

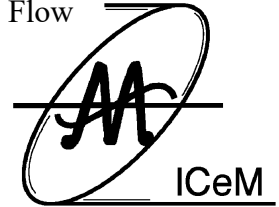


The International Information Center for Multiphase Flow

# NEWSLETTER

No. 58, March 2023

The Japanese Society for Multiphase Flow



## 12th Japan-Korea Symposium on Nuclear Thermal Hydraulics and Safety (NTHAS-12) October 30 -November 2, 2022, Phoenix Seagaia Resort, Miyazaki, Japan

by Yutaka ABE

NTHAS-12 (The 12th Korea-Japan Symposium on Nuclear Thermal Hydraulics and Safety) was held from October 30 to November 2, 2022, at the Phoenix Seagaia Resort in Miyazaki Prefecture. A total of 181 participants (80 from Japan and 101 from Korea) attended the symposium, and 105 papers were presented in addition to 2 plenary lectures and 4 keynote lectures.

This symposium has been held biennially in Japan and Korea alternately for more than 20 years since the first symposium was held in Pusan, Korea in 1998 by the Thermal Hydraulics Division of AESJ and KNS in Japan and Korea. The conferences have been very successful in terms of quality of technology and number of participants, providing a unique opportunity to discuss the latest technical information from Japan

and Korea as well as to interact with colleagues from neighboring countries.

Originally, the conference was to be held every two years, alternating between Japan and Korea. Thus, initially, this NTHAS-12 was scheduled to take place in 2020. Unfortunately, the year 2020 was also the beginning of the global COVID-19 corona pandemic. The NTHAS-12 was forced to be postponed repeatedly due to the COVID-19 corona pandemic. After two years of postponement, it was decided to hold the NTHAS as a FACE-TO-FACE Style Symposium in Miyazaki in 2022.

Although the coronary outbreak is now under control, the scale of the meeting was comparable to previous NTHASs, even though the situation still does not allow for optimism. In particular, this was an

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Everybody, who is interested in Multiphase flow, is welcome to join ICeM. Please contact one of the following board members to register in ICeM member.

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opportunity to reaffirm the depth and certainty of the ties between Japan and South Korea in the field of nuclear thermal hydraulics.

Thanks to the efforts and dedication of the participants from Japan and Korea as well as all the people involved in this symposium, we were able to hold a successful conference.

I would like to express my gratitude once again.

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General Chair of NTHAS12



## **10<sup>th</sup> International Conference on Conveying and Handling of Particulate Solids 5-9 July 2022, Salerno, Italy**

by Koichiro OGATA

The 10th International Conference on Conveying and Handling of Particulate Solids was held on 5-9 July 2022 at the Grand Hotel Salerno, Italy, as a face-to-face meeting style. The University of Salerno hosted the conference, kindly chaired by Professor Massimo Poletto and Dr. Diego Barletta. The scope of the conference is particle science and technology for producing and handling particulate materials such as chemicals, ceramics, minerals, foods, pharmaceuticals, biomass fuels and additive manufacturing and so on. The research fields extended over the solid flow, mechanical behaviour of bulk materials, powder

testing, mixing, segregation, and modelling in the industrial sectors. The conference gathered about 200 participants from around the world in centered Europe although researchers from Japan, the US, Australia and China could not come to the conference due to the pandemic. The program includes 7 plenaries, 26 keynotes, and 150 presentations and posters.

Plenary talks were given by

- Prof. Heinrich Jaeger (University of Chicago, USA)
- Prof. Dingena Schott (Delft University of Technology, The Netherlands)
- Prof. Chuan-Yu Wu (University of Surrey, UK)

- Prof. Raffaella Ocone (Heriot-Watt University, UK)
- Dr Pierre Jop (CNRS/Saint-Gobain, France)
- Dr Andrea Benassi (Chiesi Farmaceutici, Italy)
- Prof. Jochen Schmidt (University Erlangen, Germany)

I was impressed by these talks focusing on the understanding of fundamental behaviour of particulate materials, the modelling using the assessment of the particle physical properties, the experiments, and the simulation techniques. Particularly, the DEM simulation was used in much research as a valuable tool to understand the mechanism of particle behaviour.

The research topics were categorized into 10 tracks: Track 1. Pneumatic and mechanical conveying, Track 2. Multiphase flow and fluidization, Track 3. Powder testing and characterization, Track 4. Particle design and manufacturing, Track 5. Compaction and tableting, Track 6. Thermomechanical behaviour of granular materials, Track 7. Agglomeration and Granulation, Track 8. Dust and aerosol emissions, Track 9. Particle deformation, Track 10. Wear and attrition. Each track had 1 to 3 sessions with 3 to 5 presentations. In my research field, there was an exciting presentation on evaluation and modelling cohesive powder flow for the understanding of industrial powder handling processing.

