

OS13: Flow and Energy

November 11, 2025

EX-2

- OS13-1 **Hydrodynamic Losses in Different Sections of Cross-Flow Turbine**
15:15-15:30 Yuta Kitagawa, Yuki Kuroda, Shouichiro Iio (Shinshu University, Japan)
- OS13-2 **Experimental Study on the Effect of Nozzle Outlet Angle on Submerged Impulse Turbine Performance and Noise**
15:30-15:45 Yuto Kondo, Arata Gogo, Tomoki Nendai, Shouichiro Iio (Shinshu University, Japan), Masahiro Kaneko, Minoru Terada, Yusuke Kawaguchi (Ebarashoji Co., Ltd., Japan)
- OS13-3 **Effects of Nozzle Diameter and Number of Buckets on Micro Pelton Turbine Performance**
15:45-16:00 Ibuki Nozawa, Chikara Muramatsu, Gen Katagiri (Shinshu University, Japan), Yoshihisa Suetsugu, Tomomi Ishikawa, Yukihiro Noda, So Ishin, Takashi Ishikawa (AISIN Corporation, Japan), Shouichiro Iio (Shinshu University, Japan)
- OS13-4 **Relationship Between the Performance of Waterfall Cross-Flow Hydraulic Turbine and Waterfall Flow Conditions**
16:00-16:15 Ko Moriya, Takayuki Yamagata (Niigata University, Japan), Nobuyuki Fujisawa (Shinshu University, Japan)
- OS13-5 **Unsteady Energy Analysis of Cavitation Surge Suppression in a 3D Cavitating Inducer with Feedback Control**
16:15-16:30 Teppei Onuma, Akihito Kiyama (Saitama University, Japan), Takuji Ikeda, Byungjin An, Motohiko Nohmi (Ebara Corporation, Japan), Donghyuk Kang (Saitama University, Japan)
- 16:45-17:00 BREAK
- OS13-6 **POD Analysis for Hyperbolic Diffuser Flows with Shock Waves**
17:00-17:15 Atsumi Tateno, Yoshiaki Miyazato, Shinichiro Nakao (The University of Kitakyushu, Japan)
- OS13-7 **Evaluation of Erosion Initiation by High-Speed Spray Jet**
17:15-17:30 Wenlei Du, Takayuki Yamagata (Niigata University, Japan)
- OS13-8 **The Form of Distribution Functions and Moment Definitions for Thermal Flow Computing with Lattice Boltzmann Method**
17:30-17:45 Yoshitaka Mochizuki, Toshio Tagawa (Tokyo Metropolitan University, Japan)
- OS13-9 **Numerical and Experimental Investigation on the Flow Behavior and Heat Transfer Characteristics by an Inclined Jet Impinging on a Curved Wall**
17:45-18:00 Hang Fu (Xi'an Jiaotong University, China / Tohoku University, Japan), Yuan Li, Chenglong Tang (Xi'an Jiaotong University, China), Atsuki Komiya (Tohoku University, Japan)

OS13-10
18:00-18:45 **Comparative Analysis of Wind Farm Power Prediction Based on Multi-dimensional Models**
Peng-cheng Xiao, Lin-lin Tian, Yi-lei Song, Ning Zhao (Nanjing University of Aeronautics and Astronautics, China)

November 12, 2025

EX-2

OS13-11
9:00-9:15 **Towards Efficient Ammonia Gas Turbines: Role of Indirect and Direct Cooling in Compression Process**
Jing Zhou, Kaikai Shi, Fei Duan (Nanyang Technological University, Singapore)

OS13-12
9:15-9:30 **Numerical Simulation of Overtopping Behavior and Reservoir Flow in OBREC Systems for Turbine Design**
Yeddidi Yonatan Eka Darma (Institut Teknologi Sepuluh Nopember / Politeknik Negeri Banyuwangi, Indonesia), Raditya Hendra Pratama, Ahmad Taufiqur Rohman (National Research and Innovation Agency (BRIN), Indonesia), Samsu Dlukha Nurcholik (Kalimantan Institute of Technology, Indonesia), Ippei Oshima (Tohoku University, Japan)

OS13-13
9:30-9:45 **Spectral Optical Properties of a Porous Polymer for Efficient Radiative Cooling**
Mehdi Baneshi (Shiraz University, Iran), Atsuki Komiya (Tohoku University, Japan)

OS13-14
9:45-10:00 **Optical Performance and Flux Uniformity Optimization for Parabolic Dish Solar Concentrators: Coupled Effects of Receiver Axial Position and Tracking Error**
Shubha Deep Paul, K. Ravi Kumar (Indian Institute of Technology Delhi, India), Bellán Selvan (Niigata University, Japan)

