

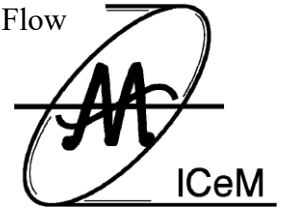


The International Information Center for Multiphase Flow

NEWSLETTER

No. 55, September 2021

The Japanese Society for Multiphase Flow



The 28th International Conference on Nuclear Engineering Virtual Conference Aug 4-6, 2021

by Tetsuaki TAKEDA

The 28th International Conference on Nuclear Engineering (ICONE28) was held virtually on August 4 - 6, 2021. This conference is a global event for professionals who want to stay current on new technology and industry trends and developments in nuclear technology. The focus of ICONE is on the technical state-of-the-art and the current status of nuclear power around the world. American Society of Mechanical Engineers (ASME), the Japanese Society of Mechanical Engineers (JSME), and the Chinese Nuclear Society (CNS) were jointly organizing the ICONE28 in 2021 virtually and online, a follow-up to the successful meetings held in Tokyo (1991), San Francisco (1993), Kyoto (1995), New Orleans (1996), Nice (1997), San Diego (1998), Tokyo (1999), Baltimore (2000), Nice (2001), Washington (2002), Tokyo (2003), Washington (2004), Beijing (2005), Miami (2006), Nagoya (2007), Orlando (2008), Brussels (2009), Xi'an (2010), Osaka (2011),

Anaheim (2012), Chengdu (2013), Prague (2014), Makuhari (2015), Charlotte (2016), Shanghai (2017), London (2018), and Tsukuba (2019). In last year, the ASME's Nuclear Engineering Conference powered by ICONE was held virtually and online due to the rapid expansion of COVID-19.

The keynote theme "Nuclear Energy the Future Zero Carbon Power" was set for confirming the roles and responsibilities of nuclear energy users to realize a low-carbon society. For the convenience of participants from different time zones around the world, the event was a combination of live discussions, on-demand pre-recorded video viewing and chat style questions and answers. We have made it possible to watch presentation videos and exchange opinions even after the conference to improve the benefits of participants by maintaining the built platform.

To Join ICeM:

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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The keynote session, “Making a Carbon-Free Future Possible” by Ms. Marie Blanc (Senior Vice President, EMEA, Westinghouse Electric Company LLC) was presented live. We have three plenary sessions, “Advanced Reactors”, “Climate Change”, and “Operating Plant Issues and Experience”. The “Advanced Reactors Plenary” by Ms. Kathryn Hyam (Director Nuclear C&S, ASME), Dr. Zheng Mingguang (SPIC), and Dr. Hiroyuki Oigawa (Executive Director, JAEA) were lectured live and also on video. The “Climate Change Plenary” by Mr. Andy Miller (Associate Director for Climate at US EPA), Mr. Rui Shu (CNPRI), and Ms. Eri Nakatani (Acting Director, Agency for Natural Resources and Energy, METI) were lectured live and also on video. The “Operating Plant Issues and Experience Plenary” by Mr. Richard Easterling (Sr. VP, Westinghouse Engineered Systems & Solutions), Mr. Fu Li (Tsinghua University), and Dr. Koji Okamoto (Professor, The University of Tokyo) were lectured live and also on video.

The panel sessions were held on nine themes as shown in Table 1.

Table 1 Panel sessions and attendee

Panel Session Theme	Attendee
Advanced Fuel Development	67
Advanced Manufacturing	93
Micro & Small Modular Reactors/ Advanced Nuclear System	93
Space and Other Applications of Nuclear Energy	52
AP1000 Plant Experience	56
Severe Accidents - Mitigation, Planning, Management	53
Fukushima Panel - 10 years Later	86
Climate Change and Emission Reduction	39
Women In Nuclear Engineering	76

Especially, JSME contributed to the panel sessions which are “Advanced Fuel Development”, “Advanced Manufacturing”, “Micro & Small Modular Reactors/ Advanced Nuclear System”, “Severe Accidents - Mitigation, Planning, Management”, and “Climate Change and Emission Reduction”. In addition to that, the panel session, “Fukushima Panel - 10 years Later”, was organized Tadashi Narabayashi, professor of Tokyo Institute of

Technology. The session showed the progress of decommissioning of the Fukushima Daiichi Nuclear Power Plant, technology development, research projects for that purpose, and support for Fukushima reconstruction activities, such as cut off the stack, spent fuel removal and robotics technology. We got many comments from participants all over the world, which indicated a high level of interest in this issue.

More than 420 people participated in the conference from 20 different countries and regions. The technical paper publication (including 11 presentations only) were classified into 14 tracks including student sessions, and discussions and information exchanges were conducted by pre-recorded videos and chat style questions and answers. The session topics and the corresponding number of papers are listed in Table 2. Many research related multi-phase flow were presented, especially on tracks 7, 8 and 9.

