

OS18: The 14th International Students / Young Birds Seminar on Multi-scale Flow Dynamics

CON-SAKURA 2

November 7, 2018

14:30-(15:40)

Short Oral Presentation

(15:40-17:30)

Poster Presentation

- OS18-1: Analysis of Dynamic Behavior of Re-entry Capsule by Free Fall Test
M. Tanno, K. Fujita, H. Nagai, O. Jegede, H. Tanno
- OS18-2: Thermo-fluid Dynamic Design of a Double Pipe Heat Exchanger
T. Hirano, M. Yoshimura, K. Shimoyama, A. Komiya
- OS18-3: Experimental Study of Reentry Capsule Oscillation with Different Aft-body Shape in Transonic Flow
M. Nomura, A. Robbe, K. Fujita, H. Nagai
- OS18-4: Development of Two-dimensional Supersonic Nozzle for a Scramjet Model Combustor
T. Yamaguchi, T. Hizawa, T. Kudo, A. Hayakawa, H. Kobayashi
- OS18-5: Mars Aerial Exploration for Terrestrial and Tropospheric Environment Observation - Conceptual Study of Mars Entry Capsule -
H. Tanaka, I. Mamiya, H. Kiritani, H. Nagasawa, T. Hirata, T. Tonai, H. Nagai, K. Fujita
- OS18-6: Experimental Study on Start-up Characteristics of Oscillating Heat Pipe with Check Valves
M. Ando, A. Okamoto, K. Tanaka, R. Matsutomo, D. Isohata, N. Inoue, H. Nagai
- OS18-7: Numerical Simulation for Combustion of a Single Coal Char Particle with Detailed Gas-phase Chemistry
K. Ishimoda, S. Akaotsu, Y. Saito, Y. Matsushita, H. Aoki
- OS18-8: Experimental Study on Natural Convection Heat Transfer in a Cavity filled with Ice Slurry
T. Miyanishi, T. Miyagawa, T. Okabe, H. Murata, K. Fumoto
- OS18-9: Direct Electromagnetic Simulation of Cermet-based Solar Selective Absorber
K. Ushiki, A. Sakurai
- OS18-10: Analysis of Liquid Flow and Evaporation during a Drying Process of Thin Film
D. Suzuki, C.T. Gueye, H. Watanabe, N. Ono
- OS18-11: A Numerical Model of Evaporation Process in a Heat Pipe
Y. Nakamura, Y. Mizutani, S. Kameyama, T. Yamada, N. Ono

