

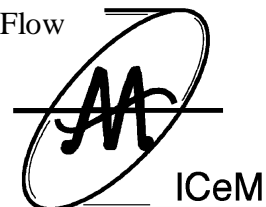


The International Information Center for Multiphase Flow

# NEWSLETTER

No. 53, March 2020

The Japanese Society for Multiphase Flow



## Second International Workshop on the Application of Fine and Ultrafine Bubbles October 24-25, 2019, Halifax, Canada

by Yoshikatsu Ueda

Second International Workshop on the Application of Fine and Ultrafine Bubbles was held at the Innovacorp Centre, 1344 Summer Street, Halifax, NS.

This workshop provided attendees with an exposure to the different fields in which fine and ultrafine bubbles have been advantageously used. These include: advanced water/wastewater treatment, mineral processing, chemical and biochemical multiphase reactors, open-pen and land-based aquaculture, large-scale algae-culture, hydroponic agriculture, fabrication of porous metals, production of foamy materials, deoxygenation of boiler feed water, and reducing the drag on ship hulls and in pipelines. Due to the rapid pace of development in this field, it is necessary to provide a forum in which some of the world's leading experts can share their experience with the user community. Conversely,

these experts will gain better understanding of the obstacles that need to be overcome in order to enhance the benefits gained by using this innovative technology in the various fields.

The workshop was organized by Prof. Terasaka, K. (Keio University), Prof. Schlüter, M. (Hamburg University of Technology), Dr. Al Taweel, A.M., Dr. Donaldson A., and Dr. Haelssig, J. (Dalhousie University). And each session was chaired by Dr. Aya, N. (National Institute of Advanced Industrial Science & Technology), Dr. Sun Z. (Mara Renewable Corp.), Dr. Tanigaki, M. (Kyoto University) and myself.

In this workshop, there were a total of 30 participants and of 16 accepted research papers included 5 student posters. Participants from Japan, Canada, China, France and Germany. Latest fine bubble applications and standardization on fine and

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ultrafine bubbles are introduced Japanese researchers. Especially interesting topic is a direct measurement for the internal pressure of ultrafine bubble by Kyoto Univ. group. European company demonstrated real-time concentration measurement of fine bubble. International collaboration research topic was also presented as student presentation (“Ultrafine Bubble Stability During Aquaculture Nutrient Distribution, Mr. Harada, S.)

Dalhousie University staffs arranged laboratory tour after the workshop. Participants had fruitful discussion during tours and enjoyed original beer



made by Dalhousie University Lab. For keeping in touch with this these great connections between countries, next third workshop will be held at Germany.

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## Future Meetings

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

### 5<sup>th</sup> Thermal and Fluids Engineering Conference (TFEC 2020)

New Orleans, LA, United States, April 5 - 8, 2020  
 Chair: T. Wang (University of New Orleans)  
 Chair: M.W. Plesniak (The George Washington University)  
<https://www.astfe.org/tfec2020/>

### Mathematical Advances in Geophysical Fluid Dynamics

Oberwolfach, Germany, May 17 - 23, 2020  
<https://www.mfo.de/www/schedule/2020/all>

### Particle growth in turbulence

Stockholm, Sweden, May 18 - June 12, 2020  
 Chair: A. Brandenburg (Nordita)  
 Chair: B. Mehlig (University of Gothenburg)  
<https://www.nordita.org/events/particles2020/>

### 13<sup>th</sup> International Conference on Thermal Engineering: Theory and Applications

Baku, Azerbaijan, June 12 - 14, 2020  
 Chair: Y. Abdullayev (Baku Engineering University)  
 Chair: M.Z. Saghir (Ryerson University)  
<https://www.ictea.ca/>

### ESAT 2020 - 31st European Symposium on Applied Thermodynamics

Paris, France, June 28 - July 1, 2020  
 Chair: E.A. Macedo (Porto, Portugal)  
 Vice chair: R. Dohrn (Leverkusen, Germany)  
<http://www.esat2020.com/>

### 19<sup>th</sup> International Symposium on Flow Visualization ISFV 19

Shanghai, June 29 - July 1, 2020  
 Chair: Yingzheng Liu, (SJTU, Shanghai)  
<http://isfv2020.sjtu.edu.cn/index>

### XXIV Fluid Mechanics Conference (KKMP2020)

Rzeszów, Poland, July 1 - 3, 2020  
 Chair: Anna Kucaba-Pietal (Rzeszow University of Technology)  
<http://fmc2020.prz.edu.pl>

### 10<sup>th</sup> International Symposium on Turbulence, Heat and Mass Transfer (THMT'20)

St. Petersburg, Russia, July 7 - 10, 2020  
 Chair: D.M. Markovich (Kutateladze Institute of Thermophysics, SB RAS)  
<http://www.thmt-20.org/>

### International Conference on Nanochannels, Microchannels, and Minichannels (ICNMM2020)

Orlando, FL, United States, July 12 - 15, 2020  
 Chair: Y. Muzychka  
 Co-chair: P. Weisensee  
<https://event.asme.org/ICNMM>

### Summer Heat Transfer Conference (SHTC 2020)

Orlando, FL, United States, July 12 - 15, 2020  
 Chair: J. Maulbetsch (Maulbetsch Consulting)  
 Co-Chair: K. Dowding (Sandia National Laboratories)  
<https://event.asme.org/SHTC>

### 26<sup>th</sup> International Conference on Chemical Thermodynamics (ICCT-2020)

London, United Kingdom, July 19 - 23, 2020  
 Chair: M. Trusler (Imperial College London)  
<https://www.ucl.ac.uk/child-health/events/2020/jul/26th-international-conference-chemical-thermodynamics>

### IIR Rankine 2020 Conference - Advances in Cooling, Heating and Power Generation

Scotland, United Kingdom, July 26 - 29, 2020  
<https://ior.org.uk/rankine2020>

### 28<sup>th</sup> International Conference on Nuclear Engineering (ICONE 28)

Anaheim, CA, USA, August 2 - 6, 2020  
<https://event.asme.org/ICONE>

### 8<sup>th</sup> International Symposium on Advances in Computational Heat Transfer (CHT-20)

Rio de Janeiro, Brazil, August 16 - 20, 2020  
 Chair: Y. Jaluria (Rutgers University)  
 Chair: Helcio R. B. Orlande (Federal University of Rio de Janeiro)  
<https://www.ichmt.org/cht-20>

### 13<sup>th</sup> International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Operation and Safety (NUTHOS-13)

Vancouver, Canada, August 23 - 27, 2020  
<https://www.cns-snc.ca/events/nuthos-13/>

### The 7<sup>th</sup> International Conference on Micro and Nano Flows (MNF2020)

London, The United Kingdom, September 14 - 16, 2020  
 Chair: T. G. Karayiannis (Brunel University London)  
<https://www.micronanoflows.com/mnf2020>

**European Conference on Thermophysical Properties (ECTP 2020)**

Venice, Italy, September 14 - 17, 2020

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

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

**31st International Symposium on Transport Phenomena (ISTP31)**

Honolulu, Hawaii, USA, October 13 - 16, 2020

Chair: Y. Yokono (The University of Tokyo)

<https://istp31.org/>

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

Nara, Japan, October 27 - 30, 2020

Chair: Y. Kato (Tokyo Institute of Technology)

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

**73rd Annual Meeting of the APS Division of Fluid Dynamics**

Chicago, United States, November 22 - 24, 2020

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

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**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>

**74th Annual Meeting of the APS Division of Fluid Dynamics**

Phoenix, United States, November 21 - 23, 2021

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

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