The next CHoPS will be held in a European country in 2025. The international committee member will decide the place in the committee's meeting in the near future. I was the only participant from Japan at the conference and I look forward to seeing many of you there.



Photo 1 Opening ceremony.



Photo 2 Conference dinner with singer at Arechi Castle.

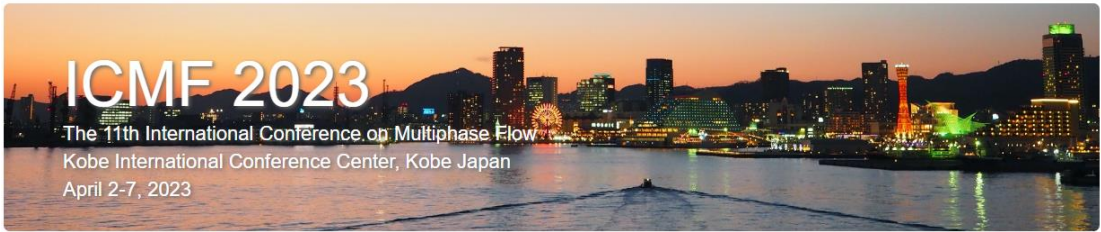
#### Author's information

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International Scientific Committee of CHoPS



<http://www.jsmf.gr.jp/icmf2022/>

The 11th International Conference on Multiphase Flow will be held in Kobe, Japan from April 2-7, 2023 at Kobe International Conference Center. The 1st ICMF was held in Tsukuba, Japan in 1991 and then the 2nd was again in Japan, Kyoto in 1995. Since then, ICMF has been governed by the ICMF Governing Board, and has been held every three years in the three geographical regions in the order of Europe, America and Asia-Oceania. ICMF has been playing a very important role in multiphase flow R & D communities as the world's largest conference on multiphase flow. ICMF will provide you with state-of-the-art knowledge on all the aspects of multiphase flow, a good chance of deepening a friendship and research collaboration, and new beginnings as well!

## Scientific Topics

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- Bio-Fluids
- Bubbly Flows
- Cavitation/Nucleation
- Collision, Agglomeration and Breakup
- Colloidal and Suspension Dynamics
- Computational Techniques for Multiphase Flows
- Droplet Flows
- Environmental and Geophysical Flows
- Experimental Methods for Multiphase Flows
- Fluid-Structure Interactions
- Interfacial Flows
- Instabilities
- Mixing
- Modelling of Multiphase Flows
- Multiphase Flow in Heat and Mass Transfer
- Non-Newtonian Multiphase Flows
- Particle Dynamics
- Particle-Laden Flows
- Reactive Multiphase Flows
- Turbulence in Multiphase Flows

# Organized Sessions

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## Industrial Applications

Organizers: Isao Kataoka (Fukui University of Technology, Japan), Xiaodong Sun (University of Michigan, USA), Hyoung Kyu CHO (Seoul National University, Korea), Shuichiro Miwa (The University of Tokyo, Japan)

## Boiling, Condensation, Evaporation

Organizers: Shoji Mori (Kyushu University, Japan), Matteo Bucci (Massachusetts Institute of Technology, USA), Hiroyasu Ohtake (Kogakuin University, Japan), Niro Nagai (Fukui University, Japan)

## Bubbles and Drops

Organizers: Toshiyuki Sanada (Shizuoka University, Japan), Minoru Shiota (Hirosaki University, Japan), Yoshiyuki Tagawa (Tokyo University of Agriculture and Technology, Japan), Chao Sun (Tsinghua University, China), Kirti Chandra Sahu (IIT Hyderabad, India), Tuan Tran (Nanyang Technological University, Singapore)

## Fluidization

Organizers: Takuya Tsuji (Osaka University, Japan), Wei Wang (Chinese Academy of Sciences, P.R. China), Daniel Holland (University of Canterbury, New Zealand), Alberto Di Renzo (University of Calabria, Italy)

## Granular Flow

Organizers: Takuya Tsuji (Osaka University, Japan), Maxime Nicolas (Aix Marseille University-CNRS, France), Hiroaki Katsuragi (Osaka University, Japan)

## Numerical Modeling of Granular and Multiphase Flows

Organizers: Mikio Sakai (The University of Tokyo, Japan), Toru Ishigami (Hiroshima University, Japan), Shunying Ji (Dalian University of Technology, China), Kun Luo (Zhejiang University, China), Wei Wang (Chinese Academy of Sciences, China)

## Two-phase Flow Systems under Microgravity

Organizers: Hitoshi Asano (Kobe University, Japan), Catherine Colin (University of Toulouse, France), Paolo di Marco (University of Pisa, Italy), Jungho Kim (University of Maryland, USA), Osamu Kawanami (University of Hyogo, Japan), Atsushi Okamoto (JAXA, Japan)

