

## Preface

Welcome to the Twentieth International Conference on Flow Dynamics (ICFD2023) hosted by the Institute of Fluid Science, Tohoku University.

As you all know, the world has been greatly affected by COVID-19, and conferences have been held mainly online, but we are finally overcoming this threat. This year, we have decided to hold the conference in person same as last year. However, the pandemic has not been contained completely. Therefore, we have decided to hold ICFD2023 as a hybrid format with some of the presentations online, with the safety of the participants as our priority.

Flow Dynamics is an Integrated Flow Science that deals with the flow and transport phenomena concerning electrons, molecules and nanoparticles, any continuum fluids and materials, energy, information, and so forth. ICFD is expected to play significant roles in helping Flow Dynamics be a significant academic discipline that deals with various issues that human society faces, such as new energy, environment, resource, and diseases.

ICFD works as a platform of discussion to reach scientific truth and engineering solutions for all the flow-relevant problems. A wide variety of sessions are organized in ICFD to provide the seeds and fulfill the needs from the viewpoint of Flow Dynamics. We would be very grateful if it contributes to initiating scientific and technical exchanges and international research collaboration.

Another significance of this conference is that it provides unique opportunities for young researchers and students to be educated and self-developed through participation and presentation in the Student Session and special events.

The technical program consists of 3 Plenary Lectures, 1 General Session, 23 Organized Sessions, starting in the morning on Monday, November 6. Approximately 480 papers will be presented. It is our great pleasure to meet a large number of participants during the conference.

On behalf of the ICFD2023 organizing committee, we hope you would enjoy fruitful discussions and exchanges of information, and we would like you to have the opportunities to strengthen your friendships and meet new friends.

Takashi Tokumasu, Professor,  
Institute of Fluid Science,  
Tohoku University

and

Jeongmin Ahn, Professor  
Syracuse University  
General Co-Chairs, ICFD2023

## Twentieth International Conference on Flow Dynamics

### Organized by:

- Executive Committee of International Conference on Flow Dynamics

### Supported by:

- Institute of Fluid Science, Tohoku University

### In cooperation with:

- CFD-Bio
- Combustion Society of Japan
- Computational Science and Engineering Division, Atomic Energy Society of Japan
- Cryogenics and Superconductivity Society of Japan
- Japan Aerospace Exploration Agency
- Japan Foundry Engineering Society
- Japan Society of Maintenology
- Japanese Society of Biorheology
- The Electrochemical Society of Japan
- The Japan Society for Aeronautical and Space Sciences
- The Japan Society for Computational Engineering and Science
- The Japan Society of Applied Electromagnetics and Mechanics
- The Japan Society of Fluid Mechanics
- The Japan Society of Mechanical Engineers
- The Japan Society of Microgravity Application
- The Japanese Society for Multiphase Flow

### Supported by a grant from:

- Aoba Foundation for the Promotion on Engineering
- Fluid Sciences Foundation
- Intelligent Cosmos Academic Foundation
- Sendai, Tourism, Convention and International Association (SenTIA)

### SCOPE:

The 20<sup>th</sup> International Conference on Flow Dynamics (ICFD2023), in the annual series since 2004, will be held from November 6<sup>th</sup> to 8<sup>th</sup>, 2023 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, ICFD2023 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 is an Integrated Flow Science which deals with 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 & 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 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 ICFD2023 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.

### CONFERENCE COMMITTEE:

#### **Executive Committee Members:**

Takashi Tokumasu (General Co-Chair of ICFD2023, Tohoku University)

Jeongmin Ahn (General Co-Chair of ICFD2023, Syracuse University)

Kaoru Maruta (IFS Director, Tohoku University)

#### **International Scientific Committee Members:**

Chair: Shigeru Obayashi (Tohoku University)

##### Australia

Masud Behnia (Macquarie University)

Weihua Li (University of Wollongong)

Gary Rosengarten (RMIT University)

Victoria Timchenko (The University of NSW)

##### Canada

Javad Mostaghimi (University of Toronto)

##### China

Zhenmao Chen (Xi'an Jiaotong University)

XinGang Liang (Tsinghua University)

Jinhao Qiu (Nanjing University of Aeronautics and Astronautics)

##### France

Christophe Bogey (ECL)

Jean-Yves Cavallé (INSA de Lyon)

Philippe Dagaut (CNRS-INSIS)

Vincent Fridrici (ECL)

Alexis Giauque (ECL)

Gael Sebald (INSA de Lyon-CNRS)

##### Germany

Christian Boller (Saarland University)

##### Japan

Debasish Biswas (Toshiba Ltd.)

Ketaro Doi (Toyohashi University of Technology)

Yuji Hattori (Tohoku University)

Jun Ishimoto (Tohoku University)

Takatoshi Ito (Tohoku University)

Satoyuki Kawano (Osaka University)

Hideaki Kobayashi (Tohoku University)

Kazunori Kuwana (Tokyo University of Science)

Kaoru Maruta (Tohoku University)

Hiroki Nagai (Tohoku University)

Taku Ohara (Tohoku University)

Akihiro Sasoh (Nagoya University)

Takehiko Sato (Tohoku University)

Masaya Shigeta (Tohoku University)

Toshiyuki Takagi (Tohoku University)

Michio Tokuyama (Tohoku University)

Satoru Yamamoto (Tohoku University)

Kazuya Yoshida (Tohoku University)

Korea

Jinsoo Cho (Hanyang University)  
Nam Il Kim (KAIST)  
Hyung Jin Sung (KAIST)

Russia

Sergey S. Minaev (Far-Eastern Federal University)

Saudi Arabia

Hong G. Im (King Abdullah University of Science and Technology)

Sweden

Fredrik Lundell (KTH Royal Institute of Technology)

Switzerland

Bastien Chopard (University of Geneva)

**Advisory Board Members:**

China Xing Zhang (Tsinghua University)  
France Patrick Bourgin (The Agence Nationale de la Recherche)  
Alain Combescure (INSA de Lyon)  
Philippe Kapsa (ECL)  
Germany Serge A. Shapiro (Freie University Berlin)  
Gerd Dobmann (Universitat des Saarlandes)  
Hungary Miklos Zrinyi (Semmelweis University)  
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Yu Fukunishi (Tohoku University)  
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Chisachi Kato (The University of Tokyo)  
Shigenao Maruyama (Tohoku University)  
Yoichiro Matsumoto (The University of Tokyo)  
Hideo Miura (Tohoku University)  
Junichiro Mizusaki (Tohoku University)

**Organizing Committee Members:**

Junnosuke Okajima (Chair), Kenichi Funamoto, Kaoru Maruta, Hisanori Masuda, Toshihiro Ogawa, Yoshitaka Suzuki, Takashi Tokumasu / (Observer) Tomohiro Okazaki

**ICFD2023 Secretariat:**

Natsuko Hatakeyama, Yuko Kawata, Tomomi Nagayoshi

Taiwan

Chingyao Chen (National Yang Ming Chiao Tung University)  
Chih-Yung Huang (National Tsing Hua University)  
Jongshinn Wu (National Yang Ming Chiao Tung University)  
Yao-Hsien Liu (National Yang Ming Chiao Tung University)

USA

Igor V. Adamovich (The Ohio State University)  
Jeongmin Ahn (Syracuse University)  
Yiguang Ju (Princeton University)  
Kozo Saito (University of Kentucky)  
Rongjia Tao (Temple University)

Kazuhiro Nakahashi (Tohoku University)  
Masami Nakano (Tohoku University)  
Hideya Nishiyama (Osaka University)  
Masaki Sano (The University of Tokyo)  
Masaaki Sato (Tohoku University)  
Toru Shimada (Japan Aerospace Exploration Agency)  
Takashi Yabe (Tokyo Institute of Technology)  
Joon-Hyun Lee (KETEP)  
Joon Sik Lee (Seoul National University)  
Sung-Jin Kim (KAIST)  
Russia Alexander Vasiliev (Moscow State University)  
Switzerland Dimos Poulikakos (ETH Zurich)  
Taiwan Wu-Shung Fu (National Chiao Tung University)  
UK Yiannis Ventikos (University College of London)  
USA Louis N. Cattafesta III (University of Florida)  
Ishwar K. Puri (Virginia Tech)  
John P. Sullivan (Purdue University)  
Satish Udpa (Michigan State University)

Korea

Russia

Switzerland

Taiwan

UK

USA

## Plenary Lectures



**Professor Christine Mounaïm-Rousselle** (University of Orléans, France)  
Title: “Specific Challenges for Ammonia Engines.”



**Professor Hai Wang** (Stanford University, USA)  
Title: “Detonation Cell Cycles and Autonomously Propagating Energy Centers (APEX)”



**Dr. Michimasa Fujino** (Honda Aircraft Co. Advisor, USA)  
Title: “Development of HondaJet  
- From Fundamental Research to Commercialization -”

## Sessions

### General Session

- GS1: **General Session**  
Co-Organizers: T. Tokumasu, J. Okajima (Tohoku University)

### Organized Session

- OS1: **The First International Symposium on Integrated Flow Science I & III  
Advanced Materials and its Energy Application**  
Organizer: S. Samukawa (National Yang Ming Chiao Tung University)  
**Multiphase Energy Science and Technology (Combination of Monozukuri-Fluid Science / Engineering)**  
Organizer: J. Ishimoto (Tohoku University)
- OS2: **The First International Symposium on Integrated Flow Science II  
Combustion Technology and Fundamentals**  
Co-Organizers: P. Dagaut (CNRS-INSIS), H. Im (King Abdullah University of Science and Technology), K. Maruta (Tohoku University)
- OS3: **The First International Symposium on Integrated Flow Science IV  
Advanced Semiconductor and Digital Transformation**  
Organizer: K. Endo (Tohoku University)
- OS4: **Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition**  
Co-Organizers: Y. Saito (Tohoku University), L. Kamps (Hokkaido University)
- OS5: **Advanced Applications of Multi-functional Fluids**  
Co-Organizers: H. Takana (Tohoku University), T. Fujino (University of Tsukuba), K. Doi (Toyohashi University of Technology), N. Takeuchi (Tokyo Institute of Technology), Y. Iwamoto (Nagoya Institute of Technology)
- OS6: **Free Flight Experiment with MSBS and Ballistic Range**  
Co-Organizers: S. Obayashi (Tohoku University), K. Seo (Kogakuin University), H. Nagai (Tohoku University)
- OS7: **Advances in Simulation Techniques for the Computational Aerosciences**  
Co-Organizers: Y. Abe (Tohoku University), F. Witherden (Texas A&M University), B. Vermeire (Concordia University), T. Haga (JAXA), K. Otsuka (Tohoku University), N. Tsushima (JAXA/ The University of Tokyo)
- OS8: **Advanced Physical Stimuli and Biological Responses**  
Co-Organizers: T. Sato (Tohoku University), T. Ohashi (Hokkaido University), S. Kawano (Osaka University), R. Shirakashi (The University of Tokyo), Y.-C. Cheng (National Yang Ming Chiao Tung University)
- OS9: **Biomedical Flow Dynamics**  
Co-Organizers: H. Anzai (Tohoku University), M. Zhang (Macquarie University), K. Takashima (Kyushu Institute of Technology), T. Nakayama (National Institute of Technology, Nara College), A. Qiao (Beijing University of Technology), M. Ohta (Tohoku University)
- OS10: **Two-Phase Thermal Control for Spacecraft**  
Co-Organizers: K. Odagiri (JAXA), H. Nagai (Tohoku University)

- OS11: **Microfluidics and Microphysiological Modeling**  
Co-Organizers: K. Funamoto (Tohoku University), T. Fukui (Kyoto Institute of Technology), T. Omori (Tohoku University), E. Corvera Poiré (National Autonomous University of Mexico)
- OS12: **Complex Thermofluid System**  
Co-Organizers: C.-Y. Chen, Y.-H. Liu, Y.-H. Liao (National Yang Ming Chiao Tung University)
- OS13: **Flow Realization, Measurement and Visualization**  
Co-Organizers: T. Yamagata (Niigata University), S. Funatani (Yamanashi University), S. Iio (Shinshu University), K. Funamoto (Tohoku University)
- OS14: **Flow in Geoscience / Geoenergy**  
Co-Organizers: A. Suzuki, A. Patsoukis-dimou (Tohoku University), J. Maes (Heriot-Watt University)
- OS15: **Turbulence: from Fundamentals to Applications**  
Co-Organizers: Y. Hattori (Tohoku University), T. Ishihara (Okayama University), Y. Tsuji (Nagoya University)
- OS16: **Vortex Motion**  
Co-Organizers: Y. Hattori (Tohoku University), S. Llewellyn Smith (UCSD)
- OS17: **Supercritical Fluid**  
Co-Organizers: Y. Kanda (Tohoku University), Y. Hu (Xi'an Jiaotong University), K. Ragui (Chinese Academy of Sciences), A. Komiya (Tohoku University)
- OS18: **Flow measurements using PSP/TSP technique**  
Co-Organizers: C.-Y. Huang (National Tsing Hua University), Y. Egami (Aichi Institute of Technology), Y. Matsuda (Waseda University), H. Nagai (Tohoku University)
- OS20: **Liaison Office Session**  
Co-Organizers: M. Ohta, T. Uchimoto, T. Tokumasu, A. Komiya (Tohoku University)
- OS21: **The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics**  
Co-Organizers: H. Kosada, K. Tamaoki, R. Zhu (Tohoku University)  
Supervisors: A. Suzuki, S. Takeda, Y. Kanda (Tohoku University)
- OS22: **The 23rd International Symposium on Advanced Fluid Information (AFI-2023) IFS Collaborative Research Forum**  
Co-Organizers: H. Masuda, T. Tokumasu (Tohoku University)  
**Fluid Science Research Award Lectures**
- OS23: **IFS Lyon Center Collaborative Research Forum**  
Organizer: T. Uchimoto (Tohoku University)
- OS24: **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-**

## General Information

**Opening:** 9:40-, Monday, November 6 @ EX-2 & EX-1, Exhibition Bldg.

**ISC Meeting** (closed meeting): 12:50-13:50, Monday, November 6 @ CON-8, Conference Bldg.

**Students / Young Birds Friendship Night:** 19:00-20:00, Monday, November 6 @ CON-SAKURA 2, Conference Bldg.

**Banquet:** 19:00-20:30, Tuesday, November 7 @ CON-SAKURA, Conference Bldg.

**Exhibition Hall:** Three Days @ CON-HAGI (14:00-19:00, Nov. 6 / 9:00-18:00, Nov. 7 / 9:00-15:00, Nov. 8), Conference Bldg.

Exhibitor Presentation Session by HPCTECH Corporation (Luncheon Seminar)	12:25-12:35, Tuesday, November 7 @ CON-HAGI
Nobby Tech. Ltd.	12:35-12:45, Tuesday, November 7 @ CON-HAGI
PHOTRON LIMITED	12:45-12:55, Tuesday, November 7 @ CON-HAGI

**Coffee Service:** Three Days @ CON-HAGI, Conference Bldg.  
 14:00-19:00, Nov. 6  
 9:00-18:00, Nov. 7  
 9:00-15:00, Nov. 8

**Lunch Information:** See MAP

**Registration:**

The conference registration desk is in the lobby,  
 1<sup>st</sup> floor, Exhibition Building.

