Preface

Welcome to the Twenty-first International Conference on Flow Dynamics (ICFD2024) hosted by the Institute of Fluid Science, Tohoku University. Considering the convenience of participants from all over the world, we have decided to hold ICFD2024 as a hybrid format as last year.

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, 26 Organized Sessions, starting in the morning on Monday, November 18. Approximately 534 papers will be presented. It is our great pleasure to meet a large number of participants during the conference.

On behalf of the ICFD2024 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.

Tetsuya Uchimoto, Professor,
Institute of Fluid Science,
Tohoku University
and
Gael Sebald, Professor
INSA de Lyon, CNRS
General Co-Chairs, ICFD2024

Twenty-first 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

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 21st International Conference on Flow Dynamics (ICFD2024), in the annual series since 2004, will be held from November 18th to 20th, 2024 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, ICFD2024 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 ICFD2024 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 middle of November is the best season of Sendai.

CONFERENCE COMMITTEE:

Executive Committee Members:

Tetsuya Uchimoto (General Co-Chair of ICFD2024, Tohoku University)
Gael Sebald (General Co-Chair of ICFD2024, INSA de Lyon, CNRS)
Kaoru Maruta (Director, IFS, Tohoku University)

International Scientific Committee Members:

Chair: Shigeru Obayashi (Tohoku University)

Asia

Debasish Biswas (Toshiba Ltd.)
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Zhenmao Chen (Xi'an Jiaotong University)
Jinsoo Cho (Hanyang University)
Ketaro Doi (Toyohashi University of Technology)
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Jun Ishimoto (Tohoku University)
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XinGang Liang (Tsinghua University)
Yao-Hsien Liu (National Yang Ming Chiao Tung University)
Kaoru Maruta (Tohoku University)
Hiroki Nagai (Tohoku University)
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Akihiro Sasoh (Nagoya University)
Takehiko Sato (Tohoku University)
Masaya Shigeta (Tohoku University)
Hyung Jin Sung (KAIST)
Toshiyuki Takagi (Tohoku University)
Takashi Tokumasu (Tohoku University)
Michio Tokuyama (Tohoku University)
Jongshinn Wu (National Yang Ming Chiao Tung University)
Satoru Yamamoto (Tohoku University)
Kazuya Yoshida (Tohoku University)

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Christian Boller (Saarland University)
Jean-Yves Cavaillé (INSA de Lyon)
Bastien Chopard (University of Geneva)

Philippe Dagaut (CNRS-INSIS)
Vincent Fridrici (École Centrale de Lyon)
Alexis Giauque (École Centrale de Lyon)
Fredrik Lundell (KTH Royal Institute of Technology)
Sergey S. Minaev (Far-Eastern Federal University)
Gael Sebald (INSA de Lyon-CNRS)

Middle East

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North America

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

Oceania

Masud Behnia (Macquarie University)
Weihua Li (University of Wollongong)
Gary Rosengarten (RMIT University)
Victoria Timchenko (The University of NSW)

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Joon Sik Lee (Seoul National University)
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Dimos Poulikakos (ETH Zurich)
Serge A. Shapiro (Freie University Berlin)
Alexander Vasiliev (Moscow State University)
Yiannis Ventikos (University College London)
Miklos Zrinyi (Semmelweis University)

North America

Louis N. Cattafesta III (University of Florida)
Ishwar K. Puri (Virginia Tech)
John P. Sullivan (Purdue University)
Satish Udpa (Michigan State University)

Organizing Committee Members:

Kenichi Funamoto (Chair), Kaoru Maruta, Hisanori Masuda, Toshihiro Ogawa, Makoto Ohta, Anna Suzuki, Yoshitaka Suzuki, Tetsuya Uchimoto (Observer) Tomohiro Okazaki

ICFD2024 Secretariat:

Natsuko Hatakeyama, Fumi Yoshizawa, Tomomi Nagayoshi

Plenary Lectures

Prof. Annemie Bogaerts (University of Antwerp, Belgium)
"Computational Fluid Dynamics Simulations of Plasma Reactor Design for Gas Conversion Applications"

Prof. Epaminondas Mastorakos (University of Cambridge, UK)
"Applications and modelling of dual-fuel combustion"

Prof. Jonathan F. Morrison (Imperial College London, UK)
"Boundary Layer Control with Moving Surfaces"

Sessions

General Session

GS1: **General Session**
Co-Organizers: T. Uchimoto, K. Funamoto (Tohoku University)

Organized Session

OS1: **The Second 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 Second 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), O. L. Gulder (University of Toronto), K. Maruta (Tohoku University)

OS3: **The Second International Symposium on Integrated Flow Science IV**
Advanced Semiconductor and Digital Transformation
Co-Organizers: D. Ohori, K. Endo (Tohoku University)

OS4: **Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition**
Co-Organizers: Y. Saito (Tohoku University), L. Kamps (Hokkaido University / Letara Ltd.)

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)

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), J. S. Park (Inha University), A. Yakeno (Tohoku University)

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 Technology**
Co-Organizers: K. Odagiri (JAXA), M. Nishikawara (Nagoya University), 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: **Innovations in Oncology**
Co-Organizers: C. Moyret-Lalle (Cancer Research Center of Lyon), R. Charlotte (Claude Bernard University Lyon 1), J.-P. Rieu (Claude Bernard University Lyon 1), F. Hollande (The University of Melbourne), K. Funamoto (Tohoku 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), H. Yingxue (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)

OS19: **Multiphase Thermal Fluid Flow and Its Interface Dynamics**
Co-Organizers: J. Okajima (Tohoku University), T. Okabe, M. Shirota (Hirosaki University)

OS20: **Multiphysics in Fluid Mechanics**
Co-Organizers: M. Shigeta (Tohoku University), M. Tanaka (Kyushu University), Y. Saito (Kyushu Institute of Technology), Y. Inada (Saitama University), J. Yoshikawa (Miyagi Prefectural Government), N. Kodama (Nagoya University), H. Komen (Osaka University), M. Sugimoto (Tohoku University)

OS21: **Smart Fluids & Soft Matters and Their Advanced Applications**
Co-Organizers: M. Nakano (SmartTECH Lab. Inc.), X. Gong (University of Science and Technology of China), W. Li (University of Wollongong), G. Sebald (INSA Lyon-CNRS-Tohoku University)

OS22: **Liaison Office Session**
Co-Organizers: M. Ohta, T. Uchimoto, T. Tokumasu, A. Komiya (Tohoku University)

OS23: **The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics**
Co-Organizers: T. Koizumi, A. Nakamura, M. Okawa, D. Tsuneoka (Tohoku University)
Supervisors: Y. Kanda, T. Ikami, Y. Kaneko (Tohoku University)

OS24: **The 24th International Symposium on Advanced Fluid Information (AFI-2024) IFS Collaborative Research Forum**
Co-Organizers: H. Masuda, T. Uchimoto (Tohoku University)
Fluids Science Research Award Lectures

OS25: **IFS Lyon Center Collaborative Research Forum**
Organizer: T. Uchimoto (Tohoku University)

OS26: **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 18 @ EX-2 & EX-1, Exhibition Bldg.

ISC Meeting (closed meeting): 12:00-13:00, Monday, November 18 @ CON-8, Conference Bldg.

Students / Young Birds Friendship Night: 19:00-20:00, Monday, November 18 @ EX-Hall-1A, Exhibition Bldg.

Banquet: 19:00-20:30, Tuesday, November 19 @ SENDAI (4th floor), Hotel Metropolitan Sendai

Exhibition Hall: Three Days @ EX-Hall-1A, Exhibition Bldg.

Exhibitor Presentation Session by Nobby Tech. Ltd., 12:50-13:00, Tuesday, November 19 @ EX-Hall-1A, Exhibition Bldg.
(Luncheon Seminar) PHOTRON LIMITED, 13:00-13:10, Tuesday, November 19 @ EX-Hall-1A, Exhibition Bldg.

Coffee Service: Three Days @ EX-Hall-1A, Exhibition Bldg.
13:10-19:00, Nov. 18
9:00-18:00, Nov. 19 (**Light meal** will be served during 12:30-13:10.)
9:00-18:00, Nov. 20 (**Light meal** will be served for lunch break time.)

Registration:
The conference registration desk is in the lobby, 1st floor, Exhibition Building.
9:00 -, Monday, November 18, 2024
8:30 -, Tuesday, November 19, 2024
8:30 -, Wednesday, November 20, 2024

Other information
A lactation/quiet room is available. Please ask the ICFD Secretariat.

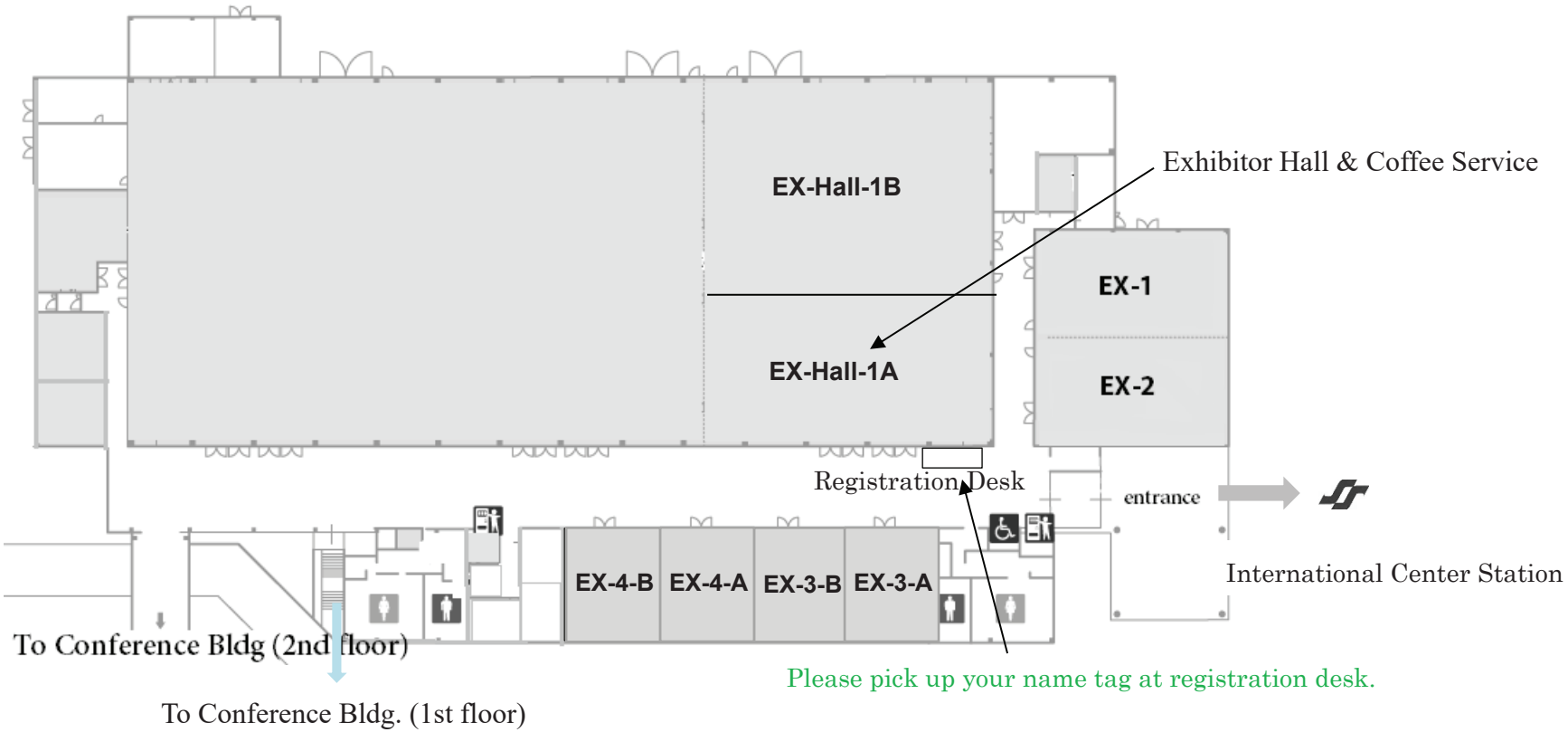
Group Photo
We will take a group photo at the following date and time, so please gather.
12:30, Tuesday, November 19, 2024 @ EX-Hall-1A, Exhibition Bldg.

Floor Plan of Sendai International Center

Exhibition building

Exhibition building **1st Floor**

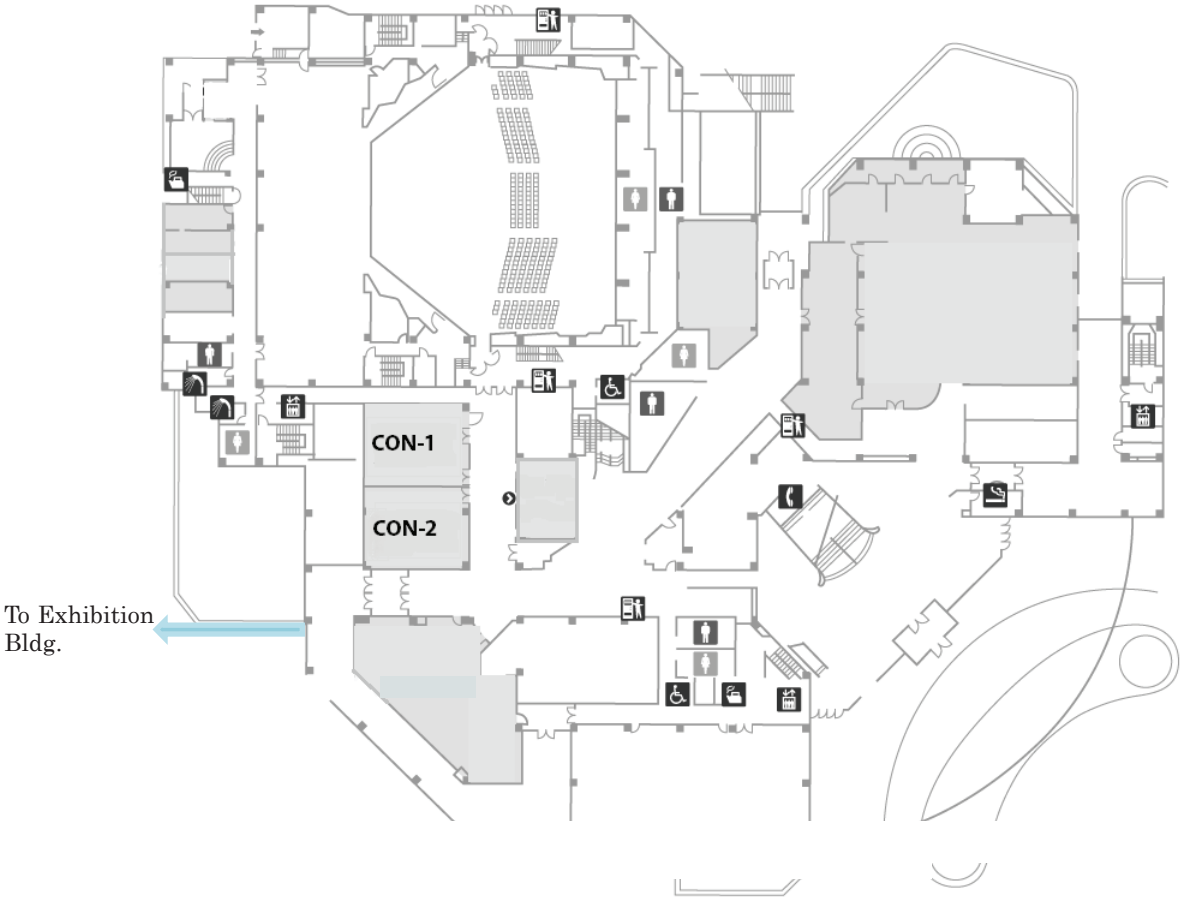
(EX-Hall-1A, EX-Hall-1B, EX-1, EX-2, EX-3-A, EX-3-B, EX-4-A, EX-4-B)



Conference building

Conference building **1st Floor**

(CON-1, CON-2)



Monday, November 18, 2024

9:40	EX-1 (satellite) & EX-2								
11:50	**Opening Address & Plenary Lectures**								
13:10	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2
14:40	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS1: The Second International Symposium on Integrated Flow Science I & III	OS8Advanced Physical Stimuli and Biological Responses	OS5Advanced Applications of Multi-functional Fluids	OS12Complex Thermofluid System	OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition	GS: General Session	OS20: Multiphysics in Fluid Mechanics
14:50	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2
16:20	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS1: The Second International Symposium on Integrated Flow Science I & III	OS8Advanced Physical Stimuli and Biological Responses	OS5Advanced Applications of Multi-functional Fluids	OS12Complex Thermofluid System	OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics		GS: General Session	OS20: Multiphysics in Fluid Mechanics
16:30	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2
18:00	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS1: The Second International Symposium on Integrated Flow Science I & III	OS8Advanced Physical Stimuli and Biological Responses	OS5Advanced Applications of Multi-functional Fluids	OS12Complex Thermofluid System	OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics		OS14: Innovations in Oncology	OS20: Multiphysics in Fluid Mechanics
19:00	Plenary Lecture @ EX-Hall-1B, Exhibition Bldg.									
20:00	Students / Young Birds Friendship Night @ EX-Hall-1A, Exhibition Bldg.									

