
Institute of Fluid Science, Tohoku University



**November 25 – 27, 2013**  
**Sendai International Center**  
**Sendai, Japan**



## Tenth International Conference on Flow Dynamics

## Second Circular

**SCOPE**

Tenth International Conference on Flow Dynamics (ICFD2013), in the annual series, which is hosted by the Institute of Fluid Science, Tohoku University will be held on November 25th through 27th at Sendai International Center, Sendai, Japan. The objectives of this conference are to explore new science horizon by discussing and exchanging information in the most advanced scientific fields and in cutting edge technologies in Flow Dynamics. One of the features of this conference is to provide young researchers and students with unique opportunities of being educated and self-developed through their proactive participation in the conference.

The past nine ICFD conferences were hosted by two Tohoku University COE Programs, "The 21st Century International COE on Fluid Dynamics (21COE, Year 2003 – Year 2007)" and its successor "Global COE Program World Center of Education and Research for Trans-disciplinary Flow Dynamics (the GCOE, Year 2008 – Year 2012)". The conference accomplished remarkable successes each time in research and education in the field of Flow Dynamics at large. ICFD is now recognized by world researchers, engineers and academicians as the biggest and the most important international conference in Flow Dynamics. The Institute of Fluid Science (IFS) had been the principal operating body of both the 21COE and the GCOE, and it is worth noting that the GCOE will end in March 2013.

At the occasion of its 70 years anniversary from its launch, IFS is regenerated as a further powerful research institute, particularly in energy related research: its reorganization leads to the creation of three new flow research divisions and the Innovative Energy Research Center. In this new context, IFS decides to continue to host ICFD, and we promise you to keep ICFD's dynamism and integrity cultivated in the past. We really appreciate for your continuing participation in the ICFD2013.

Flow Dynamics is a comprehensive scientific field which deals with the flow and transport phenomena concerning atoms, molecules and nano-scale particle, any fluid, any material, energy, information, economic activities and so forth. It addresses multiscale and multidisciplinary problems and is involved in all natural phenomena (biochemical processes, corrosion, weather, volcanic eruptions, earth magnetic field and tectonic motions, etc.) and in most of human activities (industrial processes, energy production and saving, transportation, etc.). Through the past successful achievement

in ICFDs, Flow Dynamics has become a major academic discipline which is dealing with various difficult tasks that human society is facing at, such as control of nuclear power generators, global warming, energy depletion, diseases, and so on. Flow Dynamics is taking major roles in realization of the future dreams of the people as advanced medicine and medical treatment, aerospace technology, robotics, IT technology accessible by anybody, anytime, anywhere, and so forth. Scientists and engineers who are working and/or interested in such kind of areas, please come to the ICFD2013 and extend your domains and databases.

We cordially invite you scholars, researchers, educationists, students and planners exploring and studying in the relevant research and development fields of bio-, nano-, material, energy, environmental, planetary and earth sciences and technologies, particularly in the academic field of mechanical engineering, aerospace engineering, nuclear engineering, physics, medical science and engineering, chemistry, chemical engineering and so forth, to join the conference.

About two years have passed since the last East Japan Great Earthquake and Disaster struck the area. In Sendai and the vicinities started the reconstruction works right after, and those are still vigorously going on. Tohoku University activities as well as city lives have recovered quite much to the level they were before, and we feel an air of excitement now in Sendai. We are sure you will enjoy the beautiful scenery and crisp air of Autumn in Sendai in November.

Toshiyuki Takagi, Professor, Institute of Fluid Science,  
Tohoku University and

Jean-Yves Cavaille, Professor, MATEIS Laboratory  
INSA-Lyon as  
General Co-Chair

**Plenary Lectures**

**Professor David A. Weitz** (Harvard University, USA)

**Professor Subhash C. Mishra** (IIT Guwahati, India)

**Dr. Shigeo Yata** (Panasonic Corporation, Japan)

**Sessions**

This conference consists of the following professional sessions. If you have questions and requests about the session of your interest, please contact the ICFD2013 secretariat ([icfd2013@fmail.ifs.tohoku.ac.jp](mailto:icfd2013@fmail.ifs.tohoku.ac.jp)).

**General Session:**

GS1: General Session

**Organized Sessions:**

OS1: Discussion on Hybrid Rocket Propulsion for the Future  
Space Utilization Demand  
Organizers: T. Shimada (JAXA), K. Sawada (Tohoku University)

OS2: Next-Generation CFD

Organizers: K. Nakahashi (JAXA), S. Obayashi, H. Kobayashi, S. Yamamoto (Tohoku University), D. Sasaki (Kanazawa Institute of Technology), K. Yamamoto (JAXA)

OS3: Heat and Mass Transfer in Materials Processing  
Organizer: P. Bourgin (INSA de Lyon)

OS4: Corrosion Problems under Flow in Energy Industries  
Organizers: Y. Watanabe (Tohoku University), B. Normand (INSA de Lyon), T. Shoji (Tohoku University)

OS5: Global/Local Innovations for Next Generation Automobiles

Organizers: A. Miyamoto (Tohoku University), P. Kapsa (Ecole Central de Lyon)

OS6: Smart Fluids and Materials, and their Applications  
Organizers: M. Nakano (Tohoku University), J. Y. Cavaille (INSA de Lyon), R. Tao (Temple University)

OS7: Cutting Edge of Thermal Science and Engineering  
Organizers: S. Maruyama, A. Komiya (Tohoku University)

OS8: International Symposium on Smart Materials and Structures for Energy Saving

Organizers: T. Takagi, T. Uchimoto (Tohoku University), J. Y. Cavaille (INSA de Lyon), C. Boller (Fraunhofer Institute for NDT), J. Qiu (Nanjing University of Aeronautics and Astronautics), H. Miki (Tohoku University)

OS9: International Symposium on Innovative Energy Research  
Organizers: S. Samukawa, K. Maruta (Tohoku University)

OS10: Advanced Physical Stimuli and Biological Responses

Organizers: T. Sato (Tohoku University), T. Ohashi (Hokkaido University), S. Kawano (Osaka University), R. Shirakashi (The University of Tokyo)

OS11: Blood Flow for Medical Equipment

Organizers: T. Nakayama, M. Ohta (Tohoku University)

OS12: Basic and Applied Research on Membrane Protein for Health Care

Organizers: N. Tomita, M. Ohta (Tohoku University)

OS13: Ninth International Students / Young Birds Seminar on Multi-Scale Flow

Organizer: T. Okabe (Tohoku University)  
Co-Organizers: T. Mabuchi, K. Kanda (Tohoku University)  
Supervisors: Y. Iga, K. Miyata, H. Shimizu, A. Komiya, K. Sato (Tohoku University)

**Planned Session:**

PS1: IFS Collaborative Research Forum

PS2: Young Researcher Overseas Visits Program Research Forum

PS3: Fluids Science Research Award Lecture