OS13-15
10:00-10:15 **Thermal Plasma Driven Perovskite Phase High Entropy Oxide Nanoparticles for Efficient Thermochemical Water Splitting**
Amarnath Pasupathi, Megha S Babu (Pondicherry University, India), Selvan Bellán (Niigata University, Japan), S. Yugeswaran (Pondicherry University, India)

OS13-16
10:15-10:30 **Preliminary Thermal Analysis of Flush-Mounted Photovoltaic Modules on Metal Roofs**
Jing-Wu Dong, Yu-Min Lin, Kuan-Wei Lee, Yu-Qian Ye, Che-Yu Lin (National Pingtung University of Science and Technology (NPUST), Taiwan)

10:30-10:45 BREAK

OS13-17
10:45-11:00 **Numerical Investigation of Hydrogen Production Efficiency for Methane Pyrolysis Using a Reduced Chemical Reaction Model**
Kentarō Ekida (Saitama University, Japan), Makoto Asahara (Gifu University, Japan), Akihito Kiyama, Donghyuk Kang (Saitama University, Japan)

- OS13-18
11:00-11:15 **Effects of Capillary Number on Dynamic Dissolution and Flow of Supercritical CO₂ During Cyclic Injection in Porous Media**
Kai Zhang, Chunwei Zhang (Jilin University, China), Shuai Zheng (National Energy Underground Gas Storage Research and Development Center, China), Tetsuya Suekane (Institute of Science Tokyo, Japan)
- OS13-19
11:15-11:30 **From Nucleation to Ligament Fragmentation: Ultra-Fast Imaging of Liquid-Ammonia Flash Atomization Using SLE-Fabricated Glass Nozzles**
Peter Augustin, Reinhold Kneer, Manuel Reddemann (RWTH Aachen University, Germany)
- OS13-20
11:30-11:45 **Effects of Ultrasonic Vibration Frequency on Heat Transfer Enhancement in Pool Conditions**
Chen-Chi Hung, Po-Hung Hsu, Hsiang Lee, Ting-Wei Chen, Shao-Wen Chen (National Tsing Hua University, Taiwan)
- OS13-21
11:45-12:00 **Fuzzy C-Means Clustering for Two-Phase Flow Pattern Identification in 45-Degree Inclined Narrow Rectangular Channels Learning**
Ting-Wei Chen, I-Hsuan Lin, Chen-Chi Hung, Shao-Wen Chen (National Tsing Hua University, Taiwan)
- 12:15-13:30 BREAK
- OS13-22
13:30-13:45 **Numerical Investigation on Rigid and Flexible NACA0015 Airfoil in Pitching-Heaving Motion at Re=10,000**
Faishol Luthfy Mahendra, Ming-Jyh Chern (National Taiwan University of Science and Technology, Taiwan)
- OS13-23
13:45-14:00 **Dynamic Response of an Axial Flow Fan to the Pulsating Flow Conditions**
Nozomi Nasu, Hiroto Seo, Yusuke Takebe, Akihito Kiyama, Donghyuk Kang (Saitama University, Japan)
- OS13-24
14:00-14:15 **Reconstruction of Unsteady Flow Characteristics in a Cavitating Inducer under Pulsating Flow Conditions Using 3D Dynamic Mode Decomposition with Control**
Takumi Kimura (Saitama University, Japan), Takuji Ikeda, Byungjin An, Motohiko Nohmi (Ebara Corporation, Japan), Akihito Kiyama, Donghyuk Kang (Saitama University, Japan)
- OS13-25
14:15-14:30 **Flow Visualization of Airflow in a Non-Contact Wafer Transport System Equipped with a Thin Vortex Chuck**
Asahi Nakano, Shumpei Funatani (University of Yamanashi, Japan), Katsuhiko Koshiishi, Hitoshi Iwasaka (Harmotec Corporation, Japan)
- OS13-26
14:30-14:45 **Random Forest Applied to Flow Regime Identification of Two-Phase Flow in a Vertical Rectangular Tube Under Different Vibration Condition**
Hsin-Ju Lee, Han-Yao Chen, Hsiang Lee, Ting-Wei Chen, Shao-Wen Chen (National Tsing Hua University, Taiwan)
- OS13-27
14:45-15:00 **Image Recognition Using Convolutional Neural Networks for 3X3 Simulated Rod Bundle Two-Phase Flow**
Hsiang Lee, Wen-Chen Tsai, Lung-Hung Huang, Hsin-Ju Lee, Chen-Chi Hung, Shao-Wen Chen (National Tsing Hua University, Taiwan)