

**SHORT ORAL & POSTER PRESENTATION
TABLE OF CONTENTS**

OS17: The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics

- OS17-1: Evaluation of Predictive Semi-Active Vibration Suppression Method
K. Asahina, M. Ueno, K. Makihara
- OS17-2: Semi-Active Vibration Control of Truss Structure with Magnetostrictive Transducer
H. Miyazawa, N. Sogo, K. Makihara
- OS17-3: Influence of Signal Frequency on Thickness Measurement by Electromagnetic Acoustic Transducer
H. Sun, R. Urayama, T. Uchimoto, T. Takagi, L. Udpa
- OS17-4: Numerical Study on Charging Efficiency Improvement via Impellers Design Exploration for a Centrifugal Compressor
K. Kobayashi, M. Kanazaki
- OS17-5: Interparticle Bonding of Metal Powder under Repetitive Unidirectional Friction Force
S. Takeda, H. Miki, J. Fontaine, M. Guibert, T. Miyazaki, T. Takagi
- OS17-6: Investigation of Electromagnetic Properties and Morphology of Cobalt-containing Diamond-like Carbon Aiming for Magnetic Sensor
S. Yamazaki, H. Kosukegawa, H. Miki, T. Takagi
- OS17-7: Fabrication and Test of Light-driven Micromotor for Microfluidic Devices
V. V. Thai, J. Okajima, A. Komiya, S. Maruyama, N. Yamada
- OS17-8: Influence of Magnetic Fluid Interface Flow on Particle Adsorption Efficiency
M. Kiuchi, S. Uehara, H. Nishiyama
- OS17-9: Evaluation of Superconducting Electromagnetic Acoustic Transducer with Large Amplitude
Y. Tokita, T. Uchimoto, Y. Ohara, T. Takagi
- OS17-10: Application of Multi-frequency Eddy Current Testing to Crack Detection in Rocket Engine Combustion Chambers
H. Furuya, T. Uchimoto, T. Takagi, M. Hashimoto, E. Sato, M. Shiwa, S. Hori, M. Takegoshi
- OS17-11: Low Frequency Eddy Current Testing for Inspecting Wall Thinning in Ferromagnetic Pipe
H. Song, N. Tajima, N. Yusa, H. Hashizume

- OS17-12: Viscous Fingering in a Partially Miscible System
R. Suzuki, Y. Nagatsu, M. Mishra, T. Ban
- OS17-13: Investigation of Magnetization Methods to Evaluate Residual Strain in Carbon Steel by Eddy Current Magnetic Signature Method
T. Matsumoto, T. Uchimoto, T. Takagi, G. Dobmann, S. Oozono, H. Yuya
- OS17-14: Investigation of Concentration Dependency of Diffusion Coefficient and its Variation under Different Storage Condition in Ethanol - Water System
K. Sato, J. Okajima, A. Komiya
- OS17-15: The Development of Smart Fluid Tactile Sensors on Mechanical Grippers
Y. C. Chang, C. Y. Huang, C. Y. Hsiao, Y. S. Hu
- OS17-16: Improvement of the Interfacial Shear Strength of Surface Modified Carbon Fiber and Polymer Blend
R. Hayashi, H. Kosukegawa, T. Takagi
- OS17-17: Eddy Current Evaluation of Ground Laminated Structure of CFRP Aiming for Automation of Scarf Repair
Y. Kiso, H. Kosukegawa, R. Urayama, T. Uchimoto, T. Takagi, L. Udfa
- OS17-18: Grain Refined Al Thin Plate Fabricated by Compression Shearing Method at Room Temperature.
S. Nagai, S. Takeda, H. Miki, T. Miyazaki, H. Kosukegawa, T. Takagi
- OS17-19: Numerical Analysis of Magnetic Stimulation Coil to Induce Contraction of Suprathyroid Muscles
H. Mori, T. Takagi, S. Izumi, H. Kagaya, K. Yashima, T. Abe
- OS17-20: Visualization of Flow Pattern in Methane Hydrate Mimicking Reservoir
H. Yamada, L. Chen, J. Okajima, A. Komiya, S. Maruyama
- OS17-21: Experimental Evaluation of Scattering Phase Function of Scattering Medium Containing Metallic Nano-Fibers
Y. Arai, K. Fujiwara, T. Kono, K. Nakamura, J. Yamada, H. Gonome
- OS17-22: Influence of the Decrease in Interfacial Tension due to Chemical Reaction on Immiscible Viscous Fingering
R. Tsuzuki, M. Fujimura, Y. Nagatsu
- OS17-23: Computational Design of Solar Selective Absorber with Metallic Nanoparticles Embedded in Multilayer
T. Yokoyama, K. Ushiki, A. Sakurai
- OS17-24: Computational Simulation on Electrostatic Alignment of Cellulose Nano-fibrils in Flow
M. Guo, H. Takana

