

Executive Committee Members

Makoto Ohta (General Co-Chair of ICFD2025,
Tohoku University)
Vincent Fridrici (General Co-Chair of ICFD2025,
Centrale Lyon)
Kaoru Maruta (Director of IFS, Tohoku University)

International Scientific Committee Members

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Hyung Jin Sung
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Takashi Tokumasu
Michio Tokuyama
Tetsuya Uchimoto
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Yiguang Ju
Javad Mostaghimi
Kozo Saito
Rongjia Tao
Oceania
Masud Behnia
Weihua Li
Gary Rosengarten
Victoria Timchenko

Conference Venue

ICFD2025 will take place in a hybrid fashion
-both in-person and online.

Sendai International Center

Aobayama, Aoba-ku, Sendai, 980-0856
TEL (81)22-265-2211
<http://www.aobayama.jp/english/>

Registration Fee

| Due Date (Japan Standard Time) | Registration Fee |
|---|---|
| Early Registration (on or before Aug. 25, 2025) | General 22,000 JPY Student 3,000 JPY |
| On-site Registration Fee (from Aug. 26, 2025 to Nov. 6, 2025 inclusive) | General 30,000 JPY Student 6,000 JPY |

| Due Date (Japan Standard Time) | Banquet Fee |
|--|---|
| Banquet Registration (on or before Sep. 30, 2025) | General 12,000 JPY Student 6,000 JPY |

All participants are required to make a registration
through the website.

Important Dates

- June 16, 2025:** Deadline for **Title Submission**.
Please present your paper title / author's
name / keywords through Presentation
Submission page of ICFD2025 website.
- July 22, 2025:** Deadline for **Short Paper (2 to 4 pages)
Submission**
- Aug. 25, 2025:** Deadline for Early Registration

Publication

It will be available to download the proceedings through the
ICFD2025 website. The URL and password will be informed
the participants by e-mail in the morning on November 10,
2025.

For more details, please visit ICFD2025 website.

ICFD Secretariat

For further details and related questions, please contact
ICFD2025 Secretariat: [icfd2025-ifs\[at\]grp.tohoku.ac.jp](mailto:icfd2025-ifs[at]grp.tohoku.ac.jp)
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The 22nd International Conference on Flow Dynamics

Second Circular

As of April 18, 2025

<https://www.ifs.tohoku.ac.jp/icfd/2025/index.html>

Organized by
Executive Committee of ICFD

Supported by
Institute of Fluid Science,
Tohoku University

November 10 - 13, 2025



SCOPE

The 22nd International Conference on Flow Dynamics (ICFD2025), in the annual series since 2004, will be held from November 10th to 13th, 2025 at Sendai, Japan. The objective of this conference is to explore new horizons in science and technology in Flow Dynamics by discussing and exchanging information related to the most advanced scientific fields and to cutting edge technologies. 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. Especially, ICFD2025 focuses on energy related topics, such as clean energy, hydrogen energy, and natural energy. In addition, it should be noted that ICFD provides young researchers and students with unique opportunities to develop themselves through proactive participation in the conference and young researchers and students are encouraged by awards.

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)". Institute of Fluid Science (IFS), Tohoku University, was responsible for both 21COE and GCOE programs. GCOE ended in March of 2013. In 2013, on the occasion of its 70th anniversary, IFS was reorganized as an even more powerful research institute, particularly in energy-related research, with three new research divisions and an Innovative Energy Research Center. In this movement, IFS decided to continue to support this conference series, and ICFDs have been held annually since 2013. We pledge to maintain ICFD's dynamism and spirit as a meeting for distinguished scientists in Flow Dynamics as well as for future generations of scientists and engineers.

Flow Dynamics, as the component of Integrated Flow Science, focus on the flow and transport phenomena concerning electrons, molecules, 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

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 facing, such as control of nuclear power generators, global warming, energy, resource and diseases. We expect all scientists and engineers who are working or are interested in such areas to participate in ICFD2025 and extend their research areas and international human networks.

ICFD serves as a platform of discussion to reach scientific truth and engineering solutions for all the flow-relevant problems. We cordially invite researchers, teachers, students and planners exploring and studying in the relevant research and development fields of energy, bio-, nano-, material, 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 other areas.

We believe that you will enjoy beautiful and pleasant atmosphere of the autumn at Sendai, since the beginning November is the best season of Sendai.

