9:00	Conference Bldg. TACHIBANA								9:00
	Opening Address & Plenary Lectures								
12:00	**12:00-13:00 Scientific Committee Meeting @ MEETING ROOM 8, Conference Bldg.**								12:00
13:00	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. SHIRAKASHI 2	13:00
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS10: Fluid Dynamics of Real Flight Test Environment**	**Exhibition & Coffee Service**	**OS19: Porous Media**	**GS1: General Session**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS16: Fourth International Symposium on Smart Layered Materials and Structures for Energy Saving**	**OS13: Complex Thermofluid System**	
	BREAK									
14:40	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. SHIRAKASHI 2	14:40
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS9: New Dimensions of Magnetic Suspension and Balance System**	**Exhibition & Coffee Service**	**OS19: Porous Media**	**GS1: General Session**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS16: Fourth International Symposium on Smart Layered Materials and Structures for Energy Saving**	**OS13: Complex Thermofluid System**	
	BREAK									
16:20	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. SHIRAKASHI 2	16:20
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS9: New Dimensions of Magnetic Suspension and Balance System**	**Exhibition & Coffee Service**	**OS19: Porous Media**	**GS1: General Session**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS16: Fourth International Symposium on Smart Layered Materials and Structures for Energy Saving**	**OS13: Complex Thermofluid System**	
19:30	**Students / Young Birds Friendship Night @ MEETING ROOM 1, Exhibition Building.**									19:30

	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	
9:00	**OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics**	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS3:The Fifth International Symposium on Innovative Energy Research III Multiphase Energy Science and Technology Related to FSI Coupled Problems**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS18: IFS Collaborative Research Forum (AFI-2017)**	**OS6: Advanced Physical Stimuli and Biological Responses**		**OS13: Complex Thermofluid System**	9:00
	BREAK											
10:40	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	10:40
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS7: Bilateral Programs between South Africa and Japan**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS18: IFS Collaborative Research Forum (AFI-2017)**	**OS6: Advanced Physical Stimuli and Biological Responses**		**OS13: Complex Thermofluid System**	
	LUNCH											
13:10	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	13:10
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS7: Bilateral Programs between South Africa and Japan**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS18: IFS Collaborative Research Forum (AFI-2017)**	**OS6: Advanced Physical Stimuli and Biological Responses**	**SS: Liaison Office Session**	**OS13: Complex Thermofluid System**	
	BREAK											
14:50	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	14:50
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS7: Bilateral Programs between South Africa and Japan**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS18: IFS Collaborative Research Forum (AFI-2017)**	**OS6: Advanced Physical Stimuli and Biological Responses**		**OS13: Complex Thermofluid System**	
	BREAK											
16:30	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	16:30
		OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals	**OS7: Science Café Co-sponsored by South African Embassy**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications**	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence**	**OS18: Fluids Science Research Award Lectures**	**OS6: Advanced Physical Stimuli and Biological Responses**			
20:30	**BANQUET @ SAKURA, Conference Bldg.**											20:30

	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	
9:00		**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS12: Advanced Control of Smart Fluids and Fluid Flows**	**OS11: Flow Realization, Measurement and Visualization**	**OS5: Biomolecular Dynamics**	
	BREAK								
	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	
10:40		**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS12: Advanced Control of Smart Fluids and Fluid Flows**	**OS11: Flow Realization, Measurement and Visualization**	**OS4: Biomedical Flow Dynamics**	10:40
	LUNCH								
	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	
13:10	**OS1:The Fifth International Symposium on Innovative Energy Research I Tohoku University-National Chiao Tung University 2nd Technical Workshop 2017**	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals**	**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS12: Advanced Control of Smart Fluids and Fluid Flows**	**OS11: Flow Realization, Measurement and Visualization**	**OS4: Biomedical Flow Dynamics**	13:10
	BREAK								
	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	
14:50	**OS1:The Fifth International Symposium on Innovative Energy Research I Tohoku University-National Chiao Tung University 2nd Technical Workshop 2017**		**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion**	**Exhibition & Coffee Service**	**GS1: General Session**	**OS12: Advanced Control of Smart Fluids and Fluid Flows**	**OS11: Flow Realization, Measurement and Visualization**	**OS4: Biomedical Flow Dynamics**	14:50
	BREAK								
	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-A	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	
16:30	**OS1:The Fifth International Symposium on Innovative Energy Research I Tohoku University-National Chiao Tung University 2nd Technical Workshop 2017**		**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion**	**Exhibition & Coffee Service**	**GS1: General Session**			**OS4: Biomedical Flow Dynamics**	16:30
18:00									18:00

TACHIBANA, Conference Bldg.