- OS18-12: Experimental Study on Flow Field and Heat Transfer Analysis in Microchannel Flow with Acoustic Streaming and Staggered Structure
K.-L. Huang, M.-X. Chang, T.-M. Liou, C.-Y. Huang
- OS18-13: A Numerical Study on Effective Thermal Conductivity of a Metallic Porous Medium
M.K.B.M. Khirzám, S. Suwa, D. Kobayashi, H. Hata, N. Ono
- OS18-14: Numerical Simulation of Mass Transfer and Heterogeneous Reaction in a Coke Lump
Y. Numazawa, Y. Saito, Y. Matsushita, H. Aoki
- OS18-15: Spectroscopic Evaluation of High Enthalpy Plasma Flows in Arc-heated Wind Tunnel
S. Yanai, G. Yamada, H. Kawazoe
- OS18-16: Exhaust Gas Characteristics of Bio-fuel Combustion
T. Abe, K. Takahashi, T. Kudo, A. Hayakawa, H. Kobayashi
- OS18-17: Calculation of Radiative Transfer of CO₂ Gas-blasted Arcs
S. Kozu, K. Yoshida, T. Fujino, T. Yoshino, T. Mori
- OS18-18: Hybrid-wettability Ratchet Accelerates the Propulsion of Leidenfrost Drops
Y. Konno, M. Kato, M. Shirota, T. Okabe, T. Inamura
- OS18-19: Optical Switching by Graphene-based Metamaterials
H. Okada, K. Yada, A. Sakurai
- OS18-20: Effect of Flash Boiling and Cavitation on Superheated Water Jet from a Fan Spray Injector under Ambient Pressure
D. Tsuchida, R. Watanabe, H. Kobayashi, T. Kudo
- OS18-21: Study on the Effect of Sink Condition on Temperature Oscillation in a Loop Heat Pipe
T. Adachi, K. Fujita, H. Nagai
- OS18-22: Observation of Cavitating Flow on a Heated Hydrofoil
M. Ito, J. Okajima, H. Sasaki, T. Nomura, Y. Iga
- OS18-23: Influence of Electron Excitation State on Relaxation Phenomena of Nitrogen Molecules Behind Strong Shock Wave
M. Kajino, H. Harada, G. Yamada
- OS18-24: Burning Velocity and Flame Structure of Ammonia/Hydrogen/Air Turbulent Premixed Flames at Elevated Pressures
A. Ichikawa, T. Kudo, A. Hayakawa, T. Kudo, H. Kobayashi
- OS18-25: Quantitative Temperature Measurement of NO/N₂ Mixtures in Non-Combustion Field Using LITGS
K. Kohama, A. Hayakawa, T. Yamagami, T. Kudo, S. Hochgreb
- OS18-26: Trial Computations on Flames with Repetitive Extinction and Ignition in a Micro Flow Reactor with a Controlled Temperature Profile toward Data Assimilation
K. Akita, Y. Morii, H. Nakamura, T. Tezuka, K. Maruta

- OS18-27: Uncertainty Quantification in Re-entry Trajectory Analysis for Safety Assessment
A. Tokunaga, A. Sotoguchi, K. Shimoyama, K. Fujimoto
- OS18-28: Formation of C₂ Hydrocarbons at Low Temperature from Fuel-rich CH₄/air Mixture in a Micro Flow Reactor with a Controlled Temperature Profile
K. Kanayama, T. Tezuka, S. Hasegawa, H. Nakamura, K. Maruta
- OS18-29: Effect of Shear Flow Turbulence on Premixed Flame
H. Sasaki, Y. Fukui, T. Kudo, A. Hayakawa, H. Kobayashi
- OS18-30: Burnt Gas Characteristics of Swirl Stabilized Ammonia/air Turbulent Premixed Flames for Various Mixture Inlet Velocity
M. Tsukamoto, A. Hayakawa, K.D.K. A. Somarathne, T. Kudo, H. Kobayashi
- OS18-31: Fundamental Study of Melting Behavior of Ice Slurry aimed at Rapid Cooling for Biological Tissue
H. Nishikawa, T. Okabe, T. Miyagawa, M. Shiota, T. Inamura, K. Fumoto
- OS18-32: Attempts to Improve the Startup Characteristics with the Aim of the High-reliability of Oscillating Heat Pipe for Space Application
N. Inoue, H. Nagai, M. Andoh, R. Matsutomo, A. Okamoto, H. Sugita
- OS18-33: Solar-selective Absorber based on Dielectric Multi-layers
Y. Huang, H. Okada, A. Sakurai

CON-SAKURA2
November 8, 2018

9:00-(10:10)

Short Oral Presentation

(10:10-12:00)

Poster Presentation

- OS18-34: An Experimental Study on Suppression of Rotating Cavitation in Rocket Turbopump Inducer with Slit
Y. Kamikura, M. Kanamaru, S. Kawasaki, T. Shimura, Y. Iga
- OS18-35: Cellulose Nano Fibril Alignment Controlled by Electric Field in Elongational Flow for Innovative Single Fiber Fabrication
M. Kiuchi, Y. Takeda, H. Takana
- OS18-36: Motion Analysis of Flexible Folding Wing with a Hinge Joint Loaded by Gust
S. Onuki, K. Otsuka, T. Suzaki, H. Nagai, K. Fujita, K. Makihara
- OS18-37: Performance Test of Co-axial Rotor of Mars Helicopter for Vertical Hole Exploration on Mars
K. Kano, K. Fujita, H. Nagai
- OS18-38: A Molecular Dynamics Study for Scattering Properties of Gas Molecules on Water Adsorbed Surfaces
N. Uene, H. Takeuchi, Y. Hayamizu, T. Tokumasu