Prof. Makoto Ohta, Tohoku University and
Prof. Vincent Fridrici, Centrale Lyon

General Co-Chairs, ICFD2025

Plenary Lectures

Prof. Christophe Bailly (Centrale Lyon, France)

Prof. Roland N. Horne (Stanford University, USA)

Prof. Hong G. Im (King Abdullah University of Science and Technology, Saudi Arabia)

Dr. Denis Veynante (CentraleSupélec Laboratory EM2C, France)

Sessions

General Session:

GS1: General Session

Co-Organizers: M.Ohta, A. Suzuki

Symposium / Workshop / Organized Sessions:

OS1: The Third International Symposium on Integrated Flow Science I & III

Advanced Materials and its Energy Application

Organizer: S. Samukawa

Multiphase Energy Science and Technology (Combination of Monozukuri-Fluid Science / Engineering)

Organizer: J. Ishimoto

OS2: The Third International Symposium on Integrated Flow Science II

Combustion Technology and Fundamentals

Co-Organizers: K. Maruta, TBD

OS3: The Third International Symposium on Integrated Flow Science IV

Advanced Semiconductor and Digital Transformation

Co-Organizers: K. Endo, D. Ohori

OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 17th Edition

Co-Organizers: Y. Saito, L. Kamps

OS5: Advanced Applications of Multi-functional Fluids

Co-Organizers: H. Takana, T. Fujino, K. Doi, N. Takeuchi

OS6: Free Flight Experiment with MSBS and Ballistic Range

Co-Organizers: K. Seo, H. Nagai, K. Ueno

OS7: Advances in Simulation Techniques for the Computational Aerosciences

Co-Organizers: Y. Abe, F.D. Witherden, B. C. Vermeire, T. Haga, K. Otsuka, N. Tsushima, J. S. Park, A. Yakeno

OS8: Advanced Physical Stimuli and Biological Responses : Promotion of Collaborative Research

Co-Organizers: Y.-C. Cheng, H.-Y. Angie Wang, C.H. Dylan Tsai, S. Liu, K. Tachibana, T. Sato

OS9: Biomedical Flow Dynamics

Co-Organizers: H. Anzai, M. Zhang, K. Takashima, T. Nakayama, A. Qiao, M. Ohta

OS10: Two-Phase Thermal Control Technology

Co-Organizers: K. Odagiri, M. Nishikawara, H. Nagai

OS11: Microfluidics and Microphysiological Modeling

Co-Organizers: K. Funamoto, T. Fukui, T. Omori, E. Corvera Poiré

OS12: Complex Thermofluid System

Co-Organizers: C.-Y. Chen, Y.-H. Liu, Y.-H. Liao

OS13: Flow and Energy

Co-Organizers: T. Yamagata, S. Iio, S. Funatani, A. Komiya

OS14: Innovations in Oncology

Co-Organizers: C. Moyret-Lalle, C. Rivière, J.-P. Rieu, F. Hollande, K. Funamoto

OS15: Turbulence: from Fundamentals to Applications

Co-Organizers: Y. Hattori, T. Ishihara, Y. Tsuji, A. Yakeno

OS16: Vortex Motion

Co-Organizers: Y. Hattori, S. Llewellyn Smith

OS17: Supercritical Fluid

Co-Organizers: Y. Kanda, Y. Feng, H. Yingxue, L. Chen, A. Komiya

OS18: Flow measurements using PSP/TSP technique

Co-Organizers: C.-Y. Huang, Y. Egami, Y. Matsuda, H. Nagai

OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics

Co-Organizers: J. Okajima, T. Okabe, M. Shirota

OS20: Multiphysics in Fluid Mechanics

Co-Organizers: M. Shigeta, M. Tanaka, Y. Saito, Y. Inada, H. Komen, M. Sugimoto, M. Hirota, H. Muneoka

OS21: Smart Fluids & Soft Matters and Their Advanced Applications

Co-Organizers: M. Nakano, X. Gong, W. Li, G. Sebald

OS22: Fundamentals and Applications of Thermoacoustics

Co-Organizers: T. Biwa, E. Luo, Y. Ueda, S. Zhu, G. Chen

OS23: Aerospace Heat, Fluid Engineering, and Mathematical Physics: Nonlinear Dynamics and Stochastic Processes with JST CREST

Co-Organizers: A. Yakeno, S. Kano, I. Ishikawa, Y. Abe, S. Yatsuyanagi

OS24: Dynamics of Flow of Matter in Moving Contacts

Co-Organizers: V. Fridrici, T. Tokumasu, M. Ohta

OS25: Combustion-generated Pollutants

Organizer: P. Dagaut

OS26: Liaison Office Session

Co-Organizers: M. Ohta, T. Uchimoto, T. Tokumasu, A. Komiya

OS27: The 21st International Students / Young Birds Seminar on Multi-scale Flow Dynamics

Co-Organizers: T. Hirano, G. Tamura, T. Tani, K. Yanagisawa

Supervisors: Y. Kanda, T. Ikami, Y. Kaneko

OS28: The 25th International Symposium on Advanced Fluid Information (AFI-2025)

➤ IFS Collaborative Research Forum

Co-Organizers: H. Masuda, M. Ohta

OS29: IFS Lyon Center Collaborative Research Forum

Organizer: T. Uchimoto

OS30: JSPS Core to Core program workshop -Construction of an international research exchange center for ammonia combustion and materials toward the realization of a low-carbon society-

Organizer: T. Tokumasu

OS31: Japan-South Africa Bilateral Workshop

Co-Organizers: T. Kodama, O. Oluwafemi, A. Komiya