- OS17-25: Experimental Research on Electromagnetic Acoustic Testing of Plastic Deformation Based on the Polarization of Rayleigh Wave
M. He, S. Zhao, C. Pei, S. Xie, Z. Chen, T. Uchimoto, T. Takagi
- OS17-26: Aerodynamic Characteristics of Streamlined Symmetrical Airfoil at Very Low Reynolds Number
Y. Shiozaki, M. Okamoto
- OS17-27: Aerodynamic Characteristics of Wing Planforms Simulating Fish Fin
H. Maruoka, M. Okamoto
- OS17-28: Numerical Analysis of Drying Process of Liquid Thin Film by Airflow
C. T. Gueye, D. Suzuki, S. Oura, T. Nemoto, N. Ono
- OS17-29: Effect of Vortex Stretching in Flow Transition into Vortical Flow
D. Aoyama, K. Nakayama
- OS17-30: Topological Features of Multi-scale Vortices in Isotropic Homogeneous Turbulence
K. Yamamoto, K. Nakayama
- OS17-31: Characteristic Analysis of Bubble Interface Flow inside Two Capillary Tubes with Discharge for Water Treatment
Y. Miyaoka, S. Uehara, H. Nishiyama
- OS17-32: Investigation of Indirect Reynolds Number Effect of C-141 Aircraft Model
S. Yamagishi, W. Yamazaki, M. Ueno
- OS17-33: Effect of Reentry Capsule Shape on Flow Field in Transonic Flow
M. Nomura, H. Nagai
- OS17-34: Numerical Simulation of Shock Wave Interaction with an Underwater Object
H. Imaeda, M. Sun
- OS17-35: Experimental Visualization of Flow-induced Sound using High-speed Polarization Interferometer
K. Ishikawa, R. Tanigawa, K. Yatabe, Y. Oikawa, T. Onuma, H. Niwa
- OS17-36: Design and Optimization of Car Empennage with Winglet Based on Aeroelastic Analysis
Q. Wang, C. Lai, Y. Zhou, C. Yan
- OS17-37: Aerodynamic Drag Reduction of a Vehicle Based on EGO
C. Yan, Q. Wang, C. Lai, Y. Zhou

- OS17-38: An Investigation of Eigen-Vortical-Axis Line in Core Region of a Vortex in Isotropic Homogeneous Turbulence
H. Hori, K. Nakayama
- OS17-39: Eigen-Vortical-Axis-Line in Multi-Scale Vortices in Isotropic Homogeneous Turbulence
Y. Fukatsu, K. Yamamoto, K. Nakayama
- OS17-40: Control Surface Effectiveness in Propeller Slipstream at Low Reynolds Number
K. Kurane, K. Uechi, K. Takahashi, H. Nagai
- OS17-41: A Study on Knudsen Force Exerted on Solid Body with Microstructure
S. E. M. Kamal, Y. Kawagoe, S. Yonemura
- OS17-42: Aerodynamic Characteristics and PIV Measurement around Tandem Flapping Wings
H. Tsuchida, W. Yamazaki
- OS17-43: Investigation of Flow Interaction Effect between Optimized Airfoils on Small Vertical Axis Wind Turbine
T. Hayashi, W. Yamazaki, S. Imai
- OS17-44: Design Optimization of Supersonic Biplane Airfoil Considering Uncertainties
M. Kasai, S. Tabata, W. Yamazaki
- OS17-45: Experimental Study on Aerodynamic Characteristics of Flexible-Membrane Wing at Low Reynolds Number
K. Uechi, K. Kurane, K. Takahashi, H. Nagai
- OS17-46: Numerical Prediction Capability of Cartesian-mesh CFD for Basic Unsteady Flow
T. Iwafune, D. Sasaki, T. Kojima, T. Misaka, K. Shimoyama, S. Obayashi
- OS17-47: Investigation of the Flow Field Inside Battlement-Shaped Microfluidic Channel and Its Application on the Biofilm Formation
J. H. Wang, Y. L. Sun, H. Y. Wang
- OS17-48: A Study on Pressure-Driven Gas Transport through Packed Beds of Micro-/Nanoscale Particles
S. Komatsu, Y. Kawagoe, S. Yonemura
- OS17-49: Performance Evaluation of the Cooling System Using Phase Change Material and Heat Pipes for Lithium-Ion Battery in Electric Vehicles
H. Hata, K. Okawa, T. Yamada, N. Ono
- OS17-50: Measurement of Vapor Velocity in a Heat Pipe System by PIV Technique
S. Kameyama, Y. Nakamura, T. Yamada, N. Ono