- OS18-39: Numerical Flow Analysis around a Flapping Wing Object Using an Immersed Boundary Method
Y. Ichige, W. Yamazaki, S. Takahashi
- OS18-40: Efficient Aerodynamic Shape Optimization Using Proper Orthogonal Decomposition
N. Buyanbaatar, W. Yamazaki
- OS18-41: Study on Gaseous Cavitation around a Hydrofoil in Oil Flow
S. Takahashi, T. Usui, Y. Iga
- OS18-42: An Investigation of the Effect of Vortex Stretching Between Multi-scale Vortices in Isotropic Homogeneous Turbulence
K. Yamamoto, K. Nakayama
- OS18-43: Visualization of Wing Surface Flow in Propeller Slipstream at Low Reynolds Number
T. Ikami, K. Kanou, K. Fujita, H. Nagai
- OS18-44: Investigation of Supersonic Micro Flow
C.Y. Hsiao, C.Y. Ye, C.Y. Huang
- OS18-45: Effects of a Secondary Injection in a Convergent-Divergent Nozzle on Thrust Vectoring
J.L. Chen, Y.H. Liao, J.S. Wu
- OS18-46: Dynamic Characteristics of Underwater DC Biased Pulsed Capillary Discharge for High Efficiency Water Purification
S. Kawaharada, S. Uehara, H. Takana, H. Nishiyama
- OS18-47: Uncertainty Quantification for Robust Design Optimization of Supersonic Biplane Airfoil
M. Kasai, S. Tabata, W. Yamazaki
- OS18-48: Effect of Flow Interaction Between Blade Airfoils on Optimal Airfoil Shapes of Small Vertical Axis Wind Turbine
S. Imai, N. Ban, W. Yamazaki
- OS18-49: Prediction and Evaluation of Flowfield in Larval Fish Rearing Tanks
T. Kato, W. Yamazaki, T. Sumida, Y. Sakakura
- OS18-50: Relationships of Vortex Generation in Multi-scale Flows in Isotropic Homogeneous Turbulence
S. Saeki, D. Aoyama, K. Nakayama
- OS18-51: Aerodynamic Characteristics of Wings with Large Dihedral Angles at Low Reynolds Number
A. Mori, M. Okamoto
- OS18-52: Numerical Investigation of Geometrical Corrugation Influence to Vortex Flowfields at low-Reynolds Number
Y. Yamaguchi, D. Sasaki, M. Okamoto, K. Shimoyama, S. Obayashi
- OS18-53: Velocity Field Measurement of DBD Plasma Flow Using PIV
J.H. Sohn, N. Kim, K. Kim, M. Ahn Furudate

