

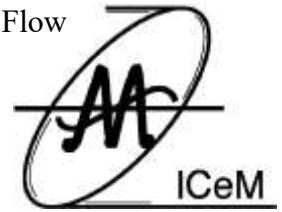


The International Information Center for Multiphase Flow

NEWSLETTER

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The Japanese Society for Multiphase Flow



ASME's Nuclear Engineering Conference powered by ICONE Aug 4-5, 2020, Virtual, Online

by Chikako Iwaki

ASME's Nuclear Engineering Conference powered by ICONE was held virtually from August 4th to 5th, 2020. The conference was co-sponsored by the American Society of Mechanical Engineers (ASME), the Japanese Society of Mechanical Engineers (JSME) and the Chinese Nuclear Society (CNS). The General Chair of the conference was Prof. Shripad Revankar of Purdue University.

ICONE (International Conference on Nuclear Engineering) is the premier global conference on nuclear reactor technology and leaders from industry, government and academia gather to present and explore cutting edge technical issues and solutions for the challenges that the nuclear industry faces today. The ICONE was inaugurated in 1991 as ICONE1 in Tokyo, Japan by JSME and ASME. The second conference, ICONE2 was held in 1993 in San Francisco, USA, the third Conference, ICONE3 was held in 1995 in Kyoto, Japan, and since then, it has

been convened on an annual basis: the ICONE has been held 27 times until now and recognized as one of the largest-scale and most proven international nuclear power conferences.

We originally planned to hold ICONE28 in California, Florida, USA, in 2020, however, it has been postponed to 2021 due to the rapid expansion of COVID-19. In order to provide an alternative conference for international technical discussions, we have decided to hold this conference virtually and online. 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 until the end of December 2020.

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 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. The keynote session, "A Legacy of Accomplishment and A Vision for a Better Future" by Mr. Bill Magwood (Nuclear Energy Agency), and the plenary sessions, "Modernization of the Nuclear Industry" by Ken Canavan (Westinghouse), "INL, A Vital Resource to Meet the Nation's Energy and Security Future" by Dr. Mark Peters (Idaho National Laboratory) were lectured live. The lectures were followed by lively discussion between a large numbers of participants.

The panel sessions were held on eight themes. In addition to the conventional "SMR (Small Modular Reactor) and Advanced Reactors", "Advanced Fuel Development", "Advanced Manufacturing", etc., the timely themes panel session also added such as "COVID-19 Impacts on Electrical Utilities". The panel session, "Post Fukushima-Daiichi Nuclear Safety and Plant Decommissioning" was organized Tadashi Narabayashi, professor emeritus of Hokkaido University. Parts of the current status concerning future decommissioning work and current approaches to decommissioning was introduced by 6 panelists. We got many comments from participants all over the world, it indicated a high level of interest in this

issue.

More than 600 people participated in the conference from 31 different countries. Although the number of papers in the technical session was reduced to about half of the initially registered number due to the change in the conference style, the 297 papers were presented finally. The papers 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 below:

Track 1: Operating Plant Experience	9
Track 2: Nuclear Fuel and Engineering	12
Track 3: Nuclear Plant Engineering	31
Track 4: SMR and Advanced Reactors	14
Track 5: Nuclear Safety, Security & Cyber Security	45
Track 6: Codes and Standards	6
Track 7: Thermal-Hydraulics	53
Track 8: Computational Fluid Dynamics (CFD)	27
Track 9: Verification and Validation	6
Track 10: Decontamination & Decommissioning	18
Track 11: Beyond Design Basis	10
Track 12: Nuclear Policy	2
Track 13: Probabilistic Risk Assessments	14
Track 14: Student Paper Competition	50

Many research related multi-phase flow were presented, especially on tracks 6, 7, 8 and 9. The representative presentations are as follows:

- Aerosol behavior for fission product removal
- Particle decontamination efficiency in a single bubble by pool scrubbing
- Numerical simulation of micro particles motion in bubbly Flow
- High energy X-Ray CT measurement of void fraction distribution in fuel bundle
- Spray cooling of spent fuel rod
- Effect of hydrogen inflow on Passive Core Cooling System with natural circulation flow
- Influence of gas properties on gas-liquid two-phase flow

These are examples of important research that contributes to safety enhancement of nuclear reactors that were presented in the technical session.

Nuclear energy is expected to play a role in



Fig.1 Conference program cover

realizing a low-carbon society. In order to deal with multifaceted and complicated issues that are different from the conventional ones, it is necessary to bring together the knowledge of engineers and scientists from all over the world. For that reason, ICONE is expected to be held continuously in the future.

The ICONE28 will be also held virtually August 3–5, 2021. We hope that the next conference will be successful with more participants. We are waiting your joining with us.

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Future Meetings

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

Introductory Workshop: Mathematical problems in fluid dynamics

Berkeley, California, United States, January 25 - 29, 2021
<http://www.msri.org/workshops/945>

Recent Developments in Fluid Dynamics

Berkeley, California, United States, April 12 - 23, 2021
<http://www.msri.org/workshops/950>

13th International Conference on Thermal Engineering: Theory and Applications

Baku, Azerbaijan, June 11 - 13, 2021
Chair: Y. Abdullayev (Baku Engineering University),
M.Z. Saghir (Ryerson University)
<https://www.ictca.ca/>

Summer Heat Transfer Conference (SHTC 2021)

Virtual Conference, Online, June 16 - 18, 2021
<https://event.asme.org/SHTC>

19th International Symposium on Flow Visualization ISFV 19

Shanghai, June 28 - 30, 2021
Chair: Yingzheng Liu, (SJTU, Shanghai)
<http://isfv2020.sjtu.edu.cn/index>

ESAT 2021 - 31st European Symposium on Applied Thermodynamics

Paris, France, July 4 - 7, 2021
Chair: E.A. Macedo (Porto, Portugal)
Vice chair: R. Dohrn (Leverkusen, Germany)
<http://www.esat2020.com/>

10th International Symposium on Turbulence, Heat and Mass Transfer (THMT-21)

St. Petersburg, Russia, July 6 - 9, 2021
Chair: D.M. Markovich (Kutateladze Institute of Thermophysics, SB RAS)
<http://www.thmt-20.org/>

26th International Conference on Chemical Thermodynamics (ICCT-2020)

London, United Kingdom, July 18 - 22, 2021
Chair: M. Trusler (Imperial College London)
<https://www.icct2020.org/>

28th International Conference on Nuclear Engineering (ICONE 28)

Virtual Conference, Online, August 4 - 6, 2021
<https://event.asme.org/ICONE>

8th International Symposium on Advances in Computational Heat Transfer (CHT-21)

Rio de Janeiro, Brazil, August 15 - 19, 2021
Chair: Y. Jaluria (Rutgers University), Helcio R. B. Orlande (Federal University of Rio de Janeiro)
<https://www.ichmt.org/>

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, Decemember 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 11th International Conference on Multiphase Flow (ICMF 2022)

Kobe, Japan, May 29 – June 3, 2022
Chair: Yuichi 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/>

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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