9:00 -, Monday, November 6, 2023

8:30 -, Tuesday, November 7, 2023

8:30 -, Wednesday, November 8, 2023

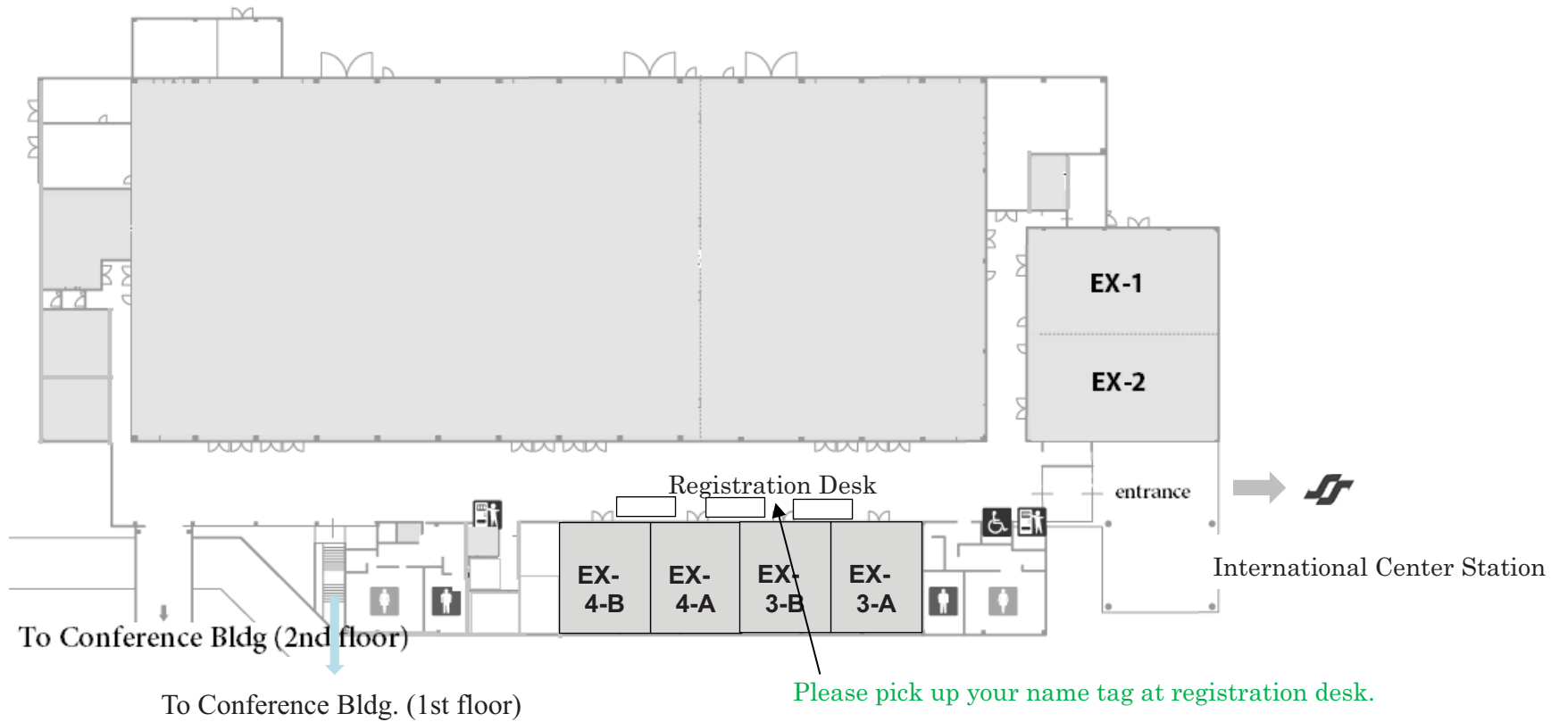




# Floor Plan of Sendai International Center

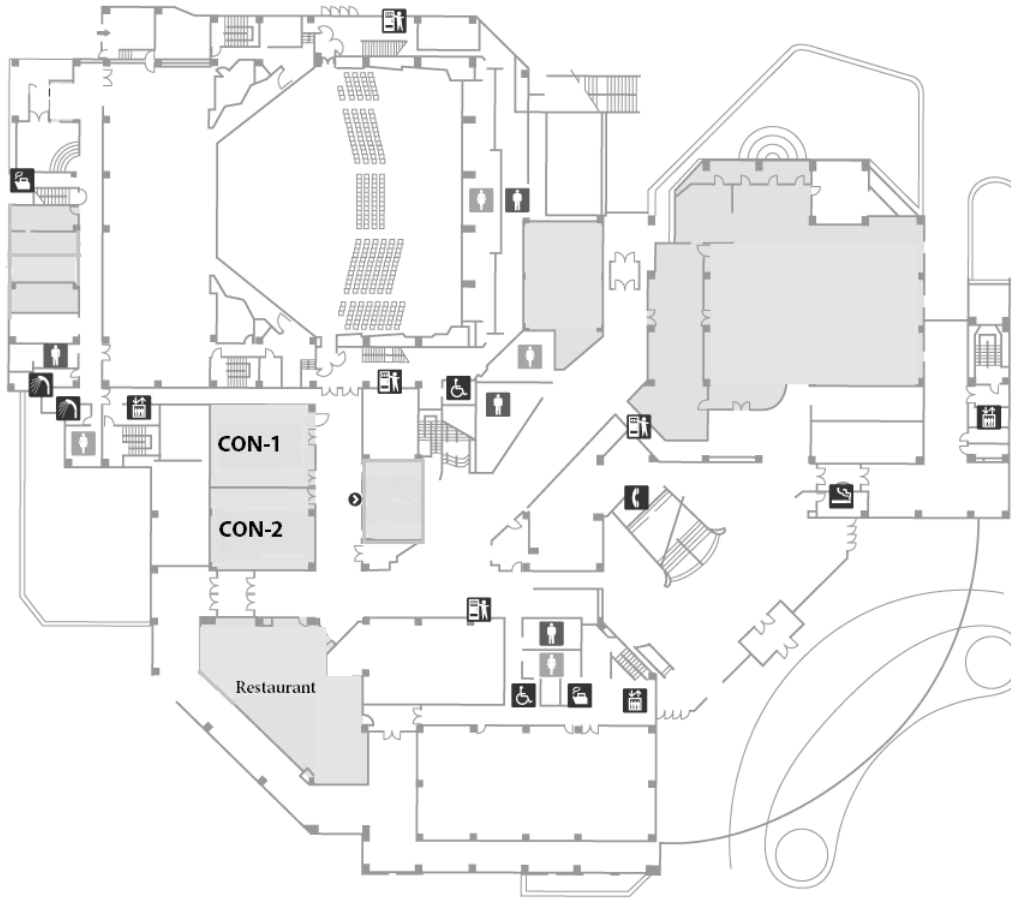
## Exhibition building

Exhibition building 1st Floor  
(EX-1, EX-2, EX-3-A, EX-3-B, EX-4-A, EX-4-B)

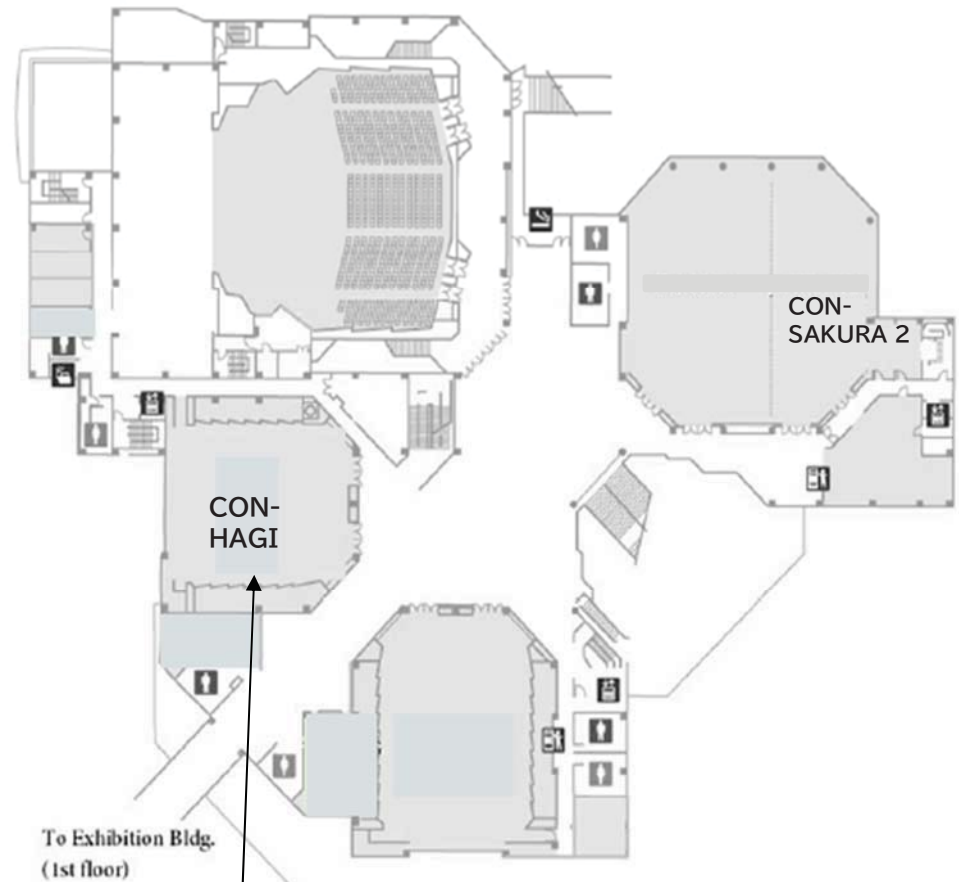


# Conference building

Conference building 1st Floor  
(CON-1, CON-2)



Conference building 2nd Floor  
(CON-SAKURA)



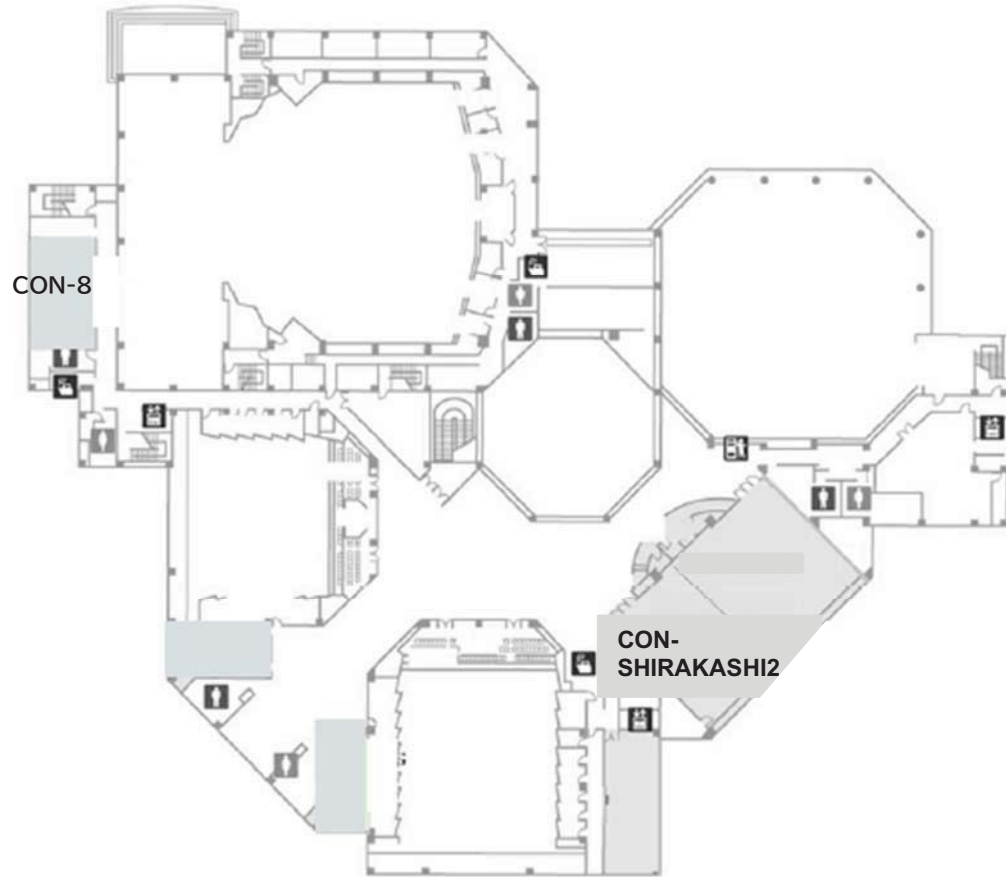
AFI & Exhibitor Hall & Coffee Service

14:00-19:00, Nov. 6

9:00-18:00, Nov. 7

9:00-15:00, Nov. 8

Conference building 3rd Floor  
(CON-SHIRAKSHI)



EX-1 (satellite) & EX-2										
<b>Opening Address &amp; Plenary Lectures</b>										
EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI
OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS8Advanced Physical Stimuli and Biological Responses	OS9: Biomedical Flow Dynamics	OS18Flow measurements using PSP/TSP Technique	OS12Complex Thermofluid System		GS: General Session	OS1:The First International Symposium on Integrated Flow Science I & III	OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS22: IFS Collaborative Research Forum (AFI-2023)
EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI
OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS8Advanced Physical Stimuli and Biological Responses	OS9: Biomedical Flow Dynamics	OS18Flow measurements using PSP/TSP Technique	OS12Complex Thermofluid System		GS: General Session	OS1:The First International Symposium on Integrated Flow Science I & III	OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS22: IFS Collaborative Research Forum (AFI-2023)
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Students / Young Birds Friendship Night @ CON-SAKURA2, Conference Bldg.										

9:00	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI	9:00
	OS15: Turbulence: from Fundamentals to Applications	OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS8: Advanced Physical Stimuli and Biological Responses	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition	OS6 Free Flight Experiment with MSBS and Ballistic Range	OS12: Complex Thermofluid System	OS7: Advances in Simulation Techniques for the Computational Aerosciences	GS: General Session	OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS22: IFS Collaborative Research Forum (AFI-2023)	9:00
10:30												10:30
10:40	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI	10:40
	OS15: Turbulence: from Fundamentals to Applications	OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS8: Advanced Physical Stimuli and Biological Responses	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition	OS11: Microfluidics and Microphysiological Modeling	OS12: Complex Thermofluid System	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS17: Supercritical Fluid	OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS22: IFS Collaborative Research Forum (AFI-2023)	10:40
12:10												12:10
13:10	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI	13:10
	OS15: Turbulence: from Fundamentals to Applications	OS20 Liaison Office Session	OS3: The First International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition	OS11: Microfluidics and Microphysiological Modeling	OS12: Complex Thermofluid System	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS17: Supercritical Fluid		OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	Exhibitor Presentation Session (Luncheon Seminar) OS22: IFS Collaborative Research Forum (AFI-2023)	13:10
14:40												14:40
14:50	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI	14:50
	OS15: Turbulence: from Fundamentals to Applications	OS24: JSPS Core to Core program workshop	OS3: The First International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition	OS10: Two-Phase Thermal Control for Spacecraft	OS12: Complex Thermofluid System	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS17: Supercritical Fluid		OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS22: IFS Collaborative Research Forum (AFI-2023)	14:50
16:20												16:20
16:30	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA2	CON-HAGI	16:30
	OS15: Turbulence: from Fundamentals to Applications	OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS22: Fluids Science Research Award Lecturers (AFI-2023)	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition	OS10: Two-Phase Thermal Control for Spacecraft	OS12: Complex Thermofluid System		GS: General Session	OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>		OS22: IFS Collaborative Research Forum (AFI-2023)	16:30
18:00												18:00
19:00												19:00
20:30	<b>19:00- Banquet @ CON-SAKURA, Conference Bldg.</b>											20:30

9:00	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	9:00
	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS16:Vortex Motion	OS23IFS Lyon Center Collaborative Research Forum	OS13Flow Realization, Measurement and Visualization	OS5Advanced Applications of Multi-functional Fluids	GS: General Session	OS22: IFS Collaborative Research Forum (AFI-2023)	
10:30									10:30
10:40	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	10:40
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13:10	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	13:10
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14:40									14:40
14:50	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	14:50
	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS16:Vortex Motion	OS23IFS Lyon Center Collaborative Research Forum		OS5Advanced Applications of Multi-functional Fluids	GS: General Session		
16:20									16:20
16:30	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	16:30
	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <Satellite>	OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals				OS5Advanced Applications of Multi-functional Fluids			
18:00									18:00

EX-1 (Satellite room) & EX-2										
<p>9:40-10:00 <b>Opening Address</b></p> <p>10:00-12:40 <b>Plenary Lectures</b></p> <p>10:00-10:50 "Specific Challenges for Ammonia Engines" <i>Christine Mounaim-Rousselle</i> Chair: Akihiro Hayakawa</p> <p>10:55-11:45 "Development of HondaJet - From Fundamental Research to Commercialization -" <i>Michimasa Fujino</i> Chair: Shigeru Obayashi</p> <p>11:50-12:40 "Detonation Cell Cycles and Autonomously Propagating Energy Centers (APEX)" <i>Hai Wang</i> Chair: Kaoru Maruta</p>										
BREAK										
EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA	CON-HAGI
<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Chair: H. Nakamura</p>	<p><b>OS8:Advanced Physical Stimuli and Biological Responses</b></p> <p>Chair: Y.-C. Cheng</p>	<p><b>OS9: Biomedical Flow Dynamics</b></p> <p>Chairs: M. Ohta, &amp; A. Qiao</p>	<p><b>OS18Flow measurements using PSP/TSP Technique</b></p> <p>Chair: C.-Y. Huang</p>	<p><b>OS12Complex Thermo-fluid System</b></p> <p>Numerical and Experimental Fluid Dynamics 1 Chair: Z. P. Tan</p>		<p><b>GS: General Session</b></p> <p>Heat transfer Chair: S. Donatas</p>	<p><b>OS1:The First International Symposium on Integrated Flow Science I &amp; III</b></p> <p>Chair: J. Ishimoto</p>	<p><b>OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics</b></p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>
<p>14:10-14:28 OS2-1 Propene Oxidation in a Supercritical Jet-Stirred Reactor up to 100 atm <i>B. Mei, Z. Wang, A. D. Lele, P. Dievart, Y. Ju</i></p> <p>14:28-14:46 OS2-2 Unraveling the Complex Oxidation Processes Occurring Under Cool Flame Conditions. <i>P. Dagaout, Z. Dbaouk, N. Belhadj, R. Benoit, M. Lailliau</i></p> <p>14:46-15:04 OS2-3 Ammonia Oxidation by N<sub>2</sub>O: a Shock-Tube Study <i>Q. Mathieu, C. M. Grégoire, E. L. Petersen</i></p> <p>15:04-15:22 OS2-4 Short-Lived Intermediates Detection in Trimethyl Phosphate Pyrolysis using Vacuum Ultraviolet Synchrotron Radiation <i>K. Kanayama, H. Nakamura, K. Maruta, A. Bodi, P. Hemberger</i></p> <p>15:22-15:40 OS2-5 Investigation on Ammonia Oxidation at Elevated Pressures Using a Micro Flow Reactor with a Controlled Temperature Profile <i>K. Tamaoki, T. Tezuka, M. Izumi, H. Nakamura</i></p>	<p>14:10-14:28 OS2-1 Propene Oxidation in a Supercritical Jet-Stirred Reactor up to 100 atm <i>B. Mei, Z. Wang, A. D. Lele, P. Dievart, Y. Ju</i></p> <p>14:28-14:46 OS2-2 Unraveling the Complex Oxidation Processes Occurring Under Cool Flame Conditions. <i>P. Dagaout, Z. Dbaouk, N. Belhadj, R. Benoit, M. Lailliau</i></p> <p>14:46-15:04 OS2-3 Ammonia Oxidation by N<sub>2</sub>O: a Shock-Tube Study <i>Q. Mathieu, C. M. Grégoire, E. L. Petersen</i></p> <p>15:04-15:22 OS2-4 Short-Lived Intermediates Detection in Trimethyl Phosphate Pyrolysis using Vacuum Ultraviolet Synchrotron Radiation <i>K. Kanayama, H. Nakamura, K. Maruta, A. Bodi, P. Hemberger</i></p> <p>15:22-15:40 OS2-5 Investigation on Ammonia Oxidation at Elevated Pressures Using a Micro Flow Reactor with a Controlled Temperature Profile <i>K. Tamaoki, T. Tezuka, M. Izumi, H. Nakamura</i></p>	<p><b>14:05-14:10</b> Opening <i>T. Sato &amp; Y.-C. Cheng</i></p> <p><b>14:10-14:40</b> OS8-1 Invited Design Principle of Shark Noses: Dynamic, and Biomimicry Applications <i>Y.-H. Lin, Z.-Y. Su, Y.-X. Huang, K.-J. Chi, W.-H. Wang, Y.-Y. Chiang</i></p> <p><b>14:40-15:10</b> OS8-2 Invited Non-thermal Plasma Generated by High-voltage Pulses and Its Applications for Improving the Growth and Preserving the Freshness of Fruits and Vegetables <i>K. Takahashi, K. Takaki</i></p> <p><b>15:10-15:25</b> OS8-3 High-Permittivity Substrates for Enhancing APPJ-Assisted Bonding on Microfluidic Chip <i>C.-C. Ni, C.-H. D. Tsai</i></p> <p><b>15:25-15:40</b> OS8-4 Base Material Property of Cancellous Bone <i>Y.-C. Lu, C.-G. Xu, K.-M. Chan, T. Wu, W.-Y. Jang</i></p>	<p><b>14:10-14:50</b> OS9-1 Invited Developing Nanofibrous Coatings For Cardiovascular Stent Wires <i>C. Foniatis, A. Jedlovszky-Hajdu</i></p> <p><b>14:50-15:10</b> OS9-2 Numerical Simulation of Vascular Remodeling under Multiple Mechanical Stimuli <i>H. Zhang, Y. Yang, S. Chen, A. Qiao, H. Song, W. Fu, H. Anzai, M. Ohta</i></p> <p><b>15:10-15:25</b> OS9-3 The Effect of Oscillatory Shear Index (OSI) on Endothelial Cell Behavior Observed in a Flow Chamber <i>H. Saifurrahman, Z. Wang, H. Anzai, M. Ohta</i></p> <p><b>15:25-15:40</b> OS9-4 Low Surface Tension Biphasic Separation in Aspirin Continuous Manufacturing <i>W.-C. Chen, C.-H. Ni, Y.-Y. Chiang</i></p>	<p><b>14:10-14:50</b> OS18-1 Invited Recent Developments of Pressure-Sensitive Paint Technique in JAXA Test Facilities <i>Y. Sugioka, K. Nakakita</i></p> <p><b>14:50-15:10</b> OS18-2 Development of Low-Photodegradable AA-PSP with Pyrene Derivatives <i>Y. Egami, H. Horie, Y. Okamoto, E. Matsushita</i></p> <p><b>15:10-15:30</b> OS18-3 Study on the Method for Extracting Pressure Fluctuations Created by Flapping-Jet Device from PSP Data <i>K. Ogasawara, T. Handa</i></p>	<p><b>14:10-14:40</b> OS12-1 Invited Calculation of the Thermo-fluid Fields and Process Progress in the Kiln for MLCC Manufacturing <i>Y.-H. Cheng, D. Chou, C.-C. Tseng, T.-S. Yang</i></p> <p><b>14:40-15:00</b> OS12-2 The Numerical Approach of Rayleigh-Bénard Convection by Physics Informed Neural Network <i>H.-C. Chang, M.-Y. Chang, W.-H. Wang</i></p> <p><b>15:00-15:20</b> OS12-3 Application of CFD for Pressure and Velocity Simulation and Aerodynamic Noise Prediction in Dental Air-Turbine Handpieces <i>C.-G. Li, C.-C. Lu, T. Yamada, K. Nozaki</i></p> <p><b>15:20-15:40</b> OS12-4 High-Resolution Reynolds Stress Measurement using Single-Pixel Ensemble-Averaged PIV <i>T. F. Chang, K. B. Lua</i></p>		<p><b>14:10-14:30</b> GSI-1 Investigation of Thermal Performance of a Double Pipe Heat Exchanger with Wavy Inner Pipe <i>H.-S. Peng, P.-J. Chen</i></p> <p><b>14:30-14:50</b> GSI-2 Preliminary Research in Fiber Optic Laser Therapy for Treatment of Breast, Head and Neck Tumors <i>A. Ohonai, T. Kogawa, Y. Kanda, T. Kodama, A. Komiya</i></p> <p><b>14:50-15:10</b> GSI-3 Performance Investigation of Spectral Beam Splitting Photovoltaic Thermal System <i>A. Ustaoglu, S. B. Sungur, H. Buyukpatpat, J. Okajima</i></p> <p><b>15:10-15:30</b> GSI-4 Heat Transfer Control for Uniform Cooling of Elongated Device <i>M. Yamamoto, Y. Nakano, K. Komata, Y. Oda, K. Matsuo, A. Komiva</i></p>	<p><b>14:10-14:50</b> OS1-1 Invited Mathematical Modeling of the Sensible Regions of Leaked Hydrogen Around a Flying Quad-Rotor Drone <i>K. Matsuura, A. Slabbinck Matsumoto</i></p> <p><b>14:50-15:10</b> OS1-2 A Comparison of Solid Oxide Fuel Cell Performance on Ammonia Versus Hydrogen <i>C. Wilhelm, J. Ahn</i></p> <p><b>15:10-15:30</b> OS1-3 Metal-Doped Fungi Biomass for Battery Electrode Material <i>K. Fields, C. Wilhelm, J. Ahn, S. Erdman</i></p>	<p><b>OS21-1 - OS21-24</b> 14:10-15:10 (preparation time)</p> <p>15:10-15:40 Short Oral Presentation</p>	<p><b>CRF-1 to 26</b> 14:10-15:40 Short Oral Presentation</p>
BREAK										