- OS18-54: Aerodynamics Effects of Leading-Edge Shapes for Delta Wing at Low Reynolds Number
H. Maruoka, M. Okamoto
- OS18-55: Optimum Design of Nonplanar Wings for Minimum Induced Drag at Low Reynolds Number
K. Tokura, S. Morizawa, H. Kawazoe, S. Obayashi
- OS18-56: Effect of Electric Field on Breakup of a Liquid Ligament
H. Mayusumi, Y. Saito, Y. Matsushita, H. Aoki
- OS18-57: Topological Characteristics of Vortex Transition in Isotropic Homogeneous Turbulence
D. Aoyama, K. Nakayama
- OS18-58: Fundamental Characteristics on Alignment of Cellulose Nano-fibrils by AC Electric Field
R. Sato, M. Guo, H. Takana
- OS18-59: Robust Characteristic of Eigen-Vortical-Axis Line as a Vortical Axis in Isotropic Homogeneous Turbulence
K. Doi, H. Hori, K. Nakayama
- OS18-60: Vortical Flow Symmetry Violation at Extinction of Vortex in Terms of Local Topology in Isotropic Homogeneous Turbulence
K. Nagaya, K. Nakayama
- OS18-61: An Investigation of Relationships between Eigen-Vortical-Axis Line and Maximum Region of Swirlity
H. Hori, K. Nakayama
- OS18-62: Estimation of Local Particle Deposition by Wall Stokes Number in Idealized Airways
S. Fujii, M. Shirota, T. Monori, Y. Kasamatsu, T. Okabe, T. Inamura, S. Tasaka
- OS18-63: Mars Aerial Exploration for Terrestrial and Tropospheric Environment Observation – Aerodynamic Design of Mars Airplane–
I. Mamiya, H. Tanaka, H. Kiritani, T. Tonai, H. Nagasawa, T. Hirata, K. Fujita, H. Nagai
- OS18-64: DSMC Simulation of the Vapor Flow Induced below a Leidenfrost Droplet over Micro-sized Asymmetric Surfaces
C.J.C. Otic, S. Yonemura
- OS18-65: Effect of Geometrical Parameters on Knudsen Thermal Force Exerted on Solid Body
S.E.M. Kamal, S. Yonemura
- OS18-66: A Feasibility Study of Vortex Forecast with Invariant Key Flow of Vortex Generation in Isotropic Homogeneous Turbulence
Y. Fukatsu, K. Nakayama

13:00-(14:10)

Short Oral Presentation

(14:10-16:00)

Poster Presentation

- OS18-67: Computational Simulation of SLD Impingement
Z. Chengxiang, Z. Chunling, W. Zhengzhi
- OS18-68: Evaluation of PSP Characteristics under High-Pressure Environment
H. Taniguchi, D. Numata
- OS18-69: A Study on Experimental Apparatus for Applying Electromagnetic Effect to Thin Metal Plate Processing
K. Akitsu, K. Tuchiya, N. Ono
- OS18-70: Surface Tension Measurement of Aqueous Solution Exposed to Alcohol Vapor
D. Kobayashi, S. Miura, T. Kaneko, T. Yamada, T. Ishibashi, H. Matsuo, K. Watanabe, N. Ono
- OS18-71: Transition of Dynamic Elasto-plastic Contact Behavior of Pure Cu Powder
S. Takeda, H. Miki, J. Fontaine, M. Guibert, N. Nakayama, H. Takeishi, T. Takagi
- OS18-72: Evaluation of Water Uptake in Anti-Corrosion Polymer Coating by Capacitance Measurement
L. Ollivier-Lamarque, T. Uchimoto, N. Mary, S. Livi
- OS18-73: Investigation of Structure and Electromagnetic Properties of Cobalt-containing DLC for Magnetic Device Application
Z. Diao, H. Kosukegawa, H. Miki, T. Takagi
- OS18-74: Evaluation of Creep-Fatigue Degradation of Cu-alloy for Rocket Engine Combustion Chamber using NDT Method Based on Eddy Current
H. Furuya, T. Uchimoto, T. Takagi, M. Hashimoto, E. Sato, M. Takegoshi
- OS18-75: Rapid Deposition of Porous Photo-Catalytic TiO₂ Film for DSSC by 1kW class Atmospheric Plasma Spray Equipment using Ar/N₂ working gas
K.O. Alabi, Z.A. Ettayabi, Y. Ando, Y. Noda
- OS18-76: Semi-Active Vibration Suppression Using Predictive Theory
M. Ueno, I. Takamoto, K. Otsuka, K. Makihara
- OS18-77: Non-Destructive Evaluation of Detectability of Eddy Current Probe for Fiber Misalignment of CFRP
Y. Kiso, H. Kosukegawa, R. Urayama, M. Hashimoto, T. Takagi, L. Udpa
- OS18-78: Effect of Elastic Strain on Ionic Conductivity of Solid Electrolytes
Y. Miyoshi, F. Iguchi
- OS18-79: Numerical Analysis of Current Density Distribution in Magnetic Stimulation Coil with Magnetic Core
H. Mori, T. Takagi, S. Izumi, H. Kagaya, K. Yashima, T. Abe