	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	
9:00	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS8Advanced Physical Stimuli and Biological Responses	OS5Advanced Applications of Multi-functional Fluids	OS12Complex Thermofluid System	OS6Free Flight Experiment with MSBS and Ballistic Range	OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics	OS11: Microfluidics and Microphysiological Modeling	OS16Vortex Motion	9:00
10:30											10:30
10:40	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	10:40
	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS8Advanced Physical Stimuli and Biological Responses	OS5Advanced Applications of Multi-functional Fluids	OS12Complex Thermofluid System	OS6Free Flight Experiment with MSBS and Ballistic Range	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition	OS11: Microfluidics and Microphysiological Modeling	OS16Vortex Motion	
12:10											12:10
13:10	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	13:10
	OS24: IFS Collaborative Research Forum (AFI-2024)	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS3: The Second International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation		OS12Complex Thermofluid System	OS10: Two-Phase Thermal Control Technology	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition	OS11: Microfluidics and Microphysiological Modeling	OS17: Supercritical Fluid	
14:40											14:40
14:50	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	14:50
	OS24: IFS Collaborative Research Forum (AFI-2024)	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS3: The Second International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation	OS18Flow measurements using PSP/TSP Technique	OS12Complex Thermofluid System	OS10: Two-Phase Thermal Control Technology	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition	OS14: Innovations in Oncology	OS17: Supercritical Fluid	
16:20											16:20
16:30	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	16:30
	OS24: IFS Collaborative Research Forum (AFI-2024)	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS7: Advances in Simulation Techniques for the Computational Aerosciences	OS24: Fluids Science Research Award Lecturers	OS18Flow measurements using PSP/TSP Technique		OS10: Two-Phase Thermal Control Technology	OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition	OS14: Innovations in Oncology		
18:00											18:00
19:00	**19:00- Banquet @ Hotel Metropolitan Sendai**										19:00
20:30											20:30

Wednesday, November 20, 2024

	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	
9:00	OS24: IFS Collaborative Research Forum (AFI-2024)	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS15: Turbulence: from Fundamentals to Applications	OS7: Advances in Simulation Techniques for the Computational Aerosciences and OS25IFS Lyon Center Collaborative Research Forum JOINT SESSION	OS18Flow measurements using PSP/TSP Technique	OS9: Biomedical Flow Dynamics	OS21: Smart Fluids & Soft Matters and Their Advanced Applications	OS13Flow Realization, Measurement and Visualization	9:00
10:30									10:30
10:40	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	10:40
12:10	OS24: IFS Collaborative Research Forum (AFI-2024)	OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS15: Turbulence: from Fundamentals to Applications	OS25IFS Lyon Center Collaborative Research Forum	OS18Flow measurements using PSP/TSP Technique	OS9: Biomedical Flow Dynamics	OS21: Smart Fluids & Soft Matters and Their Advanced Applications	OS13Flow Realization, Measurement and Visualization	12:10
13:00	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	13:00
14:40		OS22Liaison Office Session	OS15: Turbulence: from Fundamentals to Applications				Ceremony Commemorating the 10th Anniversary of 1-m MSBS	OS13Flow Realization, Measurement and Visualization	14:40
14:50	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	14:50
16:20	OS24: IFS Collaborative Research Forum (AFI-2024)	OS26: JSPS Core to Core program workshop	OS15: Turbulence: from Fundamentals to Applications	OS25IFS Lyon Center Collaborative Research Forum	GS: General Session	OS9: Biomedical Flow Dynamics	OS21: Smart Fluids & Soft Matters and Their Advanced Applications	OS13Flow Realization, Measurement and Visualization	16:20
16:30	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	16:30
18:00		OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals	OS15: Turbulence: from Fundamentals to Applications	OS25IFS Lyon Center Collaborative Research Forum	GS: General Session	OS9: Biomedical Flow Dynamics	OS21: Smart Fluids & Soft Matters and Their Advanced Applications		18:00

9:40 EX-1 (Satellite room) & EX-2

9:40-10:00 **Opening Address**

10:00-11:50 **Plenary Lectures I**

10:00-10:50
"Boundary Layer Control with Moving Surfaces"
Jonathan F. Morrison
Chair: Shigeru Obayashi

11:00-11:50
"Applications and modelling of dual-fuel combustion"
Epaminondas Mastorakos
Chair: Kaoru Maruta

11:50 BREAK

13:10

EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2
OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** Multistage reactions *Chair: Y. Morii*	**OS1: The Second International Symposium on Integrated Flow Science I & III** *Chair: J. Ishimoto*	**OS8Advanced Physical Stimuli and Biological Responses** *Chair: Y.-C. Cheng*	**OS5Advanced Applications of Multi-functional Fluids** Plasma Chemistry *Chair: H. Takana*	**OS12Complex Thermofluid System** Experimental Flow *Chair: Y.-H. Liu*	**OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics** *Chair: J. Okajima*	**OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition** Hybrid Rocket Fuel Session *Chair: Y. Saito*	**GS: General Session** *Chair: K. Ohtani*	**OS20: Multiphysics in Fluid Mechanics** Plasma, thermal, and multiphase flows 1 *Chairs: M. Shigeta, Y. Inada*
OS23-1 - OS23-64 Preparation Time	13:10-13:40 OS2-1 *Invited* On the Characterization of Biofuels Cool Flame Products: Ethers. *P. Dagaut, N. Belhadj, Z. Dbouk, R. Benoit* 13:40-13:58 OS2-2 Time-resolved Species Measurement During the Ignition Process of DME Premixed Cool Flames *M. Zhou, M. Lee, Y. Ju, Y. Suzuki* 13:58-14:16 OS2-3 Novel Analysis of Fuel-Lean Premixed Stretched Cool and Hot Flames in n-Heptane/Air Mixture *A. Tsunoda, Y. Morii, K. Maruta* 14:16-14:34 OS2-4 Pyrolysis of Liquid Fuels and Soot Formation at Elevated Pressures in a Temperature Controlled Micro Flow Reactor *M. R. Razavi, Ö. L. Gülder*	13:10-13:30 OS1-1 Non-steady CFD Analysis of Gas-liquid Mixing of Non-Newtonian Fermentation of Filamentous Fungi *S. Susukida, K. Muto, K. Miyazawa, A. Yoshimi, Y. Kato, J. Ishimoto, K. Abe* 13:30-13:50 OS1-2 Numerical Investigation on a Hematite Pellet Reduced by CO-H_2 Mixtures *X.-W. Yang, S.-Y. Hsu, P.-B. Liu* 13:50-14:10 OS1-3 Investigation of Positive Electrode Material in Solid Oxide Fuel Cells for Emission Reduction *A. M. Willsey, T. S. Welles, J. Ahn* 14:10-14:30 OS1-4 Investigation of the Effects of Long-Term Direct-Ammonia Operation on Solid Oxide Fuel Cells *C. Wilhelm, J. Ahn*	**Opening** 13:05-13:10 *T. Sato, Y.-C. Cheng* 13:10-13:40 OS8-1 *Invited* Poroelastodynamic Modelling of Articular Cartilage *D. Chou* 13:40-13:55 OS8-2 Experimental and Finite Element Analysis of the Microstructural Design for Femoral Implants *L.-T. Chen, W.-Y. Jang* 13:55-14:10 OS8-3 The Plasma Simulation of the Ion Thruster Using the Coupling of Finite Element Method and PIC-DSMC Method *T.-L. Li, D. Chou* 14:10-14:40 OS8-4 *Invited* Investigation of Vascular Endothelial Cell Dynamics Using Microfluidic Platforms to Control Microenvironments *K. Funamoto*	13:10-13:30 OS5-1 Effects of Cavitation Intensity on Synthesis of Carbon Nanoparticles and Their Catalytic Performance *H. Ota, N. Takeuchi, M. Kodama, H. Takana, O. L. Li* 13:30-13:50 OS5-2 Study on Optimization of The H_2O_2/O_3 Supply Rate for the Decomposition of Persistent Organic Compounds *A. Xonelatha, R. Sakamoto, T. Hirakawa, N. Takeuchi* 13:50-14:10 OS5-3 Scale-up and Application Prospects of Plasma Decomposition of PFOS *S. Qing, Y. He, D. Wang, T. Namihira, N. Takeuchi* 14:10-14:30 OS5-4 Enhanced Cell Membrane Fragility Induced by Reactive Oxygen Species Transport Through Plasma Jet Irradiation into Cell Suspension *T. Yano, R. Goda, K. Kudo*	13:10-13:45 OS12-1 *Invited* Cleanroom Airflow Visualization by Large Scale Particle Image Velocimetry (LPIV): Focusing on the Semiconductor Wafer Box and the Hospital Operation Room *S.-C. Hu, A. X. Andrade, O. A. Zargar, T. Lin* 13:45-14:00 OS12-2 Experimental Study on the Influence of Mesh Size for Microbubble Generation in Water *H.-Y. Wang, K. B. Lua, J.-S. Wu, C.-H. Dylan Tsai* 14:00-14:15 OS12-3 Effects of the Phase Lag of Magnetic Particle Chain in a Dynamical Field *Y.-T. Tu, C.-Y. Chen* 14:15-14:30 OS12-4 The Influence of Electrolytic Bubbles from Magnetohydrodynamic Jet *Y.-H. Chen, M.-H. Lu, C.-Y. Chen*	13:10-13:50 OS19-1 *Invited* Stress Induced by Droplets Impacting onto Soft Substrates *Y. Tagawa, K. Matsunuma, Y. Iwasawa, H. Maruoka, Y. Yokoyama* 13:50-14:20 OS19-2 Drop Propulsion on Heated Plate with Asymmetric Heterogeneous Wettability *R. Ato, R. Goto, T. Miyagawa, M. Shirota* 14:20-14:40 OS19-3 On the Dynamics of a Laser-induced Cavitation Bubble in a Corner of a Flexible Beam and a Rigid Wall *S. Haranaga, S. Maruyama, A. Kiyama, K. Sato, D. Kang*	13:10-13:25 OS4-1 Empirical Analysis of Fuel Regression Rate Considering Swirl Geometry in Hybrid Rocket Engines *K. Shimotake, K. Murakami, Y. Funami, K. Takahashi* 13:25-13:40 OS4-2 Study on Solid Fuel Made from Polyethylene and Polypropylene Sorted from Ocean Plastics for Hybrid Rockets *Y. Takahashi, K. Takahashi, T. Sakata* 13:40-13:55 OS4-3 Study on Frequency Characteristics of Low Frequency Instabilities in 2D Slab Burner *Y. Ishizuka, T. Morita, Y. Kawabata, K. Takahashi* 13:55-14:10 OS4-4 Study on Solid Fuels for Hybrid Rockets made of WAX and PLA with added Oxidizer *K. Murakami, K. Takahashi* 14:10-14:25 OS4-5 Combustion Characteristics of Solid Fuels for Hybrid Rockets with Added B and Mg/Al Powders *C. Nakashima, K. Takahashi*	13:10-13:25 GS1-1 Investigation of the Improvement of Thermo-Hydraulic Performance by Applying Spherical Dimples In Different Spacing Configurations *F. Yıldırım, M. Gürdal* 13:25-13:40 GS1-2 Elastocaloric Solid-State Refrigeration Device: Design of Single Stage System Using Natural Rubber for Near Room Temperature Cooling and Analytical Modelling *M. Sion, A. Komiya, G. Coativy, G. Sebald, S. Xin* 13:40-13:55 GS1-3 Examining the Effect of Encapsulated PCMs with Different Features on Battery Thermal Management System *B. Kursuncu, A. Ustaoglu, J. Okajima, F. Yıldız* 13:55-14:10 GS1-4 Effect of Different Encapsulated PCM Geometries on Battery Thermal Management System *B. Kursuncu, A. Ustaoglu, J. Okajima* 14:10-14:25 GS1-5 The Kinetics of Coacervate Formation Based on Elastin-like Polypeptides with Varying Hydrophobicity Using Coarse-Grained Molecular Dynamics *H. Takegahara, K. Funamoto, T. Mabuchi*	13:10-13:40 OS20-1 *Invited* Multiscale Multiphysics Modelling of Wire-Arc Additive Manufacturing *A. B. Murphy, Y. H. Kim, D. Gunasegaram, P. W. Cleary, D. G. Thomas* 13:40-13:55 OS20-2 Numerical Simulation of a Slurry Bubble Column Using Smoothed Particle Hydrodynamics *M. Hirota* 13:55-14:10 OS20-3 SPH Simulation of Toe-like and Levee-like Structure Formation of Lava Flow *S. Tomita, J. Yoshikawa, M. Sugimoto, H. Komen, M. Shigeta* 14:10-14:25 OS20-4 Thermocline Behaviour of A Packed Bed Thermal Energy Storage System *M. I. D. bin Osman, S. Tamura, K. Matsubara, T. Kodama, S. Bellan* 14:25-14:40 OS20-5 Characteristics of Oil-air Two Phase Flow Field of Rotating Disk under Low Temperature Lubrication *C. Wei, W. Wei, D. Nelias, S. Yuan*

14:40 BREAK

14:50

EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2
OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** Combustion products & dynamics *Chair: E. C. Okafor*	**OS1: The Second International Symposium on Integrated Flow Science I & III** *Chair: J. Ishimoto*	**OS8Advanced Physical Stimuli and Biological Responses** *Chair: D. Chou*	**OS5Advanced Applications of Multi-functional Fluids** Thermal / Non-Thermal Plasma *Chair: T. Fujino*	**OS12Complex Thermofluid System** Computational Fluid Dynamics I *Chair: Y.-H. Liu*	**OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics** *Chair: T. Okabe*		**GS: General Session** *Chair: M. Hirota*	**OS20: Multiphysics in Fluid Mechanics** Plasma, thermal, and multiphase flows 2 *Chairs: M. Tanaka, N. Kodama*
OS23-1 - OS23-17 Short Oral Presentation & Poster Presentation	14:50-15:08 OS2-5 On the Formation of Aromatics From Cyclic Hydrocarbon Fuels Under Cool Flame Conditions: From Methylcyclohexene to Terpenes. *P. Dagaut, Z. Dbouk, R. Benoit* 15:08-15:26 OS2-6 Numerical Investigation on a Carbon Particle Burning in Different Atmospheric Conditions *H.-H. Tang, S.-Y. Hsu, P.-B. Liu, D.-Q. Vo*	14:50-15:10 OS1-5 Metal-Doped Biomass Derived Carbon Material for Energy Storage Application *K. Fields, S. Erdman, J. Ahn* 15:10-15:30 OS1-6 The Effect of Wind Direction on the Smoldering Spread of Incense Sticks *P. Viriya-amornkit, K. Kuwana, Y. Qin, X. Huang*	14:50-15:20 OS8-5 *Invited* A Novel Detection Method for Metal Contamination Within Microalgae Cells Using Dielectrophoresis *C.-J. Li, H.-Y. Wang* 15:20-15:50 OS8-6 *Invited* 20-year-old PVA-H biomodel *M. Ohta, R. Hasegawa, S. Sasaki, A. Omiya, H. Kosukegawa*	14:50-15:10 OS5-5 Data Assimilation for Determination of EHD Force and Heating Fields Based on Velocity and Density Field Measurements *Y. Kaneko, A. Yamanaka, H. Nishida* 15:10-15:30 OS5-6 Conversion of Methane and Carbon Dioxide Using Triple Thermal Plasma *H. Ko, Y. Lee, J. Oh, S. Choi*	14:50-15:10 OS12-5 Numerical Computations of Complex Phenomena for Practical Industrial Applications by HPC *W.-H. Wang, H.-C. Chang, M.-Z. Li* 15:10-15:25 OS12-6 Investigation of Shark Nasal Cavity Flow in Motion with Computational Fluid Dynamics *Y.-H. Lin, W.-H. Wang*	14:50-15:10 OS19-4 Enhanced Pancake Model for Dynamics of Impacting Drops *T. Yamaya, R. Miura, T. Miyagawa, M. Shirota* 15:10-15:30 OS19-5 Predicting Shear-thinning Viscosity through Droplet Impact Using Machine Learning *M. Naito, S. Kumagai, S. Miyatake, Y. Tagawa*		14:50-15:05 GS1-6 A Handheld-Type Combustion-Driven Needle-Free Liquid Jet Injector Design for Drug Delivery *J. Sadek, R. Portaro, H. D. Ng* 15:05-15:20 GS1-7 Efficient Method for Ablation State Identification of Charring Ablators *Y. Yin, H. Ji, C. Tao, C. Zhang, J. Qiu*	14:50-15:20 OS20-6 *Invited* How Physics-Informed Neural Networks are Utilized for Accurate Calculations and Measurements of Electron Transport Properties in Gases *S. Kawaguchi, K. Takahashi, K. Satoh* 15:20-15:35 OS20-7 Modeling and Simulation of Transient Dynamics of Mooring Systems Influenced by Realistic Ocean Waves *U. Torres-Herrera, A. Keramat, H.-F. Duan*

