

## Executive Committee Members

Taku Ohara (General Co-Chair of ICFD2015,  
Tohoku University)  
XinGang Liang (General Co-Chair of ICFD2015,  
Tsinghua University)  
Shigeru Obayashi (Director of IFS, Tohoku University)

## International Scientific Committee Members

Chair: Shigenao Maruyama

<b>Australia</b>	Hideya Nishiyama
Masud Behnia	Shigeru Obayashi
Gary Rosengarten	Masaki Sano
Victoria Timchenko	Akihiro Sasoh
<b>Canada</b>	Toru Shimada
Javad Mostaghimi	Toshiyuki Takagi
<b>China</b>	Michio Tokuyama
Zhenmao Chen	Satoru Yamamoto
XinGang Liang	<b>Korea</b>
<b>France</b>	Jinsoo Cho
Patrick Bourgin	Sung-Jin Kim
Jean-Yves Cavaille	Hyung Jin Sung
Philippe Kapsa	<b>Russia</b>
<b>Germany</b>	Sergey S. Minaev
Gerd Dobmann	Oleg P. Solonenko
Serge A. Shapiro	Alexander Vasiliev
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Miklos Zrinyi	Fredrik Lundell
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<b>Italy</b>	Dimos Poulikakos
Gian Piero Celata	<b>Taiwan</b>
<b>Japan</b>	Chingyao Chen
Keisuke Asai	Wu-Shung Fu
Debasih Biswas	Jongshinn Wu
Yu Fukunishi	<b>UK</b>
Masato Furukawa	Yiannis Ventikos
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Hideaki Kobayashi	Kozo Saito
Junichiro Mizusaki	John P. Sullivan
Kazuhiro Nakahashi	Rongia Tao
Masami Nakano	Satish Udpa
Tomohide Niimi	

## Location

### 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

	With Banquet	Without Banquet
Advanced Registration Fee (on or before Sep.1)	General 21,000 JPY	General 15,000 JPY
	Student 6,000 JPY	Student 3,000 JPY
Onsite Registration Fee (after Sep. 2)	General 31,000 JPY	General 23,000 JPY
	Student 9,000 JPY	Student 4,000 JPY

## Important Dates

- June 15, 2015:** Deadline for **Presentation Submission**.  
**Extended to** Please present your paper title / author's  
**July 1, 2015** name / keywords through Presentation  
Submission page of ICFD2015 website.
- Aug. 1, 2015:** Deadline for **Short Paper (A4, 2pages)**  
**Submission**
- Sep. 1, 2015:** Deadline for **Advanced Registration**

## Publication & Special Issues of International Journals

Proceedings will be distributed to the conference participants with USB flash memory. Selected papers are being planned to be published in a journal after the conference. Please visit ICFD2015 website for the details.

## ICFD Secretariat

For further details and related questions, please contact

ICFD2015 Secretariat: [icfd2015@fmail.ifs.tohoku.ac.jp](mailto:icfd2015@fmail.ifs.tohoku.ac.jp)

ICFD2015 Secretariat, Institute of Fluid Science,  
Tohoku University  
2-1-1, Katahira, Aoba-ku, Sendai, 980-8577, JAPAN  
TEL&FAX (81)22-217-5301

<http://www.ifs.tohoku.ac.jp/icfd2015/>

# Twelfth International Conference on Flow Dynamics

## Second Circular

As of June 16, 2015

<http://www.ifs.tohoku.ac.jp/icfd2015/>

Supported by  
Institute of Fluid Science, Tohoku University



## October 27 - 29, 2015

## Sendai International Center

## Sendai, Japan



## SCOPE

The twelfth International Conference on Flow Dynamics (ICFD2015), in the annual series since 2004, will be held on October 27th through 29th at the Sendai International Center, Sendai, Japan. The objectives of this conference are to explore new horizons in science 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 world researchers and engineers as one of the biggest and the most important international conference in the field of Flow Dynamics. It has also been playing an important role of initiating international research collaborations. It should be noted that ICFD provides young researchers and students with unique opportunities to be educated and self-developed through proactive participation in the conference.

The first nine ICFDs 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 (GCOE, Year 2008 - Year 2012)". The Institute of Fluid Science (IFS), Tohoku University, was the principal operating body for both 21COE and GCOE, the latter which came to end in March 2013. In 2013, on the occasion of its 70th anniversary, IFS was regenerated as an even more powerful research institute, particularly in energy-related research, with three new flow research divisions and the Innovative Energy Research Center. In this new movement, IFS has continued to support this conference series, and ICFDs were held annually in 2013 and 2014. We pledge to maintain ICFD's dynamism and spirit as a meeting for present-day distinguished scientists of Flow Dynamics as well as for future generations of scientists.

Flow Dynamics is a comprehensive scientific field which deals with flow and transport phenomena concerning molecules, electrons and nanoscale particles, any continuum fluids, any materials, energy, information, economic activities 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. The ICFD is expected to play a significant role in helping Flow Dynamics to become a major academic discipline which deals with various difficult tasks by which human society is faced, such as control of nuclear power generators, global warming, energy, resource, diseases. Scientists and engineers, who are working or interested in such areas, please participate in the ICFD2015 and extend your domains and human network.