15:50	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA	CON-HAGI	15:50
	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Chair: K.D.K.A. Somaratne</p>	<p><b>OS8:Advanced Physical Stimuli and Biological Responses</b></p> <p>Chair: K. Takahashi</p>	<p><b>OS9: Biomedical Flow Dynamics</b></p> <p>Chairs: M. Zhang &amp; T. Nakayama</p>	<p><b>OS18Flow measurements using PSP/TSP Technique</b></p> <p>Chair: H. Nagai</p>	<p><b>OS12Complex Thermo-fluid System</b></p> <p>Thermal and Flow I Chair: W.-H. Tien</p>		<p><b>GS: General Session</b></p> <p>Chemical reaction and energy Chair: Y. Kanda</p>	<p><b>OS1:The First International Symposium on Integrated Flow Science I &amp; III</b></p> <p>Chair: J. Ishimoto</p>	<p><b>OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics</b></p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>	
15:50-16:08	<p>OS2-6 Pyrolysis and Soot Formation of Liquid Fuels in a Micro Flow Reactor M. R. Razavi, <u>Q. L. Gülder</u></p>	<p>OS2-6 Pyrolysis and Soot Formation of Liquid Fuels in a Micro Flow Reactor M. R. Razavi, <u>Q. L. Gülder</u></p>	<p>OS8-5 Invited Calcium Response and Large Cation Uptake Induced by Atmospheric Pressure Plasma S. Sasaki, R. Honda, M. Kanzaki, T. Kaneko</p>	<p>OS9-5 Heart Rate in Mammals R. D. M. Travasso, C. A. Penick, R. R. Dunn, E. Carverra Pojré</p>	<p>OS18-4 An Experimental Study of Film Cooling and Heat Transfer using Dual-luminophore Pressure-Sensitive Paint W.-T. Cheng, C.-Y. Huang, Y.-H. Liu</p>	<p>OS12-5 A Numerical Investigation Of Microtube Length Effect On Convective Boiling Y. Wang, C.-E. Li, Z.-Y. Chen, S.-H. Pai, C.-W. Lin, H.-Y. Hsu, Y.-C. Lin</p>		<p>GS1-5 Analysis of Emission Control Technology in Varied Temperatures for Automotive Applications A. M. Willsey, T. S. Welles, J. Ahn</p>	<p>OS1-4 Optimal Operating Conditions for an Electric ECS in Ground Parking Status Y. Amano, H. Saito, T. Adachi</p>	<p>OS21-1 - OS21-24 15:50-17:20 Poster Presentation</p>	<p>OS22-1 to 26 15:50-17:20 Poster Presentation</p>	
16:08-16:26	<p>OS2-7 Numerical Investigation of Soot Formation in Pressurized, Highly Turbulent Jet Flames E. Ouadarella, J. Guo, H. G. Im</p>	<p>OS2-7 Numerical Investigation of Soot Formation in Pressurized, Highly Turbulent Jet Flames E. Ouadarella, J. Guo, H. G. Im</p>	<p>OS8-6 Invited Investigate the Effects of Gold Nanoparticles on the Electrohydrodynamic Behavior of Cells C.-J. Lee, H.-Y. Wang</p>	<p>OS9-6 Multiscale Model Study on the Impact of Circle of Willis Structure Integration with Cerebral Artery Stenosis on Postoperative Cerebral Hyperperfusion in Superficial Temporal Artery-Middle Cerebral Artery Bypass Surgery S. Huang, B. Li, L. Zhang, J. Liu, Y. Liu</p>	<p>OS18-5 Investigation of The Correlation Between Wafer Temperature Distribution and Process Performances in Chemical Mechanical Planarization Process by Flow and Temperature Visualization Methods Y.-C. Chang, H.-H. Hsu, W.-H. Tien</p>	<p>OS12-6 An Artificial Neural Network Model for Predicting Hydraulic Diameters in Pillow-Plate Heat Exchangers A. Sabourshirazi, M. Ghodrati, J.-L. Liow</p>		<p>GS1-6 Modeling and Analysis of the Flue Gas Recirculation System for Iron Ore Sintering Process H.-X. Chen, S.-Y. Hsu, Y.-S. Huang</p>	<p>OS1-5 Study on Flow Characteristics of a Control Valve in a Perforated Cage by CFD Analysis Y. Kurowsawa, C. Youn</p>			
16:26-16:44	<p>OS2-8 Characterization of Particulate Morphology Generated from Lithium-Ion Battery Combustion Processes S. L. Manzella, S. Suzuki, K. Maruta</p>	<p>OS2-8 Characterization of Particulate Morphology Generated from Lithium-Ion Battery Combustion Processes S. L. Manzella, S. Suzuki, K. Maruta</p>	<p>OS8-7 Miniature Plasma Microbubble System For Dental Applications Y.-W. Huang, C.-W. Feng, A.-S. Chen, Y.-C. Cheng</p>	<p>OS9-7 Numerical Modelling of Ultrasonically Induced Cavitation in Biological Systems P. Guida, W. L. Roberts</p>	<p>OS18-6 Numerical and Experimental Analysis of Conjugate Heat Transfer in Glass Microchannel Flow with Sidewall Heating P.-C. Wang, Y.-W. Wu, T.-M. Liou, C.-Y. Huang</p>	<p>OS12-7 Helical Wires for Enhancing Pool Boiling Heat Transfer C.-K. Wang, Y.-D. Ren, C.-W. Lo</p>		<p>GS1-7 Performance Investigation of Encapsulated PCM Battery Thermal Management System B. Karsuncu, A. Ustaoglu, J. Okajima, E. Demirkol</p>	<p>OS1-6 Blowoff Limits of the Smoldering Processes P. Viriya-amornkij, K. Kuwana</p>			
16:44-17:02	<p>OS2-9 A Study on the Effect of the Discharge Frequency of Dielectric Barrier Discharge on the Ignition Characteristics in RCEM S. Agrawal, N. Horibe, J. Hayashi, H. Kawanabe</p>	<p>OS2-9 A Study on the Effect of the Discharge Frequency of Dielectric Barrier Discharge on the Ignition Characteristics in RCEM S. Agrawal, N. Horibe, J. Hayashi, H. Kawanabe</p>	<p>OS8-8 Improving Puncture Accuracy Using Vibrating Devices for Flexible Organs Y. Iwata, K. Kikuchi, K. Takase, T. Ishikawa</p>	<p>OS9-8 Effect of Directional Deviation of the Endotracheal Tube Tip on Lung Volume Distribution H. Kobayashi, G. Tanaka</p>	<p>OS18-7 Proposal of Noise Reduction Method for PSP Data Using Multivariate Singular Spectrum Analysis M. Takagi, K. Kubota, R. Shigebara, T. Ikami, Y. Egami, H. Nagai, Y. Matsuda</p>	<p>OS12-8 Numerical Simulation of Magneto-hydrodynamic Thermal Convection within a Rotating Spherical Shell under the Influence of Axial Gravitational Field. H. Satake, T. Tagawa</p>		<p>GS1-8 The Effect of Tap Locations on the Temperature Distribution of Lithium-Ion Battery Cell during Discharging Y.-L. Zheng, S.-Y. Hsu, N.-H. Yeh</p>				
17:02-17:20	<p>OS2-10 Study on the Ignition-to-Flame Propagation Transition of Spherically Propagating Flame Initiated by Spark Discharge and Low-Temperature Heat Source T. Kakizawa, K. Akita, T. Tezuka, Y. Morii, H. Nakamura, K. Maruta</p>	<p>OS2-10 Study on the Ignition-to-Flame Propagation Transition of Spherically Propagating Flame Initiated by Spark Discharge and Low-Temperature Heat Source T. Kakizawa, K. Akita, T. Tezuka, Y. Morii, H. Nakamura, K. Maruta</p>		<p>OS9-9 Numerical Simulation of the Effects of Geometric Parameters on Airway Resistance in Tracheal Bronchus M. Koga, T. Fukui</p>		<p>OS12-9 Impact of Random 3D Roughness on Natural Convection along a Vertical Plate in Unsteady Flow T.-Y. Chen, C.-G. Li</p>						
17:20	BREAK											17:20
17:30	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Chair: Zheng Chen</p>	<p><b>OS8:Advanced Physical Stimuli and Biological Responses</b></p> <p>Chair: T. Sato</p>	<p><b>OS9: Biomedical Flow Dynamics</b></p> <p>Chair: H. Anzai</p>	<p><b>OS18Flow measurements using PSP/TSP Technique</b></p> <p>Chair: Y. Matsuda</p>	<p><b>OS12Complex Thermo-fluid System</b></p> <p>Fluid Flow I Chair: H.-Y. Hsu</p>	<p><b>OS7: Advances in Simulation Techniques for the Computational Aerosciences</b></p> <p>Chair: Y. Abe</p>	<p><b>OS14Flow in Geoscience / Geoenery</b></p> <p>Chair: A. Suzuki</p>	<p><b>OS1:The First International Symposium on Integrated Flow Science I &amp; III</b></p> <p>Chair: J. Ishimoto</p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>		17:30
17:30-17:48	<p>OS2-11 Theoretical Studies of Supercritical Real-Fluid Oxidations of Universal Fuels by Using the Virial Equation of State J. Bai, H. Zhao</p>	<p>OS2-11 Theoretical Studies of Supercritical Real-Fluid Oxidations of Universal Fuels by Using the Virial Equation of State J. Bai, H. Zhao</p>	<p>OS8-9 Invited Dielectric Breakdown of Cell Membrane and ROS Generation by Pulsed Electric Field Y. Minamitani, T. Kowase, M. Ichikawa, T. Mizuno, H. Sato, Y. Kobayashi, J. Hiyama, R. Kageyama, K. Tamura, Y. Kuramochi, K. Saito</p>	<p>OS9-10 Physics-driven 0D/3D Model Using Fluid-structure Interaction Method for Calculating Fractional Flow Reserve B. Li, G. Li, L. Zhang, H. Sun, J. Liu, A. Qiao, Y. Liu</p>	<p>OS18-8 Aerodynamic Coefficients Study of the Application of Pressure-sensitive Paint on NACA 0012 Airfoil in Low-Speed Wind Tunnel S.-J. Fu, K.-T. Huang, C.-Y. Huang, K.-M. Chung</p>	<p>OS12-10 Formation of Crosslinked Microparticles from Coaxial Capillary with Different Gas Flowrates Z.-K. Yu, J.-J. Hu, C.-H. D. Tsai</p>	<p>OS7-1 Invited Application of PyFR to Design of Rotor Blades for Martian Helicopters L. C. Roca, O. Buxton, P. Vincent</p>	<p>OS14-1 Invited Fluid Flow and Coupled Hydromechanical Processes in Fractured Rocks with Application to Geoenery and Geoenengineering Q. Lei</p>	<p>OS1-8 Visualization of Longitudinal Vortex Structure in the Wake of a Flat Plate Airfoil at Low Reynolds Number A. Wakabayashi, K. Hamaguchi, T. Uchida, K. Sugitani, A. Takada, K. Hirata</p>		<p>Poster</p>	



17:48-18:06 OS2-12 Stabilities of Reaction Wave Structures in Low- to High-speed Reactive Inflow Conditions <i>Y. Morii, K. Maruta</i>	17:48-18:06 OS2-12 Stabilities of Reaction Wave Structures in Low- to High-speed Reactive Inflow Conditions <i>Y. Morii, K. Maruta</i>	18:00-18:30 OS8-10 <i>Invited</i> A Grooved Petri Dish used with a Commercial Orbital Shaker for Tissue-Engineered Vascular Graft Culture <i>J.-W. Yeh, J.-J. Hu, Y.-H. Liu</i>	17:50-18:10 OS9-11 Real-time Model-based Cerebral Perfusion Calculation for Ischemic Stroke <i>H. Sun, B. Li, L. Zhang, G. Li, J. Liu, Y. Liu</i>	17:50-18:10 OS18-9 Development of Pressure Distribution Measurement Technique Using AA-PSP at Transonic Free-Flight <i>Y. Takikawa, K. Takahashi, T. Ogawa, T. Ikami, H. Nagai, D. Kurihara, J. P. Gonzales, H. Sakaue</i>	17:50-18:05 OS12-11 The Aerodynamic Effects of Phase Angle on the Tandem Flapping Wings of Damselfly <i>Y. H. Wu, K. B. Lua</i>	18:10-18:30 OS7-2 Comparison of ILES and RANS Computation for Turbulent Base Flow an Axisymmetric Body <i>J. Park, D. Kim, S. Lee, J. S. Park</i>	17:55-18:10 OS14-2 Numerical Investigation of Compressible Monodisperse Gas-Solid Flows in a Supersonic Under-expanded Jet: Effect of Particle Diameter and Concentration <i>D. Talukdar, Y. Suzuki</i>	17:50-18:10 OS1-9 Effects on the Aerodynamics of a Spinning Hollow Cylinder in Flight <i>D. Tanaka, T. Wada, Y. Naito, M. Nakano, J. Ishimoto, H. Tamigawa, K. Hirata</i>		
18:06-18:24 OS2-13 Multiscale Modeling on Shock-Cool Flame Interaction with DME/Air Mixture <i>E. Fan, T. Zhang</i>	18:06-18:24 OS2-13 Multiscale Modeling on Shock-Cool Flame Interaction with DME/Air Mixture <i>E. Fan, T. Zhang</i>	18:30-18:45 OS8-11 Influence of Pulse Rise and Fall Time on Plasma Intensity and Electron Temperature <i>A. Sung, Y.-C. Cheng</i>	18:10-18:25 OS9-12 Hemodynamic Changes in the Left Ventricle by Bicuspid Aortic Valve Geometries <i>S. Tsuda, S. Miyauchi, K. Funamoto</i>	18:10-18:30 OS18-10 Visualization of Leading Edge Vortex in Low Reynolds Number Rotor by cNTSP <i>R. Nishimura, T. Ikami, H. Nagai</i>	18:05-18:20 OS12-12 Continuous Separation of Glutathione in Microfluidic System <i>Y.-R. Tseng, Y.-Y. Chiang</i>	18:30-18:50 OS7-3 Stable and Non-Dissipative Flux Reconstruction Schemes in Split Forms: Preservation of Kinetic Energy and Entropy <i>L. Hanma, H. Asada, S. Kawai</i>	18:10-18:25 OS14-3 Accuracy Considerations Concerning 3D Printed Fracture Models <i>M. Kröhn, A. Suzuki</i>	18:10-18:30 OS1-10 Flow around a Cylinder Moving near the Ground <i>K. Matsuno, R. Kobayashi, K. Hirata</i>		
18:24-18:42 OS2-14 Unconfined Hydrogen Detonation: Experiments, Scaling, Modeling <i>M. Kuznetsov, A. Lelyakin</i>	18:24-18:42 OS2-14 Unconfined Hydrogen Detonation: Experiments, Scaling, Modeling <i>M. Kuznetsov, A. Lelyakin</i>		18:25-18:40 OS9-13 Evaluation of Therapeutic Efficacy of Cancer Immunotherapy Using Lymphatic Network Compared with Hematogenous Administration <i>K. Takagi, A. Sukhbaatar, S. Mori, T. Sugiura, T. Kodama</i>	18:30-18:50 OS18-11 Sonic Boom Distribution Measurement of Supersonic Projectile in Ballistic Range <i>J. Abe, T. Ogawa, T. Ikami, H. Nagai, S. Takahashi</i>	18:20-18:35 OS12-13 Experimental Study of Azimuthal Magnetic Field Stability of Confined Immiscible Ferrofluid <i>A. Kumar, S.-W. Hung, C.-Y. Chen</i>		18:25-18:40 OS14-4 3D Printed Fracture Networks for Investigation of Fracture Deformation under Stress <i>A. Patsoukis Dimou, Q. Lei, N. Watanabe, A. Suzuki</i>			
18:42-19:00 OS2-15 Flame Propagation and Transition to Detonation of Dimethyl Ether Mixture in a Microscale Channel <i>A. Thawka, Y. Cao, M. S. Vorenkamp, Y. Ju</i>	18:42-19:00 OS2-15 Flame Propagation and Transition to Detonation of Dimethyl Ether Mixture in a Microscale Channel <i>A. Thawka, Y. Cao, M. S. Vorenkamp, Y. Ju</i>		18:40-18:55 OS9-14 Investigation of Therapeutic efficacy of Intranodally Administered Hyperosmotic, High-viscosity Formulation of Carboplatin for the Treatment of Metastatic Lymph Node <i>M. Miyatsu, R. Mishra, A. Sukhbaatar, S. Mori, T. Kodama</i>	18:50-19:10 OS18-12 Surface Pressure Measurement of Elliptical Cavities with Variable Eccentricity in Compressible Flow <i>Y.-X. Huang, P.-H. Chung, K.-M. Chung, K.-C. Chang</i>	18:35-18:55 OS12-14 Determination of Ozone Density in Surface Micro-discharge in the Presence of Water Vapor <i>S.-R. Zou, Y.-H. Liao</i>		18:40-18:55 OS14-5 Toward Estimation of Aperture of Complex Fracture Network from Tracer Responses <i>J. Mivanaga, K. Goto, A. Suzuki, A. Patsoukis Dimou, J. M. Minto</i>			
19:00										19:00
Students / Young Birds Friendship Night @ CON-SAKURAZ, Conference Bldg.										
20:00										20:00