	15:26-15:44 OS2-7 Ignition of Fuel Beds to Firebrand Showers Compared to Ignition of Fuel Beds by Non-Reacting Heaters *S. Suzuki, S. L. Manzello* 15:44-16:02 OS2-8 Pressure Scaling of Sooting Processes in a Counterflow Diffusion Flame from 1 to 6 bar *R. Sawanni, Ö. L. Gülder* 16:02-16:20 OS2-9 Propagation of Ultra-lean Hydrogen/air Flame in a Hele-Shaw Cell *L. Yang, Z. Chen*	15:30-15:50 OS1-7 Geometric Effect on the Aerodynamics of a Spinning Hollow Cylinder in Flight *K. Oguchi, D. Tanaka, M. Nakano, J. Ishimoto, T. Adachi, K. Hirata*	15:50-16:05 OS8-7 Effect of High-Speed Water Nanodroplets on Cell Response *K. Iwasawa, S. Liu, T. Nakajima, T. Sato* 16:05-16:20 OS8-8 Experimental Study on the Configurations of Double Emulsion under Different Flow Ratios *S.-H. Weng, C.-H. D. Tsai*	15:30-15:50 OS5-7 Numerical Simulation of Methane Pyrolysis Process Using Triple Thermal Plasma *Y. H. Lee, J.-H. Oh, S. Choi* 15:50-16:10 OS5-8 Numerical and Experimental Analysis of Hollow Electrode Plasma Torch with Reverse Polarity Discharge Structure *N.-G. Lee, S.-Y. Baek, D.-H. Lee, S.-W. Kim, H.-W. Park, J.-H. Seo*	15:25-15:40 OS12-7 High-Fidelity CFD Simulation of Flow Induced 6 DOF Motion by Immersed Boundary Method *C.-W. Tsao, W.-H. Wang* 15:40-15:55 OS12-8 CFD Analysis of Convective Heat Transfer from a Heated Horizontal Cylinder Rotating in The Air: From Laminar to Turbulent Flow *Q. T. N. Nguyen, H.-H. Kuo, K. C. Lin* 15:55-16:10 OS12-9 Study of Multiple Injection Ports of Single Expansion Ramp Nozzle *H.-R. Hu, M.-C. Lo*	15:30-15:50 OS19-6 Numerical Study of Droplet Thermocapillary Motion in Microchannels Using Lattice Boltzmann Method *X. Fu, G. Zhai, C. Lai* 15:50-16:10 OS19-7 Experimental Investigation on a Novel Coherent Structures Formed by Suspended Low-Stokes-Number Particles in a High-Aspect-Ratio Liquid Bridge *S. Shidomi, S. Noguchi, I. Ueno*		15:20-15:35 GS1-8 Numerical Investigation of Three-Dimensional Shock Structure in Free-Flying Ring Intake Flowfield *K. Omiya, A. Shibakita, H. Ogawa, K. Ohtani* 15:35-15:50 GS1-9 Jet Features of Explosive Volcanic Eruptions based on Shock Tube Experiments *N. Steinau, K. Tsunematsu, K. Ohtani, K. Seo, A. Kaneko, T. Ogawa* 15:50-16:05 GS1-10 Understanding the Role of Fluids in the Nucleation Process of the Noto, Japan, 2024, Mw 7.5 Earthquake *C. Langenbruch, Y. Mukuhira, K. Yoshida, M. Uno*	15:35-15:50 OS20-8 Time-Dependent Numerical Simulation of Heat and Mass Transports in Water Plasma Jet with Evaluation of Transport Coefficients of Water-Air Mixture System *Y. Kishimoto, J. Yoshikawa, M. Sugimoto, M. Tanaka, T. Watanabe, M. Shigeta* 15:50-16:05 OS20-9 Numerical Analysis of Fe-Sm Alloy Nanopowder Growth in Thermal Plasma Tail Using Binary Aerosol Model *S. Tsurumi, J. Yoshikawa, M. Sugimoto, J. Wang, Y. Hirayama, M. Shigeta* 16:05-16:20 OS20-10 Numerical Simulation of Two-fluid Magnetohydrodynamic Flows in Complex Channels and Around Bluff Bodies *A. Sinha, S. Gopalakrishnan, U. Bhandarkar*
16:20	BREAK								
16:30	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2
	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** Instabilities and dynamics *Chair: Ö. L. Gülder*	**OS1: The Second International Symposium on Integrated Flow Science I & III** *Chair: J. Ishimoto*	**OS8:Advanced Physical Stimuli and Biological Responses** *Chair: T. Sato*	**OS5Advanced Applications of Multi-functional Fluids** MHD / Propulsion *Chair: N. Takeuchi*	**OS12Complex Thermofluid System** Fluid Mechanics Application I *Chair: K.-M. Lin*	**OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics** *Chair: M. Shirota*		**OS14: Innovations in Oncology** *Chair: J.-P. Rieu*	**OS20: Multiphysics in Fluid Mechanics** Lattice Boltzmann method simulation for thermal and multiphase flows *Chairs: Y. Saito, H. Komen*
	OS23-18 - OS23-34 Short Oral Presentation & Poster Presentation	16:30-17:00 OS2-10 *Invited* Critical Role of Local State Quantities in Determining Burning Velocity: Insights from Fuel Mass Fraction and Temperature Profiles *Y. Morii, A. Tsunoda, K. Maruta* 17:00-17:18 OS2-11 On Studies of Flame Morphology based on Bifurcation Theory *K. Matsue* 17:18-17:36 OS2-12 Effect of Buoyancy on Thermoacoustic Instability in an Rijke Tube with Adjustable Pitch Angles *B. Pang, J. Liu, K. Wu, L. Yang, J. Li* 17:36-17:54 OS2-13 A Network-based Data-driven Technique for Diagnosing Thermoacoustic Combustion Instabilities *M. Lee*	16:30-16:50 OS1-8 Dehumidification in the Heat Exchanger of an EECS in Ground Parked Condition *N. Tomiyama, K. Akinaga, T. Adachi* 16:50-17:10 OS1-9 Atomization Process of Planar Air-blast Atomizer *I. Oshima, A. Sou*	16:30-17:00 OS8-9 *Invited* Multiscale Molecular Simulations for Biomolecular Systems *T. Mabuchi* 17:00-17:30 OS8-10 *Invited* Event-Based Camera for Aerodynamic Testing in High-Speed Flight *Z. P. Tan*	16:30-16:50 OS5-9 Numerical Investigation on Flow Loss of a Linear MHD Channel with Arc Electrodes *L. Zhao, L. Li, X. Chen, F. Wang, R. Li, A. Peng* 16:50-17:10 OS5-10 2D3V Particle-in-cell Plasma Simulation of Charge Separation and Particle Acceleration Dynamics in a Magnetic Nozzle *H. Suzuki, M. Takahashi* 17:10-17:30 OS5-11 Effects of Channel Geometry on MHD Taylor-Couette Flow with End Walls *T. Hasebe, T. Fujino, H. Takana, H. Kobayashi*	16:30-16:50 OS12-10 Measurement of Mechatronic Characteristics and Numerical Calculation of Hydrodynamic Parameters for Water-Wave Energy Harvesters *Y.-C. Su, Z. Wang, K.-S. Chen, T.-S. Yang* 16:50-17:10 OS12-11 A Study of the Thermoacoustic Phenomenon in the Traditional Piston Stirling Engines *H.-S. Yang, M. A. Ali* 17:10-17:30 OS12-12 Convective Heat Transfer in Plate Fin Heat Sink with Dimples *A. K. Patil, M. Kumar* 17:30-17:45 OS12-13 Effects of Ceramic Coating on Additively Manufactured Porous Structures *Y.-H. Lin, Z.-K. Tong, P.-W. Zhou, Y.-H. Liu* 17:45-18:00 OS12-14 OH Concentration Measurement with UV-LED Absorption Spectroscopy *C. Fu, Y.-H. Liao*	16:30-16:50 OS19-8 Microdroplet Impact Phenomena on a Heated Surface under Inertial Force Dominance *T. Tabata, M. Kawaguchi, Y. Tagawa* 16:50-17:10 OS19-9 Numerical Analysis of Liquid Film Formation in a Visco-Inertial Capillary Flow *D. Tsuneoka, J. Okajima* 17:10-17:30 OS19-10 Hydrodynamic and Heat Transfer Characteristics of Oscillatory Gas-liquid Taylor Flow *H. Tao, Z. Zheng, R. Gupta*		16:30-17:10 OS14-1 *Invited* Organoid Culture to Characterize Cancer *M. Inoue, Y. Nashimoto, Y. Hirai* 17:10-17:25 OS14-2 Challenge to Reconstruct an Engineered 3D Cancer Environment by Focusing on Tumor Cell Behavior in Tissue *D. Yoshino* 17:25-17:40 OS14-3 Integrating 3D Tumor Models and Hydrogel-based Microfluidics for Metabolic Control *E. Bastien, A. Diallo, J. Codevelle, H. Delanoë Ayari, C. Rivière*	16:30-16:45 OS20-11 Numerical Simulation of Electrically Conductive Gas-Liquid Two-Phase Flow Using Phase-Field Lattice Boltzmann Method *M. Sugimoto, M. Shigeta* 16:45-17:00 OS20-12 Generally Consistent Lattice Boltzmann Method for Reacting Flow *M. F. Arira, P. S. Palar, L. R. Zuhal* 17:00-17:15 OS20-13 Application of a Hybrid Lattice-Boltzmann Lagrangian Method to Predict Fibrous Particle Penetration Through Mesh Screens *T.-P. Duong, Y.-H. Li, S.-Y. Chou, K. C. Lin*
18:00	EX-Hall-1B									
18:10	18:10-19:00 **Plenary Lectures II** 18:10-19:00 "Computational Fluid Dynamics Simulations of Plasma Reactor Design for Gas Conversion Applications" *Annemie Bogaerts* Chair: Hidemasa Takana									
19:00										
	Students / Young Birds Friendship Night @ EX-Hall-1A, Exhibition Bldg.									
20:00										

	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	
9:00	**OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics**	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** Dynamics and engines *Chair: Z. Chen*	**OS7: Advances in Simulation Techniques for the Computational Aerosciences** *Chair: Y. Abe*	**OS8:Advanced Physical Stimuli and Biological Responses** *Chair: T. Mabuchi*	**OS5:Advanced Applications of Multi-functional Fluids** Advanced Multiphase Flow 1 *Chair: M. Motozawa*	**OS12:Complex Thermofluid System** Computational Fluid Dynamics II *Chair: W.-H. Wang*	**OS6:Free Flight Experiment with MSBS and Ballistic Range** MSBS and Ballistic Range, 1 *Chair: S. Obayashi*	**OS19: Multiphase Thermal Fluid Flow and Its Interface Dynamics** *Chair: J. Okajima*	**OS11:Microfluidics and Microphysiological Modeling** *Chair: K. Funamoto* *& Chair: E. Corvera Poiré*	**OS16:Vortex Motion** turbulence and vortex dynamics *Chair: Y. Hattori*	9:00
	OS23-35 - OS23-49 Short Oral Presentation & Poster Presentation	9:00-9:18 OS2-14 Model Experiment on Knocking for PRF Using a Constant Volume Chamber *S. Miyazaki, H. Moriyama, D. Nakao, T. Tezuka, Y. Morii, K. Maruta* 9:18-9:36 OS2-15 Numerical Study on Relationship between the Research Octane Number and "Explosive Transition of Deflagration" of Primary Reference Fuels *H. Moriyama, D. Nakao, A. Tsunoda, Y. Morii, K. Maruta* 9:36-9:54 OS2-16 Emission Characteristics of Compression-Ignition Engines Fueled with Pure Methanol *Y. Wu, Z. Huang, X. Zhang, Z. Zhang, W. Wang, C. Jin, Z. Zhang, Z. Zheng, H. Liu, C. Wang, M. Yao* 9:54-10:12 OS2-17 Analysis of Constant Thermodynamic Assumptions on Detonation Transition: New Perspective of Zel'dovich's Spontaneous Ignition Front *H. Okada, Y. Morii, A. Tsunoda, K. Akita, K. Maruta* 10:12-10:30 OS2-18 Ignition Delay Time and Flame Speed Validation of a Reduced Mechanism of Toluene Reference Fuel with Multi-Alcohols- A CFD Approach *A. Dahiya, Y. De Li, K. C. Lin*	9:00-9:20 OS7-1 Optimal Runge-Kutta Projection Methods for Non-Linear Systems *M. R. Najafian, B. C. Vermeire* 9:20-10:00 OS7-2 *Invited* Illustrating the Role of High-Fidelity Simulation and Machine Learning in Accelerating Development of Turbomachinery Technology *R. D. Sandberg*	9:00-9:30 OS8-11 *Invited* Multiphase Flow Approach for Biological Thermodynamics and Carbon-Neutral Energy Sciences *J. Ishimoto* 9:30-10:00 OS8-12 *Invited* Low Temperature Co-Fired Ceramics Device for Plasma Generation and Biomedical Applications *I. G. Ho, Y.-C. Cheng* 10:00-10:30 OS8-13 *Invited* Rapid Blood Flow Analysis and Blood Flow Database Creation Enabled by Deep Learning *H. Anzai, K. Yanagisawa, L. Jing, K. Shibata, K. Jin, M. Ohta*	9:20-9:50 OS5-12 *Invited* Reagentless Synthesis of Macroscopic Nanocellulose Filaments Decorated with Ag Nanoparticles *A. B. Dichiara, W. Hira, H. Takana* 9:50-10:10 OS5-13 pH Measurements Using Triple-Barreled Glass Microelectrodes for Biological Tissue-like Environments *T. Kishimoto, S. Nagayasu, K. Doi* 10:10-10:30 OS5-14 Particle Velocity Control by Drag and Electrical Forces in Micro- and Nanofluidic Channels *K. Aichi, I. Saito, M. Sakaiya, S. Ochi, T. Kishimoto, K. Doi*	9:00-9:15 OS12-15 Evaluating the Efficiency of PINNs in Simulating NACA 4 Series Airfoils *M.-Y. Chang, H.-C. Chang, W.-H. Wang* 9:15-9:30 OS12-16 Physic-Informed Neural Networks (PINNs) for Steady State Laminar Flow over a Chip *E. O. Teng, C.-G. Li, H.-C. Kan* 9:30-9:45 OS12-17 Comparison of Implicit Large Eddy Simulation with and without Wall Model at Low Reynolds Number *P.-K. Lin, C.-G. Li* 9:45-10:00 OS12-18 Vortex Induced Vibration of Tandem Cylinders in Turbulent Flow *M.-J. Chern, J.-Y. Fan, Y. H. Irawan, S. A. Raza* 10:00-10:15 OS12-19 Study of Irrigation Behavior in Root Canal Therapy Using Computational Fluid Dynamics *Y.-S. Huang, C.-G. Li* 10:15-10:30 OS12-20 Using CFD Technology in Torque Analysis and Noise Performance Optimization of Dental High-Speed Air Turbine Handpieces *Y.-Y. Liang, C.-G. Li*	9:00-9:30 OS6-1 *Invited* Comprehensive Static and Dynamic Modeling of a Magnetic Suspension and Balance System *C. P. Britcher, C. Hull, D. Cox, M. Schoenenberger* 9:30-9:45 OS6-2 Validation of Dynamic Stability Measurement of a Space Orbital Plane Model using Magnetic Suspension *H. Sugiura, N. Kobayashi, A. Tezuka* 9:45-10:00 OS6-3 Aerodynamic Characteristics of a Space Orbital Plane Model Measured with 1-m Magnetic Suspension and Balance System *N. So, I. Kida, R. Haga, M. Miyagi, H. Okuizumi, S. Obayashi* 10:00-10:15 OS6-4 Prospects for a New MSBS at Imperial College *J. F. Morrison* 10:15-10:30 OS6-5 Three-Degree-of-Freedom Free-Motion Wind Tunnel Testing Using a Magnetic Suspension System *K. Ueno, T. Sato, Y. Takeda, R. Nagasaka, M. Kikuchi*	9:00-9:40 OS19-11 *Invited* Hot Liquid Marble *P. K. Roy, Y. Takai, R. Matsubara, M. Tenjibayashi, T. Mouterde* 9:40-10:00 OS19-12 Modelling Secondary Atomization of Multiphase Droplets for Cryogenic Carbon Capture *P.-H. Chen, A. Ceschin, F. E. Hernández-Pérez, H. G. Im* 10:00-10:20 OS19-13 Experimental Investigation on Weber Number Effect on Heat Transfer of an Impacting Drop Containing Ice Particles *Y. Kimura, H. Echigo, J. Okajima, M. Shirota, T. Okabe*	9:00-9:45 OS11-1 *Invited* A Taperd Micro-vessel for Modeling Disease Response *Y.-J. Wu, K. Sone, K. Funamoto, W. Polacheck, T.-Y. Tu* 9:45-10:00 OS11-2 3D Human Blood-Brain Barrier in Brain Diseases on a Chip *S. Mama, M. Inagaki, H. Nishihara, K. Matsuo, A. Hashimoto, K. Funamoto, M. Tachikawa* 10:00-10:15 OS11-3 Development of Perfusable Vasculature Model in 3D Muscle Tissue *I. Kim, J. Kim, J. S. Jeon* 10:15-10:30 OS11-4 Evaluation of Reactive Oxygen Species in Microvascular Network during Reoxygenation by Using Microfluidic Devices *S. Yanagita, K. Funamoto*	9:00-9:20 OS16-1 Effect of Wall Transpiration on Görtler Vortices in High-speed Boundary Layers *A. Ahaggach, A. Sescu, Z. Koshuriyan, Y. Hattori* 9:20-9:40 OS16-2 Characterization of Vortices in the Transitional Boundary Layer on a Rotating Slender Cone *K. Yamada, K. Takahara, K. Kato, M. Matsubara* 9:40-10:00 OS16-3 An Asymmetric Vortical Flow Structure Based on Local Flow Geometry and Galilei Invariant Vortex Space *K. Nakayama* 10:00-10:20 OS16-4 Statistics of Vortices in Gross-Pitaevskii Quantum Turbulence Simulation *H. Miura, N. Sakaki, Y. Tsuji, K. Yoshida* 10:20-10:40 OS16-5 Prediction of Smoke-Inflow using Recursive Fourier Neural Operator *K. Zakaria, A. N. Sinisuka, P. S. Palar, L. R. Zuhal*	9:00
10:30	BREAK										10:30
10:40	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	10:40
	OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** NH3/H2/Sustainability *Chair: H. Zhao*	**OS7: Advances in Simulation Techniques for the Computational Aerosciences** *Chair: F. D. Witherden*	**OS8:Advanced Physical Stimuli and Biological Responses** *Chair: H. Anzai*	**OS5:Advanced Applications of Multi-functional Fluids** Advanced Multiphase Flow 2 *Chair: Y. Kaneko*	**OS12:Complex Thermofluid System** Viscous Fingering *Chair: C.-Y. Chen*	**OS6:Free Flight Experiment with MSBS and Ballistic Range** MSBS and Ballistic Range, 2 *Chair: K. Seo*	**OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition** Invited Session *Chair: Y. Saito*	**OS11:Microfluidics and Microphysiological Modeling** *Chair: T. Omori*	**OS16:Vortex Motion** compressible flow & stability *Chair: H. Miura*	
	OS23-50 - OS23-64 Short Oral Presentation & Poster Presentation	10:40-10:58 OS2-19 A Comprehensive Study of the Detailed Combustion Kinetic Mechanism of Organophosphorus Flame Retardants *F. N. O. Bruce, R. He, Z. Zhu, K. Kanayama, H. Nakamura, Y. Li* 10:58-11:16 OS2-20 Experimental and Detailed Kinetics Modeling Study of Bis (2,2,2-trifluoroethyl) Carbonate, a Fire Suppressant for Lithium-Ion Batteries *M. Khan-Ghauri, C. M. Grégoire, K. Kanayama, P. Diévart, S. Takahashi, T. Tezuka, H. Nakamura, L. Catoire, K. Maruta, E. L. Petersen, O. Mathieu*	10:40-11:00 OS7-3 Coherent Structures over Distributed Micro Roughness Related to Drag Reduction *T. Ogawa, A. Yakeno* 11:00-11:20 OS7-4 The Effect of Compressibility and Pressure Gradient on the Drag Reduction Performance of the Riblet *K. Kaneko, A. Oyama, A. Yakeno* 11:20-11:40 OS7-5 Discontinuity-capturing Numerical Scheme on Unstructured Grid for Single-phase and Liquid-gas Two-phase Compressible Flows with Phase Change *H. Wakimura, T. Aoki, F. Xiao*	10:40-11:10 OS8-14 *Invited* Towards Advanced Control and Application of Charged Cavitation for Biomedicine *S. Liu, T. Nakajima, T. Sato* 11:10-11:40 OS8-15 *Invited* Application of High-Speed Nanodroplets to Cleaning and Sterilization Treatments *T. Sato, S. Fujimura, S. Kanazawa, S. Liu, K. Tachibana, Y.-C. Cheng, J.-S. Lee, T. Okuma, K. Iwasawa, Y. Xiao, T. Nakajima* **Award Ceremony & Closing** 11:40-12:00 *T. Sato, Y.-C. Cheng*	10:40-11:00 OS5-15 Collapse Process of Gas Pore from a Rotating Metal Liquid Droplet *J. Yoshikawa, K. Itoh, H. Takana* 11:00-11:20 OS5-16 Developing Green, Anti-Wear Additives for Lubricating Oils: Adsorption and Structure at Steel Surfaces from Molecular Dynamics Simulations *P. A. Bonnaud, T. Kinjo, N. Sato, M. Tohyama* 11:20-11:40 OS5-17 Experimental Evaluation of Heat Transfer and Flow Resistance of Viscoelastic Drag-reduced Flow by Adding CNT or CNF *Y. Hayashi, M. Motozawa, M. Fukuta, W. Rakpakdee*	10:40-11:00 OS12-21 Phase Separation and Pattern Formation in Partially Miscible Fluids *L. Palodhi, M. Mishra* 11:00-11:15 OS12-22 Pattern Formation of Viscous Fingering Coupled with Phase Separation *C.-Y. Liao, C.-Y. Chen* 11:15-11:30 OS12-23 Viscous Fingering In Fluid Layers Of Non-monotonic Viscosity *S.-W. Hung, Y.-A. Chen, C.-Y. Chen* 11:30-11:45 OS12-24 Fluid Displacement in a Partially Miscible System with a 2-D Micromodel *S. Kiuchi, R. X. Suzuki, M. Mishra, T. Ban, A. Patmonoaji, Y. Nagatsu*	10:40-10:55 OS6-6 A Decade of Progress in 1-m MSBS *S. Obayashi, H. Okuizumi, H. Sawada, Y. Konishi, T. Nonomura, K. Asai* 10:55-11:10 OS6-7 Oxford 3-DoF Magnetic Suspension & Balance System: Update on Recommissioning Efforts *N. Anyamele, L. J. Doherty, P. Ireland* 11:10-11:25 OS6-8 Forced Displacement Technique for Measuring Blunt Body Aerodynamics in a Magnetic Suspension Wind Tunnel *M. Schoenenberger, D. Cox, C. Britcher, C. Hull* 11:25-11:40 OS6-9 Comparisons of Supporting Methods for a Magnetic Suspension and Balance System *Y. Isomura, N. Arima, K. Seo*	10:40-11:25 OS4-6 *Invited* Hybrid Rocket Propulsion Design Handbook - Introduction and Scope of the Textbook *A. C. Karp, E. T. Jens* 11:25-12:10 OS4-7 *Invited* Development of a Cost-Competitive Hybrid Rocket Space Launch System *Y.-S. Chen*	10:40-10:55 OS11-5 Development of a Lung-vascular Co-culture Model as an Antiviral Drug Screening Platform under Different Oxygen Concentrations *J. Kwon, D. Kim, I. Kim, H. Nam, J. S. Jeon* 10:55-11:10 OS11-6 Development of Four-Chamber Microfluidic Device for Generating Different Oxygen Conditions *N. Kawahara, S. Yanagita, S. Aratake, S. Hirose, N. Ghazi, J.-P. Rieu, K. Funamoto*	10:50-11:10 OS16-6 Low Fidelity Model for Compressible Euler Equation based on Logarithmic Conformation Reformulation *T. Nakazawa* 11:10-11:30 OS16-7 Isovortical Perturbations and Wave Energy on Steady Flows of a Compressible Baroclinic Fluid *Y. Fukumoto, R. Zou* 11:30-11:50 OS16-8 Stability of a Lamb-Oseen Vortex in a Tripolar Straining Field *A. S. P. Ayapilla, Y. Hattori*	