9:00-9:20 **Opening Address**

9:20-12:00 **Plenary Lectures**

9:20-10:10
"From High Pressure to Vacuum Fokker-Planck/DSMC Method for Gas Dynamics at all Knudsen Numbers"
Patrick Jenny
Chair: Takashi Tokumasu

10:15-11:05
"Creation of Nanointerface for Super-Low Friction"
Koshi Adachi
Chair: Julien Fontaine

11:10-12:00
"Unstable Fronts and Stable 'Critters' from Micro-rollers, Self-assembly from Hydrodynamics"
Paul Chaikin
Chair: Rongjia Tao

12:00-13:00 Scientific Committee Meeting @ MEETING ROOM 8, Conference Bldg.

Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. SHIRAKASHI 2
OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II** **International Workshop on Combustion Technology and Fundamentals** OSII-1 *Chair: N. I. Kim*	**OS10: Fluid Dynamics of Real Flight Test Environment** *Chair: H. Nagai*	**OS19: Porous Media** Complex Flow *Chairs: I. Kinefuchi & T. Yu*	**GS1: General Session** Flows in Machines *Chair: Y. Iga*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Vortex Dynamics *Chair: Y. Hattori*	**OS16: Fourth International Symposium on Smart Layered Materials and Structures for Energy Saving** NDT & Maintenance *Chair: T. Uchimoto*	**OS13: Complex Thermofluid System** Experimental Thermal Sciences *Chair: Y.-H. Liu*
13:30- (15:00) OS17-1 - OS17-25 *Short Oral Presentation*	13:00-13:20 OS2-1 Combustion Pressure Effects on Soot Morphology in Laminar Diffusion Flames *A.E. Karataş, B. Gigone, Ö. L. Gülder* 13:20-13:40 OS2-2 One-dimensional Modeling of Meso-scale Counter-current Reactor with Endo- and Exo-thermic Reactions *R. Fursenko, S. Minaev, M. Sánchez-Sanz, E. Fernández-Tarrazo* 13:40-14:00 OS2-3 Rich-burn, Quick-mix, Lean-burn Combustor with Integrated Micro-Tubular Flame-assisted Fuel Cells *R. J. Milcarek, J. Ahn*	**12:45**-13:10 OS10-1 *Invited* Aerodynamic Characteristics Measurement of Mars Airplane Balloon Experiment-1 (MABE-1) *A. Oyama, M. Anyoji, M. Okamoto, K. Fujita, H. Nagai* 13:10-13:30 OS10-2 Evolutionary Computation Approach for Automatic Gain Tuning of Mars Airplane Balloon Experiment-1 (MABE-1) *K. Fujita, A. Oyama, H. Tokutake, H. Nagai*	13:00-13:20 OS19-1 Molecular Dynamics Simulation of a Nano Droplet in a Nm-order Channel *A. Fukushima, T. Tokumasu* 13:20-13:40 OS19-2 Characteristics of Turbulent Flow over Anisotropic Porous Walls *S. Yogaraj, U. Lacis, M. Rosti, L. Brandt, S. Bagheri*	13:00-13:20 GS1-1 Effect of the Annulus Inlet Duct Structure at Pre-swirl System *J. Lee, H. Lee, S. Kim, D. Kim, J. Cho* 13:20-13:40 GS1-2 Numerical Analysis of the Axial Location of the ROBI type Pre-swirler *S. Kim, H. Lee, J. Lee, D. Kim, J. Cho* 13:40-14:00 GS1-3 Unsteady Effect of Shock Interaction on Long Rotor Blades in LP Steam Turbine *H. Miyazawa, T. Furusawa, S. Yamamoto*	13:20-13:40 OS14-1 Modelling of the Leading-Edge Vortex of a Revolving Wing *D. Kolomenskiy, D. Chen, H. Liu* 13:40-14:00 OS14-2 Effect of Geometric Parameters of Chevron Nozzle on Production of Streamwise Vortex in Jet Flow *M. Suvagiya, S. D. Sharma* 14:00-14:20 OS14-3 PIV Measurements in Near Wake of a Circular Cylinder with a Short Plate in Tandem *B. N. Bhasme, S. D. Sharma*	13:00-13:10 Opening *T. Takagi* 13:10-13:50 OS16-1 *Invited* R&D to NDT-Tasks in Energy-relevant Pipeline-Steel-Applications – Sensitive Detection of Residual Strain and a special View on the Qualification Procedure to a Hardness-Spot Detection Technique *G. Dobmann, T. Takagi, T. Uchimoto, T. Matsumoto*	13:00-13:20 OS13-1 *Invited* Temperature Measurement Techniques In Microfluidic Systems For The Applications On Microbial Research *J.-H. Wang, J.-Y. Lin, H.-Y. Wang, C.-l. Sun* 13:20-13:40 OS13-2 *Invited* The Width and Inclination Angle Effects on Slit Cylinder Flow *C.-L. Chen, L.-C. Hsu* 13:40-13:53 OS13-3 A Study of Microjet Air Impingement Heat Transfer Cooling *K.-C. Huang, P.-H. Chiou, C.-C. Wang*