## Micro- and Nano-Scale Multiphase Flows

Organizers: Akimaro Kawahara (Kumamoto University), Masahiro Kawaji (City College of New York, US), Martin Wörner (Karlsruhe Institute of Technology, Germany), Mirco Magnini (University of Nottingham, UK), Masahiro Takei (Chiba University), Ryo Kurimoto (Kobe University)

## Fundamentals and Applications of Fine Bubble Technology

Organizers: Hisato Minagawa (The University of Shiga Prefecture, Japan), Takayuki Suzuki (Kobe City College of Technology, Japan), Koichi Terasaka (Keio University, Japan), Michael Schlüter (Hamburg University of Technology, Germany), Shigeo Hosokawa (Kansai University, Japan), Adam Donaldson (Dalhousie University, Canada), Takashi Hata (National Institution of Technology, Kochi College, Japan), Adel Al-Taweel (Dalhousie University, Canada)

## Invited Speakers

### Plenary Lecture

Rodney O. Fox	Iowa State University
Melany Hunt	Caltech
Frédéric Risso	Institut de Mécanique des Fluides de Toulouse
Shu Takagi	The University of Tokyo

### Keynote Lecture

Arezoo Ardekani	Purdue University
Panagiota Angeli	University College London
Dieter Bothe	Technical University of Darmstadt
Marco da Silva	Johannes Kepler University Linz
Jochen Fröhlich	Technical University of Dresden
Tatiana Gambaryan-Roisman	Technical University of Darmstadt
Kosuke Hayashi	Kobe University
Shuichiro Miwa	The University of Tokyo
Yuji Tasaka	Hokkaido University
Zhaosheng Yu	Zhejiang University

## Important Dates

All dates are based on Japan Standard Time (JST: UTC+9)

### Submission

Abstract Submission Due	<b>Sep 6, 2022</b> (No further extension)
Abstract Acceptance Notification	Oct 20, 2022
Submission of Full-Length Paper ( <a href="#">Optional</a> )	Please see <a href="#">Submission Page</a>

### Registration

Registration Opening	Sep, 2022
Deadline of Early-Bird Registration	Nov 30, 2022
Standard Rate	Dec 1 - Mar 20, 2023
Onsite Rate	Apr 2 - 7, 2023

Cancellation deadline: Feb 20, 2023

## Submission (for accepted abstracts only)

### Full Paper Submission to FTaC or MST

Full paper submission is optional. Selection of papers for special issues in FTaC (Flow, Turbulence and Combustion) or MST (Multiphase Science and Technology) will be made based on peer-review of submitted papers. For the full paper preparation, please refer to the paper submission guidelines in the journal homepages of FTaC or MST.

Please note that full papers will not be included in the digital abstract book of ICMF-2023.

### Full Paper Submission to FTaC

We will announce how to submit the full paper to FTaC and the due date as soon as possible. Papers submitted to the special issue in FTaC will be handled by the guest editors, Prof. Shu Takagi (The University of Tokyo) and Prof. Gretar Tryggvason (Johns Hopkins University).

### Full Paper Submission to MST (Now Open for Submission)

Participants those who want to submit full papers to the special issue in MST can upload the manuscripts via the publisher's online submission system.

[SUBMIT FULL PAPER TO MST](#)

Please prepare your manuscript by following the author instruction given below and submit it by the due date, **Feb 20, 2023**. Papers submitted to the special issue in MST will be handled by the guest editors, Prof. Kazuyasu Sugiyama (Osaka University) and Prof. Kosuke Hayashi (Kobe University).

### Obituary

It is with deep sadness to inform you that Distinguished Professor, Emeritus, Dimitri Gidaspow (Illinois Institute of Technology) passed away on January 9, 2023. We would like to express our sincere appreciation for his enormous contributions and to offer our deepest sympathies.

## Future Meetings

Following list includes conference name, place, date and contact information.

### Particle Growth in Turbulence

Stockholm, Sweden, March 20–31, 2023

Chair: A. Brandenburg (Nordita)

Chair: B. Mehlig (University of Gothenburg)

<https://indico.fysik.su.se/event/7880/>

### The 11th International Conference on Multiphase Flow (ICMF 2023)

Kobe, Japan, April 2–7, 2023

Chair: A. Tomiyama (Kobe University)

<http://www.jsmf.gr.jp/icmf2022/>

### International Multiphase Flow Technology Forum (IMFTF 2022)

Haikou, P.R. China, April 21–24, 2023

Chair: J. Yao (China University of Petroleum-Beijing)

<https://www.cup.edu.cn/IMFTF/Meetings/index.htm>

### 11th International Conference On Boiling & Condensation Heat Transfer (ICBCHT11)

Edinburgh, United Kingdom, May 15–17, 2023

Chair: S. Khellil (Univ. Edinburgh)