	11:16-11:34 OS2-21 Premixed Flame Propagation and Oscillation of Hydrogen/Methane/Propane Mixtures in a Narrow-Gap Disk Burner *S. M. Lee, N. I. Kim* 11:34-11:52 OS2-22 Numerical Investigation On The Extinction Limits For PMMA Sphere Burning In Microgravity *C.-W. Huang, S.-Y. Hsu, J.-H. Huang, J. S. T'ien* 11:52-12:10 OS2-23 Numerical Study of CO_2 Conversion to SAF in a Fixed Bed Catalytic Reactor *R. Shan, S. Ma, V. B. Nguyen, C. W. Kang, T.-B. A. Lim* 12:10-12:28 OS2-54 Acceleration of Chemically-reactive Flow Simulations by Local CSP-based Stiffness Reduction *A. Carinci, R. M. Galassi, M. Rafi Malik, F. E. Hernández-Pérez, M. Valorani, H. G. Im*	11:40-12:00 OS7-6 Numerical Simulation of Asymmetric Vortices on Ogive-Cylinder at High Angle of Attack Using ILES *H. Yang, B. Park, H. Kang, J. Park, S. Lee, J. S. Park*		11:40-12:00 OS5-18 Efficient Thermal Management Through Heat Transfer Optimization in an Enclosure *S. Ahmad, H. Takana*	11:45-12:00 OS12-25 Experimental Study on Effect of Chemical Concentration on Confined Chemical Garden Patterns Using Interfacial Rheological Measurement *F. J. Kobayashi, R. X. Suzuki, M. Takano, Y. Nagatsu*	11:40-11:55 OS6-10 Free-motion Wind Tunnel Testing of a Lifting Atmospheric Entry Capsule *K. Onuma, K. Ueno, Y. Takeda, K. Asai, H. Nagai, T. Ikami, Y. Sasaki, M. Okawa* 11:55-12:10 OS6-11 Dynamic Instability Analysis of Free-Flying Objects in Transonic Regime Using Ballistic Range *J. Kim, E. D. Leon, J. Hur, T. Ikami, K. Takahashi, T. Ogawa, M. Ahn Furudate, B. J. Lee, H. Nagai*		11:10-11:25 OS11-7 Analysis of the Effect of Different Boundary Conditions on an Elastic Model of the Arterial System Considering the Rheology of Human Blood *A. Torres Rojas, D. Yáñez Guarneros, E. Corvera Poiré* 11:25-11:40 OS11-8 Microorganisms Co-encapsulation within Microfluidic Gel Beads and Their Analysis Using Flow Cytometry to Discover Antibiotic-Producing Strains *A. Ochoa, P. G. De la Luz-Ángeles, Y. Rodríguez-Hernández, J. H. Lara-Baños, L. F. Olguin*	11:50-12:10 OS16-9 Nonlinear Dynamics of Helical Vortex Disturbed by Long-Wave Instability *Y. Hattori, I. Delbende, M. Rossi*
OS23-1 - OS23-64 ※Please remove posters by 12:30.										
12:10										12:10
Group Photo **Luncheon Session** Exhibitor Presentation	BREAK									
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EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	
OS24: IFS Collaborative Research Forum (AFI-2024) *Chair: T. Ikami*	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** NH3/H2/Sustainability *Chair: A. Hayakawa*	**OS7: Advances in Simulation Techniques for the Computational Aerosciences** *Chair: T. Haga*	**OS3: The Second International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation** *Chair: D. Ohori*		**OS12Complex Thermofluid System** Fluid Mechanics Application II *Chair: K. C. Lin*	**OS10: Two-Phase Thermal Control Technology** *Chair: M. Nishikawara*	**OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition** Invited Session / *Chair: Y. Saito &* Analysis, and Developmental Techniques Session / *Chair: K. Ozawa*	**OS11Microfluidics and Microphysiological Modeling** *Chair: T. Fukui*	**OS17: Supercritical Fluid** *Chair: Y. Kanda*	
CRF-1 - CRF-25, CRF-32, CRF-42, CRF-72, CRF-76 Short Oral Presentation	13:10-13:28 OS2-24 Combustion and NOx Formation of Opposed-jet Diffusion Flames with Natural Gas/Hydrogen Blended Fuels *C.-Y. Huang, H.-Y. Shih* 13:28-13:46 OS2-25 Stabilization Mechanism for CH_4/H_2 Jet Lifted Flames with Various Inert Gases in Laminar/Turbulent Transition *D. S. Jeon, N. I. Kim* 13:46-14:04 OS2-26 Development of a Reduced Chemical Kinetic Mechanism for the Combustion of Ammonia/Diethyl Ether (DEE) Flames *D. Sharma, J. Xing, A. L. Pillai, R. Kurose* 14:04-14:22 OS2-27 Development and Validation of Skeletal Mechanism of Ethylene/Ammonia in Plug Flow Reactor *W. Lin, W. Z. Jia, K. C. Lin* 14:22-14:40 OS2-28 Toward Methane-Equivalent Thermochemical Properties In Ammonia Co-Firing Systems For Gas Turbine Applications *W. Li, Y. Zhang, J. Fang, Y. Li*	13:10-13:30 OS7-7 Multi-scale Modeling Method for Structural Design of CFRP Aircraft *Y. Nakai, Y. Abe, K. Ryuzono, Y. Kawagoe, T. Okabe* 13:30-13:50 OS7-8 Numerical Investigation of a Vertical Axis Wind Turbine for Performance Improvement Using Plasma Actuator *T. Ito, K. Lee, S. Kikuchi* 13:50-14:10 OS7-9 Image-based Data Compression of High-fidelity Turbulence Data *H. Nagata, H. Asada, S. Kawai, S. Kawai* 14:10-14:30 OS7-10 Geometrically Nonlinear Analysis and Structural Sizing of Composite Aircraft Wings *Y. Liu, K. Nakamura, S. Date, T. Nagashima, Y. Abe*	13:10-13:40 OS3-1 *Invited* High-efficiency GaN Micro-LEDs Fabricated by Neutral Beam Etching for VR/AR Applications *X. Wang, D. Ohori, S. Samukawa* 13:40-14:10 OS3-2 *Invited* Atomic Layer Technology and Its Application for Advanced Heterogeneous Integrated Nano-device = Emerging Plasma Nanotechnology=. *S. Samukawa* 14:10-14:25 OS3-3 Estimation of Carrier Mobility in Si-Nanopillar/SiGe Composite Films by Laser Heterodyne Photothermal Displacement Measurements under Electric Field *Y. Uno, T. Harada, D. Ohori, K. Endo, S. Samukawa, T. Ikari, A. Fukuyama* 14:25-14:40 OS3-4 Epitaxial Growth of High-quality Mg_3Sb_2-based Thin Films and Their Thermoelectric Properties *A. Ayukawa, N. Kiridoshi, T. Kuriyama, W. Yamamoto, A. Yasuhara, H. Udono, S. Sakane*		13:10-13:30 OS12-26 Numerical Modeling of OH Radicals Generated in Atmospheric-pressure Air Dielectric Barrier Discharges *K.-M. Lin, T.-Y. Liao, G.-J. Lin, Y.-C. Chen* 13:30-13:45 OS12-27 Experimental Investigation and Numerical Modeling of Plasma Bullet Dynamics in an Atmospheric Pressure Plasma Jet *I. L. de la Cruz Jr., H.-P. Yang, K.-M. Lin* 13:45-14:00 OS12-28 One-dimensional Discharge Simulation of Argon Excited Species Produced in Atmospheric-pressure Ar/O_2 Dielectric Barrier Discharges *W. H. Lai, J. W. Liu, K. M. Lin* 14:00-14:15 OS12-29 Numerical Study of Wet Cleaning Process for Wafer Surfaces with Trenches on a Rotating Disk *J.-W. Yeh, Y.-C. Tseng, Y.-H. Liu* 14:15-14:30 OS12-30 Application of DSMC to Simulate Interior Outgassing Phenomena in Satellites. *H.-H. Hsu, M.-C. Lo*	13:10-13:50 OS10-1 *Invited* Thermal Management System for High-Heat-Flux Applications Using Two-phase Pumped Loop Systems *T. Hirokawa* 13:50-14:10 OS10-2 Effect of Orientation on the Performance of the Two-Phase Cold Plate *K.-Y. Ho, S.-W. Lin, T.-W. Chang, C.-C. Wang* 14:10-14:30 OS10-3 High-speed Visualization of Microscale Phase Change Behavior in a Porous Media Under Saturated Vapor Conditions *T. Kato, K. Odagiri, Y. Akizuki, H. Nagano, H. Ogawa*	13:10-13:55 OS4-8 *Invited* Estimating Combustion States in Hybrid Rockets: An Extended Kalman Filter Approach *T. Shimada* 13:55-14:10 OS4-9 Development from Reconstruction Techniques to Nozzle Erosion Suppression Technology *H. Nagata, L. Kamps, S. Hirai, G. Gallo* 14:10-14:25 OS4-10 Innovative R&D for Expanding the Use of Hybrid Rocket Systems in Aerospace *L. Kamps, S. Hirai, H. Nagata* 14:25-14:40 OS4-11 Experimental Study on Internal Ballistics for ELS-R100 Hybrid Thruster *Y. Saito, S. Kameyama, K. Kida, H. Kariya, T. Kuwahara, K. Fujita, R. Kobayashi, H. Ikeda, T. Nagata*	13:10-13:25 OS11-9 Numerical Simulation of Microcapsules Filled with Ferrofluid under a Uniform Magnetic Field *R. Takeuchi, T. Omori, T. Ishikawa* 13:25-13:40 OS11-10 Development of a Biomechanical Erythrocyte Model that Reflects the Membrane Microstructure *S. Nix* 13:40-13:55 OS11-11 A Numerical Simulation of a Dense Suspension of Spermatozoa *R. Iwasawa, T. Omori, T. Ishikawa* 13:55-14:10 OS11-12 Evaluation of Chaotic Structures as Passive Micromixers *A. Ochoa, L. F. Olguín, E. Corvera Poiré*	13:10-13:50 OS17-1 *Invited* Fluctuation Analysis and Thermal Conductivity Prediction of Supercritical Carbon Dioxide by Molecular Dynamics Simulation *C. Sun, C. Hou, W. Ge, L. Chen, Y. Zhang* 13:50-14:10 OS17-2 Analysis of Fluctuations of Supercritical Region CO_2 by Small Angle Neutron Scattering (SANS) Experiments and MD Simulations *L. He, R. Zhang, Y. Feng, L. Chen* 14:10-14:30 OS17-3 The Comparison of Visualization Experiment and Numerical Simulation on High-pressure CO_2 Converging-diverging Nozzle Flow Across the Critical Region *H. Wang, L. Chen*	
14:40										14:40
BREAK										