9:00	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA	CON-HAGI	9:00
	<p><b>OS15: Turbulence: from Fundamentals to Applications</b></p> <p>Turbulence &amp; Control Chair: Y. Hattori</p>	<p><b>OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Machine Learning Chair: H. G. Im</p>	<p><b>OS8: Advanced Physical Stimuli and Biological Responses</b></p> <p>Chair: S. Liu</p>	<p><b>OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition</b></p> <p>Invited talk Session Chair: Y. Saito</p>	<p><b>OS6: Free Flight Experiment with MSBS and Ballistic Range</b></p> <p>Chair: S. Obayashi</p>	<p><b>OS12: Complex Thermofluid System</b></p> <p>Thermal and Flow II Chair: Y.-H. Liao</p>	<p><b>OS7: Advances in Simulation Techniques for the Computational Aerosciences</b></p> <p>Chair: T. Hoga</p>	<p><b>GS: General Session</b></p> <p>Multiphase flow Chair: X. Chang</p>	<p><b>OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics</b></p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>	
9:10-9:30	OS15-1 Turbulence Generator for Studying the Vertical Migration of Red Tide Microalgae <u>W. Niu, K. Kikuchi, T. Ishikawa</u>	9:00-9:18 OS2-16 <i>Invited</i> Machine Learning Tools for Accelerating Simulation-driven Engine Design and Optimization <u>P. Pal</u>	9:30-10:00 OS8-12 <i>Invited</i> Portable Biosensor System with Microfluidics Embedded Optical Sensor <u>C.-C. Chiang, C.-S. Huang</u>	9:00-9:45 OS4-1 <i>Invited</i> Advancing Internal Ballistics of Hybrid Rockets: Challenges, Parameter Estimation, and Future Perspectives <u>T. Shimada</u>	9:00-9:30 OS6-1 <i>Invited</i> Increasing the Dynamic Pressure Capability of the NASA Langley/ODU 6-inch MSBS <u>M. Schoenenberger, D. Cox, E. Shellabarger, H. Shehata, C. Britchev, B. McGovern</u>	9:00-9:20 OS12-15 Development of Conjugate Heat Transfer Immersed Boundary Method based on Low Mach Number Compressible Flow Solver <u>C. G. Li, R. Bale, M. Tsubokura</u>	9:00-9:20 OS7-4 Solution-Acceleration of High-Order Methods via Hybridized Implicit-Explicit Time Integration <u>C. A. Pereira, B. C. Vermeire</u>	9:00-9:20 GS1-9 Experimental Observation of Erosion Structure from the Incubation Stage to the Accumulation Stage in Liquid Impingement Erosion <u>K. Fujisawa</u>	9:00-9:18 OS2-16 <i>Invited</i> Machine Learning Tools for Accelerating Simulation-driven Engine Design and Optimization <u>P. Pal</u>	<p><b>OS21-25 - OS21-48</b> 9:00-10:00 (preparation time)</p> <p>10:00-10:30 <i>Short Oral Presentation</i></p>	<p>Poster</p>	
9:30-9:50	OS15-2 Relation between Turbulence in Swirling Flow in a Cylindrical Pipe and the Ranque-Hilsch Effect <u>T. Yamamoto, Y. Hattori</u>	9:18-9:36 OS2-17 <i>Invited</i> Unlocking the Hidden Details: New Approaches for ML-Based Super-Resolution of Turbulent Flows <u>M. Ihme, W. T. Chung, B. Akoush, P. Sharma</u>	10:00-10:30 OS8-13 <i>Invited</i> Effects of Superimposed Electric Field on Structure and Permeability of Biological Membrane Investigated by Molecular Dynamics Simulation <u>K. Tachibana, K. Takami, R. Ninomiya, I. Yagi, A. Oda, S. Uchida</u>	9:45-10:30 OS4-2 <i>Invited</i> Combustion of Metallized Fuels for Hybrid Rocket Applications <u>J. C. Thomas</u>	9:30-9:50 OS6-2 Analysis of Unsteady Wake Structure behind Magnetically Levitated Circular Cylinder with Pitch Angles in 0.3-m MSBS <u>S. Yokota, T. Nagata, Y. Oka, M. Kasai, T. Nonomura</u>	9:20-9:35 OS12-16 Thermo-Fluid Analysis of Internally Cooled Tubes to Improve Cutting Speed for Difficult-to-Cut Materials <u>T. Hasegawa, K. Suzuki, E. Shamoto, T. Nakamura, T. Watanabe, K. Nagata, Y. Hatano</u>	9:20-9:40 OS7-5 A Fully Coupled Block Implicit Solver for the Incompressible Navier-Stokes Equations on Collocated Grids <u>M. A. George, N. Williamson, S. W. Armfield</u>	9:20-9:40 GS1-10 Analysis of the Wind Flow and Fuel Heat Release Rate on Dynamics of Wildfire <u>M. Ghodrati, A. Adalati-Nejad</u>	9:18-9:36 OS2-17 <i>Invited</i> Unlocking the Hidden Details: New Approaches for ML-Based Super-Resolution of Turbulent Flows <u>M. Ihme, W. T. Chung, B. Akoush, P. Sharma</u>			
9:50-10:10	OS15-3 Wall Turbulence Response to Distributed Dynamic Roughness: a DNS Study <u>A. Sescu, M. Brockhaus, J. Morrison</u>	9:36-9:54 OS2-18 <i>Invited</i> Neural Network Approach to Detailed Reaction Model Optimization, Uncertainty Minimization, and Model Reduction <u>Y. Zhang, K. Dong, L. A. Vandewalle, R. Xu, G. P. Smith, H. Wang</u>	9:54-10:12 OS2-19 <i>Invited</i> Artificial Intelligence (AI) Based Fuel Design <u>S. Mani Sarathy, N. Kuzhgaliyeva</u>	9:50-10:10 OS6-3 Comparisons of Static and Dynamic Aerodynamic Studies of Fineness-Ratio One Cylinders <u>F. Miller, C. P. Brticer</u>	10:10-10:30 OS6-4 The Differences of Aerodynamic Forces Between The Static Javelin and The Vibrating Javelin <u>R. Ishai, K. Seo, H. Okuzumi, Y. Konishi, S. Obayashi, S. Ito, M. Hiratsuka</u>	9:35-9:50 OS12-17 A Novel Method in Predicting Heat Transfer Coefficient and Pressure Drop in Pillow-Plate Heat Exchangers <u>A. Sabourishirazi, M. Ghodrati, J.-L. Liow</u>	9:40-10:00 OS7-6 Shock Reflection from an Axial Cylinder in Axisymmetric Flow <u>B. Shoesmith, E. Timofeev, H. Ogawa</u>	9:40-10:00 GS1-12 Numerical Investigation of Droplet Collision Using the Lattice-Boltzmann Model <u>J. Restrepo-Cano, F. E. Hernández-Pérez, H. G. Im</u>	9:36-9:54 OS2-18 <i>Invited</i> Neural Network Approach to Detailed Reaction Model Optimization, Uncertainty Minimization, and Model Reduction <u>Y. Zhang, K. Dong, L. A. Vandewalle, R. Xu, G. P. Smith, H. Wang</u>			
10:10-10:30	OS15-4 Study of Drag Reduction Effect of Polymer Solution based on Measurement of Velocity and Wall Shear Stress <u>Y. Wang, Y. Yamamoto, Y. Tsuji</u>	10:12-10:30 OS2-20 <i>Invited</i> Theory and Analysis of Linear and Nonlinear Autoencoders for Stiff Chemical Systems <u>V. Vijayarangan, H. A. Uvanakara, H. G. Im</u>	10:10-10:30 OS2-19 <i>Invited</i> Artificial Intelligence (AI) Based Fuel Design <u>S. Mani Sarathy, N. Kuzhgaliyeva</u>	10:12-10:30 OS2-20 <i>Invited</i> Theory and Analysis of Linear and Nonlinear Autoencoders for Stiff Chemical Systems <u>V. Vijayarangan, H. A. Uvanakara, H. G. Im</u>		10:05-10:20 OS7-7 Positivity-Preserving Entropy-Based Adaptive Filtering for Discontinuous Spectral Element Methods <u>F. D. Witherden</u>	10:05-10:20 OS12-18 Simulations of Natural Convection with Heated Moving Sphere by CFD <u>M.-Z. Li, J. Lewis, H.-C. Chang, W.-H. Wang</u>	*GS1-11 Cancelled	9:54-10:12 OS2-19 <i>Invited</i> Artificial Intelligence (AI) Based Fuel Design <u>S. Mani Sarathy, N. Kuzhgaliyeva</u>	10:12-10:30 OS2-20 <i>Invited</i> Theory and Analysis of Linear and Nonlinear Autoencoders for Stiff Chemical Systems <u>V. Vijayarangan, H. A. Uvanakara, H. G. Im</u>		
10:30	BREAK											10:30
10:40	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA	CON-HAGI	10:40
	<p><b>OS15: Turbulence: from Fundamentals to Applications</b></p> <p>Turbulent Shear Flow Chair: Y. Tsuji</p>	<p><b>OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Machine Learning Chair: H. G. Im</p>	<p><b>OS8: Advanced Physical Stimuli and Biological Responses</b></p> <p>Chair: C.-H. D. Tsai</p>	<p><b>OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition</b></p> <p>Reactive Flow Using Metallic Fuel in Hybrid Rockets Chair: Y. Saito</p>	<p><b>OS11: Microfluidics and Microphysiological Modeling</b></p> <p>Chairs: K. Funamoto &amp; E. Corvera Poiré</p>	<p><b>OS12: Complex Thermofluid System</b></p> <p>General I Chair: C.-G. Li</p>	<p><b>OS7: Advances in Simulation Techniques for the Computational Aerosciences</b></p> <p>Chair: F. Witherden</p>	<p><b>OS17: Supercritical Fluid</b></p> <p>Chair: Y. Kanda</p>	<p><b>OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics</b></p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>	
10:40-11:20	OS15-5 <i>Invited</i> Fluctuations and the Law-of-the-Wall in Turbulent Flows <u>K. R. Sreenivasan</u>	10:40-10:58 OS2-21 <i>Invited</i> Advancing Flame Surface Density Modelling with Machine Learning <u>J. Z. Ho, M. Talei, W. T. Chung, D.J.E. Brouzet, P. Sharma, B. Akoush, M. Ihme</u>	10:40-11:10 OS8-14 <i>Invited</i> The Effect of Low Temperature Plasma Treatment on Rat Adipose-Derived Stem Cells <u>K.-J. Xie, C.-K. Su, C.-H. Lin, Y. H. Liao</u>	10:40-11:10 OS4-3 Experimental Study on Magnesium Wire Combustion in Water-Vapor Flow <u>M. Akiyama, H. Koizumi, K. Komurasaki</u>	10:40-11:10 OS11-1 <i>Invited</i> 1D Elastic Model of the Hepatic Blood Circulation <u>A. M. Torres Rojas, S. Lorente</u>	10:40-11:00 OS12-20 Airfoil Optimization by Adjoint Operator <u>S.-Y. Lin, J.-H. Luo, C.-C. Liu, M.-Y. Lin</u>	10:40-11:00 OS7-8 High-order Nonlinear Limiter for the Discontinuous Galerkin Method on Unstructured Meshes <u>Y. Liu, J. Zhu, Z. Wang, L. Tian, N. Zhao</u>	10:40-11:20 OS17-1 <i>Invited</i> Fundamentals and Applications in Transcritical CO <sub>2</sub> Thermodynamical Cycles <u>Y. Nie, X.-R. Zhang</u>	10:40-10:58 OS2-21 <i>Invited</i> Advancing Flame Surface Density Modelling with Machine Learning <u>J. Z. Ho, M. Talei, W. T. Chung, D.J.E. Brouzet, P. Sharma, B. Akoush, M. Ihme</u>	<p><b>OS21-25 - OS21-48</b> 10:40-12:10 <i>Poster Presentation</i></p>	<p><b>CRF-27 to 52 (except CRF-31 to 34 and CRF-46)</b></p> <p>10:40-12:10 <i>Short Oral Presentation</i></p>	

11:20-11:40 OS15-6 Convection Velocity Measurement in High Reynolds Number Pipe Flow <i>N. Furuichi, M. Ono, Y. Tsuji</i>	10:58-11:16 OS2-22 <i>Invited</i> Global Multiscale Sampling (GMS) Method Empowering Deep Neural Networks To Solve High-dimensional Stiff ODEs In Combustion Simulation <i>Z.-Q. J. Xu, J. Yao, Y. Yi, T. Zhang</i>	11:10-11:40 OS8-15 <i>Invited</i> Observation of Laser-Induced Optical Breakdown and Its Application in Biomedicine <i>S. Liu, K. Iwasawa, A. Nakayama, T. Nakajima, T. Sato</i>	11:10-11:40 OS4-4 Study on the Effect of MG-AL Powder on Combustion Completeness of Boron Powder in Solid Fuels for Hybrid Rockets <i>H. Maeda, K. Takahashi</i>	11:10-11:25 OS11-2 Simulation Of Sea Urchin Sperm Rheotaxis <i>R. Takagi, T. Omori, T. Ishikawa</i>	11:00-11:15 OS12-21 Permeability Field Prediction Using A Machine Learning Algorithm <i>A. Singh, C.-Y. Chen</i>	11:00-11:20 OS7-9 Very-high-order BVD Schemes Using $\beta$ -variable THINC Method <i>H. Wakimura, T. Aoki, F. Xiao</i>	11:20-11:40 OS17-2 Heat and Mass Transfer of Aggregate Contaminants in Porous Media Structures of a Soil Sample under Supercritical CO <sub>2</sub> Injection <i>K. Ragui, L. Chen, Y. Kanda, A. Komiya</i>	10:58-11:16 OS2-22 <i>Invited</i> Global Multiscale Sampling (GMS) Method Empowering Deep Neural Networks To Solve High-dimensional Stiff ODEs In Combustion Simulation <i>Z.-Q. J. Xu, J. Yao, Y. Yi, T. Zhang</i>		
11:40-12:00 OS15-7 Experiments on Structures of Secondary Instability of Streaks in Wall-Bounded Turbulent Shear Flows <i>I. Watanabe, K. Matsui, M. Shimizu, K. Morita, K. Kato, M. Matsubara</i>	11:16-11:34 OS2-23 Artificial Intelligent Temperature Prediction of a Porous Radiant Burner System Based on Deep Learning Analyses of Thermal Infrared Images Calibrated by Thermocouples <i>H. Y. Hsieh, S. Shy, V. T. Mai, P.-C. Tung</i>	11:40-12:00 Award Ceremony & Closing <i>T. Sato &amp; Y.-C. Cheng</i>	11:40-12:10 OS4-5 Enhancing Hypergolic Reactivity: Metal Hydride-Fueled Fuel Grain with Solid Oxidant Doping <i>C. C. Chang, S.-S. Wei, Z. P. Tan, Y. X. Chang, J.-S. Wu</i>	11:25-11:40 OS11-3 Effective Viscosity Estimation Using Resultant Wave of Wall Shear Stress Distribution in Plane Poiseuille Suspension Flow <i>M. Kawaguchi, T. Fukui, K. Funamoto</i>	11:15-11:30 OS12-22 The Analysis of Thermal Flow Field in the Anode Cell <i>C.-J. Weng, C.-C. Ho, S.-Y. Hsu, C.-H. Tsai</i>	11:20-11:40 OS7-10 Simulation Framework for Wake-Induced Aeroelastic Phenomena <i>K. Otsuka, T. Yamazaki, Y. Abe, T. Haga</i>	11:40-12:00 OS17-3 Numerical Study of Rayleigh-Bénard-Type Convection of CO <sub>2</sub> Fluid in Porous Media under Supercritical Pressures <i>Y. Feng, L. Chen</i>	11:16-11:34 OS2-23 Artificial Intelligent Temperature Prediction of a Porous Radiant Burner System Based on Deep Learning Analyses of Thermal Infrared Images Calibrated by Thermocouples <i>H. Y. Hsieh, S. Shy, V. T. Mai, P.-C. Tung</i>		
	11:34-11:52 OS2-24 Artificial Intelligence Technology to Control Combustion Stability <i>S. Yang, J. Huang</i>			11:40-11:55 OS11-4 Numerical Simulation of Swimming Microorganisms in a Maxwellian Fluid <i>K. Koitabashi, T. Omori, T. Ishikawa</i>	11:30-11:45 OS12-23 Energy Generation and Flow Field of a Finite Length Oscillating Cylinder in a Freestream <i>H.-W. Huang, J.-R. Lin, K.-B. Lua</i>	11:40-12:00 OS7-11 Multiple Flow Fields Gathering in a Reduced Order Model <i>Y. Nakamura, S. Sato, N. Ohmishi</i>		11:34-11:52 OS2-24 Artificial Intelligence Technology to Control Combustion Stability <i>S. Yang, J. Huang</i>		
	11:52-12:10 OS2-25 Stiffness Suppression in Generating a Simplified Reaction Model for Methane using Genetic Algorithms <i>K. Hirose, Y. Morii, K. Shimoyama, H. Nakamura</i>			11:55-12:10 OS11-5 Twisted Fiber Microfluidics: A Cutting-Edge Approach to 3D Spiral Devices <i>S. Kato, D. W. Carlson, A. Q. Shen, Y. Guo</i>		11:45-12:00 OS12-24 The Response of Ion Current in Lifted Non-Premixed Jet Flames under DC Electric Field <i>Y.-R. Chien, Y.-H. Liao</i>		11:52-12:10 OS2-25 Stiffness Suppression in Generating a Simplified Reaction Model for Methane using Genetic Algorithms <i>K. Hirose, Y. Morii, K. Shimoyama, H. Nakamura</i>		