- OS17-51: Heat Transfer Enhancement in Mini-Channel Using Porous Medium
S. Suwa, D. Kobayashi, T. Yamada, N. Ono
- OS17-52: Effects of Double Pylon Upstream of a Cavity on Flame Structure in Supersonic Flow
T. Hizawa, K. Murata, T. Yamaguchi, T. Ichikawa, T. Kudo, A. Hayakawa, H. Kobayashi
- OS17-53: Heat Transfer Characteristics of Micro Pulsating Heat Pipe Using Self-rewetting Fluid
M. Sasa, K. Fumoto, T. Okabe, R. SAVINO, T. Inamura, M. Shirota
- OS17-54: Effects of Ambient Pressure on Spray Combustion with an Air-blast Atomizer
K. Matsushita, K. Kato, T. Kudo, S. Kato, M. Uchida, A. Hayakawa, H. Kobayashi
- OS17-55: Numerical Investigation of Temperature Oscillation in a Loop Heat Pipe
T. Adachi, H. Nagai
- OS17-56: A Study on Addition of Light-Shielding Layer in Aerodynamic Heating Measurement in Hypersonic Flow Using Temperature-Sensitive Paint
T. Tonai, H. Nagai
- OS17-57: Development of Dye Sensitized Solar Cell with Thermal Sprayed Titanium Oxide Photovoltaic Device
A. K. Oluwafunmilade, G.K. Ronoh, I. Anyadiiegwu, Y. Noda, Y. Ando
- OS17-58: Thermal Hydraulics Analysis for Structural Integrity Evaluation of Reactor Pressure Vessels Undergoing the Pressurized Thermal Shock Phenomenon
N. H. Hiep, K. Takase
- OS17-59: Experimental Study of Natural Convection in a Cavity: Improved Thermal Boundary Control for Precise Measurement
M. Duan, A. Takahashi, L. Chen, J. Okajima, A. Komiya
- OS17-60: Investigation on Ignition Properties of CO/H₂/CH₄ Mixtures Derived From In-Cylinder Fuel Reformation
Y. Murakami, H. Nakamura, T. Tezuka, S. Hasegawa, G. Asai, K. Maruta
- OS17-61: Elucidation of Change in Eddy Current Testing Signals of Fatigue Cracks by Heating
H. Yamamoto, T. Uchimoto, T. Takagi, Y. Ohara
- OS17-62: Experiment Study on Flow Field and Heat Transfer Analysis in Microchannel Flow Using Bubble-Induced Acoustic Streaming with Staggered Cavities and Membrane
F. R. Chen, K. L. Huang, C. Y. Wang, T. M. Liou, C. Y. Huang
- OS17-63: Turbulent Burning Velocity of CH₄/NH₃/Air Premixed Flames at High Pressure
Y. Naito, A. Ichikawa, A. Hayakawa, T. Kudo, H. Kobayashi

- OS17-64: Numerical Study of Thermal Performance of Oscillating Heat Pipe with Different Filling Ratio
N. Inoue, T. Adachi, H. Nagai, S. Okazaki, H. Ogawa
- OS17-65: Non-Invasive Detection of Skin Tumor by Thermal Conductivity Measurement: Experiments on a Skin Mimicking Phantom
K. Kudo, T. Okabe, K. Fumoto, J. Okajima, T. Fujimura, M. Shirota, T. Inamura, S. Aiba, S. Maruyama
- OS17-66: Study on Chemical Structure of Ammonia/Air Weak Flames in a Micro Flow Reactor with a Controlled Temperature Profile
M. Shindo, H. Nakamura, T. Tezuka, S. Hasegawa
- OS17-67: Spectroscopic Measurement of Plasma Flow with Ablation in a Arc-Heated Wind Tunnel
S. Yanai, G. Yamada, T. Sakai, H. Kawazoe
- OS17-68: Near-Infrared Wavelength-Selective Metasurface Emitter
R. Koyanagi, Y. Huang, A. Sakurai
- OS17-69: Broadband Mid-Infrared Metasurface Emitter for Radiative Cooling
K. Hamada, R. Ogawa, A. Sakurai
- OS17-70: Study on combustion and ignition characteristics of *n*-pentane and *isop*-pentane in a micro flow reactor with a controlled temperature profile
R. Nakada, H. Nakamura, S. Hasegawa, T. Tezuka, K. Maruta
- OS17-71: Numerical Simulation on Self-ignition Behavior Assisted by a Non-equilibrium Plasma
Y. Kon, H. Takana, H. Nishiyama
- OS17-72: Optimized Near-field Thermophotovoltaic Device
M. Lim, J. Song, J. H. Kim, S. S. Lee, B. J. Lee
- OS17-73: Extinction by Core-Shell Structure Made of a Dielectric Core and Metallic Nanoparticles
C. Qin, B. J. Lee