	14:00-14:20 OS2-4 Radiative and Environmental Characteristics of Cylindrical Infrared Burners *A. Maznoy, A. Kirdyashkin, S. Minaev*	13:30-13:50 OS10-3 Feasibility Study of Laser-propelled Launch Demonstration *K. Mori* 13:50-14:10 OS10-4 Development of High-Performance Multi-Rotor Drone *K. Yonezawa, H. Matsumoto, K. Sugiyama, H. Tokutake, Y. Tanabe, S. Sunada* 14:10-14:30 OS10-5 Transient Flight Aerodynamic Parameters Estimation of Quadrotor Helicopter *N. D. Hung, Y. Liu, K. Mori*	13:40-14:00 OS19-3 Direct Observation of Reaction Distribution in a Porous Composite Positive Electrode for Li Ion Batteries by Using Two-Dimensional X-ray Absorption Spectroscopy *Y. Kimura, K. Chiba, T. Watanabe, T. Nakamura, K. Amezawa, H. Tanida, Y. Uchimoto, Z. Ogumi* 14:00-14:20 OS19-4 Location Related Variability of Permeability Characteristics in Cancellous Bone *M. Ito, S. Tupin, H. Anzai, A. Suzuki, M. Ohta*			13:50-14:10 OS16-2 A Signal Separation Method for Hybrid PECT/EMAT Nondestructive Testing Method Based on Wavelet Analysis *S. Xie, M. Tian, Z. Chen, T. Uchimoto, T. Takagi* 14:10-14:30 OS16-3 Coupled Computing of Hydrogen Leakage with Crack Propagation Using Hybrid Particle and Euler Method *J. Ishimoto, T. Sato, A. Combescure*	13:53-14:06 OS13-4 Design and Balance of a Membrane Dehumidification System *S.-M. Li, C.-C. Wang* 14:06-14:19 OS13-5 The Experimental Analysis of Heat Transfer Enhancement Techniques by Combining Electrostatic Vibration and Corona Wind *T.-K. Wei, H.-H. Chin, Y.-X. Huang, Y.-Y. Tsui, C.-C. Wang* 14:19-**14:32** OS13-6 The Transient Analysis of Two-Phase Flow in a Parallel Rectangular Channel under Vibration Conditions *Y.-H. Chang, S.-W. Chen, M.-L. Chai, H.-J. Lin, J.-D. Lee, J.-R. Wang, C. Shih*
14:30	**BREAK**							14:30
14:40	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. SHIRAKASHI 2	14:40
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II** **International Workshop on Combustion Technology and Fundamentals** OSII-2 *Chair: H. Im*	**OS9: New Dimensions of Magnetic Suspension and Balance System** *Chair: K. Asai*	**OS19: Porous Media** Gas Transport *Chairs: S. Yogaraj & A. Suzuki*	**GS1: General Session** Heat Transfer *Chair: J. Okajima*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Vortex Dynamics *Chair: Y. Fukumoto*	**OS16: Fourth International Symposium on Smart Layered Materials and Structures for Energy Saving** Composite *Chair: F. Kojima*	**OS13: Complex Thermofluid System** Complex Fluids *Chair: H.-Y. Wang*	