**12:10- BREAK**  
  
(Luncheon Seminar)  
**12:25-12:35**  
Exhibitor Presentation I  
  
**12:35-12:45**  
Exhibitor Presentation II  
  
**12:45-12:55**  
Exhibitor Presentation III  
  
**CRF-27 to 52**  
(except **CRF-31 to 34** and **CRF-46**)  
**12:55-14:40**  
Poster Presentation

BREAK

13:10	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA	CON-HAGI	13:10
	<b>OS15: Turbulence: from Fundamentals to Applications</b>  LES <i>Chair: T. Ishihara</i>	<b>OS20 Liaison Office Session</b>	<b>OS3: The First International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation</b>  <i>Chair: K. Endo</i>	<b>OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition</b>  Internal Ballistic Flow in Hybrid Rockets <i>Chair: L. Kamps</i>	<b>OS11 Microfluidics and Microphysiological Modeling</b>  <i>Chairs: T. Fukui &amp; T. Omori</i>	<b>OS12 Complex Thermofluid System</b>  Fluid Flow II <i>Chair: K. B. Lua</i>	<b>OS7: Advances in Simulation Techniques for the Computational Aerosciences</b>  <i>Chair: K. Otsuka</i>	<b>OS17: Supercritical Fluid</b>  <i>Chair: Y. Hu</i>		<b>OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics</b>	<b>OS22: IFS Collaborative Research Forum (AFI-2023)</b>	
	13:20-13:40 OS15-8 Investigating a Non-local Data-Driven Approach for Wall Modeling in Large Eddy Simulation <i>G. Tabe Jamaat, Y. Hattori</i>	13:10-13:25 <i>Invited Talk</i> Universities of International Research Excellence for Students (going abroad) <i>M. Yamaguchi</i>	13:10-13:40 OS3-1 <i>Invited</i> The Digital Transformation in Health Care and Education Setting <i>G. Hong, N. Yoda, H. Egusa, K. Osaka</i>	13:10-13:40 OS4-6 Enhancing Performance of Hybrid Rocket Propulsion System Through Nitrox: A Comparative Study <i>J.-C. Hsu, H.-Y. Tso, S.-S. Wei, J.-S. Wu</i>	13:10-13:25 OS11-6 A Microfluidic Device to Mimic Hypoxic Tumor Angiogenesis toward Breast Cancer Spheroid <i>Y. Iijima, G. Hayase, K. Funamoto, D. Yoshino</i>	13:10-13:30 OS12-25 Digital Defocusing Micro-Particle Streak Velocimetry for Measuring Three-Dimensional Flow Velocity in Single-Spine Microchannel <i>Z.-L. Lin, W.-H. Tien</i>	13:10-13:30 OS7-12 Optimal Flapping Manoeuvres of 2D Flexible Wings <i>Y. Wang, J. Li</i>	13:10-13:30 OS17-4 Numerical Analysis of CO <sub>2</sub> Flows across Critical Region in Porous Media on a Microchip <i>M. Chen, L. Chen, Y. Kanda, A. Komiya</i>		<b>OS21-49 - OS21-72</b> 12:25-13:25 (preparation time)  13:25-13:55 <i>Short Oral Presentation</i>	<b>CRF-27 to 52</b> (except <b>CRF-31 to 34</b> and <b>CRF-46</b> ) <b>12:55-14:40</b> <i>Poster Presentation</i>	
	13:40-14:00 OS15-9 Machine-Learning-Based Sub-Grid Scale Modeling for Coarse-Grid Large-Eddy Simulation <i>S. Maejima, S. Kawai</i>	13:25-13:35 Overseas Support in IFS <i>T. Tokumasu</i>	13:40-14:10 OS3-2 <i>Invited</i> Exploring the Boundary Layer Dynamics on Rotating Substrates for Enhanced Wet Cleaning Efficiency <i>N. Belmiloud, M. Kihara, M. Sato, Y. Okuno</i>	13:40-14:10 OS4-7 Progress on HTTP-3A Hybrid Rocket Propulsion Technology Development <i>S.-S. Wei, Z.-R. Chen, A. Lai, T. H. Chou, Y. Lu, S.-T. Kao, A. Wang, M.-C. Lee, C.-H. Huang, Y.-T. Chang, Y.-K. Wang, H.-Y. Tso, C.-C. Chang, J.-C. Hsu, J. S. Wu</i>	13:25-13:40 OS11-7 Usefulness of the Human Blood-Brain Barrier on a Chip for Brain-Targeting Drug Development <i>M. Tachikawa, M. Hidaka, Y. Sakamoto, K. Funamoto, M. Inagaki</i>	13:30-13:50 OS12-26 Performance Evaluation of Pin Fins with Wings <i>A. K. Patil, V. Choudhary, M. Kumar</i>	13:30-13:50 OS7-13 Structural Sizing of a Wing-Fuselage Model Using One-way Coupling Analysis <i>Rashmikant, T. Yamazaki, Y. Abe</i>	13:30-13:50 OS17-5 System Analysis and Preliminary Results of Chromium Extraction from Soil Samples by Supercritical CO <sub>2</sub> <i>W. Wu, L. Chen, D. Mei</i>		13:55-14:40 & 14:50-15:35 <i>Poster Presentation</i>		
	14:00-14:20 OS15-10 Wall-modeled LES of Transonic Flow at High Reynolds Number Around a Pitching Airfoil <i>H. Sashida, T. Aoyama, S. Kawai, S. Kawai</i>	13:35-13:53 Students' Going Abroad <i>W. Taira, K. Kanayama</i>	14:10-14:40 OS3-3 <i>Invited</i> Silicon Technologies for Quantum Computing <i>T. Mori</i>	13:40-13:55 OS11-8 Spatial Gradient of Fluid Shear Stress Prolongs Nuclear Translocation of Nuclear Factor-kappa B <i>M. Sasaki, K. Funamoto, D. Yoshino</i>	13:50-14:05 OS12-27 The Motion of Ferrofluid Drop Under Three-Dimensional Dynamic Magnetic Field <i>K.-Y. Huang, Y.-Y. Peng, C.-Y. Chen</i>	13:50-14:10 OS7-14 Fully-partitioned Method for Static Aeroelasticity and Deep Dynamical Modeling for Unsteady Fluid-structure Interaction <i>T. Yamazaki, Y. Abe, F. D. Witherden, T. Okabe</i>	13:50-14:10 OS17-6 Summary and Analysis of Complex Phase-Transitions in Critical Fluid by Phase Field Method <i>H. Liu, L. Chen</i>					

14:20-14:40 OS15-11 Studies on Unsteady turbulence characteristics Associated with the Effect of Vortex Generators on Jet in Cross Flow Using a High Order LES Turbulence Model <i>D. Biswas, T. Jimbo</i>			14:10-14:40 OS4-8 Reconstruction Technique for Hybrid Rocket Fuel Regression towards Overcoming Multiple Solutions <i>A. T. Padilla Torres, Y. Saito, T. Kuwahara</i>	13:55-14:10 OS11-9 A Numerical Study on the Effects of Mechanical Stimulation and Endothelium Recovery Rate on Vascular Remodeling after Percutaneous Coronary Intervention <i>B. Guo, S. Chen, Y. Zhang, Y. Yang, A. Qiao</i>  14:10-14:25 OS11-10 Adhesion Modulates Cell Migration and Endothelial Cell Dynamics <i>R. D. M. Travasso, M. Gouveia, M. Palmeira, Á. Calhau, J. Curty, S. Cunha, J. Carvalho, M. Moreira-Soares, J. Rafael Bordin, C. S. Lopes, F.A. Carvalho, A. Hernández-Machado, K. Kinoshita, N. C. Santos</i>  14:25-14:40 OS11-11 Experimental Study on Electrohydrodynamic Instability of Three Immiscible Liquids Flowing in a Microchannel <i>E. N. Soysal, K. Uguz</i>	14:05-14:20 OS12-28 Influence of Different Magnetic Field Effects on Bubble Rotation on Electrode Surface <i>Y.-J. Chen, Y.-H. Li, C.-Y. Chen</i>  14:20-14:35 OS12-29 Two-Phase Flow Separator for High Viscosity Liquid <i>B.-C. Hsueh, Y.-C. Chen, Y.-Y. Chiang</i>	14:10-14:30 OS7-15 Optimal Design of Composite Plate Wings for Aeroelastic Characteristics based on Complex Modulus Approach <i>M. Kameyama, K. Kawakami</i>	14:10-14:30 OS17-7 Evaluation of Organic Solvent Diffusion in Pressurized CO <sub>2</sub> Gas Utilizing Dynamic Pendant Drop Volume Analysis <i>R. Mukai, Y. Kanda, Y. Hu, L. Chen, A. Komiya</i>			
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BREAK

EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA	CON-HAGI
<b>OS15: Turbulence: from Fundamentals to Applications</b> Turbulent Shear Flow <i>Chair: T. Ishihara</i>	<b>OS24: JSPS Core to Core program workshop &amp; OS2: Combustion &amp; OS23: Lyon</b>	<b>OS3: The First International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation</b> <i>Chair: K. Endo</i>	<b>OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition</b> Hybrid Rocket Performance Enhancement Through Innovative Flow Techniques <i>Chair: L. Kamps</i>	<b>OS10: Two-Phase Thermal Control for Spacecraft</b> <i>Chair: H. Nagai</i>	<b>OS12: Complex Thermofluid System</b> Numerical and Experimental Fluid Dynamics II <i>Chair: Y.-H. Liu</i>	<b>OS7: Advances in Simulation Techniques for the Computational Aerosciences</b> <i>Chair: Y. Abe</i>	<b>OS17: Supercritical Fluid</b> <i>Chair: K. Ragni</i>		<b>OS21: The 19th International Students / Young Birds Seminar on Multi-scale Flow Dynamics</b>	<b>OS22: IFS Collaborative Research Forum (AFI-2023)</b>

14:50-15:10 OS15-12 On the Identification of the Viscous Superlayer in Free-shear Flows <i>Y. Xie, W. Yin, Y. Zhou</i>	14:50-15:00 OS24-1 Introction of core to core program <i>T. Tokumasu</i>  15:00-15:15 OS24-2 / OS23-1 Invited MATEIS: Material Science Lab <i>N. Mary, E. Maire, L. Chazeau, B. Normand</i>  15:15-15:30 OS24-3 Invited Collaborative research on sustainable energy at UW <i>A. Dichiaro</i>  15:30-15:45 OS24-4 Invited Fundamental developments in ammonia combustion for practical applications <i>M. Sarathy</i>	14:50-15:10 OS3-4 Significant Device Performance Enhancement of 1L MoS <sub>2</sub> nMOSFETs through the vdW Interface Formation of Sb <sub>2</sub> Te <sub>3</sub> /MoS <sub>2</sub> <i>W. H. Chang, S. Hatayama, Y. Saito, N. Okada, T. Endo, Y. Miyata, T. Irisawa</i>  15:10-15:30 OS3-5 Formation of <i>In-situ</i> Al Doped SiC Thin Film. <i>Y. Tsuchizu, K. Ono, K. Uehara, S. Yasuhara, W. Takeuchi</i>  15:30-15:50 OS3-6 Suppression of Charges in Al <sub>2</sub> O <sub>3</sub> Gate Dielectric and ammonia combustion for Improvement of MOSFET Performance by Plasma Nitridation <i>K. Manabe</i>	14:50-15:20 OS4-9 Experimental Investigation of Regenerative Cooling in Hybrid Rocket Engines for the Nozzle Erosion Suppression <i>G. Gallo, H. Kojima, L. Kamps, H. Nagata</i>  15:20-15:50 OS4-10 Fuel Regression Characteristics of Axial-Injection End-Burning Hybrid Rocket with Liquid Oxygen <i>K. Ri, S. Suzuki, M. Fukada, H. Nagata</i>  15:50-16:20 OS4-11 Development of a Throttling Valve for Blow-down Hybrid Rocket Engine <i>S.-C. Wang, Z.-R. Chen, S.-S. Wei, J.-S. Wu</i>	14:50-15:30 OS10-1 Invited Current Research and Future Prospects of Oscillating Heat Pipes <i>M. Ando, K. Tanaka, A. Okamoto</i>  15:30-15:50 OS10-2 Numerical Analysis on the Heat Transport Performance of Oscillating Heat Pipe with Different Heating Section Arrangement <i>A. Kawaguchi, T. Yokouchi, M. Ando, T. Ikami, H. Nagai</i>  15:50-16:10 OS10-3 Development of Dielectrically-Enhanced Microchannel Evaporator with Diverging Electric Field <i>M. Nishikawara, N. J. O'Connor, J. S. Yagoobi</i>	14:50-15:10 OS12-30 Scaling Laws and Investigations of the Laser Direct Energy Deposition by CFD model <i>C.-C. Tseng, Y.-C. Wang, M.-I. Ho</i>  15:10-15:30 OS12-31 Development of Raw-Image Ray-Bundling for Focused-Plenoptic 3D-PTV <i>Y. S. Chen, C.-C. Chen, Z. P. Tan</i>  15:30-15:45 OS12-32 Unsteady flow and Heat Transfer Past a Wall-mounted Prism at Low Reynold Number <i>W.-H. Shih, C.-G. Li</i>	14:50-15:10 OS7-16 Influence of Ground Clearance on Aerodynamic Characteristics of Aero-Train <i>J. He, C. Lai, J. Song, S. Obayashi</i>  15:10-15:30 OS7-17 Investigation on Vortex Structure and Flow Characteristics of Open-wheel Racing Car <i>Z. Zhen, C. Lai, S. Feng</i>  15:30-15:50 OS7-18 Advances in High-Order Weighted Essentially Non-Oscillatory Schemes with Arbitrary Linear Weights for Compressible Flow Problems <i>N. Zhao, J. Zhu, L. Tian, Z. Wang</i>	14:50-15:10 OS17-8 A Comparative Kinetic Study of Ethanol Oxidation in Gas Phase and Supercritical Water <i>G. Li, C. Yang</i>  15:10-15:30 OS17-9 Topology Optimization of TPMS-based Porous Structure in Fluid Heat Dissipation <i>T. Si, Z. Cheng, Q. Wang</i>  15:30-15:50 OS17-10 Pore-scale Simulation of Two-phase Displacement and Mass Transfer in Porous Media <i>Y. Hu, Y. Kanda, R. Mukai, J. Su, A. Komiya</i>		<b>OS21-49 - OS21-72</b> 13:55-14:40 & 14:50-15:35 <i>Poster Presentation</i>	Poster
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<p>15:50-16:10 OS15-15 Turbulence Structure in the Atmospheric Surface Layer over Urban Areas: Empirical Model Decomposition of Hot-Wire Anemometry Data <i>C.-H. Liu, F. Li, R. Wang, G. Chen, Z. Mo</i></p>	<p>15:45-16:00 OS24-5 <i>Invited</i> Recent Activities in Emerging Semiconductor Technologies and Synthetic Ammonia for Hydrogen Energy System <i>Y. Li, C. Lan</i></p> <p>16:00-16:20 OS24-6 / OS2-56 Ammonia Combustion with Biomass Gaseous Fuels and Hydrogen: from Fundamental Properties towards Engine Use <i>P. Brequigny, R. Rabello de Castro, A. Soule, F. Halter, G. Dayma, C. Mounaim-Rousselle</i></p>				<p>15:45-16:00 OS12-33 An Experimental Study of Tandem Flapping Wings: Comparative Analysis of Unsteady Aerodynamics in Damselfly and Dragonfly Hovering <i>Y.-H. Wang, C.-H. Chen, Y.-H. Wu, K. B. Lua</i></p>	<p>15:50-16:10 OS7-19 CFD Prediction Accuracy Study Based on Physical Wind Tunnel Model <i>M. Duan, J. Feng, S. Huang, Y. Chen, Q. Wang, L. Xu</i></p>				
BREAK										
16:20	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	CON-SHIRAKASHI 2	CON-SAKURA
16:30	<p><b>OS15: Turbulence: from Fundamentals to Applications</b> Noise &amp; Fundamental Aspects <i>Chair: Y. Hattori</i></p>	<p><b>OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b> <i>Chair: Ö. L. Gülder</i></p>	<p><b>OS22: Fluids Science Research Award Lecturers (AFI-2023)</b> <i>Chair: K. Maruta</i></p>	<p><b>OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition</b> Implementation of Complex Flow in Hybrid Rocket Systems <i>Chair: Y. Saito</i></p>	<p><b>OS10: Two-Phase Thermal Control for Spacecraft</b> <i>Chair: K. Odagiri</i></p>	<p><b>OS12: Complex Thermofluid System</b> General II <i>Chair: C.-H. D. Tsai</i></p>	<p><b>GS: General Session</b> Electromagnetics flow <i>Chair: S. Takeda</i></p>	<p><b>OS2: The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b> <b>&lt;Satellite&gt;</b></p>		<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>
<p>16:30-16:50 OS15-16 Examination of the Acoustic Spectrum in the Generalized Acoustic Analogy for Heated Flows - Temperature Coupling Effects vs Direct Enthalpy Flux Generated Noise <i>S. Stirrat, M. Z. A. Koshuriyan, A. Sescu</i></p> <p>16:50-17:10 OS15-17 Evaluation of Noise Generated from Turbulent Boundary Layer on a Flat Plate Using Direct Numerical Simulation <i>N. Hirao, M. Hirota, Y. Hattori</i></p> <p>17:10-17:30 OS15-18 Combination of Active and Passive Techniques Applied on NACA0015 for Aerospace Applications Regarding Anti-Icing Issues <i>H. K. Pazarlıoğlu, K. Arslan, A. Ü. Tepe</i></p> <p>17:30-17:50 OS15-19 Taylor's Hypothesis in High-order Turbulence Correlations <i>M. Z. A. Koshuriyan, S. Stirrat, A. Sescu</i></p>	<p>16:30-16:48 OS2-26 Combustion Analysis of Novel Miniature Swiss-roll Combustors with Non-premixed CH4/air Flames <i>C.-C. Lien, H.-Y. Shih</i></p> <p>16:48-17:06 OS2-27 Experimental Study on Weak Intensity Turbulent Combustion Generated by Grids <i>W. Kong, Z. Yuan, R. Zhao</i></p> <p>17:06-17:24 OS2-28 The Effect of Lewis Number on the Flame Behavior in a Sudden Expansion Channel <i>J.-H. Huang, S.-Y. Hsu</i></p> <p>17:24-17:42 OS2-29 Auto-ignition of Pressurized Syngas Leakage <i>G. Lyu, X. Gou</i></p> <p>17:42-18:00 OS2-30 Numerical Investigation on the Concurrent-flow Flame Spread over a Thin Solid-fuel in Narrow Channels <i>K. Hsueh, Y.-X. Zhang, S.-Y. Hsu</i></p>	<p>16:30-17:15 FRA-1 Numerical Study of Combustion Phenomena in Compressible Flow <i>A. Matsuo</i></p>	<p>16:30-17:00 OS4-12 Feasibility Study of A-SOFT Hybrid Rocket Thrust-O/F Control System for Ground Test <i>T. Siricharoensathaporn, K. Matsui, K. Kitagawa</i></p>	<p>16:30-16:50 OS10-4 Visualization Study of Hysteresis Phenomena in a Multi-evaporator Loop Heat Pipe <i>Y. Chang, N. Watanabe, H. Nagai, H. Nagano</i></p> <p>16:50-17:10 OS10-5 Experimental Testing and Numerical Investigation of an Anti-Gravity LHP <i>S. Somers-Neal, T. Maeda, A. Mitani, R. Kobayashi, H. Nagano</i></p> <p>17:10-17:30 OS10-6 Heat Transfer Limit Evaluation of Cryogenic Loop Heat Pipe <i>T. Yokouchi, X. Chang, K. Odagiri, H. Ogawa, H. Nagano, H. Nagai</i></p> <p>17:30-17:50 OS10-7 Visualization of Low Mass Flux Nitrogen Condensate Flow Inside a Cryogenic Loop Heat Pipe. <i>A. Gomi, K. Odagiri, Y. Sakamoto, S. Okazaki, H. Nagai, H. Ogawa</i></p>	<p>16:30-16:50 OS12-34 3-D Acoustic Streaming Flow Patterns Induced by Parallel Longitudinal Spines in Microchannels <i>O. C. Tarigan, C.-C. Li, W.-H. Tien</i></p> <p>16:50-17:05 OS12-35 Enhancing the Performance of Distributed Electric Propulsion <i>P. W. Chiang, K. B. Lua</i></p> <p>17:05-17:20 OS12-36 Flow Fields of Multiple Finite Length Oscillating Cylinders In Side-By-Side Configuration Normal To The Free Stream <i>K.-X. Shih, K.-B. Lua</i></p> <p>17:20-17:35 OS12-37 Numerical Simulation of Aerodynamics and Aeroacoustics in True Wireless Stereo Headphone Noise Isolating Designs <i>T.-Y. Cheng, Y.-C. Chen, W.-H. Wang</i></p>	<p>16:30-16:50 GS1-13 Analysis of Exploding Bridge Foil and Flyer Launch in Slapper Detonator <i>K. Kim</i></p> <p>16:50-17:10 GS1-14 Two-dimensional Particle-in-cell Simulation of Plasma Flow in Diverging Magnetic Nozzle <i>J. Lee, M. Takahashi</i></p> <p>17:10-17:30 GS1-15 Effect of DC Magnetic Field Strength on Volumetric Entropy Generation in Sudden Expansion Tube with Dimpled Fin <i>E. Gürsoy, H. K. Pazarlıoğlu, M. Gürdal, E. Gredik, K. Arslan</i></p> <p>17:30-17:50 GS1-16 Evaluating the Effect of Hot Electrons on the Plasma Dynamics in a Magnetic Nozzle using a Multifluid-FDTD Model <i>S. Shrivastava, N. Ohnishi, M. Takahashi</i></p>	<p>16:30-16:48 OS2-26 Combustion Analysis of Novel Miniature Swiss-roll Combustors with Non-premixed CH4/air Flames <i>C.-C. Lien, H.-Y. Shih</i></p> <p>16:48-17:06 OS2-27 Experimental Study on Weak Intensity Turbulent Combustion Generated by Grids <i>W. Kong, Z. Yuan, R. Zhao</i></p> <p>17:06-17:24 OS2-28 The Effect of Lewis Number on the Flame Behavior in a Sudden Expansion Channel <i>J.-H. Huang, S.-Y. Hsu</i></p> <p>17:24-17:42 OS2-29 Auto-ignition of Pressurized Syngas Leakage <i>G. Lyu, X. Gou</i></p> <p>17:42-18:00 OS2-30 Numerical Investigation on the Concurrent-flow Flame Spread over a Thin Solid-fuel in Narrow Channels <i>K. Hsueh, Y.-X. Zhang, S.-Y. Hsu</i></p>			<p>Poster</p>