Table 2 Session topics and number of papers

No.	Track Title	Paper
1	Operating Plant Challenges, Successes, and Lessons Learnt	8
2	Nuclear Plant Engineering	35
3	Advanced Reactors and Fusion	9
4	Small Modular and Micro-Reactors Technologies and Applications	17
5	Nuclear Fuels, Research, and Fuel Cycle	19
6	Nuclear Codes & Standards	5
7	Thermal-Hydraulics	45
8	Computational Fluid Dynamics (CFD)	20
9	Verification and Validation	10
10	Advanced Methods of Manufacturing for Nuclear Reactors and Components	3
11	Decontamination, Decommissioning, and Radioactive Waste Management	16
12	Beyond Design Basis and Nuclear Safety	37
13	Risk Informed Management and Regulation	11
14	Student Paper Competition	97
	Total	332

Training engineers and the researchers who will ensure the future of mechanical engineering is an

urgent challenge, and the JSME is examining and implementing measures to improve the education of the next generation. In nuclear engineering, it will be essential to train personnel with a high level of skills, to develop the more advanced nuclear reactors of the future. These will incorporate speedy and improved safety measures in view of the tightening regulations. Meanwhile, it will be necessary to smoothly proceed with decommissioning the increasing number of nuclear reactors which will come to the end of their operational life in the near future. For young engineers and researchers, it is highly stimulating to engage in debates with their peers from other countries, in order to gather first-hand information at this kind of international conference. This conference focused on the student sessions, and created ways to train young engineers and researchers from a comprehensive point of view, with competitions and event management by the students. Through the ICONE student program, the conference fosters the development of future nuclear professionals.

The ICONE is a very important scientific conference to share the latest research developments

in the field of nuclear engineering within the specialists in the nuclear and power engineering areas of industry, academia, and government. It is believed that this ICONE continues to contribute to the enhanced safety of nuclear power and to further development of nuclear engineering as a top world nuclear engineering conference. This conference was a forum for meaningful discussions and information exchange for participants from all over the world.

The ICONE29 will be held on August 8–12, 2022, in Shenzhen, China. The conference theme is “Nuclear Energy Innovation Powering a Carbon Neutral Future”. We hope that the next conference will be successful with more participants. We are waiting for your joining us.

Tetsuaki TAKEDA
Conference and Organizing Co-Chair of ICONE28
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Future Meetings

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

14th International Conference on Thermal Engineering: Theory and Applications

Kuwait City, Kuwait, October 26 - 28, 2021

<https://www.ictca.ca/>

2021 International Congress on Advances in Nuclear Power Plants (ICAPP2021)

Abu Dhabi, UAE, October 20 - 24, 2021

Chair: Y. Addad (Khalif University)

<https://www.ans.org/meetings/view-368/>

74th Annual Meeting of the APS Division of Fluid Dynamics

Phoenix, United States, November 21 - 23, 2021

<http://www.aps.org/meetings/index.cfm>

The First Symposium on Carbon Ultimate Utilization Technologies for the Global Environment (CUUTE-1)

Nara, Japan, Decemnberr 14 - 17, 2021

Chair: Y. Kato (Tokyo Institute of Technology)

<http://web.apollon.nta.co.jp/CUUTE-1/>

5th Thermal and Fluids Engineering Conference (TFEC 2021)

New Orleans, LA, United States, 2021

Chair: T. Wang (University of New Orleans), M.W.

Plesniak (The George Washington University)

<https://www.astfe.org/tfec2020/>

----- 2022 and beyond, not yet determined -----

19th Internatinal Meeting on Nuclear Reactor Thremal Hydraulics (NURETH-19)

Brussels, Belgium, March 6 – 11, 2022

Chair: H.A. Abderrahim (SCK, CEN), J-P, Chabard

(EDF), X. Sun (University of Michigan)

<https://www.ans.org/meetings/view-334/>

The 32th International Symposium on Transport Phenomena (ISTP32)

Tianjin, China, March 19-21, 2022

Chair: Y. Utaka (Tianjin Unversity)

<https://istp32.scimeeting.cn/en/web/index/>

Japan-U.S. Seminar on Two-Phase Flow Dynamics

Michigan, USA, May 8 – 11, 2022

Chair: S. Ceccio (University of Michigan)

<https://usjapanseminar.engin.umich.edu/>

13th International Topical Meeting on Reactor Thermal-Hydraulics, Operation, and Safety (NUTHOS-13)

Taichung, Taiwan, September 4-9, 2022

Chair: M. Lee (National Tsing Hua University)

<https://www.ans.org/meetings/view-348/>

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

Kobe, Japan, April 2 – 7, 2023

Chair: Y. Murai (Hokkaido University)

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

European Conference on Thermophysical Properties (ECTP 2023)

Venice, Italy, 2023

Chair: A. Muscio (AIPT / Univ. Modena e Reggio Emilia)

<http://www.ectp2020.eu/>

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

Osaka, Japan, 2023

13th International Conference on Thermal Engineering: Theory and Applications

Baku, Azerbaijan, Postponed

Chair: Y. Abdullayev (Baku Engineering University),

M.Z. Saghier (Ryerson University)

<https://www.ictca.ca/>

Mathematical Advances in Geophysical Fluid Dynamics

Oberwolfach, Germany

<https://www.mfo.de/www/schedule/2020/all>

Particle growth in turbulence

Stockholm, Sweden

Chair: A. Brandenburg (Nordita)

Chair: B. Mehlig (University of Gothenburg)

<https://www.nordita.org/events/particles2020/>

The 7th International Conference on Micro and Nano Flows (MNF2020)

London, The United Kingdom

Chair: T.G. Karayiannis (Brunel University London)

<https://www.micronanoflows.com/mnf2020>

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