	13:30- (15:00) OS17-1 - OS17-25 *Short Oral Presentation* (15:00- 16:30) OS17-1 - OS17-25 *Poster Presentation*	14:40-15:00 OS2-5 Dual Effect of Potassium-Containing Compounds on Combustion Processes *V. I. Babushok* 15:00-15:20 OS2-6 Application of Molecular Beam Mass Spectrometry for Studying Laminar Premixed Burner-Stabilized Flames at 1-5 atm *D. Knyazkov, A. Dmitriev, T. Bolshova, V. Shvartsberg, K. Osipova, A. Shmakov, O. Korobeinichev*	14:40-15:20 OS9-1 *Invited* Unsteady Aerodynamics Simulation for Automobile in Real World Conditions *M. Tsubokura, T. Nakashima* 15:20-15:40 OS9-2 Improvements of 1 m Magnetic Suspension and Balance System for Wind Tunnel Tests at High Angles of Attack *H. Senda, H. Sawada, H. Okuizumi, Y. Konishi, S. Obayashi*	14:40-15:00 OS19-5 Numerical Study on Gas Flow in Micro-/Nanoscale Porous Media by Direct Simulation Monte Carlo Method *Y. Kawagoe, S. Yonemura* 15:00-15:20 OS19-6 Construction of Theoretical Expression for Gas Transport in Micro-/Nanoscale Porous Media *Y. Kawagoe, S. Yonemura*	14:40-15:00 GS1-4 Advanced Exergy Analysis of Waste Heat Powered Combined Power Generation and Refrigeration System *A. Ustaoglu, M. Alptekin* 15:00-15:20 GS1-5 Effect of Laser Annealing on Pencil Drown Paper *Y. Motoizumi, H. Ito, C. Kato, S. Tanaka, T. Rachi, K. Satoh, R. Sudo, S. Yasuhara, M. Can, S. Shawuti, T. Tokumasu, S. Kaneko*	14:40-15:20 OS14-4 *Invited* Helicity-Enhanced Extreme Vortex States and the Hydrodynamic Blow-Up Problem *D. Yun, B. Protas* 15:20-15:40 OS14-5 One-dimensional Hydrodynamic PDE Model for Turbulence with Cascade and Singular Solutions *T. Matsumoto, T. Sakajo*	14:40-15:00 OS16-4 Interlaminar Electrical Resistance and its Influence on Eddy Currents in CFRP Composites *X. Xu, H. Ji, J. Qiu, T. Takagi* 15:00-15:20 OS16-5 Advanced Maintenance Technique on CFRP - Eddy Current Testing and Functionalization in Mechanical/electromagnetic Properties - *H. Kosukegawa, T. Uchimoto, T. Takagi, G. Dobmann*	14:40-15:00 OS13-7 *Invited* Electrical Conductivity of Nanofluids - Theory and Experiment *U. Lei, L.-P. Xu* 15:00-15:20 OS13-8 *Invited* Liquid Crystal Measurement of Heat Transfer in a Rotating Cooling Channel with Partial Pin-fins *C.-C. Wang, S.-C. Huang, Y.-H. Liu* 15:20-15:33 OS13-9 Numerical Study to Investigate Proton Transport in Proton Exchange Membrane Fuel Cell *C. C. Tai, C. L. Chen*	