ICFD works as a platform of discussion to reach scientific truth and engineering solutions for all the flow-relevant problems. Participants will know when they come to Sendai that a wide variety of sessions are opened to provide the seeds and to fulfill the needs from a viewpoint of flow. We cordially invite 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 fields of mechanical engineering, aerospace engineering, nuclear engineering, physics, medical science and engineering, chemistry, chemical engineering and all the other areas. After the East Japan Great Earthquake and Disaster in March, 2011, Sendai and the vicinities are definitely recovering, although the speed of recovery depends on the area. Fortunately, activities of Tohoku University as well as the lives of people living in the city are already at the pre-disaster level. It is a beautiful season in Sendai. We believe that you will enjoy comfortable atmosphere of autumn in Sendai.

Taku Ohara, Professor  
Institute of Fluid Science, Tohoku University  
and

XinGang Liang, Professor  
Department of Engineering Mechanics,  
School of Aerospace Engineering, Tsinghua University  
General Co-Chairs, ICFD2015

## Plenary Lectures

**Professor Colin P. Britcher** (Old Dominion University, USA)

**Professor James J. Feng** (The University of British Columbia, Canada)

**Professor Noritaka Usami** (Nagoya University, Japan)

### General Session:

**GS1: General Session**

Co-Organizers: T. Ohara, H. Takana

### Symposium / Workshop / Organized Sessions:

**OS1: The Third International Symposium on Innovative Energy Research I**

Organizer: S. Samukawa

**OS2: The Third International Symposium on Innovative Energy Research II: Modern Combustion Research** co-held with Third International Conference "Dynamics and Structure of Combustion Waves"

Co-Organizers: S. Minaev, K. Maruta

**OS3: The Third International Symposium on Innovative Energy Research III: Reconstruction of Large Scale Disasters and Explore Methods to Mitigate the Effects of These Disasters**

Co-Organizers: J. Ishimoto, K. Saito, Y. Nakamura, K. Kuwana, K. Sekimoto

**OS4: Medical Flow Dynamics**

Co-Organizers: H. Anzai, T. Nakayama, M. Ohta

**OS5: Proteins Flow Dynamics**

Co-Organizers: Y. Ikeda, M. Ohta

**OS6: Advanced Physical Stimuli and Biological Responses**

Co-Organizers: T. Sato, T. Ohashi, S. Kawano, R. Shirakashi

**OS7: International Symposium on Medical Thermo Fluid Science for Progress in Quality of Life**

Co-Organizers: S. Maruyama, T. Yambe

**OS8: Flow Dynamics and Combustion Technology in Hybrid Rocket Propulsion**

Co-Organizers: T. Shimada, K. Sawada

**OS9: New Dimensions of Magnetic Suspension and Balance System**

Co-Organizers: K. Asai, S. Obayashi

**OS10: Science and Technology of Nanoscale Heat Transfer and Outlook for their Application**

Co-Organizers: T. Tokumasu, J. Shiomi

**OS11: Flow Realization, Measurement and Visualization**

Co-Organizers: N. Fujisawa, T. Yamagata, T. Hayase

**OS12: Advanced Control of Smart Fluids and Fluid Flows**

Co-Organizers: M. Nakano, Y. Fukunishi

**OS13: Complex Thermofluid System**

Co-Organizers: C.-Y. Chen, W.-S. Fu

**OS14: International Workshop on Cavitation Peening and Related Phenomena**

Organizer: H. Soyama

**OS15: The 16th Japan-Korea Students' Symposium - New Energy Flow for Sustainable Society Properties and Applications of Next Generation Energy Materials**

Co-Organizers: Y. Okamoto, M. Takeda, I. Hwang  
Supervisors: T. Kawada, K. Kang

**OS16: The 11th International Students / Young Birds Seminar on Multi-scale Flow Dynamics**

Co-Organizers: T. Kogawa, K. Kato, T. Shiroto  
Supervisors: Y. Iga, H. Shimizu, H. Kosukegawa

**OS17: AFI-2015** (Invited presentation session)

➤ **IFS Collaborative Research Forum**

Co-Organizers: H. Masuda, T. Ohara

➤ **Fluids Science Research Award Lectures**

Organizer: S. Obayashi

**OS18: The Third International Symposium on Smart Layered Materials and Structures for Energy Saving** (Invited presentation session)

Co-Organizers: T. Takagi, T. Uchimoto, J. Y. Cavallé, C. Boller, J. Qiu, F. Lundell

**OS19: Global / Local Innovations for Next Generation Automobiles (Joint Session)** (Invited presentation session)

Co-Organizers: A. Miyamoto, P. Kapsa, M. C. Williams

### Special Session

**SS1: Liaison Office Session** (Invited presentation session)

Co-Organizers: T. Takagi, M. Ohta