14:50	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	14:50
	OS24: IFS Collaborative Research Forum (AFI-2024)	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** NH3/H2/Sustainability *Chair:N. I. Kim*	**OS7: Advances in Simulation Techniques for the Computational Aerosciences** *Chair: J. S. Park*	**OS3: The Second International Symposium on Integrated Flow Science IV: Advanced Semiconductor and Digital Transformation** *Chair: K. Endo*	**OS18Flow measurements using PSP/TSP Technique** *Chair: C.-Y. Huang*	**OS12Complex Thermofluid System** Numerical Heat Transfer and Fluid Flow *Chair: M.-C. Lo*	**OS10: Two-Phase Thermal Control Technology** *Chair: K. Odagiri*	**OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition** Internal Ballistics Modeling Session *Chair: L. Kamps*	**OS14: Innovations in Oncology** *Chair: N. Aznar*	**OS17: Supercritical Fluid** *Chair: Y. Hu*	
	14:50-15:35 CRF-1 - CRF-25, CRF-32, CRF-42, CRF-72, CRF-76 Poster Presentation	14:50-15:08 OS2-29 Characterizing Fuel-NO Interaction in NH_3/DME Co-firing: Experimental and Kinetic Modeling Investigation *S. Liu, Q. Zhang, X. Shi, J. Fang, Q. Fang, W. Li, Y. Li* 15:08-15:26 OS2-30 An Efficient Optimization Method for Chemical Mechanisms with Deep Reinforcement Learning *H. Hu, H. Zhang* 15:26-15:44 OS2-31 Using CO Laser-Absorption Measurements To Assess C_2H_4 Detailed Kinetics Mechanisms During Combustion: A Shock-Tube Study *O. Mathieu, C. M. Grégoire, E. L. Petersen* 15:44-16:02 OS2-32 The Flame Behaviors in Mesoscale Sudden-Expansion Tube at the Preliminary Stage after Ignition *T.-H. Chuang, J.-H. Huang, S.-Y. Hsu* 16:02-16:20 OS2-33 Combustion Properties of CO-O2 Mixtures Diluted with CO2 at Elevated Pressures and Temperatures *M. Kuznetsov, E. Torres de Ritter, A. Veser, A. Lelyakin, T. Jordan*	14:50-15:10 OS7-11 Data-Driven Fluid-Structure Interaction Analysis for Vortex-Induced Vibration *C. Lee, T. Yamazaki, F. D. Witherden, Y. Kawano, Y. Abe* 15:10-15:30 OS7-12 Study of Thermal Management System for eVTOL *H. Nakayama, D. Sasaki, Y. Inoue* 15:30-15:50 OS7-13 Comparison of Genetic Algorithm and Reinforcement Learning in Airfoil Optimization *A. Yoshikawa, N. Fujimatsu* 15:50-16:10 OS7-14 Multi-Objective Optimization for Aircraft Wing Shapes Using Advanced Composite Materials *R. Kano, Y. Abe, K. Ryuzono, T. Okabe*	14:50-15:20 OS3-5 *Invited* Volume of Fluid Modeling of a Rotating Disk Edge Wetting with Backside Dispense *A. Ceschin, M. Kihara, M. Sato, N. Belmiloud, K. Huet* 15:20-15:35 OS3-6 Evaluation of the Germination Process of the Haworthia cooperi ver. TruncateUnder the Controllable Gas Plasma Radiation *A. Kanbara, D. Ohori, N. Hayashi* 15:35-15:50 OS3-7 Interface Design Concept of HfO_2/Si Gate Stack for Nanosheet MOSFETs *Y. Morita, H. Ota, S. Migita* 15:50-16:05 OS3-8 Effect of Oxygen Vacancies at the AZO/ZnO Interface on ReRAM Characteristics *K. Hamada, T. Ohno, K. Minami, K. Endo*	14:50-15:10 OS18-1 Development of Pressure-Sensitive Paint with Temperature Insensitivity *K.-T. Huang, H.-Z. Lin, C.-Y. Huang* 15:10-15:30 OS18-2 Pressure Distribution Measurement on NACA0012 Airfoil using Silica-based PSP in Low-Speed Flow *M. Okawa, Y. Yamagishi, T. Ikami, K. Watanabe, H. Nagai* 15:30-15:50 OS18-3 An Experimental Study on the Two-Dimensional Flow Field of a Transonic Backward-Facing Step Flow with Vortex Generators *C.-C. Wang, C.-Y. Huang, K.-M. Chung* 15:50-16:10 OS18-4 Effect of Titanium Dioxide Surface Treatment on Fast-Responding PSP Characteristics *Y. Egami, N. Yoshii, K. Nagao*	14:50-15:05 OS12-31 Rapid Thermal-Electrical Co-Simulation for Power Electronics System *C. C. Hsu, H. C. Tang, F. M. Tu, H. Y. Hsu* 15:05-15:20 OS12-32 Numerical Simulation Analysis of the Heat Transfer Performance of Screw Pipe of the Water-Cooled Divertor in a Nuclear Fusion Reactor *M. Faridafshin, N. Yusa, S. Yoshioka* 15:20-15:35 OS12-33 Numerical Investigation on R134a Flash Evaporation under Reduced Pressure *K.-C. Chang, Y.-C. Lin* 15:35-15:50 OS12-34 A Numerical Investigation of Conjugate Heat Transfer Phenomena within Annular Finned Tube Heat Exchangers *F.-H. Tseng, H.-T. Chen, C.-G. Li* 15:50-16:05 OS12-35 Numerical Study of Flow and Heat Transfer in Heat Sink Arrays with Varied Fin Geometries *Z.-L. Lin, C.-G. Li* 16:05-16:20 OS12-36 A Numerical Study of Geometry Effect on Pressure Drop Instability Using VOF Method *C. W. Lin, K. H. Sun, S. S. Lo, H. Y. Hsu*	14:50-15:10 OS10-4 Comparison of Porous Characteristics by Various Measurement Methods *M. Nishikawara* 15:10-15:30 OS10-5 Numerical Study of Oscillating Heat Pipes with Different Diameter Channel *A. Kawaguchi, Y. Sasaoka, M. Ando, A. Okamoto, T. Ikami, H. Nagai* 15:30-15:50 OS10-6 Parasitic Heating Effect on Operating Characteristics of CLHP *T. Yokouchi, X. Chang, K. Odagiri, H. Ogawa, H. Nagano, H. Nagai*	14:50-15:05 OS4-12 Current Status on a New Time-Resolved Fuel Regression Measurement Applied to Cylindrical Hybrid Rocket Engine *K. Ozawa, Y. Jinnouchi, K. Omiya, N. Tsuboi* 15:05-15:20 OS4-13 High Fidelity Numerical Simulations of Ablating Boundary Layers for Hybrid Rocket Motors *K. Budzinski, K. Retfalvi, E. K. Ismael, R. Zangeneh, P. DesJardin* 15:20-15:35 OS4-14 Fundamental Experiments on Metalized Fuel Hybrid Rockets for Spacecraft with Microwave Repetitive Ignition *K. Nishii, T. Kanda, A. Kakami* 15:35-15:50 OS4-15 H_2O_2 Droplet Ignition in a Deep-Pool of $NaBH_4$ Hypergolic Fuel – Part 1: Observation of Fluid Dynamics Phenomena *Z. Guo, Y. Hsia, K. Chang, C.-C. Chang, S.-S. Wei, J.-S. Wu, Z. P. Tan* 15:50-16:05 OS4-16 H_2O_2 Droplet Ignition in a Deep-Pool of $NaBH_4$ Hypergolic Fuel – Part 2: Ignition Trends and Hypothesis of Mechanisms *Y. Hsia, Z. Guo, K. Chang, C.-C. Chang, S.-S. Wei, J.-S. Wu, Z. P. Tan* 16:05-16:20 OS4-17 Performance Evaluation of Ground Test Prototype of Thrust-O/F Control System for A-SOFT Hybrid Rocket *K. Kitagawa, T. Siricharoensathaporn, K. Matsui*	14:50-15:05 OS14-4 Patient-derived Tumour Organoids for the Identification of Tumour Cell-intrinsic and Tumour-immune Modulators *R. Wagner, M. Brisset, M. Grandin, C. Shembrey, S. Lee, T. Vu, A. Heriot, A. Serrano, F. Hollande* 15:05-15:20 OS14-5 Investigation of a Predictive Therapeutic Response under Controlled Oxygen Condition in Cancer Patient-derived Organoids *M. Roinard, S. Aratake, K. Funamoto, N. Aznar, J.-P. Rieu* 15:20-15:35 OS14-6 Co-Culture with Microvascular Networks Attenuates Cancer Cell Proliferation under Hypoxia *S. Aratake, K. Funamoto* 15:35-15:50 OS14-7 Role of Circulating snoRNA Snord in Breast Cancer Bone Metastatic Progression *C. Filassi, C. Moyret-Lalle, M. Puppo, P. Clézardin, V. Marcel* 15:50-16:05 OS14-8 Treatment of Metastatic Lymph Node by Lymphatic Drug Delivery System Using Carboplatin *E. Tada, M. Miyatsu, A. Sukhbaatar, S. Mori, T. Sugiura, T. Kodama* 16:05-16:20 OS14-9 Evaluation of Chemoimmunotherapy using Lymphatic Drug Delivery System *R. Suzuki, A. Sukhbaatar, H. Fuji, S. Mori, Y. Ito, T. Kodama*	14:50-15:10 OS17-4 Kinetics of Methanol/Ethanol Assisted Oxidation of Ammonia in Supercritical Water *S. Zhang, J. Yang, G. Li* 15:10-15:30 OS17-5 Rayleigh-Bénard Convection Onset of Supercritical CO_2 inside a Closed Chamber: Experiments and Numerical Results *R. Zhang, L. Chen, Y. Kanda, A. Komiya* 15:30-15:50 OS17-6 Cancelled 15:50-16:10 OS17-7 Mass Transport Evaluation in Supercritical Fluids by Droplet Volume Change Measurement *Y. Kanda, L. Chen, A. Komiya*	
16:20	BREAK										16:20
16:30	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	CON-1	CON-2	16:30
	OS24: IFS Collaborative Research Forum (AFI-2024)	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** NH3/H2/Sustainability *Chair:O. Mathieu*	**OS7: Advances in Simulation Techniques for the Computational Aerosciences** *Chair: A. Yakeno*	**OS24: Fluid Science Research Award Lecturers** *Chair: K. Maruta*	**OS18Flow measurements using PSP/TSP Technique** *Chair: Y. Egami*		**OS10: Two-Phase Thermal Control Technology** *Chair: H. Nagai*	**OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 16th Edition** Hybrid Rocket Propulsion Systems Session *Chair:Y. Saito*	**OS14: Innovations in Oncology** *Chair: C. Moyret-Lalle*		
		16:30-16:48 OS2-34 High-pressure Oxidation of Hydrogen at 100 Atm in a Supercritical-pressure Jet-stirred Reactor *H. Zhao, C. Yan, G. Song, Z. Wang, A. W. Jasper, S. J. Klippenstein, Y. Ju*	16:30-16:50 OS7-15 Uncertainty Quantification of Aerostructural Properties on Composite Wing Design *K. Nakamura, Y. Abe, K. Shimoyama, S. Obayashi*	16:30-17:00 FRA-1 Research on Solid Material Flammability in Microgravity for Fire Safety in Space *O. Fujita* 17:00-17:30 FRA-2 Struggling with the multiscale structures of bubbly flows *S. Takagi*	16:30-16:50 OS18-5 Investigation of Supersonic Micronozzle with Secondary Injection and Different Divergent Sections *Y.-E. Tsai, Y.-J. Wu, P.-H. Huang, C.-Y. Huang*		16:30-16:50 OS10-7 Observation of Acoustic Streaming in Wet Thermoacoustic Engines Using PIV *S.-H. Hsu, W.-T. Lin* 16:50-17:10 OS10-8 Effect of Bubbling on the Single-Phase Performance for Immersion Heat Sink *Y.-S. Chao, C.-C. Wang*	16:30-16:45 OS4-18 Tethered Hovering Flight Demonstration of the HTTP-4 Hybrid Rocket with Vertical Takeoff Vertical Landing (VTVL) Capability *S.-C. Wang, Z.-R. Chen, C.-C. Chang, H.-Y. Tso, J.-C. Hsu, T.-C. Lee, Y.-T. Hou, S.-T. Kao, C.-H. Huang, Y.-C. Liang, J.-S. Shiang, J.-W. Huang, M.-T. Ho, S.-S. Wei, J.-S. Wu*	16:30-17:10 OS14-10 *Invited* Microfluidic Systems for Cancer Modeling and Drug Screening *S. Kim, J. Park, J. S. Jeon*		

	16:48-17:06 OS2-35 Study for Global Reaction Mechanism for Cracked Ammonia Gas *H. M. Yang, N. I. Kim* 17:06-17:24 OS2-36 On the Flammability Limits of Radiative Stretched NH_3/H_2/Air Premixed Flames at Elevated Pressures *S. Xie, H. Zhang* 17:24-17:42 OS2-37 Premixing Effects of Cracked NH_3 and CH_4 on Flame Propagation and Length Scale Using a Radial-Stepwise-Gap-Burner (RSGB) *J. Han, N. I. Kim* 17:42-18:00 OS2-38 Flame Modelling of Premixed Ammonia Combustion in Swirl Burner using LES *Q. T. Le, V. B. Nguyen, S. Ma, B. S. Neo, A. Lim, C. W. Kang, H. Zhang*	16:50-17:10 OS7-16 Drag Polar Prediction of an Aircraft Using Inviscid and Various Viscous Models *Rashmikant, Y. Abe*	17:30-18:00 FRA-3 Advanced Flow Measurement and Control Based on Data Driven Mode Decomposition *T. Nonomura*	16:50-17:10 OS18-6 Visualization of the Laminar to Turbulent Transition Location Over Reusable Launch Vehicle Using Green Spectrum-Based Temperature-Sensitive Paint *K. S. Chandrasekaran, S. Mariappan, D. Das, A. Singh, S. R* 17:10-17:30 OS18-7 Bubble Formation Analysis of Boiling Two-Phase Flow of Magnetic Fluids Using Temperature-Sensitive Paint *Y.-C. Tan, Y.-J. Cheng, C.-Y. Huang*			16:45-17:00 OS4-19 Development the Shortened Tsuâ-Ing Hybrid Rocket Engine for the Asfaloth Supersonic Sounding Rocket *K.-H. Chang, H.-Y. Tso, C.-C. Chang, S.-C. Wang, J.-C. Hsu, Y.-X. Chang, M.-H. Wang, Y.-T. Chang, T.-Y. Lin, S.-S. Wei, Z. P. Tan, J.-S. Wu* 17:00-17:15 OS4-20 Development of Hypergolic Solid Fuel for Hybrid Rocket Ignition *H.-Y. Tso, K.-L. Chang, C.-C. Chang, T.-F. Lin, K.-H. Lee, Z.-P. Tan, S.-S. Wei, J.-S. Wu*	17:10-17:25 OS14-11 Pharmacokinetic Analysis in Lymphatic Drug Delivery System *R. Miyazaki, T. Shimano, A. Sukhbaatar, S. Mori, T. Kodama* 17:25-17:40 OS14-12 Microfluidic Assessment Reveals Cell Deformability As A Prognostic Factor For AML Treatment Sensitivity *C. M. Cardozol, L. Barral, S. Jeanpierre, M.-C. Audry-Deschamps, V. Maguer-Satta, M. Faivre, S. Lefort* 17:40-17:55 OS14-13 A Hydrogel Based Microsystem to Uncouple Mechanical and Chemical Gradients in Dense Tissues *G. Jardiné, A. Diallo, G. Simon, H. Delanoë-Ayari, C. Rivière, S. Monnier*	
18:00									18:00
19:00	19:00- Banquet @ Hotel Metropolitan Sendai								19:00
20:30									20:30

9:00	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	9:00
	OS24: IFS Collaborative Research Forum (AFI-2024) *Chair: Y. Kanda*	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** NH3/H2/Sustainability *Chair:Y. Li*	**OS15: Turbulence: from Fundamentals to Applications** wall turbulence *Chair: Y. Hattori*	**OS7: Advances in Simulation Techniques for the Computational Aerosciences and OS25: IFS Lyon Center Collaborative Research Forum JOINT SESSION** *Chair: H. Nagai*	**OS18: Flow measurements using PSP/TSP Technique** *Chair: H. Nagai*	**OS9: Biomedical Flow Dynamics** *Chairs: A. Qiao, C. Voniatis*	**OS21: Smart Fluids & Soft Matters and Their Advanced Applications** *Chair: M. Nakano*	**OS13: Flow Realization, Measurement and Visualization** *Chair: T. Yamagata*	
	CRF-26 - CRF-51 except CRF-32 and CRF-42 Short Oral Presentation	9:00-9:18 OS2-39 Effect of Flame-wall Interaction on Flashback Propensity of Turbulent Premixed Hydrogen Flames *J. Park, D. Park, K. T. Kim* 9:18-9:36 OS2-40 Combustion Analysis of a Gas Turbine Combustor with Methane/Hydrogen Blended Fuels *C.-H. Tsai, H.-Y. Shih* 9:36-9:54 OS2-41 Reconstruction of Velocity and Pressure Field of Reactive Circular Jet Flow using Physics-informed Neural Network *R. Waluyo, M. Aziz* 9:54-10:12 OS2-42 Investigation on a Preheated Ammonia/Air Stagnation Flame on a Heated Metal Surface *K. Kanayama, M. Izumi, T. Tezuka, G. Miyamoto, H. Nakamura* 10:12-10:30 OS2-43 Experimental and Numerical Investigation of the Effects of an Uncontrolled Primary Zone Dilution on Liquid Ammonia Spray Combustion *E. C. Okafor, O. Kurata, H. Yamashita, N. Iki, T. Inoue, H. Jo, M. Shimura, T. Tsujimura, A. Hayakawa, H. Kobayashi*	9:00-9:20 OS15-1 Turbulent Channel Flow Response to Wavy Walls: a DNS Study *M. Brockhaus, A. Sescu, L. Chamorro* 9:20-9:40 OS15-2 Determination of Reynolds Number at which Two Types of Large-scale Structures Alternate in Turbulent Channel Flow using Two-point Velocity Correlation. *R. Sasaki, R. Takai, K. Kato, M. Matsubara* 9:40-10:00 OS15-3 Determination of Scales of the Large-Scale Structures in Sub-Critical Turbulent Channel Flow *R. Takai, K. Takahara, K. Sato, S. Yimprasert, K. Kato, M. Matsubara* 10:00-10:20 OS15-4 On the Breakdown of Görtler Vortices into Fully-Turbulent Boundary Layer Flows *M. Brockhaus, A. Sescu, O. Es-Sahli, Y. Hattori* 10:20-10:40 OS15-5 Scale of Disturbance Structures around The Second Peak of Velocity Fluctuations in a Turbulent Boundary Layer at very High Reynolds Numbers *M. Shimizu, R. Kaji, I. Watanabe, K. Matsui, S. Hara, K. Kato, Y. Naka, A. Inasawa, M. Matsubara*	9:10-9:50 OS7-17 / OS25-1 *Invited* Numerical Methods for Solving Multimode Giesekus Viscoelastic Fluid Flows *S. Xin, S. Abdollahzadeh, R. Knikker, D. Siginer, M. Botaous* 9:50-10:10 OS25-2 Identification of Dominant Modes of Flow Between Rotatingl Conical Cones by Linear Stability and DMD Analyses *H. Yata, K. Akinaga, A. Komiya, T. Adachi* 10:10-10:30 OS25-3 Coupled Computing of Fluid-Structure Interaction Problems for Multiphase Energy Systems *J. Ishimoto, T. Elguedj*	9:00-9:40 OS18-8 *Invited* Fast Response Inorganic TSP Using a Ball Milling *S. Someya, S. Saito, S. Baba, N. Takada* 9:40-10:00 OS18-9 Development of Silica-based PSP for Unsteady Pressure Distribution Measurements in Low-Speed Flow *Y. Yamagishi, M. Okawa, T. Ikami, K. Watanabe, H. Nagai* 10:00-10:20 OS18-10 Evaluation of Pressure Sensitive Paint using PTFE powder and $Ru(dpp)_3$ *Y. Azeyanagi, N. Fujimatsu*	9:00-9:30 OS9-1 *Invited* Composite Electrospun Scaffolds for Biomedical Applications *A. Jedlovszky-Hajdu, V. Pálos, S. Halmóczki, C. Voniatis, H. Saifurrahman, M. Ohta,* 9:30-9:45 OS9-2 Simulation of Thrombosis Induced by Various Degrees of Stent Malapposition *H. Zhang, Z. Qu, S. Chen, A. Qiao, Q. Hou, H. Song, W. Fu, H. Anzai, M. Ohta* 9:45-10:00 OS9-3 Development of Electrospun Nanocomposites *S. Halmóczki, V. Rizmajer, K. Osán, A. Jedlovszky-Hajdú, C. Voniatis, V. T. Pâlos, M. Ohta, H. Saifurrahman* 10:00-10:15 OS9-4 Dynamics of Osteoarthritic Synovial Fluid *D. Acevedo, D. Grecov, E. Corvera Poiré*	9:00-9:30 OS21-1 *Invited* Advanced Applications of Flexible Soft Materials in Impact Protection: Shape Memory Semi-active Safeguarding and Triboelectric Nanogenerator Smart Sensing *X. Gong, W. Wang* 9:30-10:00 OS21-2 *Invited* The Vibration Bandgaps in Linkage Magnetorheological Elastomer Acoustic Metamaterial *Z. Chen, G. Jing, W. Li* 10:00-10:30 OS21-3 *Invited* Thermomechanical Properties of Natural Rubber: Application to Refrigeration *G. Sebald, A. Komiya, M. Sion, S. Xin, G. Coativy*	9:00-9:15 OS13-1 Investigation of Heat Transfer Enhancement in Pool Condition under High-Frequency and Low-Frequency Ultrasonic Vibration *C.-C. Hung, P.-H. Hsu, Y.-T. Su, Y.-H. Lin, S.-W. Chen, H.-J. Lee* 9:15-9:30 OS13-2 Supervised Learning Applied to Flow Regime Identification of Two-Phase Flow in a Forced-Vibration Rectangular Tube *H.-J. Lee, H.-Y. Chen, S.-W. Chen, C.-C. Hung, Y.-H. Lin* 9:30-9:45 OS13-3 Unsupervised Learning Applied to Flow Regime Identification of Gas-Liquid Two-Phase Flow in Vertical Narrow Rectangular Tube *Y.-H. Lin, C.-C. Hung, H.-J. Lee, S.-W. Chen* 9:45-10:00 OS13-4 Large Eddy Simulations of Transonic Diffuser Flows *M. Okajima, T. Yamashita, S. Nakao, Y. Miyazato* 10:00-10:15 OS13-5 Quantitative Flow Visualization of Shock-Dominated Flows by MZI *T. Yamashita, M. Okajima, S. Nakao, Y. Miyazato* 10:15-10:30 OS13-6 Three-Dimensional Structure of a High-Aspect-Ratio Elliptic Underexpanded Sonic Jet *T. Sakashita, T. Nagata, S. Nakao, Y. Miyazato*	
10:30									10:30
				BREAK					
10:40	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	10:40
	OS24: IFS Collaborative Research Forum (AFI-2024) *Chair: Y. Morii*	**OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals** NH3/H2/Sustainability *Chair:H. Zhang*	**OS15: Turbulence: from Fundamentals to Applications** turbulent shear flow *Chair: Y. Hattori*	**OS25: IFS Lyon Center Collaborative Research Forum**	**OS18: Flow measurements using PSP/TSP Technique** *Chair: Y. Matsuda*	**OS9: Biomedical Flow Dynamics** *Chairs: H. Anzai, M.S.S. Hashuro*	**OS21: Smart Fluids & Soft Matters and Their Advanced Applications** *Chair: W. Li*	**OS13: Flow Realization, Measurement and Visualization** *Chair: K. Funamoto*	
	CRF-52 - CRF-77 except CRF-72 and CRF-76 Short Oral Presentation	10:40-10:58 OS2-44 Numerical Investigation on The Design of Swirl Burner For NH3/CH4/Air Combustion *J.-Y. Lu, S.-Y. Hsu, C.-H. Tsai, K.-C. Lin, W.-X. Lin, C.-C. Chen*	10:50-11:10 OS15-6 An Attempt at Linear Response Extraction Method to Elucidate the Leading Edge Receptivity to Free Stream Disturbances *K. Taira, A. Yoshida, K. Kato, M. Matsubara*	10:40-11:00 OS25-4 Coarse-grained Lattice Simulations for Turing Patterns on Membranes *E. Bretin, C. Carvalho, R. Denis, F. Kato, H. Koibuchi, S. Masnou, M. Nakayama, S. Tasaki, T. Uchimoto*	10:40-11:00 OS18-11 Post Processing Method for Pressure-Sensitive-Paint Data Using Machine Learning *R. Kokubo, M. Takagi, T. Ikami, Y. Egami, H. Nagai, Y. Matsuda*	10:40-11:10 OS9-5 *Invited* Evaluation of Vascular Function Focusing on Luminal Surface Topography *M. Kobayashi, Y. Hashimoto, A. Kishida, T. Kimura, K. Murata, H. Masumoto, H. Anzai, Z. Wang, M. Ohta, M. Yamamoto*	10:40-11:10 OS21-4 *Invited* Electro-Rheological Behavior of Suspensions Based on Titanium Dioxide Nano-Particles in Various Types of Modified Silicone Oil *K. Tanaka, X. Lin, S. Yonezumi, M. Kawaguchi, H. Kobayashi, M. Nakano*	10:40-10:55 OS13-7 Investigation of Number of Blades with a Focus on Enhancing Cross-flow Turbine Manufacturing *S. Takeshima, K. Suzuno, G. Katagiri, T. Arai, S. Iio, T. Uchiyama, K. Takamure*	