<https://icbcht11.eng.ed.ac.uk/>

### 30th International Conference on Nuclear Engineering (ICONE 30)

Kyoto, Japan, May 21–25, 2023

Chair: K. Okamoto (The University of Tokyo)

<https://www.icone30.org/>

### International Conference on Power Engineering 2023 (ICOPE-2023)

Kyoto, Japan, May 21–26, 2023

Chair: T. Nakagaki (Waseda University)

<https://www.icope-2023.org/>

### Fluidization XVII

Edinburgh, United Kingdom, May 21–25, 2023

Chair: R. Ocone (Heriot-Watt University)

<https://www.aiche.org/conferences/fluidization/2023>

### ASME - JSME - KSME Joint Fluids Engineering

### Conference 2023 (AJK FED 2023)

Osaka, Japan, June 9–13, 2023

Chair: T. Kajishima (Shikoku Polytechnic College / Osaka University)

Chair: G. Kawahara (Osaka University)

<https://ajk2023-fed.org/>

### Multiphase Flows - Simulation, Experiment and Application

Dresden, Germany, June 19–23, 2023

<https://www.hzdr.de/db/Cms?pOid=66032&pNid=1296>

### 10th International Granulation Workshop

Sheffield, United Kingdom, 21–23 June, 2023

<https://www.sheffield.ac.uk/agglom/10th-international-granulation-workshop-2023>

### 20th International Symposium on Flow Visualization (ISFV 2023)

Delft, Netherland, 17–21 July, 2023

Chair: F. Scarano (TU Delft)

<https://www.isfv20.org/>

### 26th International Conference on Chemical Thermodynamics (ICCT-2023)

Osaka, Japan, July 30–August 4, 2023

Chair: K. Saito (Tsukuba University)

[https://www.chem.sci.osaka-](https://www.chem.sci.osaka-u.ac.jp/lab/micro/ICCT2023/pg80.html)

[u.ac.jp/lab/micro/ICCT2023/pg80.html](https://www.chem.sci.osaka-u.ac.jp/lab/micro/ICCT2023/pg80.html)

### 20th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-20)

Washington DC, USA, August 20–25, 2023

Chair: R. Furstenu (United States Nuclear Regulatory Commission)

Chair: B.-W. Yang (DEQD)

Chair: E. Merzari (Penn State University)

<https://www.ans.org/meetings/view-nureth20/>

### International Conference on Computational Heat and Mass Transfer (ICCHMT2023)



Düsseldorf, Germany, September 4–8, 2023  
 Chair: A. C. Benim (Düsseldorf University of Applied Sciences)  
<https://www.icchmt2023.de/>

**European Conference on Thermophysical Properties (ECTP2023)**  
 Venice, Italy, September 10–13, 2023  
 Chair: A. Muscio (AIPT / Univ. Modena e Reggio Emilia)  
<https://www.ectp2023.eu/>

**10th International Conference on Turbulence, Heat and Mass Transfer (THMT-23)**  
 Rome, Italy, September 11–15, 2023  
 Chair: K. Hanjalić (TU Delft)  
<http://www.thmt-23.org/>

**The 8th International Conference on Micro and Nano Flows (MNF2023)**  
 Padova, Italy, September 18–20, 2023  
 Chair: T. G. Karayiannis (Brunel University London)  
<https://www.micronanoflows.com/>

**The 33th International Symposium on Transport Phenomena (ISTP33)**  
 Kumamoto, Japan, September 24–27, 2023  
 Chair: H. Saitoh (Sojo University)  
<https://istp33.jp/>

**International Congress on Particle Technology (PARTEC2023)**  
 Nuremberg, Germany, September 26–28, 2023  
 Chair: A. Kwade (Technische University of Braunschweig)

<https://www.partec.info/>

**VIII International Conference on Particle-Based Methods (PARTICLES2023)**  
 Milan, Italy, October 9–11, 2023  
 Chair: U. Perego (Politecnico di Milano)  
<https://particles2023.cimne.com/>

**14th International Symposium on Ultrasonic Doppler Methods for Fluid Mechanics and Fluid Engineering**  
 Kobe, Japan, October, 23–25, 2023  
<https://www.isud-conference.org/>

**2023 AIChE Annual Meeting**  
 Orlando, USA, November 5–10, 2023  
<https://www.aiche.org/conferences/aiche-annual-meeting/2023>

**76th Annual Meeting of the APS Division of Fluid Dynamics (APS-DFD23)**  
 Washington DC, USA, November 19–21, 2023  
<https://www.aps.org/meetings/meeting.cfm?name=DFD23>

----- 2024 and beyond, not yet determined -----

**13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13)**  
 Montreal, Canada, June 25–June 28, 2024  
 Chair: S. Tavoularis (University of Ottawa)  
<http://www.tsfp13.org>

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