					17:35-17:55 OS12-38 Investigating The Application Of Tesla Valve Annular Structure Ethanol Steam Reforming Combined With In Water Gas Shift Reaction <i>M.-H. Zhong, C.-G. Li, W.-H. Chen</i>					
18:00	19:00- Banquet @ CON-SAKURA, Conference Bldg.									18:00
20:30										20:30

9:00	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	9:00
	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Chair: <i>Y. Morii</i></p>	<p><b>OS16Vortex Motion</b></p> <p>Curved vortices &amp; Sound</p> <p>Chair: <i>M. Hirota</i></p>	<p><b>OS23IFS Lyon Center Collaborative Research Forum</b></p> <p>Chair: <i>J.-Y. Cavaille</i></p>	<p><b>OS13Flow Realization, Measurement and Visualization</b></p> <p>Chair: <i>T. Yamagata</i></p>	<p><b>OS5Advanced Applications of Multi-functional Fluids</b></p> <p>Advanced multiphase flow 1</p> <p>Chair: <i>T. Kishimoto</i></p>	<p><b>GS: General Session</b></p> <p>Space application I</p> <p>Chair: <i>Y. Saito</i></p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>	
9:00-9:18 OS2-31	<p>Repetitive Autoignition and Extinction Instability of Non-premixed N-dodecane Spray Cool Flames Using Digital Inline Holography</p> <p><i>W. Xu, Z. Wang, B. Mei, M. A. Erimin, L. Deike, Y. Ju</i></p>	<p>Repetitive Autoignition and Extinction Instability of Non-premixed N-dodecane Spray Cool Flames Using Digital Inline Holography</p> <p><i>W. Xu, Z. Wang, B. Mei, M. A. Erimin, L. Deike, Y. Ju</i></p>	<p>9:10-9:30 OS16-1</p> <p>Streamwise Pressure Gradient Effect on Görtler Vortices: a Numerical Study in the Compressible Regime</p> <p><i>O. Es-Sahli, A. Sescu, Z. Koshuriyan, Y. Hattori</i></p>	<p>9:40-10:00 OS23-2</p> <p>Nondestructive Evaluation of Water Uptake in Epoxy-Ionic Liquid Composite Polymer for Corrosion Protection by Coplanar Capacitor Sensor</p> <p><i>L. Ollivier-Lamarque, T. Uchimoto, N. Mary, S. Livi</i></p>	<p>9:00-9:15 OS13-1</p> <p>Unsupervised Flow Regime Analysis of 3x3 Rod Bundle Two-phase Flow and Calibration Experiment of Full Section</p> <p><i>W.-C. Tsai, S.-W. Chen, L.-H. Huang, P.-S. Ruan, M.-S. Lin</i></p>	<p>9:30-9:50 OS5-16</p> <p>Dynamic Assembly of Strong and Conductive Carbon Electrolyte Applications for the Enhancement of Transpiration Driven Electrokinetic Generators</p> <p><i>D. Edmondson, A. Dichiaro, H. Takana</i></p>	<p>9:00-9:20 GS1-17</p> <p>Particle-in-cell Simulation of the Cross-field Transport in a Plasma Thruster employing a Time-varying Magnetic Field</p> <p><i>H. Suzuki, M. Takahashi</i></p>	<p><b>CRF-53 to 68</b></p> <p><b>CRF-46</b></p> <p><b>CRF-31 to CRF-34</b></p> <p>9:30-10:30</p> <p>Short Oral Presentation</p>	
9:18-9:36 OS2-32	<p>Ignition of Premixed Cool Flame in a Counterflow</p> <p><i>Y. Wang, Y. Wang, Z. Chen</i></p>	<p>9:18-9:36 OS2-32</p> <p>Ignition of Premixed Cool Flame in a Counterflow</p> <p><i>Y. Wang, Y. Wang, Z. Chen</i></p>	<p>9:30-9:50 OS16-2</p> <p>Flow Visualization and Analysis of Internal Fluids using Different Helix Structures</p> <p><i>P.-Y. Su, G.-Y. Lu, F. Maqbool, W.-H. Wang, W.-H. Tien, Y.-Y. Chiang</i></p>	<p>10:00-10:20 OS23-3</p> <p>Effect of Flow Parameters on Ultrasonic Attenuation</p> <p><i>H. Nakamoto, K. Terada, P. Guy, T. Uchimoto</i></p>	<p>9:15-9:30 OS13-2</p> <p>Feasibility Study on Identifying Bubbly Flow Boundary in Narrow Rectangular Tube Using Probability Density Plots</p> <p><i>Y.-H. Liu, S.-W. Chen, H.-Y. Chen</i></p>	<p>9:50-10:10 OS5-2</p> <p>Fiber-Morphology-Dependence of Rotational Diffusion Constant of Cellulose Nanofiber Suspension by Brownian Dynamics Simulation</p> <p><i>Y. Ishimoto, R. Koinuma, H. Takana</i></p>	<p>9:20-9:40 GS1-18</p> <p>Fundamental Design of Directional Radiation Metamaterials for Asteroid Probe Radiator</p> <p><i>A. Sudo, R. Moriya, S. Tachikawa, A. Sakurai</i></p>		
9:36-9:54 OS2-33	<p>An Updated Simplified Reaction Rate Model to Consider Chemical Reaction in Preheat Zone</p> <p><i>A. Tsunoda, Y. Morii, K. Maruta</i></p>	<p>9:36-9:54 OS2-33</p> <p>An Updated Simplified Reaction Rate Model to Consider Chemical Reaction in Preheat Zone</p> <p><i>A. Tsunoda, Y. Morii, K. Maruta</i></p>	<p>9:50-10:10 OS16-3</p> <p>Numerical Study on Sound Generation Process of an Oboe Reeds with DNS</p> <p><i>Y. Nakahara, R. Sumita, R. Tabata, S. Iwagami, T. Nanri, T. Kobayashi, Y. Hattori, K. Takahashi</i></p>		<p>9:30-9:45 OS13-3</p> <p>Visualization of Temperature Distribution of Cavitation Collapse Bubbles in Automotive Transmission Oil</p> <p><i>R. Shiozawa, S. Funatani</i></p>	<p>10:10-10:30 OS5-3</p> <p>Experimental Investigation on the Flow State of Shear Thickening Fluid in a Circular Channel</p> <p><i>R. Zhang, Y. Mukuhira, S. Ishihara, T. Tian, Y. Arai, M. Uno, V. Sokolovskii, T. Tomai, T. Ito</i></p>	<p>9:40-10:00 GS1-19</p> <p>Compressibility Effects around Propeller on Propeller-Wing Aerodynamic Interaction for Mars Airplane</p> <p><i>Y. Furusawa, K. Kitamura, T. Ikami, M. Okawa, H. Nagai</i></p>		
9:54-10:12 OS2-34	<p>Experimental Investigation on Laminar Flame Propagation and Two Stage auto Ignition Phenomena of n-C<sub>2</sub>H<sub>4</sub>/air Premixture under High Temperature / Pressure Conditions</p> <p><i>T. Tateishi, R. Tanabe, M. Kawano, Y. Honda, T. Hara, M. Nakahara, A. Miyoshi, H. Terashima, D. Shimokuri</i></p>	<p>9:54-10:12 OS2-34</p> <p>Experimental Investigation on Laminar Flame Propagation and Two Stage auto Ignition Phenomena of n-C<sub>2</sub>H<sub>4</sub>/air Premixture under High Temperature / Pressure Conditions</p> <p><i>T. Tateishi, R. Tanabe, M. Kawano, Y. Honda, T. Hara, M. Nakahara, A. Miyoshi, H. Terashima, D. Shimokuri</i></p>	<p>10:10-10:30 OS16-4</p> <p>Numerical Study on Fundamental Process of a Thermoacoustic Engine</p> <p><i>Y. Tashima, T. Ohno, T. Nanri, T. Kobayashi, Y. Hattori, K. Takahashi</i></p>		<p>9:45-10:00 OS13-4</p> <p>Flow Visualization and Characterization of Capillary Waves using a Novel Optical Method</p> <p><i>U. V. Mukim, R. W. Time, A. H. Rabertjafimanantsoa</i></p>	<p>10:10-10:30 OS5-3</p> <p>Experimental Investigation on the Flow State of Shear Thickening Fluid in a Circular Channel</p> <p><i>R. Zhang, Y. Mukuhira, S. Ishihara, T. Tian, Y. Arai, M. Uno, V. Sokolovskii, T. Tomai, T. Ito</i></p>	<p>10:00-10:20 GS1-20</p> <p>Pulsed Jet Impingement On Regolith Simulants Under Lunar Conditions Using PIV</p> <p><i>S. Subramanian, A. Wilson, C. White, K. Kontis, D. Evans, J. Van den Eynde</i></p>		
10:12-10:30 OS2-35	<p>TOF-MS Measurement of Intermediate Species in Wall-stabilized Premixed Cool Flames</p> <p><i>M. Zhou, Y. Suzuki, M. Lee</i></p>	<p>10:12-10:30 OS2-35</p> <p>TOF-MS Measurement of Intermediate Species in Wall-stabilized Premixed Cool Flames</p> <p><i>M. Zhou, Y. Suzuki, M. Lee</i></p>			<p>10:00-10:15 OS13-5</p> <p>PIV Measurement of the Wake of Sphere with a Uniaxial Through-hole</p> <p><i>D. Kobayashi, S. Tsukamoto, T. Uchiyama, K. Takamura</i></p>				
						<p>10:15-10:30 OS13-6</p> <p>Particle Collection Characteristics of a Prismatic Two-stage Electrostatic Precipitator</p> <p><i>T. Haruki, S. Ando, T. Yagi, H. Amano, Y. Iwatani, K. Takamura, T. Uchiyama</i></p>			
BREAK									
10:40	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	10:40
	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>&lt;Satellite&gt;</p>	<p><b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b></p> <p>Chair: <i>Y. Suzuki</i></p>	<p><b>OS16Vortex Motion</b></p> <p>Instability</p> <p>Chair: <i>Y. Hattori</i></p>	<p><b>OS23IFS Lyon Center Collaborative Research Forum</b></p> <p>Chairs: <i>K. Funamoto &amp; G. Sebald</i></p>	<p><b>OS13Flow Realization, Measurement and Visualization</b></p> <p>Chair: <i>S. Funatani</i></p>	<p><b>OS5Advanced Applications of Multi-functional Fluids</b></p> <p>MHD energy conversion</p> <p>Chair: <i>N. Takeuchi</i></p>	<p><b>GS: General Session</b></p> <p>Space application II</p> <p>Chair: <i>T. Ikami</i></p>	<p><b>OS22: IFS Collaborative Research Forum (AFI-2023)</b></p>	
10:40-10:58 OS2-36	<p>Reactivity and Extinction of n-dodecane Non-premixed Cool Flame at High Pressure</p> <p><i>Z. Wang, A. Thawko, B. Mei, W. Xu, C. K. Law, Y. Ju</i></p>	<p>10:40-10:58 OS2-36</p> <p>Reactivity and Extinction of n-dodecane Non-premixed Cool Flame at High Pressure</p> <p><i>Z. Wang, A. Thawko, B. Mei, W. Xu, C. K. Law, Y. Ju</i></p>	<p>10:40-11:00 OS16-5</p> <p>Compressibility Effect on Kelvin-Helmholtz and Rayleigh-Taylor Instabilities</p> <p><i>Y. Fukumoto, R. Zou, K. Matsuura, N. Taniguchi</i></p>	<p>10:40-11:00 OS23-4</p> <p>Mass Transfer Enhancement and Control by using Ultrasound Induced Flow</p> <p><i>A. Kamiya, V. Botton, S. Miralles, R. Zhu</i></p>	<p>10:40-10:55 OS13-7</p> <p>Influence of the Edge Curvature Connecting Between the Cavity and Guide Wall on Cross-Flow Turbine</p> <p><i>Y. Kuroda, H. Tatsumi, T. Sakai, S. Iio, T. Kitahara, Y.-D. Choi, M. Inagaki</i></p>	<p>10:40-11:00 OS5-4</p> <p>Study on Streaky Structure in the Vicinity of Rotating Inner Cylinder in Co-axial MHD Energy Conversion Device</p> <p><i>T. Hasebe, T. Fujino, H. Takana, H. Kobayashi</i></p>	<p>10:40-11:00 GS1-21</p> <p>Numerical Simulation on Thermal Decomposition of a Hydrocarbon Fuel under Supercritical State using CFD with Reaction Model</p> <p><i>T. Isono, T. Miyaaura, Y. Daimon, T. Onodera, S. Tomioka</i></p>	<p><b>CRF-53 to 68</b></p> <p><b>CRF-46</b></p> <p><b>CRF-31 to CRF-34</b></p> <p>10:40-12:10</p> <p>Poster Presentation</p>	

10:58-11:16 OS2-37 Unburnt Reaction Progress Effects on Spherical Flame Dynamics under Elevated Temperature Conditions <i>K. Akita, P. Zhao, Y. Morii, K. Maruta</i>	10:58-11:16 OS2-37 Unburnt Reaction Progress Effects on Spherical Flame Dynamics under Elevated Temperature Conditions <i>K. Akita, P. Zhao, Y. Morii, K. Maruta</i>	11:00-11:20 OS16-6 Stability Boundary of Inviscid Nonmonotonic Shear Flow <i>M. Hirota, K. Deguchi</i>	11:00-11:20 OS23-5 Numerical Study on Electrical Drift and Diffusion of Ions in Polymer Strips <i>J. Courbon, H. Takana, J.-Y. Cavallé, G. Coativy, G. Diguét</i>	10:55-11:10 OS13-8 Relationship between Inlet Flow Conditions and Cross-flow Turbine Performance <i>K. Suzuno, M. Fujimori, K. Aiba, A. Yamaguchi, S. Iio</i>	11:00-11:20 OS5-5 Fundamental Characteristics of Rotating-Detonation-Driven Disk-Shaped MHD Generator Fueled by Hydrogen <i>R. Masuda, M. Matsumoto, A. Kawasaki, Y. Okumo</i>	11:00-11:20 GS1-22 Evaluation of Flight Performance of a Laser-blast Rider Driven by Repetitive Pulses <i>Y. Muto, M. Takahashi</i>
11:16-11:34 OS2-38 Secondary Injector Configurations Impact on Combustion Instability of Axially-Staged Lean-Premixed Flames <i>G. Han, Y. Choi, K. T. Kim</i>	11:16-11:34 OS2-38 Secondary Injector Configurations Impact on Combustion Instability of Axially-Staged Lean-Premixed Flames <i>G. Han, Y. Choi, K. T. Kim</i>	11:20-11:40 OS16-7 Linear Short-Wave Instability in Helical Vortices <i>I. Delbende, Y. Hattori, M. Rossi, Y. Xu</i>	11:20-11:40 OS23-6 Active Control of Protein Mass Transfer by Membranes with Various Pore Patterns <i>R. Zhu, J. F. Torres, S. Livi, A. Komiya</i>	11:10-11:25 OS13-9 Analyzing the Impact of Operating Conditions on Energy Loss in a Cross-flow Turbine <i>A. Yamaguchi, M. Fujimori, K. Aiba, K. Suzuno, S. Iio</i>	11:20-11:40 OS5-6 Numerical Simulation of Alkali Metal Seed Mixing Process Based on MHD Generator <i>P. Zhu, A. Peng</i>	11:20-11:40 GS1-23 Design and Numerical Study of an Intake for Electrostatic Ramjet Engine <i>K. Ito, M. Takahashi</i>
11:34-11:52 OS2-39 Numerical Study of Alcohol-to-jet Fuel Pyrolysis and Oxidation <i>Y.-J. Wu, K. C. Lin</i>	11:34-11:52 OS2-39 Numerical Study of Alcohol-to-jet Fuel Pyrolysis and Oxidation <i>Y.-J. Wu, K. C. Lin</i>	11:40-12:00 OS16-8 Nonlinear Development of Instability of Two-Dimensional Taylor-Green Vortices in Rotating Fluid <i>N. Ueno, M. Hirota, Y. Hattori</i>	11:40-12:00 OS23-7 Study of the Electroactuation of Doped Epoxy-amine Elastomers with Ionic Liquids under High Electric Fields <i>A. Blain, G. Coativy, F. Dalmás, S. Livi, G. Perli, V. Perrin, L. Seveyrat, G. Diguét, J. Courbon, H. Takana, J.-Y. Cavallé</i>	11:25-11:40 OS13-10 Effect of Number of Blades on the Performance of a Waterfall Cross-Flow Hydro-Turbine <i>K. Moriya, T. Yamagata, N. Fujisawa</i>	11:40-12:10 OS5-7 Cancelled	11:40-12:00 GS1-24 Visualization Study on the Ultrasonic-Driven Rectangular Synthetic Jet <i>H. Furukawa, K. Adachi, K. Furutani, T. Handa</i>
11:52-12:10 OS2-40 Experimental Study on the Dynamic Response of Axially-Staged Lean-Premixed Combustion System <i>Y. Choi, K. T. Kim</i>	11:52-12:10 OS2-40 Experimental Study on the Dynamic Response of Axially-Staged Lean-Premixed Combustion System <i>Y. Choi, K. T. Kim</i>			11:40-11:55 OS13-11 Development of a Micro-Pelton Turbine for Off-grid Power Generation <i>R. Shirai, S. Iio, T. Arai</i>		

