

OS20: Multiphysics in Fluid Mechanics

November 18, 2024

CON-2

- OS20-1 **Multiscale Multiphysics Modelling of Wire-Arc Additive Manufacturing**
13:10-13:40 *(Invited)*
Anthony B. Murphy, Yun. H. Kim, Dayalan Gunasegaram, Paul W. Cleary,
David G. Thomas (CSIRO, Australia)
- OS20-2 **Numerical Simulation of a Slurry Bubble Column Using Smoothed Particle**
13:40-13:55 **Hydrodynamics**
Masato Hirota (Sumitomo Heavy Industries Ltd., Japan)
- OS20-3 **SPH Simulation of Toe-like and Levee-like Structure Formation of Lava Flow**
13:55-14:10 Shingo Tomita (Tohoku University, Japan), Joe Yoshikawa (Industrial
Technology Institute, Miyagi Prefectural Government, Japan), Makoto
Sugimoto (Tohoku University, Japan), Hisaya Komen (Osaka University,
Japan), Masaya Shigeta (Tohoku University, Japan)
- OS20-4 **Thermocline Behaviour of A Packed Bed Thermal Energy Storage System**
14:10-14:25 Muhammad Iman Daniel bin Osman, Shun Tamura, Koji Matsubara, Tatsuya
Kodama, Selvan Bellan (Niigata University, Japan)
- OS20-5 **Characteristics of Oil-air Two Phase Flow Field of Rotating Disk under Low**
14:25-14:40 **Temperature Lubrication**
Chunhui Wei (INSA-Lyon, France / Beijing Institute of Technology / Yangtze
Delta Region Academy of Beijing Institute of Technology, China), Wu Wei
(Beijing Institute of Technology, China), Daniel Nelias (INSA-Lyon, France),
Shihua Yuan (Beijing Institute of Technology, China)
- OS20-6 **How Physics-Informed Neural Networks are Utilized for Accurate Calculations**
14:50-15:20 **and Measurements of Electron Transport Properties in Gases** *(Invited)*
Satoru Kawaguchi, Kazuhiro Takahashi, Kohki Satoh (Muroran Institute of
Technology, Japan)
- OS20-7 **Modeling and Simulation of Transient Dynamics of Mooring Systems**
15:20-15:35 **Influenced by Realistic Ocean Waves**
Ulises Torres-Herrera, Alireza Keramat, Huan-Feng Duan (The Hong Kong
Polytechnic University, Hong Kong, China)
- OS20-8 **Time-Dependent Numerical Simulation of Heat and Mass Transports in Water**
15:35-15:50 **Plasma Jet with Evaluation of Transport Coefficients of Water-Air Mixture**
System
Yosuke Kishimoto (Tohoku University, Japan), Joe Yoshikawa (Industrial
Technology Institute, Miyagi Prefectural Government, Japan), Makoto
Sugimoto (Tohoku University, Japan), Manabu Tanaka, Takayuki Watanabe
(Kyushu University, Japan), Masaya Shigeta (Tohoku University, Japan)

- OS20-9
15:50-16:05 **Numerical Analysis of Fe-Sm Alloy Nanopowder Growth in Thermal Plasma Tail Using Binary Aerosol Model**
Shunsuke Tsurumi (Tohoku University, Japan), Joe Yoshikawa (Industrial Technology Institute, Miyagi Prefectural Government, Japan), Makoto Sugimoto (Tohoku University, Japan), Jian Wang, Yusuke Hirayama (National Institute of Advanced Industrial Science and Technology, Japan), Masaya Shigeta (Tohoku University, Japan)
- OS20-10
16:05-16:20 **Numerical Simulation of Two-fluid Magnetohydrodynamic Flows in Complex Channels and Around Bluff Bodies**
Avick Sinha (University of Brighton, UK), Shivasubramanian Gopalakrishnan, Upendra Bhandarkar (IIT Bombay, India)
- OS20-11
16:30-16:45 **Numerical Simulation of Electrically Conductive Gas-Liquid Two-Phase Flow Using Phase-Field Lattice Boltzmann Method**
Makoto Sugimoto, Masaya Shigeta (Tohoku University, Japan)
- OS20-12
16:45-17:00 **Generally Consistent Lattice Boltzmann Method for Reacting Flow**
Muhammad Farras Arira, Pramudita Satria Palar, Lavi Rizki Zuhail (Bandung Institute of Technology, Indonesia)
- OS20-13
17:00-17:15 **Application of a Hybrid Lattice-Boltzmann Lagrangian Method to Predict Fibrous Particle Penetration Through Mesh Screens**
Thanh-Phat Duong, Yen-Hsi Li, Sheng-Yao Chou, Kuang C. Lin (National Tsing Hua University, Taiwan)