	15:20-15:40 OS2-7 Modelling of Chemical Kinetics of Combustion Processes: Mechanisms Generation, Validation and Model Reduction *V. Bykov* 15:40-16:00 OS2-8 Two-Dimensional Modeling of Flame Dynamics Near the Multi-Channel Burner Outlet *E. Sereshchenko, R. Fursenko, S. Minaev*	15:40-16:00 OS9-3 Visualization of Flow Separation on a Prolate Spheroid by using a Magnetic Suspension and Balance System *T. Ambo, Y. Nakamura, T. Ochiai, T. Nonomura, K. Asai*	15:20-15:40 OS19-7 Capillary Condensation and Its Impact on Gas Transport in Mesoporous Media: A Numerical Simulation Based on the Three-dimensional Structure of Materials *I. Kinefuchi, Y. Yoshimoto, T. Hori* 15:40-16:00 OS19-8 Large-scale Simulations of CO_2 Gas Injection and Hydrate Formation in Sub-seabed Sediments for CO_2 Storage *T. Yu, T. Sato, G. Guan, A. Abudula*	15:20-15:40 GS1-6 Numerical Modeling on the Formation of Neck-Down Profile in Glass Fiber Drawing Furnace *K. Kim*		15:20-15:40 OS16-6 Experimental and Numerical Study on Control of CNF Alignment by Alterative Electric Field *H. Takana, Y. Takeda, M. Guo, C. Brouzet, N. Mittal, F. Lundell* Smart Materials *Chair: G. Sebald* 15:55-**16:15** OS16-7 Nonlinear Deformation Behavior of Ionic Polymer-Metal Composite Actuators under DC Voltages Applied *L. Qian, H. Liu, K. Bian, K. Zhu, K. Xiong*	15:33-15:46 OS13-10 Simulation and Analysis of Heat Exchangers Using Supercritical Fluids *Y.-M. Li, C.-C. Wang* 15:46-15:59 OS13-11 Effects of the Thermal Resistance on High Power Solid-State Lasers *Y.-C. Li, K. Huang, C.-C. Wang*
16:10	**BREAK**						16:10
16:20	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. SHIRAKASHI 2	16:20
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II** **International Workshop on Combustion Technology and Fundamentals** OSII-3 *Chair: V. Bykov*	**OS9: New Dimensions of Magnetic Suspension and Balance System** *Chair: S. Obayashi*	**OS19: Porous Media** Geological Development *Chairs: Y. Kimura & M. Ohta*	**GS1: General Session** Multiphase *Chair: N. Ochiai*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Buoyancy effects on vortices *Chair: T. Sakajo*	**OS16: Fourth International Symposium on Smart Layered Materials and Structures for Energy Saving** Smart Materials *Chair: G. Sebald*	**OS13: Complex Thermofluid System** Numerical Methods in Fluids *Chair: H.-C. Weng*	
	(15:00- 16:30) OS17-1 - OS17-25 *Poster Presentation*	16:20-16:40 OS2-9 Combustion of Hydrocarbons-based Foamed Emulsions *B. Kichatov, A. Korshunov, A. Kiverin, M. Ivanov* 16:40-17:00 OS2-10 Flame Stabilization in a Counter- Flow Micro Combustor with Power Extraction *S. Minaev, E. Fernandez-Tarrazo*	16:20-16:40 OS9-4 The Measurement of Sphere Drag using 1-m MSBS *H. Okuizumi, H. Sawada, Y. Konishi* 16:40-17:00 OS9-5 Digitizing a Position Measuring System for 0.3-m MSBS *T. Ochiai, T. Ambo, Y. Nakamura, T. Nonomura, K. Asai*	16:20-16:50 OS19-9 *Invited* Impact of Stress on Anomalous Transport in Fractured Rock *P. K. Kang, Q. Lei, M. Dentz, R. Juanes* 16:50-17:10 OS19-10 DNA-Based Tracers for Reservoir Characterization *Y. Zhang, K. Li, R. N. Horne*	16:20-16:40 GS1-7 Numerical Analysis of High Pressure CO2 Flows with Nonequilibrium Condensation *T. Furusawa, H. Miyazawa, S. Moriguchi, S. Yamamoto* 16:40-17:00 GS1-8 Prediction of Oil Behavior Around Piston Rings by Numerical Analysis *R. Sasaki, Y. Kawamoto, Y. Akama, S. Takahashi, K. Yamamoto, M. Ochiai, A. Azetsu*	16:20-17:00 OS14-6 *Invited* Buoyant Norbury Vortex Rings *M. Blyth, J. Rodriguez-Rodriguez, H. Salman* 17:00-17:20 OS14-7 Buoyant Vortex Rings and Vortex Filaments *S. G. Llewellyn Smith, C. Chang*	**16:15**-16:35 OS16-8 Improvement in Magnetic Properties of Metamagnetic Shape Memory Alloy Processed by Compression Shearing Method at Room Temperature *H. Miki, K. Tsuchiya, E. Abe, S. Takeda, M. Ohtsuka, M. Gueltig, M. Kohl, T. Takagi* 16:35-16:55 OS16-9 Preparation and Properties of Polyvinylidene Fluoride / Nd-doped $BaTiO_3$ Nanocomposites *K. Zhu, J. Hu, J. Wang, K. Xiong, J. Qiu*	16:20-16:40 OS13-12 *Invited* Hypersonic Rarefied Flow over 3D Interceptor with Gas Coolant Jet of Optical Window *M.-C. Lo, J.-L. Shen, P.-Y. Tzeng* 16:40-17:00 OS13-13 *Invited* An Investigation of Implicit Turbulence Modeling for Laminar-turbulent Transition in Natural Convection *C. G. Li, M. Tsubokura, W. H. Wang*	