12:10

12:10

BREAK

13:10

13:10

EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI
<b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b>  <Satellite>	<b>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</b>  <i>Chair: O. Mathieu</i>	<b>OS16Vortex Motion</b>  Vortical Structures <i>Chair: Y. Hattori</i>	<b>OS23IFS Lyon Center Collaborative Research Forum</b>  <i>Chairs: A. Komiya &amp; J. Courbon</i>	<b>OS13Flow Realization, Measurement and Visualization</b>  <i>Chair: S. Iio</i>	<b>OS5Advanced Applications of Multi-functional Fluids</b>  Thermal Plasma / Plasma Chemistry <i>Chair: T. Fujino</i>	<b>GS: General Session</b>  Fluid mechanics I <i>Chair: A. Takeno</i>	<b>OS22: IFS Collaborative Research Forum (AFI-2023)</b>
13:10-13:28 OS2-41 Turbulent Partially Cracked Ammonia/air Flames in Spherical Vessel <i>S.-E. Zitouni, P. Brequigny, C. Mounaïm-Rousselle</i>	13:10-13:28 OS2-41 Turbulent Partially Cracked Ammonia/air Flames in Spherical Vessel <i>S.-E. Zitouni, P. Brequigny, C. Mounaïm-Rousselle</i>	13:20-13:40 OS16-9 Vortical Flow Derived from Local Flow Geometry and its Relationships to Flow Structure of Finite-Scale Vortex in Homogeneous Isotropic Turbulence <i>K. Nakayama</i>	13:10-13:30 OS23-8 Coupled Computing of Fluid-Structure Interaction Problems for Multiphase Energy Systems <i>J. Ishimoto, T. Elguedj</i>	13:10-13:25 OS13-12 Cancelled	13:20-13:40 OS5-8 A Double-Jacketed Enthalpy Probe for Measurement of Supersonic Plasma <i>J.-H. Seo, D.-U. Kim, N.-G. Lee, D.-H. Lee</i>	13:10-13:30 GS1-25 Research on Improving the Performance of the Vertical Axis Wind Turbine using J-type Airfoil <i>R. Pena Valdes, G. Ohmori, S. Imai, W. Yamazaki</i>	Poster
13:28-13:46 OS2-42 Experimental Study on Emission Characteristics of Ammonia Jet Diffusion Flames under Oxygen Enrichment Condition <i>Y. Xia, Y. Shen, K. Sakai, S. Colson, T. Kudo, A. Hayakawa, H. Kobayashi</i>	13:28-13:46 OS2-42 Experimental Study on Emission Characteristics of Ammonia Jet Diffusion Flames under Oxygen Enrichment Condition <i>Y. Xia, Y. Shen, K. Sakai, S. Colson, T. Kudo, A. Hayakawa, H. Kobayashi</i>	13:40-14:00 OS16-10 Quasi-Steady State of a Hub Vortex Under Multi-Polar Strain Induced by Satellite Vortices <i>A. S. P. Ayappilla, Y. Hattori</i>	13:30-13:50 OS23-9 Clarification of Flow Structures Related to Jet Noise Generation Using Mode Analysis and High-Precision Jet Flow Simulation <i>S. Morita, A. Yakeno, C. Bogey, S. Obayashi</i>	13:40-13:55 OS13-14 Numerical Simulation of the Effects of the Figure-eight Flapping Motion of an Insect on the Aerodynamics <i>M. Yoshida, T. Fukui</i>	13:40-14:00 OS5-9 Evaluation of the Thermal Plasma Pyrolysis of Methane by Using Computational Works <i>Y. H. Lee, J.-H. Oh, S. Choi</i>	13:30-13:50 GS1-26 Research and Development of Automatic Flight of Small Bird-Like Innovative Air Vehicle <i>U. Kagawa, M. Hirano, H. Izumi, T. Ishide, S. Obayashi</i>	
13:46-14:04 OS2-43 The Temperature Characteristics of Liquid Ammonia Spray at High Pressures <i>K.D.K. A. Somarathne, H. Yamashita, K. Oku, K. Honda, T. Kudo, A. Hayakawa, H. Kobayashi</i>	13:46-14:04 OS2-43 The Temperature Characteristics of Liquid Ammonia Spray at High Pressures <i>K.D.K. A. Somarathne, H. Yamashita, K. Oku, K. Honda, T. Kudo, A. Hayakawa, H. Kobayashi</i>	14:00-14:20 OS16-11 Steady Translation of a Weakly Compressible Hollow Vortex Pair <i>V. Krishnamurthy, S. Llevellyn Smith</i>	13:50-14:10 OS23-10 Nonlinear Bifurcation and Dynamic Mode Decomposition for Taylor Vortex in Gap between Rotating Two Cylinders/Cones <i>H. Yata, K. Akinaga, V. Botton, A. Komiya, T. Adachi</i>	13:55-14:10 OS13-15 Numerical Simulation of the Effects of External Oscillatory Flow on the Performance of Small Swimming Object. <i>K. Nakagawa, T. Fukui</i>	14:00-14:20 OS5-10 Application of Cavitation to Plasma Process for Synthesis of Carbon Catalysts for Oxygen Reduction Reaction <i>R. Harakawa, N. Takeuchi, H. Takana, O. L. Li</i>	13:50-14:10 GS1-27 Design of UAV Propeller and Performing CFD Analysis <i>H. M. Cambaz, Y. K. Karaçomak, V. Çelik, K. Arslan</i>	
14:04-14:22 OS2-44 Unsteady Emission Characteristics of Premixed Ammonia/Hydrogen/Air Flames in a Stagnation Flow <i>T. Tomidokoro, H. G. Im</i>	14:04-14:22 OS2-44 Unsteady Emission Characteristics of Premixed Ammonia/Hydrogen/Air Flames in a Stagnation Flow <i>T. Tomidokoro, H. G. Im</i>	14:10-14:30 OS16-11 Steady Translation of a Weakly Compressible Hollow Vortex Pair <i>V. Krishnamurthy, S. Llevellyn Smith</i>	14:10-14:30 OS23-11 Which Mechanisms Govern Polymer Deposition By Cold Spray Process? <i>C. Bernard, H. Takana, O. Lame, K. Ogawa</i>	14:10-14:25 OS13-16 The Effect of a Crater on the Velocity of Regolith Ejecta During Plume-Regolith Interactions <i>B. Craig, A. Wilson, T. Ukai, K. Kontis</i>	14:20-14:40 OS5-11 Carbon Sulfonation by Atmospheric Pressure Plasma <i>N. Takeuchi, S. Deng, K. Takahashi, K. Tachibana, J. Hieda, O. L. Li</i>	14:10-14:30 GS1-28 Effect of Pitching Airfoil Aspect Ratio and Pitch Amplitude on Lift and Drag Forces in a Periodic Flow <i>H. Tanaka, Y. Tanaka, Y. Isoda</i>	
14:22-14:40 OS2-45 Numerical Investigation on the Flame and Stability Characteristics of Partially Cracked Ammonia/Air Premixtures <i>S. Xie, H. Zhang</i>	14:22-14:40 OS2-45 Numerical Investigation on the Flame and Stability Characteristics of Partially Cracked Ammonia/Air Premixtures <i>S. Xie, H. Zhang</i>						



				<p>14:25-14:40 OS13-17 A Novel AI-Based Noise Removal Approach for Particle Streak Velocimetry Images <i>A. Qadir, T.-T. Vo, M.-K. Liu, W.-H. Tien</i></p>				
14:40	BREAK							14:40
14:50	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	
	<p>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <i>&lt;Satellite&gt;</i></p>	<p>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals <i>Chair: E. C. Okafor</i></p>	<p>OS16Vortex Motion Point Vortex &amp; Relevant Topics <i>Chair: Y. Fukumoto</i></p>	<p>OS23IFS Lyon Center Collaborative Research Forum <i>Chair: M. Ohta &amp; N. Mary</i></p>	<p>OS5Advanced Applications of Multi-functional Fluids Plasma Chemistry / Plasma Flow Control <i>Chair: Q. Li</i></p>	<p>GS: General Session Fluid mechanics II <i>Chair: A. Hayakawa</i></p>	CON-HAGI	
	<p>14:50-15:08 OS2-46 Comparative Experimental and Theoretical Study of Combustion Instability between Ammonia and Methane Downward Propagating Flames in Tubes <i>J. R. Delfin, F. Guo, N. Hashimoto, O. Fujita</i></p> <p>15:08-15:26 OS2-47 Structure and Combustion Characteristics of Turbulent Hydrogen Bluff-Body Flames at Different Reynolds Numbers <i>S. Abdelwahid, L. Angelilli, F. E. Hernández-Pérez, H. Tang, A. Alfazazi, G. Magnotti, B. Dally, H. G. Im</i></p> <p>15:26-15:44 OS2-48 Simulation of Ethylene/Ammonia Laminar Opposed Diffusion Flame: Two-Dimensional and Curtain Flow Effect <i>W. Z. Jia, A. Dahiya, K. C. Lin</i></p> <p>15:44-16:02 OS2-49 Ammonia and Ethanol Blend as Fuel for ICE: from the Liquid Injection to the Combustion and Pollutant Emissions <i>R. Pelé, P. Brequigny, J. Bellettre, C. Hespel, G. Dayma, F. Halter, C. Mounaïm-Rousselle</i></p> <p>16:02-16:20 OS2-50 Global Quench Conditions of Downwardly-Propagating versus Centrally-Ignited Premixed Ammonia/Air Flames by Intensive Near-Isotropic Turbulence <i>Y.-R. Chen, S. Shyy, H. Y. Hsieh, V. T. Mai</i></p>	<p>14:50-15:08 OS2-46 Comparative Experimental and Theoretical Study of Combustion Instability between Ammonia and Methane Downward Propagating Flames in Tubes <i>J. R. Delfin, F. Guo, N. Hashimoto, O. Fujita</i></p> <p>15:08-15:26 OS2-47 Structure and Combustion Characteristics of Turbulent Hydrogen Bluff-Body Flames at Different Reynolds Numbers <i>S. Abdelwahid, L. Angelilli, F. E. Hernández-Pérez, H. Tang, A. Alfazazi, G. Magnotti, B. Dally, H. G. Im</i></p> <p>15:26-15:44 OS2-48 Simulation of Ethylene/Ammonia Laminar Opposed Diffusion Flame: Two-Dimensional and Curtain Flow Effect <i>W. Z. Jia, A. Dahiya, K. C. Lin</i></p> <p>15:44-16:02 OS2-49 Ammonia and Ethanol Blend as Fuel for ICE: from the Liquid Injection to the Combustion and Pollutant Emissions <i>R. Pelé, P. Brequigny, J. Bellettre, C. Hespel, G. Dayma, F. Halter, C. Mounaïm-Rousselle</i></p> <p>16:02-16:20 OS2-50 Global Quench Conditions of Downwardly-Propagating versus Centrally-Ignited Premixed Ammonia/Air Flames by Intensive Near-Isotropic Turbulence <i>Y.-R. Chen, S. Shyy, H. Y. Hsieh, V. T. Mai</i></p>	<p>14:50-15:10 OS16-12 Unsteady Motion and Wake of a Thin Aerofoil Using Discrete Vortex Method <i>C. Chang, P.-Y. Tseng</i></p> <p>15:10-15:30 OS16-13 Numerical Study of Point-vortex Motions on Filtered-Euler Flows <i>T. Gotoda</i></p> <p>15:30-15:50 OS16-14 Quasi-Geostrophic Vortex Vertical Alignment in Near Collapse Interactions <i>J. N. Reinaud, X. Carton</i></p> <p>15:50-16:10 OS16-15 A Monte Carlo Approach to the N-vortex Problem on the Unit Sphere <i>K. Takeda, T. Sakajo</i></p>	<p>14:50-15:10 OS23-12 Investigation of a Predictive Therapeutic Response Under Controlled Oxygen Condition in Cancer Patient-Derived Organoids <i>S. Aratake, Z. Su, J.-P. Rieu, K. Funamoto, N. Aznar</i></p> <p>15:10-15:30 OS23-13 Hypoxia Triggers Collective Aerotactic Spreading of Eukaryotic Cells <i>N. Ghazi, M. Demircigil, S. Hirose, A. Chauviat, V. Calvez, K. Funamoto, C. Anjard, J.-P. Rieu</i></p> <p>15:30-15:50 OS23-14 Finsler Geometry Modeling and Monte Carlo Study on Geometrically Confined skyrmions in Nanodots <i>G. Diquet, B. Ducharne, S. E. Hog, F. Kato, H. Koibuchi, T. Uchimoto, H. T. Diep</i></p> <p>15:50-16:10 OS23-15 Atomic Scale Investigation of the Electric Field Dependence of Carbon Diffusion in Fe <i>R. Onozuka, T. Mabuchi, P. Chantrenne, T. Tokumasu</i></p>	<p>14:50-15:10 OS5-12 Observation of Ultrasonically Enhanced Electrohydraulic Discharge for Wastewater Treatment <i>T. Kuroki, Y. Kumazawa, H. Yamazaki, M. Okubo</i></p> <p>15:10-15:30 OS5-13 Control Between Two Types of Plasma-induced Liquid Flows <i>T. Kawasaki, K. Shen</i></p> <p>15:30-15:50 OS5-14 Effect of Plasma Actuation Control on a Field Rotor of HAWT <i>R. Suzuki, Y. Kamada, T. Maeda, K. Iwahashi, M. Tanaka, N. Kubo, N. Watanabe</i></p> <p>15:50-16:10 OS5-15 The Ac-DBD Plasma Flow Control inside the S-duct at Low Speed <i>F. Jiang, K. Kontis, C. White</i></p>	<p>14:50-15:10 GS1-29 Applying the Finite Element Method to Solve the Two-Dimensional Flow Passing Through an Obstacle <i>C.-H. Yang, T.-L. Li, D. Chou</i></p> <p>15:10-15:30 GS1-30 Numerical Investigation of Effects of Ring Curvature on Starting Characteristics of Supersonic Ring Intakes <i>A. Shibakita, M. Matsumaga, H. Ogawa, R. Tahir, J. K. J. Hew, R. W. Boswell</i></p> <p>15:30-15:50 GS1-31 Analytical and Numerical Studies of Shock Wave Reflection in Axisymmetric Internal Flows <i>J. K. J. Hew, M. Matsumaga, H. Ogawa, R. W. Boswell, S. Milder</i></p> <p>15:50-16:10 GS1-32 Experiments on Aerodynamic Sound Radiated from a Row of Protuberance in Boundary Layers <i>M. Sakai, A. Inasawa</i></p>	14:50	
16:20	BREAK							16:20

16:30	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-2	CON-HAGI	16:30
	<p>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</p> <p>&lt;Satellite&gt;</p>	<p>OS2:The First International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals</p> <p>Chair: A. Hayakawa</p>				<p>OSS5:Advanced Applications of Multi-functional Fluids</p> <p>Advanced multiphase flow 2</p> <p>Chair: H. Takana</p>			
	<p>16:30-16:48 OS2-51 Experimental Investigation of Flame Behavior and NOx Emission Characteristics of NH<sub>3</sub>/CH<sub>4</sub> Combustion with Highly Preheated Air in a Bench-scale Furnace <i>A. Sharma, Y. Qiao, Y. Wakata, V. K. Subramani, T. Miyake, T. Kishimura, T. Sonoda, A. Miyoshi, D. Shimokuri</i></p> <p>16:48-17:06 OS2-52 Analytical Study of Parametric Instability in Premixed Ammonia/Methane Flames <i>A. K. Ahirwar, A. K. Dubey</i></p> <p>17:06-17:24 OS2-53 Evaluation During Hydrogen Co-firing by Transient Quasi-DNS for a Coaxial Burner with Mixing Tube <i>K. Abe, Y. Morii, K. Maruta</i></p> <p>17:24-17:42 OS2-54 Computational Study of NH<sub>3</sub> Addition Effects on NO<sub>x</sub> Formation of Opposed-jet CH<sub>4</sub>/air and H<sub>2</sub>/air Diffusion Flames <i>Y.-Y. Zhuang, H.-Y. Shih</i></p> <p>17:42-18:00 OS2-55 Fundamental Combustion Characteristics of Laminar Ultra-Lean Hydrogen/Air Flames <i>N. Villenave, S. Zitouni, P. Brequigny, F. Foucher</i></p>	<p>16:30-16:48 OS2-51 Experimental Investigation of Flame Behavior and NOx Emission Characteristics of NH<sub>3</sub>/CH<sub>4</sub> Combustion with Highly Preheated Air in a Bench-scale Furnace <i>A. Sharma, Y. Qiao, Y. Wakata, V. K. Subramani, T. Miyake, T. Kishimura, T. Sonoda, A. Miyoshi, D. Shimokuri</i></p> <p>16:48-17:06 OS2-52 Analytical Study of Parametric Instability in Premixed Ammonia/Methane Flames <i>A. K. Ahirwar, A. K. Dubey</i></p> <p>17:06-17:24 OS2-53 Evaluation During Hydrogen Co-firing by Transient Quasi-DNS for a Coaxial Burner with Mixing Tube <i>K. Abe, Y. Morii, K. Maruta</i></p> <p>17:24-17:42 OS2-54 Computational Study of NH<sub>3</sub> Addition Effects on NO<sub>x</sub> Formation of Opposed-jet CH<sub>4</sub>/air and H<sub>2</sub>/air Diffusion Flames <i>Y.-Y. Zhuang, H.-Y. Shih</i></p> <p>17:42-18:00 OS2-55 Fundamental Combustion Characteristics of Laminar Ultra-Lean Hydrogen/Air Flames <i>N. Villenave, S. Zitouni, P. Brequigny, F. Foucher</i></p>				<p>16:30-16:50 OS5-1 Dynamic Assembly of Strong and Conductive Carbon Nanotube/Nanocellulose Composite Filaments <i>A. B. Dichiaro, H. G. Wise, H. Takana</i></p> <p>16:50-17:10 OS5-17 Local Electric Field Measurement of Temperature Dependence of Electrical Conductivity and Viscosity <i>T. Kishimoto, T. Ando, K. Doi</i></p> <p>17:10-17:30 OS5-18 Chirality-Activated Vortex Flow and Its Reversal Mode in Liquid Crystals <i>S. Takano, T. Nakanishi, K. Nakagawa, T. Asahi</i></p> <p>17:30-17:50 OS5-19 Explosive Growth of Particulate Matters in Smoke Plumes Emitted from Industrial Plants <i>Q. Li, X. Ding, D. Wu, J. Chen</i></p>			
18:00									18:00