	10:58-11:16 OS2-45 Stabilization and NOx of Non-Premixed Flames of Cracked $NH_3 + H_2$ with a Fuel-Tube Depth in a Coaxial Air *P. S. Kim, D. S. Jeon, N. I. Kim* 11:16-11:34 OS2-46 Effects of Flame Cooling on Gas and Liquid Ammonia Spray Combustion using a Swirling Burner *G. Reibel, Y.-R. Chen, K. Oku, H. Yamashita, A. Hayakawa, T. Kudo, H. Kobayashi* 11:34-11:52 OS2-47 Measurements and Numerical Simulations of Axial Fuel-Air Staged Ammonia-Hydrogen Combustion *J. Lee, U. Jin, K. T. Kim* 11:52-12:10 OS2-48 Combustion Analysis of Gas Turbine Combustor with Methane/Ammonia Blended Fuels *W.-J. Chen, H.-Y. Shih* 12:10-12:28 OS2-55 Dynamics-Informed Stiffness Reduction for Reactive Simulations of Ammonia-Hydrogen Blends *M. Y. Baykan, V. Vijayarangan, D.-H. Shin, H. G. Im*	11:10-11:30 OS15-7 Experimental Study on the Effect of Microbubbles on Turbulent Structure in Pipe Flow *X. Wu, T. Masuda, Y. Hamana, Y. Tsuji* 11:30-11:50 OS15-8 The Modulating Effect of Coherent Structures on Inter-scale Energy Transfer in Turbulent Mixing Layer *M. Wang, Y. Ito, Y. Sakai* 11:50-12:10 OS15-9 Flutter Boundary Behaviors and Airfoil Thickness Effects in Transonic Flow Regimes *S. Selland, T. Miyake, H. Terashima*	11:00-11:20 OS25-5 Analysis of Frequency Spectrum of Ultrasonic Pulse-Echo Wave Reflected on Periodic Rough Surface *K. Fujii, H. Nakamoto, P. Guy, T. Uchimoto* 11:20-11:40 OS25-6 Enhancement of Protein Mass Transfer using Ultrasound Induced Flow and Macro-pore Membrane *A. Komiya, R. Zhu, V. Botton, S. Miralles* 11:40-12:00 OS25-7 Active yet Precise Control of Protein Mass Transfer by Membranes *A. Komiya, J. F. Torres, R. Zhu, S. Livi*	11:00-11:20 OS18-12 Experimental Study of Unsteady Flow around Oscillating Airfoil using cntTSP *G. Y. Lim, T. Ikami, H. Nagai* 11:20-11:40 OS18-13 Unsteady Pressure Distribution Measurement of Hayabusa Capsule at Transonic Speeds *R. Hosaka, D. Yamashita, T. Ikami, Y. Egami, H. Nagai* 11:40-12:00 OS18-14 Investigation on Leading Edge Vortex on Low Reynolds Number Rotor Blade by cntTSP Visualization *T. Ikami, R. Nishimura, H. Nagai*	11:10-11:25 OS9-6 Fabrication of Composite Nanofibrous Covers for Coronary Stents *C. Voniatis, A. Jedlovszky-Hajdu* 11:25-11:40 OS9-7 Polysuccinimide-Salt Electrospun Scaffold as a Potential Wound Dressing Material *V. Pálos, S. Halmóczki, C. Voniatis, H. Saifurrahman, M. Ohta, A. Jedlovszky-Hajdu* 11:40-11:55 OS9-8 Structural Modification of Catheter-Type Tactile Sensor Using Polyvinylidene Fluoride (PVDF) Film *S. Nagano, K. Takashima, M. Watanabe, K. Ishida*	11:10-11:30 OS21-5 Size-dependent Magnetomechanically Enhanced Photothermal Antibacterial Efficacy in Fe_3O_4@Au/polydopamine Magnetic Fluid *Y. Xu, K. Wang, S. Xuan, X. Gong* 11:30-11:50 OS21-6 A Smart Shear Thickening Fluid (STF)-based Warning-protection Sponge towards Sensing Performance and Impact Resistance with Excellent Flame Retardant *Y. Pan, M. Sang, X. Gong* 11:50-12:10 OS21-7 Superior Yarns-Based Fabrics with Satisfied Mechanical and Thermal Properties towards Safeguarding *H. Chen, M. Sang, X. Gong*	10:55-11:10 OS13-8 Relationship between Performance of Propeller Turbine and Blade Solidity *F. Miura, T. Sei, S. Hashimoto, S. Iio, T. Uchiyama* 11:10-11:25 OS13-9 Effect of Guide Vane on the Performance of Waterfall Cross-Flow Hydro Turbines *K. Moriya, T. Yamagata, N. Fujisawa* 11:25-11:40 OS13-10 Dynamic Response of Three-Dimensional Transient Flow in a Centrifugal Fan Using Dynamic Mode Decomposition with Control *S. Maruyama, I. Kambayashi, A. Kiyama, D. Kang* 11:40-11:55 OS13-11 Flow Characteristics of Charged Particles in a Swirling Flow Under the Influence of an Electric Field in a Circular Pipe *T. Haruki, K. Yoshimi, T. Yagi, H. Amano, Y. Iwatani, T. Uchiyama, K. Takamure* 11:55-12:10 OS13-12 Experimental Study on Passive Control of Supersonic Jet Noise *S. Togoshi, S. Nakao, Y. Miyazato*	
12:10	Luncheon Session CRF-26 - CRF-77, except CRF-32, CRF-42, CRF-72, CRF-76 Poster Presentation	BREAK						12:10
13:00	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	13:00
		OS22 Liaison Office Session	**OS15: Turbulence: from Fundamentals to Applications** bluff body *Chair: M. Matsubara*				**Ceremony Commemorating the 10th Anniversary of the Installation of the 1-m Magnetic Suspension and Balance System at the Institute of Fluid Science, Tohoku University**	**OS13 Flow Realization, Measurement and Visualization** *Chair: S. Iio*	
		13:00- History of Liaison office session *Makoto Ohta (IFS)* 13:05- Global Strategy of Tohoku University as an International Research Excellence *Prof. Toshiya Ueki (Executive Vice President for General Affairs, International Affairs, and Academic Resources of Tohoku University)* 13:20- My academic journey of 10+ years in Boston *Prof. Jessie S Jeon (KAIST)* 13:35- Overseas Research Case Reports: 6 months in Taiwan *Kazuki Sone (PhD student, Funamoto Lab., IFS)*	13:10-13:30 OS15-10 Numerical Study on the Influence of Aerodynamic Effects on High-Rise Pantograph at Different Working Heights *A. Dwivedi, N. Oshima, Y. Cho, S. Kim* 13:30-13:50 OS15-11 Mechanisms of Aerodynamic Forces with Varying Aspect Ratio of Rectangular Cylinder *N. Yoshida, H. Asada, S. Kawai* 13:50-14:10 OS15-12 Aerodynamic Heat Dissipation and Aerodynamic Performance Simulation for FSAE Racing Car *G. Zhai, X. Fu, C. Lai*				13:00-13:10 Opening Remarks 13:10-13:25 Commemorative Video Screening 13:25-13:55 Guest Speeches 13:55-14:00 Closing Remarks	13:10-13:25 OS13-13 Experimental Study of Ninja-Star Underexpanded Sonic Jets *R. Uchida, S. Nakao, Y. Miyazato* 13:25-13:40 OS13-14 Fundamental Study on Effective Positions of a Feedback Force in Measurement-integrated simulation for Flow around a Circular Cylinder *K. Hirose, S. Miyauchi* 13:40-13:55 OS13-15 Visualization of The Wake Behind a NACA Blade with Truncated Rear End *S. Tsukamoto, K. Takamure, T. Uchiyama*	

	13:45- Overseas Research Case Reports: 3 months in Lyon *Taisei Takagi (Master student, Komiya Lab., IFS)* 13:55- Joint research and education initiatives at IFS through network of liaison offices and joint laboratories *Tetsuya Uchimoto (IFS)* 14:05- A liaison office: the first step towards lasting collaboration?: 20th anniversary, and HYCOMBS with the TU-CNRS-CREATE *Prof. Jean-Yves Cavaille (CGO of IFS)* 14:20- Hydrogen and Ammonia Combustion R&D in Singapore: Introduction of HYCOMBS (and LCER) *Prof. Huangwei Zhang (NUS)* 14:35- Research and Development on Large Scale Renewable Ammonia Production in Saudi Arabia *Prof. Mani Sarathy (KAUST)* 14:50- Closing	14:10-14:30 OS15-13 Design and Parametric Analysis of Propeller Boss Cap Fins with Hull Interaction Effects: A CFD-based Study *G. Rajaraman, P. Tomar, N. Kumbhakarna* 14:30-14:50 OS15-14 Reynolds Number Effect on Drag Reduction of Axisymmetric Boattail Models with Longitudinal Groove Cavitation *Q. D. Nguyen, T. H. Tran, D. T. Nguyen, G. Sharma, J. Tanimoto*					13:55-14:10 OS13-16 Effect of Deflector Angles on Drag of Ahmed Body *D. V. Pham, T. H. Tran, G. Sharma, J. Tanimoto* 14:10-14:25 OS13-17 Experimental Study on Flow Visualization Technique in Low Aspect Ratio Thin Wing at Critical Reynolds Numbers *Y.-C. Liu* 14:25-14:40 OS13-18 Flow Structures of Unsteady Supersonic Free Jets from a Round Laval Nozzle *H. Ueno, R. Fukuda, S. Nakao, Y. Miyazato*
14:40	BREAK						14:40
14:50	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B	14:50
	OS24: IFS Collaborative Research Forum (AFI-2024)	**OS26: JSPS Core to Core program workshop** *Chair: A. Hayakawa*	**OS15: Turbulence: from Fundamentals to Applications** fundamental & environmental *Chair: T. Ishihara*	**OS25IFS Lyon Center Collaborative Research Forum**	**GS: General Session** *Chair: Y. Kanda*	**OS9: Biomedical Flow Dynamics** *Chairs: M. Zhang, T. Nakayama*	**OS21: Smart Fluids & Soft Matters and Their Advanced Applications** *Chair: X. Gong*	**OS13Flow Realization, Measurement and Visualization** *Chair: S. Funatani*
		15:00-15:25 OS26-1 *Invited* Towards Clean and Efficient Ammonia Combustion for Gas Turbine Applications *Yuyang Li (Shanghai Jiao Tong University, China)* 15:25-15:50 OS26-2 *Invited* Development of Low Carbon Ammonia-fuel Combustor for Power Generation *Sophie Colson (IHI Corporation, Japan), Shintaro Ito, Masahiro Uchida, Takamasa Ito* 15:50-16:15 OS26-3 *Invited* Ammonia in Marine Transport: Research Insights and Future Directions *Moez Ben Houidi (King Abdullah University of Science and Technology (KAUST), Saudi Arabia), Fahad Almatrafi, Hao Wu, William L. Roberts*	15:00-15:20 OS15-15 Non-Equilibrium Turbulence Effects in Dynamos and Convections *N. Yokoi* 15:20-15:40 OS15-16 Experimental Comparison of Turbulent Statistics in Superfluid ^{4}He Coflow and Counterflow *T. Hirayama, Y. Tsuji* 15:40-16:00 OS15-17 Investigation of the Turbulent Wake and Emission Dispersion Behind a Heavy-Duty Lorry with Proper Orthogonal Decomposition *M. Qiu, Y. Liu, Y. Hou, C.-H. Liu* 16:00-16:20 OS15-18 Intermittency Analysis of the Turbulence over Idealized Urban Areas Based on Empirical Mode Decomposition *R. Wang, C.-H. Liu* 16:20-**16:40** OS15-19 Wake Motions after a Fractal Tree based on Empirical Mode Decomposition *S. Liu, C.-H. Liu*	14:50-15:10 OS25-8 Investigation of Electric Field Induced Bending of Doped Epoxy-amine Elastomers with Ionic Liquids *D. Djoumoi, L. Seveyrat, V. Perrin, F. Dalmas, S. Livi, J. Courbon, H. Takana, J.-Y. Cavaillé, G. Coativy* 15:10-15:30 OS25-9 Parametric Study of Ion Flow Through Polymer Strip Submitted to a High Voltage *J. Courbon, H. Takana, G. Coativy, J.-Y. Cavaillé* 15:30-15:50 OS25-10 Bending Strength of Density Gradient Designed Silicon Carbide Plate by the Direct Ink Writing *H. Kurita, T. Kudo, T. Kanno, Z. Wang, F. Narita* 15:50-16:10 OS25-11 Ultrasound Study of Hydrolytic Ageing of Polymers *S. Boucaud-Gauchet, J. Caritey, G. Jusserand, T. Devaux, S. Livi, F. Vander Meulen, T. Uchimoto, N. Mary*	14:50-15:05 GS1-11 Effects of Phase Differences Between Oscillating Foil and Periodic Flow on Thrust and Lift Coefficients *M. Sagawa, Y. Isoda, Y. Tanaka* 15:05-15:20 GS1-12 Flow Separation Control over Cetacean-inspired and Bird/Insect Wing-inspired Airfoils DU 06 W 200 *A. Xavier Andrade, O. Ali Zargar, S.-C. Hu, T. Lin* 15:20-15:35 GS1-13 Flow Separation Control over Shark Skin-inspired and Hybrid Blade Airfoils DU 06 W 200 *O. Ali Zargar, A. X. Andrade, S.-C. Hu, T. Lin* 15:35-15:50 GS1-14 Investigation of Ultrasonic-Driven Pulsating Supersonic Jet for High-Speed Flow Control *K. Adachi, H. Furukawa, K. Furutani, T. Handa*	14:50-15:05 OS9-9 Cancelled 15:05-15:20 OS9-10 Hemodynamic Effects on Aneurysm Endovascular Coil Porosity *N. S. b. Shafii, R. Yamaguchi, K. Osman, M. I. Kori, A. Z. M. Khudzari, M. Ohta* 15:20-15:35 OS9-11 Cancelled 15:35-15:50 OS9-12 Microfluidic Liquid Dispenser: Effects of Boundary Condition on Single Droplet Formation *P. D. W. Prasetya, Suprijanto, T. S. Wibowo, M. Ohta, H. Anzai, N. K. Putra* 15:50-16:05 OS9-13 Numerical Simulations in 3D Airway Models for Respiratory Droplet Generations Using DPM-EWF *N. Kobayashi, M. Ohta, H. Anzai*	15:00-15:30 OS21-8 *Invited* Visco-Elasto-Plastic Behaviour of Magnetorheological Elastomers under Shear Loading *K. Danas, G. Sebald, M. Nakano* 15:30-16:00 OS21-9 *Invited* Rheological Properties of MR Elastomers under Normal Compression *T. Tian, P. Milosevski, M. Nakano* 16:00-16:20 OS21-10 Development of a Rotary Fluid Inerter with Variable Damping Characteristics *W. Xie, L. Deng, W. Li*	14:50-15:05 OS13-19 Influence of a Low-Pass Filtered Reconstructed Volume on the Measurement Accuracy of Holographic Particle Tracking Velocimetry *Y. Tanaka, M. Ishiyama, D. Nakai* 15:05-15:20 OS13-20 Velocity Reconstruction of Three-dimensional Velocity Field Measured by Stereo PIV using Helmholtz Decomposition *A. Saito, Y. Tanaka* 15:20-15:35 OS13-21 High-frequency Ultrasound Imaging Analysis of Intravascular Flow Dynamics in Metastatic Lymph Nodes *K. Maeda, D. Kuramoto, Y. Okada, R. Miyazaki, M. Omura, A. Sukhbaatar, S. Mori, T. Kodama* 15:35-15:50 OS13-22 Relationship Between Impact Forces and Erosion Initiation in Pulsed Jet Tests on Erosion of Wind Turbine Blades *G. Ikarashi, H. Furukawa, T. Yamagata, N. Fujisawa, K. Fujisawa, M. Tanaka*