	17:00-17:20 OS2-11 Scale Effects on Dynamics of Meso-scale Bluff-body-stabilized Flames in Lean Premixed Hydrogen-air and Syngas-air Mixtures *Y. J. Kim, B. J. Lee, H. G. Im* 17:20-17:40 OS2-12 Mathematical Modeling of Combustion Waves in Thin Solid Fuel Samples *V. Gubernov, V. Kurdyumov, A. Kolobov, A. Polezhaev*	17:00-17:20 OS9-6 Implementation of a Flow Visualization Technique to the 0.3-m MSBS *Y. Nakamura, T. Ambo, Y. Ozawa, T. Nonomura, K. Asai* 17:20-17:40 OS9-7 Improvement of a Model Position Sensing at the IFS 1-m MSBS *H. Nagaike, H. Sawada, T. Nonomura, K. Asai* 17:40-18:00 OS9-8 Low Speed Towing Test Using 1-m Magnetic Suspension and Balance System *S. Oyama, H. Nagaike, Y. Konishi, H. Sawada, H. Okuizumi, S. Obayashi*	17:10-17:30 OS19-11 Pore-scale Flow and Transport in Fractured Porous Media *A. Suzuki, Y. Zhang, K. Li, R. N. Horne* 17:30-17:50 OS19-12 Analysis of Temperature Distribution Effects on Gas Production from Methane Hydrate Reservoir by Depressurization *Y. Feng, L. Chen, T. Kogawa, J. Okajima, A. Komiya, S. Maruyama*	17:00-17:20 GS1-9 Computational Simulation of SLD Impingement *C. Zhu, C. Zhu, Z.Wang* 17:20-17:40 GS1-10 Particle-laden Flow Around Two Tandem Cylinders of Different Diameters *S. Jeong, D. Kim* 17:40-18:00 GS1-11 Particle Focusing Regimes in Laminar Suspension Flows through Square Ducts *H. Yamashita, T. Itano, M. Sugihara-Seki*	17:20-17:40 OS14-8 Gyroscopic Analogy of Coriolis Force for Stabilizing a Rotating Stratified Flow Confined in a Spheroid *Y. Fukumoto, Y. Miyachi*	16:55-17:10 OS16-10 Multiscale Modeling of Electro-mechanical Coupling in Electroactive Polymers *A. Suzuki, R. Miura, N. Hatakeyama, J.-Y. Cavaille, G. Diguet, G. Sebald* Interface *Chair: K. Ogawa* 17:20-17:40 OS16-11 Inter-Particle Sintering of UHMWPE-FNA Nano-Composites Under Different Interfacial Loading Conditions *K. Ravi, O. Lame, K. Ogawa, J.-Y. Cavaille, T. Deplancke, C. Bernard* 17:40-18:00 OS16-12 Molecular Simulation Analysis for Adhesion Mechanisms Involved in Polyethylene Processed by Cold Spray *Y. Ishizawa, K. Inaba, R. Miura, A. Suzuki, N. Miyamoto, N. Hatakeyama, A. Miyamoto, K. Ogawa, C. Bernard, J.-Y. Cavaille, O. Lame, K. Ravi* **18:00-18:20** OS16-13 Tribochemistry of Hydrogen-Free DLC Coatings in Base Oil: the Origin of Wear *S. Lafon-Placette, J. Fontaine, M.-I. De Barros-Bouchet, C. Héau* **18:20-18:30** Closing *Chair: J.-Y. Cavaille*	17:20-17:40 OS13-14 Numerical Simulation of Characteristics of a Valveless Self-excited Tunable Pulse Combustor *L. Guo, Z. Wang, M. Zhai, Y. Zhang, P. Dong* 17:40-17:53 OS13-15 Numerical Simulations of a Supersonic Areoshell *M.-Y. Hsiao, C.-Y. Chen*
18:00	**Students / Young Birds Friendship Night @ MEETING ROOM 1, Exhibition Building.**						18:00
19:30							19:30