## OS21: The 19<sup>th</sup> International Students / Young Birds Seminar on Multi-scale Flow Dynamics

- OS21-1: **Structural Optimization of Flexible Multibody Systems with Deployment Mechanism**  
*S. Watanabe, S. Dong, K. Otsuka, K. Makihara*
- OS21-2: **Optical Absorption Characteristics of Perovskite Photovoltaic Cells by Fluctuational Electromagnetics**  
*R. Sugimoto, S. Ito, K. Ono, A. Sakurai*
- OS21-3: **Temperature Measurement of Carbon Materials under applied Voltage by Raman Spectroscopy**  
*T. Sugano, T. Hasegawa, A. Sakurai*
- OS21-4: **Effective Semi-Active Energy Harvesting from Structural Vibration Using Magnetostrictive Transducer**  
*Y. Kobayashi, A. Li, K. Otsuka, K. Makihara*
- OS21-5: **Numerical Study and Process Improvement of Micro-structured Gas Separator Utilizing the Soret Effect**  
*S. Nobe, R. Masuo, M. Osada, N. Ono*
- OS21-6: **Heat Transfer Enhancement of Flow Boiling with Copper Heated Surface Having Microstructures and Relationship between Heat Flux and Bubble Point Density**  
*S. Sasaki, S. Hayashi, K. Onodera, T. Aizawa, N. Ono*
- OS21-7: **Study on Pressure Profile for Various Fuel Flow Rates in a Scramjet Combustor with Dual-cavity Flameholder**  
*K. Norimatsu, S. Nishiura, T. Kudo, A. Hayakawa*
- OS21-8: **Study on Evaporation Behavior and Diffusion Coefficient of Water Inside Coated Layer in Drying Process**  
*D. Negishi, K. Akase, N. Ono*
- OS21-9: **Visualization of Marangoni Liquid Flow in a Rotating System During Wafer Drying**  
*H. Nakagami, A. Sakai, T. Ishibashi, N. Ono*
- OS21-10: **Meso-microscale Coupled Simulation of Wind under Varying Atmospheric Stabilities over Complex Terrain**  
*Y. Song, G. Ma, L. Tian, P. Xiao, X. Lu, N. Zhao, C. Zhu*
- OS21-11: **State Estimation of Multibody Model Using State Observer Based on Differential Algebraic Equation**  
*T. Okada, S. Dong, R. Kuzuno, Y. Takahashi, Y. Shizuno, K. Otsuka, K. Makihara*
- OS21-12: **Remaining Life Assessment in Fiber Ropes by System Invariant Analysis Technology (SIAT) with Acoustic Testing**  
*K. Sasada, S. Takeda, T. Uchimoto, T. Soma, M. Kimura*

- OS21-13: **Marangoni Convection with Supplying Pure Water in a Rotating System during Wafer Drying**  
*A. Sakai, H. Nakagami, T. Ishibashi, N. Ono*
- OS21-14: **Application of Aerodynamic Topology Optimization Design to Multi Element Airfoil**  
*T. Kobara, W. Yamazaki*
- OS21-15: **Flutter Harvester Using Flexible Plates with Piezoelectric Film**  
*T. Mukogawa, S. Dong, Y. Jia, Y. Shi, C. Soutis, H. Kurita, F. Narita, K. Otsuka, K. Makihara*
- OS21-16: **Molecular Dynamics Study of Li-ion Transport Properties in Solid Electrolyte Li<sub>6</sub>PS<sub>5</sub>Cl**  
*T. Wang, S. Huang, T. Tokumasu*
- OS21-17: **Time-resolved Multi-scale Droplet Shape Measurement of Superspreading Wetting of Nanofluid**  
*A. Hoshino, E. Shoji, T. Biwa, M. Kubo, T. Tsukada, T. Tomai, T. Adschiri*
- OS21-18: **Evaluation of Uniform and Surface Compressive Residual Stress in Carbon Steel by Eddy Current Magnetic Signature Method**  
*K. Takigami, S. Takeda, T. Uchimoto*
- OS21-19: **Effects of Propeller Rotation Speed on Aerodynamic Performance of Wing in Tractor-Configuration**  
*M. Okawa, R. Nishimura, H. Kurahashi, T. Ikami, H. Nagai*
- OS21-20: **Arc Interruption Performances for Various Gases with Same Mass Flow Rates**  
*T. Suzuki, H. Miyagi, K. Maeshima, T. Yoshino, T. Mori, T. Fujino*
- OS21-21: **Arbitrary Lagrangian-Eulerian Non-linear Finite Element Analysis of Tethered Structure with Large Deformation**  
*Y. Takahashi, R. Kuzuno, S. Dong, T. Okada, Y. Shizuno, K. Otsuka, K. Makihara*
- OS21-22: **Dynamic of Vertically Clamped Flexible Filament in Wavy Flow**  
*J. Zhang, T. Nakamura*
- OS21-23: **Investigation of Efficient/Inefficient Arrangement of HEPA Air Purifiers in Indoor Ventilation**  
*H. Takaku, G. Hirokawa, W. Yamazaki, H. Takahashi*
- OS21-24: **Visualization of Natural Convection Boundary Layer Using BOS Method and Assessment of its Usefulness**  
*S. Ogasawara, Y. Iseki, T. Sawamura, T. Kogawa*
- OS21-25: **Numerical Research of Wind Flow and Wind Turbine Wake over the Typical Complex Terrain**  
*G. Ma, L. Tian, Y. Song, N. Zhao*

- OS21-26: **Experimental Investigation on Dynamic Instability at Transonic Speeds of Thin-aeroshell Reentry Capsule**  
*R. Kawano, T. Ikami, H.Nagai, K. Yamada*
- OS21-27: **Three-Dimensional Thermal Analysis of Stone-Incorporated Sauna Stoves Using OpenFOAM**  
*Y. Awaji, T. Kogawa*
- OS21-28: **Evaluation of Heat Transfer Under Laser Treatment by Non-Fourier Effect**  
*T. Tanaka, T. Wada, T. Kogawa*
- OS21-29: **Performance Evaluation of Hydrodynamic Thrust Bearing for Centrifugal Blood Pumps by CFD Simulation**  
*T. Masuda, E. Okamoto, D. Sakota, R. Kosaka, T. Yano*
- OS21-30: **Study on Drying Process of Blood Drop - Automatic Classification of Drying Processes by Using Deep Learning -**  
*M. Fukuda, T. Yano*
- OS21-31: **Enhanced Cascaded Lattice Boltzmann Model for Droplet Impact on Superhydrophobic Surfaces**  
*Y. Xu, L. Tian, C. Zhu, N. Zhao*
- OS21-32: **Numerical Simulation for the Breakup Behavior of a Liquid Jet in a Cross-flow with an Electric Field**  
*K. Hayashi, M. Shirota, Y. Mawatari, M. Yamamura, Y. Saito*
- OS21-33: **Evaluation of Fiber Misalignment in CFRP with Curvature Using Eddy Current Testing**  
*K. Sasaki, S. Takeda, T. Uchimoto, H. Kosukegawa, J. Inoue*
- OS21-34: **Changes in Light Scattering Properties of Suspensions Containing Erythrocytes with Swelling and Collapse**  
*S. Ishizuka, T. Yano*
- OS21-35: **Thermal Fluid Analysis for Gas Mixing in an Internal Condensation Reactor for Methanol Synthesis**  
*A. Toba, S. Shimokawara Y. Saito*
- OS21-36: **Influence of Propeller Wake on Mars Airplane Wing Geometry**  
*N. Hasegawa, M. Kanazaki, H. Nagai*
- OS21-37: **Numerical Analysis of Internal Flowfield in Star-Shaped Grains using Building-Cube Method**  
*S. Yoshinaga, K. Yoshida, S. Ogawa, D. Sasaki*
- OS21-38: Cancelled

- OS21-39: **Molecular Dynamics Study on Mechanical Balance at Three-phase Contact Line of Interfacial Nanobubble**  
*Y. Jonosono, S. Tsuda, T. Tokumasu, H. Nagashima*
- OS21-40: **Development of Numerical Analysis Method for Cavity Flame-Holder in Supersonic Flow using Building-Cube Method**  
*K. Miyata, S. Ogawa, D. Sasaki, K. Mori*
- OS21-41: **POD Analysis of the Unsteady Behavior of Wind Turbine Wakes on Escarpment**  
*L. Tian, P. Xiao, Y. Song, N. Zhao*
- OS21-42: **Basic Research on the Aerodynamic Characteristics of 3-D Wings in the Martian Atmospheric Environment**  
*S. Takaya, D. Numata*
- OS21-43: **Visualization of Sonic Boom Phenomena Using Anodized-Aluminum Pressure Sensitive Paint**  
*C. Yamada, D. Numata*
- OS21-44: **Study on Unsteady Aerodynamic Phenomena around Re-entry Vehicles Using Ballistic Range**  
*M. Yamamoto, D. Numata*
- OS21-45: **Numerical Investigation on Airfoils by the Synergistic Effect of Blowing and Suction**  
*Y. Sun, T. Wang*
- OS21-46: **Study on Combining Method of Time Series Flow Fields with Different Phases around Airfoil for Unsteady PIV**  
*H. Kurahashi, T. Ikami, H. Nagai*
- OS21-47: **Electron Dynamics Evaluation in Different Temperature Using Au/TiO<sub>2</sub> and Au/SiO<sub>2</sub> Nano Particles Dispersion**  
*S. Nakano, R. Hosokawa, Y. Ito, K. Fujiwara, T. Katayama, T. Oto, T. Chiba, H. Gonome*
- OS21-48: **Study on the Pyrolysis of Trimethyl Phosphate and Dimethyl Methyl Phosphonate Using a Micro Flow Reactor with a Controlled Temperature Profile**  
*R. Matsumoto, K. Kanayama, K. Tamaoki, M. Izumi, H. Nakamura, T. Tezuka, K. Maruta*
- OS21-49: **Simultaneous and Non-Simultaneous Drop Impact onto a Wall**  
*H. Sontheimer, L. Elsäßer, P. Stephan, T. Gambaryan-Roisman*
- OS21-50: **Bending of Bundle of Vorticity Lines in a Vortex and its Relationships to Vortical Flow Characteristics in Homogeneous Isotropic Turbulence**  
*K. Uchima, K. Nakayama*
- OS21-51: **Integrating Wing and Fuselage for Silent Supersonic Transport Designed at On-Track and Off-Track Conditions**  
*A. Akashi, K. Shimoyama, S. Obayashi*

- OS21-52: **Study on Aerodynamic Characteristics of Airfoils at Supersonic Flight in the Martian Atmospheric Environment**  
*T. Takizawa, D. Numata*
- OS21-53: **Evaluation of the Effect of Radiative Heat Transfer on the Thermal Resistance of Foamed Insulation Materials**  
*T. Kitazume, Y. Kanda, A. Komiya*
- OS21-54: **Optimal Design of Wavelength-Selective Emitters for Thermophotovoltaic Power Generation Using Carbon Nanotube Thin Films by Machine Learning**  
*K. Kumagai, K. Suzuki, T. Nishihara, Y. Miyauchi, A. Sakurai*
- OS21-55: **Fundamental Study of Two-color AA-PSP for Surface Pressure Measurement on Free-flight Projectile**  
*Y. Kawamata, D. Numata*
- OS21-56: **Deposition Patterns of Evaporating Sugar-Coffee Drops on Heated Surfaces**  
*K. Ando, K. Taguchi, T. Okabe*
- OS21-57: **Topological Data Analysis for Estimation of Rock Fracture Structure**  
*T. Hasumi, Y. Imoto, J. Miyanaga, T. Uda, A. Suzuki*
- OS21-58: **The Effects of a Slit in a Hydrofoil on the Thermodynamic Self-Suppression Effect for Tip Leakage Vortex Cavitation**  
*Y. Oda, J. Okajima, Y. Iga*
- OS21-59: **Numerical Simulation of Bubble Shape and Heat Transfer During Nucleate Pool Boiling of FC-72**  
*H. Ishibashi, K. Ota, P. Stephan, J. Okajima*
- OS21-60: **Numerical Study on a Supercritical Airfoil: Interactions of Vortex Generator-Induced Wake and Shock Waves**  
*Y. Tsukamoto, K. Kitamura*
- OS21-61: **Influence on Flow Velocity Variation on Heat Transfer of Subcooled Boiling in High Speed Flow**  
*F. Ono, J. Okajima*
- OS21-62: **Dynamic Modeling and Aeroelastic Response Study of Ultra-Long Flexible Wind Turbine Blades**  
*Z. Zizhen, W. Tongguang, W. Long, Z. Baoxu*
- OS21-63: **Estimation of Fracture Network Structures Using Heat and Solute Tracers**  
*M. Qiao, K. Goto, J. Maes, A. Patsoukis Dimou, J. Miyanaga, A. Suzuki*
- OS21-64: **Research on Optimization of Runner Efficiency of Francis Turbine Based on CFturbo**  
*J. Song, X. Li, H. Gong, S. Feng, L. Fu*

- OS21-65: **Validation of Momentum Conservation Model to Isothermal Drop Impacts on Solid Surfaces**  
*T. Yamaya, K. Maeda, Y. Nakagawa, T. Miyagawa, M. Shiota*
- OS21-66: **Adhesion Force Acting on Climbing Drops on Heated Ratchets with Heterogeneous Wettability Surfaces**  
*R. Ato, T. Miyagawa, M. Shiota*
- OS21-67: **Time Variation in Temperature Distribution on a Solid Surface during Impacts of Molten Tin Drops**  
*K. Maeda, Y. Nakagawa, T. Miyagawa, T. Okabe, M. Shiota*
- OS21-68: **Effects of Electrical Charge on the Shape Oscillation of Falling Drop**  
*R. Miura, A. Kodama, T. Miyagawa, T. Okabe, Y. Matsushita, Y. Saito, Y. Matsukawa, H. Aoki, M. Daikoku, J. Fukuno, M. Shiota*
- OS21-69: **Characterization of Single Drop Formation from a Needle Using Event-Based Camera**  
*T. Kosugi, R. Yamamoto, K. Maeda, T. Miyagawa, Y. Kimura, M. Shiota*
- OS21-70: **Development of Fast-Response PSP for Surface Pressure Measurement on Airfoils of the Mars Airplane**  
*H. Manome, D. Numata*
- OS21-71: **Effects of Aerodynamic Devices on Airfoil Flow in the Martian Atmospheric Environment**  
*R. Minohara, D. Numata*
- OS21-72: **Aerodynamic Performance Study on a Parafoil Airfoil with an Upper Surface Slit**  
*W. Zhen, W. Tongguang, Z. Wei, F. Kai, Z. Kang, L. Xudong*



**OS22: The 23rd International Symposium on Advanced Fluid Information  
(AFI-2023)  
IFS Collaborative Research Forum**

- CRF-1: **Comparative Analysis of the Chemical Kinetics of Premixed NH<sub>3</sub>-H<sub>2</sub>-H<sub>2</sub>O-Air and NH<sub>3</sub>-CH<sub>4</sub>-H<sub>2</sub>O-Air Stoichiometric Flames**  
*E. C. Okafor, M. Hayashi, T. Kudo, A. Hayakawa, T. Kitagawa*
- CRF-2: **Effects of Pressure on Flame Structure of Ammonia/methane/air Premixed Flames Stabilized in a Stagnation Flow**  
*A. Hayakawa, M. Kovaleva, A. Crayford, A. Valera-Medina*
- CRF-3: **Atomization and Combustion Characteristics of Fine Bubble Fuel**  
*J. Obata, Y. Nakatake, H. Tanaka, H. Yamashita, A. Hayakawa*
- CRF-4: **Study on the Injection Process of Next-Generation Liquefied Fuels**  
*N. Kawaharada, I. Oshima*
- CRF-5: **Experimental and Kinetics Modeling Study of Tri-Methyl-Phosphate Pyrolysis: Toward P-Containing Fire Suppressants for Lithium-Ion Battery Electrolytes**  
*C. Grégoire, R. Matsumoto, K. Kanayama, T. Tezuka, M. Izumi, H. Nakamura, K. Maruta, E. L. Petersen, O. Mathieu*
- CRF-6: **Effects of Residence Time on NO<sub>x</sub> Emission of an Ammonia Fueled Supersonic Transportation**  
*H. Kosada, A. Hayakawa, H. Nakamura, D. Shimokuri, Y. Fujimoto, S. Obayashi*
- CRF-7: **Effects of Pressure on Derived Temperature using LITGS for Oxygen Enriched CH<sub>4</sub>/O<sub>2</sub>/N<sub>2</sub> Flames**  
*H. Kondo, Y. Mizuno, T. Kudo, Shinji. Nakaya, A. Hayakawa*
- CRF-8: **Introduction of New AE Monitoring System for Big-data AI-aided Acoustic Emission Analysis**  
*Y. Mukuhira, M. Naoi, T. Ito*
- CRF-9: **Acoustic Measurement on Basic Physical Properties of Functional Fluids for Innovative Underground Development**  
*K. Sawayama, Y. Mukuhira, Z. Rongchang, T. Ito*
- CRF-10: **Direct Comparison between Resolved Shear Stress and Stress Drop**  
*N. Yoshimitsu, Y. Mukuhira, H. Asanuma*
- CRF-11: **Structural and Thermophysical Properties of Multi-component Crosslinked Epoxy Polymers: A Molecular Dynamics Study with Curing Reaction Model**  
*Y. Zhao, G. Kikugawa*

- CRF-12: **Effect of Surfactant on Surface Energy of Nanobubble Composed of Nitrogen Gas**  
*T. Hori, G. Kikugawa*
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*J. Okajima, H. Sontheimer, P. Stephan*
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