16:20					15:50-16:05 GS1-15 Flow Dynamics of Oscillatory Flow Across a Porous Structure: An Overview *F. A. Z. Mohd Saat, M. I. Fahmy Rosley, F. Shikh Anuar*			15:50-16:05 OS13-23 Numerical Analysis of Rain-induced Erosion in Wind Turbine Blades *K. Fujisawa, T. Yamagata, N. Fujisawa, M. Tanaka* 16:05-16:20 OS13-24 Experimental Study of Transient Shock Wave Behavior in a Transonic Diffuser *H. Kodama, S. Nakao, Y. Miyazato*
16:30	BREAK							
	EX-Hall-1A	EX-Hall-1B	EX-1	EX-2	EX-3-A	EX-3-B	EX-4-A	EX-4-B
		OS2: The Second International Symposium on Integrated Flow Science II: Combustion Technology and Fundamentals NH3/H2/Sustainability *Chair:H. Nakamura*	**OS15: Turbulence: from Fundamentals to Applications** fundamental & environmental *Chair: T. Ishihara*	**OS25IFS Lyon Center Collaborative Research Forum**	**GS: General Session** *Chair: T. Ikami*	**OS9: Biomedical Flow Dynamics** *Chairs: Y. Li, J. Liao*	**OS21: Smart Fluids & Soft Matters and Their Advanced Applications** *Chair: G. Sebald*	
		16:30-16:48 OS2-49 Experimental and Chemical Kinetic Study of NO Addition Effect on Methane Oxidation Using Weak Flames in Micro-Flow Reactor with a Controlled Temperature Profile *A. S. Singh, K. Tamaoki, Y. Murakami, K. Kanayama, T. Tezuka, H. Nakamura* 16:48-17:06 OS2-50 An Extension of Localized Thickened Flame Approach for Premixed Flames under Stretching Effects *T. Cui, H. Terashima, S. Kawai* 17:06-17:24 OS2-51 Kinetic Insights into Ammonia-hydrogen Doped Ignition and Emission Assisted by Nanosecond Pulsed Discharge *M. Zhang, Q. Chen, N. Liu, W. Qin, Y. Fu* 17:24-17:42 OS2-52 High-Pressure Turbulent Burning Velocities of Stoichiometric ($55\%NH_3$+$45\%H_2$)/Air Spherical Flames in Near-Isotropic Turbulence *V. T. Mai, W.-C. Shen, H.-Y. Hsieh, S. Shy* 17:42-18:00 OS2-53 Species Measurements for NH_3/CH_4 Mixtures at Intermediate Temperatures Using a Micro Flow Reactor with a Controlled Temperature Profile *Y. Ishida, K. Tamaoki, K. Kanayama, T. Tezuka, H. Nakamura*	16:40-17:00 OS15-20 Transport Efficiency of Different Positions over Idealized Urban Areas by Empirical Mode Decomposition *Y. Hou, K. Zhou, C.-H. Liu* 17:00-17:20 OS15-21 Analysis of Trailing Edge Noise from a Flat Plate and Effect of Finlets on the Noise using Direct Numerical Simulation *N. Hirao, M. Hirota, Y. Hattori* 17:20-17:40 OS15-22 The Mechanism of Aeroacoustic Noise Generation in Jet-Wing Interaction under the Wing-in-Ground Effect *L. Tan, Y. Hattori* 17:40-18:00 OS15-23 Investigation of Orthogonal Modes in High-speed Axisymmetric Jet Turbulence: Instantaneous vs. Statistical Data *S. Arabi, M. Z. A. Koshuriyan, A. Sescu*	**16:20**-16:40 OS25-12 Monitoring Eukaryotic Cell Functions under Various Hypoxic Conditions with Microfluidic Based Oxygenators *N. Ghazi, N. Kawahara, S. Hirose, S. Yanagita, K. Funamoto, C. Anjard, J.-P. Rieu* 16:40-17:00 OS25-13 Investigation of a Predictive Therapeutic Response Under Controlled Oxygen Condition in Cancer Patient-Derived Organoids *S. Aratake, M. Roinard, Z. Su, J.-P. Rieu, K. Funamoto, N. Aznar* 17:00-17:20 OS25-14 Super-Resolution Reconstruction of Microdefects on Metal Spherical Surfaces using Eddy Current Pulsed Thermography *L. Guo, L. He, Z. Tong, S. Xie, Z. Chen, T. Uchimoto, T. Takagi* 17:20-17:40 OS25-15 Analysis of the Drift Velocity Variation of Carbon in Steel under Electric Field *R. Onozuka, P. Chantrenne, T. Tokumasu* 17:40-18:00 OS25-16 Damage due to Water Jet Impacts on ZnS *P. Gantier, D. Nélias, N. Boisson, T. Chaise, C. Mauger, P. Dumont, P. Junique*	16:30-16:45 GS1-16 Wake Structure Interactions in a Channel Flow of Shear-thinning Fluids around Porous Cylinders *S. Jamshed, N. Tiwari, A. Dhiman* 16:45-17:00 GS1-17 Dynamics of an Inverted Flag in an Oscillatory Flow *J. Zhang, T. Nakamura* 17:00-17:15 GS1-18 Experimental Study on Active Control of Subsonic Compressible Boundary-Layer Flow Using High-Frequency Flapping Jet *K. Ikeuchi, A. Urita, T. Handa* 17:15-17:30 GS1-19 Analysis of the Atomization Process in a Swirl Injector Using VOF to Lagrangian Method *K.-L. Li, C.-C. Tseng, P.-Y. Tsai* 17:30-17:45 GS1-20 Computational Studies for Air Intake and Plasma Generation Process in Air-breathing Electric Propulsion System *K. Ito, M. Takahashi*	16:30-16:45 OS9-14 Numerical Modeling of Histotripsy Induced by High-Intensity Focused Ultrasounds *P. Guida, W. L. Roberts* 16:45-17:00 OS9-15 Validation of Fluid-Structure Interaction Analysis Using Particle Image Velocimetry in a Cerebral Aneurysm *S. Sato, G. Tanaka, M. Ohta, R. Yamaguchi* 17:00-17:15 OS9-16 A Computational Fluid Dynamics-based Framework for Slip-Resistance Performance of Progressively Worn Common Outsole Designs: Implications on Slips and Falls *S. Gupta, A. Chanda* 17:15-17:30 OS9-17 CFD Study on Relationship between Occurrence of Portal Vein Thrombosis and Wall Shear Stress after Hepatectomy *S. Nakajima, Y. Iijima, M. Takada, I. Hosokawa, M. Otsuka, G. Tanaka*	16:30-17:00 OS21-11 *Invited* Development and Implementation of MR Fluid Shaft Coupling for Driving Axial Pump *M. Nakano, O. Taguchi, K. Sugiyama, Y. Watanabe* 17:00-17:20 OS21-12 Effects of Arbitrary Particle Morphology on Dynamic Performance of Magnetorheological Fluids *K. Wang, B. Liu, Y. Xu, H. Deng, X. Gong* 17:20-17:40 OS21-13 Design, Modelling, and Experimental Evaluation of a Variable Inertance Bypass Fluid Inerter *K. T. Tran, L. Deng, W. Li*	
18:00								

OS23: The 20th International Students / Young Birds Seminar on Multi-scale Flow Dynamics

OS23-1: **Numerical Simulation of Triple Thermal Plasma Process for Synthesizing Silicon/Carbon Composite**
S.-B. Yang, Y. H. Lee, J.-H. Oh, S. Choi

OS23-2: **Thermal Plasma Synthesis of Boron Nitride Nanotubes Using a Reactant Gas of Ammonia**
S. Kim, Y. H. Lee, J.-H. Oh, S. Choi

OS23-3: **Synthesis of Graphene Nanoflakes by Methane Pyrolysis in Thermal Plasma**
G. Yang, S. Kim, S. Yang, H. Ko, Y. H. Lee, J.-H. Oh, S. Choi

OS23-4: **A Study on Droplet Breakup Behavior and its Electrical Characteristics**
Y. Kurihara, R. Jin, M. Daikoku, T. Miyagawa, T. Okabe, M. Shirota, Y. Matsukawa, H. Aoki, Y. Saito, J. Fukuno

OS23-5: **Thermal Emission Measurement in a Micro-Area of Two-Dimensional Materials**
H. Tanaka, T. Kishi, K. Misaki, I. Bisignano, S. Ishii, A. Sakurai

OS23-6: **Unsteadiness in a 2D Transonic Cavity Flow with a Deep Sub-cavity and Deployment of a Passive Control Technique**
C. Mallavarapu, H. Ogawa, S. K. Karthick

OS23-7: **Semi-Active Vibration Control Combining Various Disturbance Periods and Predictive Scheme**
K. Mishima, X. Li, T. Tang, M. Zhou, Y. Hara, K. Makihara

OS23-8: **Dynamic Analysis Method for High-Aspect-Ratio Wings Using Curvature Modes**
Y. Shizuno, S. Dong, R. Kuzuno, T. Okada

OS23-9: **Buffeting-Induced Vibration Energy Harvesting using Flexible Plates with Piezoelectric Film**
K. Shimura, M. Ishigami, Y. Jia, Y. Shi, C. Soutis, H. Kurita, F. Narita, Y. Hara, K. Makihara, K. Otsuka

OS23-10: **Conceptual Study on an Flying Wing Type Micro-sized Mars Airplane with Canard**
R. Kimura, M. Okawa, T. Ikami, H. Nagai

OS23-11: **Uncertainty Quantification of Spacecraft Thermal Analysis Using Transient Surrogate Model**
D. Yamashita, T. Ikami, H. Nagai

OS23-12: **Effect of Liquid Properties on Attitude of Flake Particles in a Drop Impacting using DEM-VOF Simulations**
N. Hashiguchi, T. Miyagawa, T. Okabe, M. Shirota, Y. Matsukawa, H. Aoki, M Daikoku, J. Fukuno, Y. Saito

OS23-13: **Thermal Load Estimation Using Machine Learning**
A. Okuyama, R. Kato, S. Eguchi, Y. Hara, K. Makihara, K. Otsuka

OS23-14: **Experimental Study on Heat Transport Characteristics of Single-Turn Pulsating Heat Pipe with Straight Channel**
K. Saito, T. Nozawa, M. Miura

OS23-15: **Liquid Film Formed with Liquid Column Oscillation in Capillary Tube**
I. Ito, Y. Ahara, H. Kikuchi, Y. Hitomi, M. Miura, H. Ito

OS23-16: **Heat Transport Characteristics of Pulsating Heat Pipes with Various Flow Path Shapes**
T. Sasagawa, R. Akiyama, M. Miura

OS23-17: **Performance Improvement of Gas Separator with Micro-Network Structure and Prototyping of the Device with a 3D printer**
R. Masuo, M. Osada, S. Nakanishi, M. Yamazaki, N. Ono

OS23-18: **Visualization of Surface and Internal Flows in Liquid Layer during Coating Material Processing**
K. Akase, R. Yabe, N. Ono

OS23-19: **Prototype Study of Particle Separator with 3D Printed Microstructures Utilizing Thermophoresis**
M. Osada, R. Masuo, S. Nakanishi, M. Yamazaki N. Ono

OS23-20: **Temperature Evaluation of Autonomous Spectral Switching Coatings under Solar Irradiation**
T. Takahashi, H. Tomori, H. Gonome

OS23-21: **Insight into Latent Heat and Melting of Sugar Alcohol Phase Change Materials: A Molecular Dynamics Study**
S. Cheng, D. Surblys, T. Ohara

OS23-22: **Correlation between Deformation Behavior of Filament Wound CFRP and Eddy Current Testing Signals**
K. Nakajima, T. Uchimoto, H. Kosukegawa, T. Takagi, S. Takeda, T. Watanabe, Y. Tsuchiyama

OS23-23: **Clustering Method of Species Characteristics for Simplified Reaction Model of Methane**
K. Igusa, H. Nakamura

OS23-24: **Improvement of Solar Absorption Performance by Plasmonic Pickering Emulsions**
Y. Koizumi, S. Hirashima, T. Kimura, M. Ono, Y. Nonomura, A. Masuhara, H. Gonome

OS23-25: **Thermal Photonics Power Generation System Based on Perovskite Materials**
K. Ono, S. Ito, R. Sugimoto, A. Sakurai

OS23-26: **Effect of Pre-strain on Unsteady Characteristics of Flexible-membrane Wing at Low Reynolds Number**
H. Kurahashi, T. Ikami, H. Nagai

OS23-27: **Uncertainty Quantification in Compressible Flow Fields with Different Initial Conditions**
N. Gima, S. Morizawa

OS23-28: **Design and Development of 7 kW Solar Simulator for Solar Thermal Applications**
A.Z. Rizal, M. Kambayashi, K. Matsubara, T. Kodama, S. Bellan

OS23-29: **Fluid-Structure Interaction Analysis of Flexible-membrane Wing at Low Reynolds Number**
K. Funada, H. Osaki, Y. Chikamoto, D. Sasaki, Y. Kawamoto, S. Takahashi, K. Fujita, H. Kurahashi, M. Okawa, T. Ikami, H. Nagai

OS23-30: **Basic Research on Dye-Painted AA-PSP Using Bathophenanthroline Ruthenium Chloride as the Pressure-Sensitive Dye**
H. Takata, Y. Kawamata, T. Kawashima, D. Numata

OS23-31: **Effect of Anodized Aluminum Layer Thickness on the Characteristics of Sulfuric Acid Type Dye-Painted AA-PSP**
K. Yoneyama, Y. Kawamata, T. Kawashima, D. Numata

OS23-32: **Experimental Investigation of Optimized Arrangements of HEPA Air Purifiers in Indoor Ventilation**
H. Takaku, W. Yamazaki, H. Takahashi

OS23-33: **Advanced Optical Design for PIV Measurements on Curved Surfaces**
R. Mise, T. Ikami, H. Nagai

OS23-34: **Influence of Unsteadiness of Cavitating Flow on the Thermodynamic Self-Suppression Effect**
G. Nakamura, Y. Iga

OS23-35: **Numerical Simulation for Non-Newtonian Liquid Jet Breakup in a Gas Cross-flow with an Electric Field**
S. Nakashima, K. Hayashi, M. Shirota, S. Iwata, Y. Mawatari, M. Yamamura, Y. Saito

OS23-36: **Effect of Atomization Characteristics of Two-fluid Nozzle on Radiative Heat Transfer in Fire Accident**
M. Jono, T. Kogawa, K. Kawai, W. Xing, S. Moriya, J. Okajima, H. Gonome

OS23-37: **Towards to Extrapolation Prediction of Fluid Phenomena Using Physics-Informed Neural Networks (PINNs)**
S. Nakama, S. Morizawa

OS23-38: **Research on Installing Protuberance on a Flat Plate at Low Reynolds Numbers**
H. Osaki, D. Sasaki, Y. Kawamoto, M. Okamoto

OS23-39: **Towards Efficient Unsteady Aerodynamic Optimization of a Thin Angular Airfoil at Low Reynolds Number**
Y. Chikamoto, D. Sasaki, Y. Kawamoto

OS23-40: **Development of Temperature Sensitive Paint for Cryogenic Fluid Visualization**
S. Okuyama, T. Yokouchi, T. Ikami, H. Nagai

OS23-41: **Research on Advanced Aerodynamic Topology Optimization for Supersonic Airfoil**
Y. Inagaki, W. Yamazaki

OS23-42: **Airfoil Design Using Optimal Design Technology Integrating Experimental and Numerical Analysis Data**
S. Fujisaki, A.U. Batsukh, W. Yamazaki

OS23-43: **Dependence of the Probe Volume Direction in LITGS in Non-reacting Flow with Temperature Distribution**
H. Kondo, S. Hasegawa, K. Norimatsu, T. Kudo, A. Hayakawa

OS23-44: **Influence of Notch in Inducer Blade on Cavitation Instabilities for Rocket Turbopump**
T. Yoshino, N. Ishikawa, A. Kowata, S. Kawasaki, Y. Iga

OS23-45: **Numerical Simulation of Gas-Liquid Two-Phase Flow and Liquid Film Formation on a Rotating Disk with a Narrow Gap**
K. Kurosawa, M. Shimagaki, J. Okajima

OS23-46: **Passage Characteristics of Bundle of Vortical Axis Lines in Homogeneous Isotropic Turbulence**
K. Uchima, K. Nakayama

OS23-47: **Evaluation of Martensitic Transformation and Surface Microcracks of Hydrogen-Charged Austenitic Stainless Steels Using Eddy Current Testing**
Y. Kure, T. Uchimoto, S. Ajito, M. Koyama, E. Akiyama, S. Takeda

OS23-48: **Effect of Anodized Aluminum Layer Thickness on the Characteristics of Phosphoric Acid Type Dye-Painted AA-PSP**
T. Kawashima, D. Numata

OS23-49: **Development of Background Oriented Schlieren Measurement Technique for Cylindrical Combustion Flow**
Y. Hirayama, M. Kido, Y. Yabiku, S. Ogawa

OS23-50: **Temperature Measurement in a Micro-Area of Two-Dimensional Materials by Raman Spectroscopy**
T. Hasegawa, T. Sugano, A. Sakurai

OS23-51: **Experimental Study on Temperature Depression inside Cavitation in a Nozzle Flow**
R. Suzuki, J. Okajima

OS23-52: **Effect of Painting Parameters on the Characteristics of Dye-Painted AA-PSP Aimed at Visualizing Unsteady Shock Wave Phenomena**
Y. Kawamata, D. Numata

OS23-53: **Fabrication of PC-PSP Using Bathophenanthroline Ruthenium Chloride as the Pressure-Sensitive Dye**
T. Takizawa, D. Numata

OS23-54: **Study on the Basic Characteristics of Supersonic Airfoil for Mars Airplane**
T. Ninomiya, K. Shibata, T. Takizawa, D. Numata

OS23-55: **Evaluation of the Impact of Ablation Power and Heating Time Combinations on the Depth of Heat Penetration in Biological Tissue**
T. Tani, S. Xin, M. Ono, A. Komiya