9:00	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	9:00
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II** **International Workshop on Combustion Technology and Fundamentals** OSII-4 *Chair: H. Nakamura*	**OS3:The Fifth International Symposium on Innovative Energy Research III** **Multiphase Energy Science and Technology Related to FSI Coupled Problems** *Chair: J. Ishimoto*	**GS1: General Session** Vehicles *Chair: K. Shimoyama*	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications** Thermal Plasma 1 *Chairs: H. Takana & O. P. Solonenko*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Aero / Thermoacoustics *Chair: Y. Hattori*	**OS18: IFS Collaborative Research Forum (AFI-2017)** *Chair: M. Hirota*	**OS6: Advanced Physical Stimuli and Biological Responses** *Chair: S. Kanazawa*		**OS13: Complex Thermofluid System** Viscous Fingering *Chair: C.-Y. Chen*	
	9:30- (11:00) OS17-26 - OS17-48 *Short Oral Presentation*	9:00-9:20 OS2-13 High Performing Oxygen Transport Membrane Reactors for Oxy-fuel Combustion *R. Falkenstein-Smith, M. Rushby, H. Nagashima, T. Tokumasu, J. Ahn* 9:20-9:40 OS2-14 Enhanced Stabilization of Lifted Non-Premixed Jet Flames by Plasma Discharges *Y.-H. Liao, X.-H. Zhao* 9:40-10:00 OS2-15 Experimental Analysis of Premixed-Flame Propagation in a Hele-Shaw Cell *F. Veiga-López, D. Martínez-Ruiz, M. Sánchez-Sanz, E. Fernández-Tarrazo* 10:00-10:20 OS2-16 Performance Prediction for Gas Turbine Co-firing Ammonia and Natural Gas *S. Ito, S. Kato, M. Uchida, S. Onishi, T. Fujimori, H. Kobayashi*	9:00-9:30 OS3-1 *Invited* Interaction of Two Identical Flickering Flames *Y. Nakamura, K. Mochizuki, T. Matsuoka* 9:30-10:00 OS3-2 *Invited* A Simple and Fast Method for Solving Flame Evolution Equations *K. Kuwana, S. Yazaki* 10:00-10:20 OS3-3 Study on Multi-model Fluid-structure Coupling Method of Wind Turbine under Complex Inflow *L. Wang, J. Cao, T. Wang, R. Han, J. Wu*	9:00-9:20 GS1-12 Numerical Study for Effects of Wing Twist on Longitudinal Stability of BWB UCAV *S. Ban, S. Kim, J. Lee, J. Cho* 9:20-9:40 GS1-13 Optimization of Rotor Blade Airfoil for Multi Rotorcraft *K. Kano, T. Misaka, H. Nagai, Y. Nakano, S. Obayashi, M. Ishikawa, H. Kayanuma* 9:40-10:00 GS1-14 Fully Compressible Aerodynamics and Aeroacoustics Simulation of a Full-scale Road Vehicle *W.-h.Wang, C.-G. Li, K. Onishi, M. Tsubokura*	9:00-9:30 OS15-1 *Invited* Research History and Progress on Functional Plasma Flows and their Applications *H. Nishiyama* 9:30-10:00 OS15-2 Numerical Modeling of Diffusion of Plasma Species in Argon-Water Arc Discharge: Comparison Between Inhomogeneous and Homogeneous Mixing Assumptions *J. Jeništa, H. Takana, S. Uehara, H. Nishiyama, A. B. Murphy, M. Bartlová, V. Aubrecht* 10:00-10:20 OS15-3 Alumina and YSZ Films Deposition by Atmospheric Vortex Plasma Spray *Y. Ando, I. Anyadiegwu, A. K. Oluwafunmilade, H. Nishiyama, T. Nakajima, S. Uehara, O. P. Solonenko*	9:20-9:40 OS14-9 Numerical Study of Wing Noise Reduction by Using Porous Flap *T. Watarai, Y. Hattori* 9:40-10:00 OS14-10 Direct Simulations of Tonal Noise Generation from the Flow around a Sphere *T. Ikeda, Y. Suzuki, M. Asai* 10:00-10:20 OS14-11 Spatiotemporal Observation of Thermoacoustic Chaotic Oscillations *R. Delage, Y. Takayama, M. Sato, H. Hyodo, T. Biwa*	9:00-10:30 CRF-1 to CRF-31, CRF-R1 *Short Oral Presentation 1*	9:40-9:45 Opening *T. Sato & T. Ohashi* 9:45-10:30 OS6-1 *Keynote* Effect of the Pulsed Discharge Stimulation on Agaricus Bisporus Cultivation *M. Kocik, M. Tański, K. Garasz, R. Barbucha, C. Ślusarski, J. Kraśniewski*		9:00-9:20 OS13-16 *Invited* Time-Lapse 3D Visualization of Fingering Associated with Rayleigh-Taylor and Safmann-Taylor Instabilities *T. Suekane, Y. Nakanishi, J. Ono, L. Wang, Y. Nagatsu* 9:20-9:40 OS13-17 *Invited* Influences of Physicochemical Effects on Interfacial Hydrodynamics *Y. Nagatsu* 9:40-10:00 OS13-18 *Invited* Optimal Perturbation Structures of Miscible Viscous Fingering with Non-monotonic Viscosity Profiles *T. K. Hota, M. Mishra* 10:00-10:13 OS13-19 Gravity-driven Convection in Heterogeneous Porous Media *Q. Li, W. Cai, F.-C. Li, C.-Y. Chen* 10:13-10:26 OS13-20 *Invited* Thermal Performance Evaluation of High Voltage Cascode GaN HEMTs in Parallel Operation Packaging with Fast Static and Transient Thermal Methods *S. Cheng, H.-P. Chou, P.-C. Chou, S.-H. Chen, M.-k. Liang*	
10:30	**BREAK**										10:30