- OS18-80: The Relationship between Residual Strain and Electrical Conductivity in the Oxide Composites
R. Kuwabara, T. Abe, K. Yashiro, F. Iguchi
- OS18-81: Effect of Compression Shearing Method at Room Temperature Consolidation Process of Pure Cu Powder on Grain Refinement and Mechanical Properties
S. Nagai, S. Takeda, H. Miki, T. Miyazaki, H. Kosukegawa, T. Takagi
- OS18-82: Managing Shear Stress in a Microchannel for Microorganism Biofilm Cultures
J. Wang, P. Bodenes, H. Wang
- OS18-83: Distribution of Electric Potential Around a Spherical Bubble Considering Electric Double Layer
H. Mi, Y. Iwamoto, Y. Ido, H. Takana
- OS18-84: The Development of Pressure Sensors with PDMS Microchannel Devices
Y. Chang, W. Chen, C. Haung
- OS18-85: Switch Control with Adaptive Threshold for Effective Vibration Energy Harvesting
Y. Hara, K. Saito, K. Makihara
- OS18-86: Application of Artificial Neural Network to Defect Detection Using Eddy Current Testing
X. Zhou, R. Urayama, H. Kosukegawa, T. Uchimoto, T. Takagi
- OS18-87: Development of Point Focusing Electromagnetic Acoustic Transducer Aiming at the Local Pipe Wall Thinning Measurement
A. Tezuka, H. Sun, R. Urayama, T. Uchimoto, T. Takagi
- OS18-88: Droplet Spreading and Oscillation on Different Wettability Surfaces at Low Weber Number
X. Liu, X. Zhang, J. Min
- OS18-89: Experiment on Droplet Impacting on a Spherical Surface
X. Liu, X. Zhang, J. Min, X. Wu
- OS18-90: Characterization of Phase Transition of Hydrogen Charged Austenitic Stainless Steels under Tensile Test Condition Using Eddy Current Testing
H. Yamamoto, T. Uchimoto, T. Takagi, H. Enoki, T. Iijima
- OS18-91: Dynamic Behavior of Arc Jet Using Ar-N₂ Mixture Gas in a Few kW DC Plasma Torch
K. Maeshima, H. Matsumoto, H. Saito, T. Fujino
- OS18-92: Fluid Dynamical Characteristics of Ionic Liquid Electrospray for Efficient CO₂ Absorption
N. Hara, K. Yamamoto, H. Takana, T. Makino, M. Kanakubo
- OS18-93: Simultaneous Measurement of Wetting and Spreading Behavior of Impacting Drops
T. Kawasaki, M. Shirota, Y. Akiyama, T. Okabe, T. Inamura
- OS18-94: Effects of the Carrier Gas on Properties of Plasma-Activated Water
C. Lai, Y. Deng, Y. Liao

- OS18-95: Treatments of Non-thermal Aspheric Pressure Plasma Affects Cellular Uptake of Molecules
C. Chen, Y. Cheng, Y. Cheng
- OS18-96: Breast Cancer Cell Migration under Controlled Oxygen Tensions
R. Koens, Y. Tabata, D. Yoshino, K. Funamoto
- OS18-97: Influence of Hypoxic Environment on Vascular Endothelial Cell Migration
Y. Tabata, D. Yoshino, K. Funamoto, R. Koens, K. Funamoto