OS23-56: **Evaluation of the Effect of Local Periodic Thermal Perturbations on Convective Heat Transfer Enhancement in a Vertically Heated Plate**
T. Takagi, T. Koizumi, T. Kogawa, A. Komiya

OS23-57: **Assessment of New Chemical-Kinetic Parameters in Two-Temperature Kinetic Model Using an Open-Source CFD Software Eilmer4**
J. Wu, M. Ahn Furudate

OS23-58: **Investigating the Thermomechanical Properties of Phosphorus-Enhanced Flame-Retardant Epoxy Resins Through Reactive DPD/MD Simulations**
K. Li, A. Ito, G. Kikugawa

OS23-59: **Numerical Simulation on Bubble Growth and Wall Heat Transfer During Saturated Flow Boiling of Water in Microchannel**
Y. Lyu, J. Okajima

OS23-60: **Simulation of Adhesion and Fracture at the Interface between Thermosets and Metals using Quantum Chemical and Molecular Dynamics Calculations**
H. Xue, Y. Xi, N. Kishimoto, G. Kikugawa, K. Li, T. Ishiyama

OS23-61: **Physical Property Measurement of Liquids Using an Event-Based Camera Falling with a Drop**
T. Kishi, T. Kosugi, R. Yamamoto, T. Miyagawa, M. Shirota

OS23-62: **Numerical and Experimental Study of Ice Particle Melting During Drop Impact onto a Heated Surface**
H. Echigo, Y. Kimura, J. Okajima, T. Okabe

OS23-63: **Evaluation of Thermoelectric Effect on EMFs at a Water-Graphene Interface**
N. Iwamoto, T. Okada, A. Komiya

OS23-64: **Study on the Amount of Heat Loss in the Cooling System Using Elastocaloric Effects**
S. Ishii, G. Sebald, S. Moriya, A. Komiya

OS24: The 24th International Symposium on Advanced Fluid Information (AFI-2024) IFS Collaborative Research Forum

CRF-1: **Plan to Study the Surface Flow of a Small Rotor Blade with a Vortex Generator**
H. Otsuka, H. Sasaki, H. Tokutake, T. Ikami, H.Nagai, H. Osaki, D. Sasaki, Y. Kawamoto

CRF-2: **Smoke-Visualized Wake of Quadrotor in Ground Effect**
H. Otsuka, Y. Kobayashi, S. Akaba, H. Tokutake, M. Okawa, T. Ikami, H. Nagai

CRF-3: **Conceptual Study on a Conventional Micro-sized Mars Airplane with Stowable and Deployable Membrane Wings**
S. Kudo, T. Takagi, H. Kono, T. Masaki, S. Oshima, M. Kanazaki, T. Ikami, H. Nagai

CRF-4: **Measurement of Three-Dimensional Density Field around Hayabusa Capsule Model Using Monochrome Random Dot Pattern at Two Different Moments**
M. Yamagishi, S. Nogi, N. Kosaka, M. Ota, T. Inage, Y. Takikawa, K. Ohtani, H. Nagai

CRF-5: **Numerical Simulation for High-speed and Low-temperature Plasma Flows in a Space Transport System**
M. Takahashi, S. Suzuki, H. Suzuki, K. Ito, H. Nagai

CRF-6: **Whole Field Prediction from Sparse Sensors Using Neural Networks**
M. Takagi, T. Ikami, Y. Egami, H. Nagai, T. Kashikawa, K. Kimura, Y. Matsuda

CRF-7: **A Study on the Flow Characteristics near the Surface of Highly Acoustically Transparent Porous Materials**
N. Takeda, T. Kusano, O. Terashima, H. Nagai, Y. Konishi, T. Ikami, T. Komatsuzaki

CRF-8: **The Behavior of Local Geometries of Shock Wave Surfaces Propagating in Turbulent Flow**
A. Kusuhata, K. Tanaka, T. Watanabe, K. Nagata, Y. Ito, Y. Hattori

CRF-9: **An Analysis of Self-Organization of Three Dimensional Turbulent Vortical Structure Derived from Interaction between Vortical Flow and Bundle of Vorticity Lines**
K. Nakayama, K. Uchima, K. Sakurai, Y. Hattori

CRF-10: **Thermometry of Oxygen Enriched Methane Flames using Near-infrared Emissions from Water Molecules**
K. Hirose, F. Ren, K. Omi, K. Nakayama, K. Uchida, S. Nakaya, H. Kondo, S. Hasegawa, T. Kudo, A. Hayakawa, M. Tsue

CRF-11: **Real-Fluid properties Using the Virial Equation of State Based on the Boltzmann-weighted Full-dimensional Potential**
X. Zhang, H. Nakamura, H. Zhao

CRF-12: **Feasibility Study of Ammonia Fueled Commercial Aircraft**
T. Wada, K. Iijima, D. Shimokuri, A. Hayakawa, H. Nakamura, Y. Fujimoto, S. Obayashi

CRF-13: **Evaluation of Optimal Hydrogen-Ammonia Mixtures for Solid Oxide Fuel Cells**
C. Wilhelm, K. Tamaoki, H. Nakamura, J. Ahn

CRF-14: **An Experimental and Kinetic Modeling Study for Autoignition Times of TMPI and TEPI Flame Retardants**
F. N. O. Bruce, Z. Zhu, K. Kanayama, H. Nakamura, Y. Li

CRF-15: **Analysis of Thermophysical Properties of Phase-Change Material Based Metal-Organic Frameworks Using Molecular Dynamics Simulation as a Reviewing Approach**
M. R. Prakoso, N. Y. Rodjali, T. Tokumasu

CRF-16: **Investigation of the Passivation Mechanism of TiOx/Si Heterostructure by Molecular Dynamics Simulation**
Y. Michishita, S. Fukaya, N. Uene, K. Gotoh, T. Tokumasu, N. Usami

CRF-17: **Evaluation of Stability of Magnesium Oxide Deposited on Silicon Surface**
S. Kaneko, M. Kurouchi, M. Yasui, D. Shiojiri, M. Mitsuhashi, M. Yoshimura, R. Yu, S. Yasuhara, M. M. Can, S. K. Sahoo, I. Mariana, K. Sardar, T. Tokumasu

CRF-18: **Characterization of Particulate Morphology Generated from Lithium-Ion Battey Combustion Processes**
S. L. Manzello, S. Suzuki, K. Maruta

CRF-19: **PECT Signal Processing Algorithm for Better Thickness Quantification of Ferromagnetic Material**
S. Xie, S. Yang, L. Guo, G. Lu, Z. Chen, T. Uchimoto, T. Takagi

CRF-20: **Research on the Antibacterial Effect of Ag- and Cu-Containing Carbon Films Using the Self-Exudation Effect of Contained Metal Components**
M. Goto, S. Takeda, H. Miki, K. Ito, T. Uchimoto

CRF-21: **Exploring the Effects of Shear Stress Magnitude and Variation on Endothelial Injury: From Current Evidence to In Vitro Experiment of Cellular Responses**
M. Zhang, H. Saifurrahman, Z. Wang, H. Anzai, M. Ohta

CRF-22: **Interaction between Aortic Stiffness and Carotid Arterial Stiffness: Computational Simulations Using a Realistic Arterial Model**
Y. Li, M. Petrova, C. S. McLachlan, M. Ohta

CRF-23: **Computational Hemodynamics in Intracranial Aneurysms: Unveiling Insights into Hemodynamic Complexity**
M. Albadawi, R. Yamaguchi, K. M. Saqr, M. Ohta

CRF-24: **Development of Transcranial Doppler-Computed Tomography Fusion Imaging System Based on Sensors, Artificial Intelligence, and Phantom**
E. Kristianti, I. Rostiana, N. R. Marali, M. F. Syukra, M. S. S. Hashuro, M. Ohta

CRF-25: **Numerical Simulation of the Effect of Viscosity on the Directional Movement of Droplets on the Bioinspired Micro/Nanostructured Surfaces**
S. Chen, H. Zhang, B. Guo, T. Du, A. Qiao, H. Song, W. Fu, H. Anzai, M. Ohta

CRF-26: **Effect of Atomization Characteristics of Two-Fluid Nozzle on Radiative Shielding of Mist for Heat Stroke Prevention against Thermal Radiation from the Ground Surface**
H. Gonome, M. Jono, K. Kawai, W. Xing, S. Moriya, J. Okajima, T. Kogawa

CRF-27: **Pore-Scale Simulation of Mass Transfer during Supercritical Fluid Remediation for Soil Contaminants**
Y. Hu, Y. Xu, Y. Kanda, A. Komiya

CRF-28: **Combined In situ & Ex situ, Multi-scale Stress Measurements in Crystalline Geothermal Reservoirs**
Y. Mukuhira, X. Ma, S. Zhang, T. Ito

CRF-29: **Direct Numerical Simulation of a Vertical Natural Convection Boundary Layer in Water**
J. Ke, S. Armfield, A. Komiya, N. Williamson

CRF-30: **Numerical Investigation of a Truncated Nanofluid-based Non-imaging Concentrating Photovoltaic Thermal (CPVT) System**
A. Ustaoglu, V. Akgül, B. Kursuncu, J. Okajima

CRF-31: **Advection-diffusion Solution of the Internal MRI Environment for Analysis of Brain Function with Olfactory Stimulation**
Y. Inoue, A. Yamada, T. Yurimoto, F. Seki, Y. Takewa, J. Okajima

CRF-32: **Study on Micro-scale Evaporation for Heat Transfer Enhancement**
J. Okajima, Y. Naka, H. Sontheimer, T. Gambaryan-Roisman, P. Stephan

CRF-33: **Molecular Dynamics Study for Interfacial Structure and Affinity between Surface-modified Metal Oxide and Binary Mixtures of Organic Solvents**
T. Saito, Y. Sato, M. Kubo, E. Shoji, G. Kikugawa, D. Surblys, A. Komiya

CRF-34: **A Molecular Dynamics Investigation of Ionic Conductivity in YSZ Phase Transitions**
Y. Guo, T. Taniuchi, K. Fukumoto, T. Ohara, M. Kishimoto, H. Iwai

CRF-35: **Permeability of CO_2 Gases through DPPC Lipid Membranes using Molecular Dynamics Simulation**
F. P. Nasution, F. Yulia, N. Y. Rodjali, T. Mabuchi

CRF-36: **Analysis of Heat and Momentum Transport Characteristics Through Droplets Inside Nanoorder Channels**
A. Fukushima, T. Tokumasu

CRF-37: **Multi-scale Analysis of Oxygen Ion Conduction Property in Solid Oxide Electrolyte Membrane**
T. Ijichi, H. Nagashima, C. Wilhelm, A. Willsey, J. Ahn, T. Tokumasu

CRF-38: **Molecular Dynamics Study of Interfacial Nano-Bubble**
H. Nagashima, Y. Jonosono, S. Tsuda, T. Tokumasu

CRF-39: **Study on the Injection Process of Next-Generation Liquefied Fuels**
N. Kawaharada, I. Oshima

CRF-40: **Gas Component Identification for Laser-Induced Cavitation Bubbles**
S. Liu, K. Nitto, O. Supponen, T. Nakajima, M. Farhat, T. Sato

CRF-41: **Experiment and Molecular Dynamics Simulation for Plasma-Dependent Interface**
K. Tachibana, S. Liu, S. Uchida, T. Nakajima, T. Sato

CRF-42: **Experimental Investigation on Relationship between Flow Dynamics and Micro-structure in Cellulose Nano-fiber Dispersion**
M. Motozawa, H. Takana, T. Chinju

CRF-43: **Two-dimensional Analysis of Flow through an Orifice using Extended Finite Element Method**
T. Shimabuku, S. Miyauchi, K. Funamoto

CRF-44: **Development of a Plasma-Liquid Interfacial Reactor on a Microfluidic Chip**
H. Yoshiki, A. Enta, T. Nakajima, T. Sato

CRF-45: **Membrane Permeation Characteristics of Reactive Oxygen Species under Cold Atmospheric Pressure Plasma Irradiation**
S. Uchida, Y. Iijima, R. Tanaka, R. Ninomiya, Y. Ninagawa, I. Yagi, K. Tachibana, A. Oda, T. Sato

CRF-46: **Electric Current Measurement of Nanodroplets Generated by Condensation of Water Vapor with High-speed Flow**
J. Lee, Y. Cheng, S. Liu, T. Nakajima, T. Sato

CRF-47: **Generation of High-Speed Ultrafine Droplets and Droplets Characteristics**
T. Sato, S. Kanazawa, K. Tachibana, S. Liu, T. Nakajima

CRF-48: **Pressure Measurement in Laser-Induced Cavitation Bubble Using Discharge Characteristics**
S. Uehara, T. Sato, M. Farhat, S. Kanazawa, Y. Iga, T. Nakajima, S. Kamata, S. Liu

CRF-49: **Schlieren Imagery of Low Frequency AC Voltage EHD of Phase Change Materials**
E. Chariandy, J. S. Cotton, T. Sato, S. Liu

CRF-50: **Multidimensional Evaluation of Aircraft Design: The Crossover Between Aesthetics and Performance/Safety**
J. Shintake, M. N. Raza, R. Saito, Y. Abe

CRF-51: **Layout of Ducted Fan between Aero-Train Wings**
C. Lai, J. He, S. Obayashi

CRF-52: **Emulating Atherosclerotic Conditions on an Organ-on-a-Chip**
M. Sasaki, K. Funamoto, E. Corvera Poiré

CRF-53: **Numerical Analysis of the Flow around a Wing-body Combination Model with Three-degree-of-freedom Flapping**
M. Mitsunaga, T. Ishide, H. Izumi, H. Tamagawa, A. Harada, S. Obayashi

CRF-54: **Backup Power Supply using Flapping Wing Antennas**
H. Izumi, T. Ishide, S. Obayashi

CRF-55: **Nonlinear Aeroelastic Simulation Framework with Machine Learning for High Aspect Ratio Wings**
K. Shimura, H. He, H. Yamashita, H. Sugiyama, Y. Abe, T. Haga, K. Otsuka

CRF-56: **Unsteady RANS Simulations of Vortex-shedding using CFD-driven Machine-learned Turbulence Closure**
A. Kawabata, A. Yakeno, R. D. Sandberg

CRF-57: **Explainable Machine Learning for Aerodynamic Design Exploration**
P. S. Palar, L. R. Zuhal, K. Shimoyama, S. Obayashi

CRF-58: **Analysis of Aerodynamic Forces and Flow Field on a Roadable Aircraft against Crosswind during Landing**
S. Morizawa, R. Sakai, R. Kikuchi, S. Obayashi

CRF-59: **Numerical Investigation of the Flow Field on the Railway at Naha Airport**
S. Morizawa, N. Gima, A. Yakeno

CRF-60: **Aerodynamic Discrepancies of an Aircraft Considering the Running Engine**
J. Mueller, K. Chiba, Y. Oba, S. Obayashi

CRF-61: **Scanning Stereoscopic PIV for 3D Wake Structure of Cylindrical Blades with Fins on a Magnus Wind Turbine**
I. Okuyama, K. Nakagawa, H. Hasegawa, S. Obayashi

CRF-62: **Advancement in Feedback Control Using Sparse Processing PIV**
R. Viguera, R. Naramura, Y. Sasaki, Y. Abe, T. Nonomura

CRF-63: **Construction of Actuator Placement Optimization Framework Toward Realization of Efficient Weather Modification Technology**
H. Naruse, T. Nagata, Y. Sasaki, M. Watanabe, K. Yamada, J. Ito, J. A. I. Paski, D. Tsubakino, S. Obayashi, T. Nonomura

CRF-64: **High Sensitivity and Quantitative Visualization around High-speed Projectile**
T. Mizukaki, Y. Iwamoto, I. Nagayama, K. Ohtani

CRF-65: **Hypervelocity Impact Experiments for Risk Assessment of Inflatable Structures**
H. Takahashi, Y. Sugiyama, Y. Kikuji, K. Ohtani, Y. Hara, K. Makihara

CRF-66: **Attenuation Effect of Shock Environment in Supersonic Flows using the Soft Body**
N. Makita, H. Ueda, K. Ohtani, N. Sato, T. Ogawa, Y. Konishi, K. Kitagawa

CRF-67: **Experimental and Numerical Studies on the Correlation between Pressure Rise Time and the Turbulence Length Scale in Shock-turbulence Interaction**
Y. Arakawa, T. Ukai, K. Ohtani

CRF-68: **Fundamental Research on a New AA-PSP for Enhancing the Accuracy of Pressure Field Measurements on the Surface of Supersonic Projectiles**
D. Numata, Y. Kawamata, T. Kawashima, K. Ohtani

CRF-69: **Fundamental Study of Weak Radiation behind Air Shock Waves**
M. Funatsu, K. Shimoyama, K. Shibusawa, K. Ohtani

CRF-70: **Precise Measurement of the Effect of Deceleration on the Drag Coefficient**
T. Miyazaki, T. Kikuchi, K. Ohtani, A. Muramatsu

CRF-71: **Shock Tube Experiments to Reveal the Dynamics of Ballistic Projectiles in Explosive Volcanic Eruptions**
K. Tsunematsu, K. Ohtani, N. Steinau, K. Seo, A. Kaneko

CRF-72: **Impact Energy Absorption Properties of Artificial Pumice**
K. Tateyama, H. Fujiki, K. Ohtani

CRF-73: **Characterizing Atmospheric Conditions for Sonic Boom Loudness**
H. Yamashita, B. Kern, T. Ukai, T. Misaka, S. Obayashi

CRF-74: **Prediction and Optimisation of Axisymmetric Internal Shock and Flow Structure**
H. Ogawa, K. Omiya, A. Shibakita, C. Fujio, K. Ohtani, S. Mölder, E. Timofeev, B. Shoesmith, R. Tahir, T. Handa, Y. Watanabe, J. K. J. Hew, R. W. Boswell, T. Muruganandam, V. Vijayakrishnan, A. Marade

CRF-75: **Investigation of Three Equilateral Triangle with Tandem Arrangement using Lattice Boltzmann Method and Proper Orthogonal Decomposition**
B. Goh, K. Zakaria, P. S. Palar, V. D. Duong, L. R. Zuhal, A. Oyama, A. Yakeno

CRF-76: **Study on Heat Flux Prediction Method for Cartesian-Mesh CFD under Supersonic Flows**
D. Sasaki, M. Yukimitsu, S. Ogawa, S. Yoshinaga, H. Moriai, S. Takahashi, A. Yakeno, S. Obayashi

CRF-77: **Transition Physics and Turbulence Modeling to Reproduce It**
A. Yakeno, J. Fransson