10:40	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	10:40
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals** OSII-5 *Chair: S. Minaev*	**OS7: Bilateral Programs between South Africa and Japan** *Chairs: T. Kodama & S. O. Oluwafemi*	**GS1: General Session** Compressible Flows *Chair: K. Ohtani*	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications** Thermal Plasma 2 *Chairs: J. Jenista & T. Watanabe*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** High-Speed Flow *Chair: T. Ikeda*	**OS18: IFS Collaborative Research Forum (AFI-2017)** *Chair: S. Miyauchi*	**OS6: Advanced Physical Stimuli and Biological Responses** *Chair: T. Ohashi*		**OS13: Complex Thermofluid System** Viscous Fingering *Chair: M. Mishra*	
	9:30- (11:00) OS17-26 - OS17-48 *Short Oral Presentation* (11:00-12:30) OS17-26 - OS17-48 *Poster Presentation*	10:40-11:00 OS2-17 Cellular Structures of Propane/air Premixed Flames Propagating in a Disk Burner of Variable Mesoscale Gaps *H. Jang, N. I. Kim* 11:00-11:20 OS2-18 Improvement of an Annular-Stepwise-Diverging-Tube (ASDT) for a precise Concentration-Length-Velocity (CLV) diagram *H. Y. Kim, N. I. Kim* 11:20-11:40 OS2-19 Thermal Behavior and Combustion Properties of Coal-Containing Composite Materials *A. Ponomareva, A. Lesnykh, K. Tsoy, G. Urjupin, V. Babushok, K. Shtym* 11:40-12:00 OS2-20 Numerical and Experimental Study of Stretched Flames Stabilized in a Planar Channel *S. Mokrin, R. Fursenko, E. Odintsov, G. Uriupin, S. Minaev, K. Maruta*	10:40-10:50 Opening remarks *T. Kodama & S. O. Oluwafemi* 10:50-11:10 OS7-1 Numerical Simulation of Temperature Distribution Control for Laser-induced Hyperthermia *J. Okajima, T. Kogawa, A. Komiya, S. Maruyama* 11:10-11:30 OS7-2 $CuInS_2$/ZnS core/shell Quantum Dots – Porphyrin Conjugates for Photodynamic Therapy *N. Tsolekile, S. Parani, O. Joubert, M. C Matoetoe, S. P Songca, O. S Oluwafemi* 11:30-11:50 OS7-3 Flow Dynamics Based on Anatomical Characteristics of Lymph Node *K. Takeda, S. Horie, S. Mori, T. Kodama*	10:40-11:00 GS1-15 Toward a Thrust Performance Improvement of a Scramjet External Nozzle by Entrance Height Adjustment *T. Isono, T. Fujikawa, T. Tsuchiya, S. Tomioka* 11:00-11:20 GS1-16 Computational Study on Compressible Flows in Straight Rectangular Microducts *B. Han, T. Handa, Y. Matsuda, Y. Egami* 11:20-11:40 GS1-17 Numerical Investigation of Viscous Effects on Centreline Shock Reflection *H. Ogawa, G. Shoev*	10:40-11:10 OS15-4 *Invited* Argon-Helium Plasma Jets Outflowing at Low Reynolds Number and Their Applications in Powders Synthesis and Surface Treatment *O. P. Solonenko, H. Nishiyama, A. V. Smirnov* 11:10-11:30 OS15-5 Numerical Simulation of Arc Plasma and Molten Metal Behavior in Gas Metal Arc Welding Process *Y. Ogino, Y. Hirata, S. Asai* 11:30-11:50 OS15-6 Numerical Simulation of Moten Metal Behavior in Gas Metal Arc Welding by Three-dimensional Incompressible SPH Method *H. Komen, M. Shigeta, M. Tanaka* 11:50-12:10 OS15-7 Modeling of Loop Type of Ar Inductively Coupled Thermal Plasmas for Surface Modification *Y. Tanaka, Y. Maruyama, T. Tsuchiya, A. Fujita, T. Ishijima, Y. Uesugi, T. Yukimoto, H. Kawaura*	10:40-11:00 OS14-12 Numerical Simulation of Acoustic Radiation in Supersonic Mixing Layer *L. Ma, Y. Fang, Y. Li* 11:00-11:20 OS14-13 Hypersonic Nose Tip Transition Control through Vortex Persistence *K. J. Irimpan, V. Menezes, K. Srinivasan, H. Hosseini* 11:20-11:40 OS14-14 Aero-optical Analysis of High-speed Flow Over an Optical Window with Film Cooling *C. Su*	10:40-12:10 CRF-32 to CRF-60 CRF-R2, CRF-R3 *Short Oral Presentation 2*	10:40-11:10 OS6-2 *Invited* Investigation of Effect of Pulsed High Electric Field on Yeast Cell to Intend to Medical and Industrial Application *Y. Minamitani, T. Abe, S. Saito, R. Kageyama, Y. Kobayashi, K. Tamura, K. Saito* 11:10-11:40 OS6-3 *Invited* Nanosecond Pulsed Electric Fields Induce Activation of Transglutaminase 2 that Causes Gross Protein Crosslinking *K. Yano, K. Morotomi-Yano* 11:40-12:10 OS6-4 *Invited* Synergistic Cancer Therapy by Plasma-activated Medium and Chemotherapy Drug *C.-Y. Chen, J.-S. Wu, Y.-C. Cheng*		10:40-10:53 OS13-21 Influence of Flow Rate on Reactive Viscous Fingering with Gel Production *S. Kadowaki, K. Hoshino, Y. Nagatsu* 10:53-11:06 OS13-22 Micro-Imaging of Crossover from Capillary to Viscous Fingerings of Immiscible Two-Phase Flow in a Porous Medium *M. Muharrik, T. Suekane* 11:06-11:19 OS13-23 Deformation of Interface in a Partially Miscible System *R. Suzuki, Y. Nagatsu, M. Mishra, T. Ban* 11:19-11:32 OS13-24 Simulations of Mixing Efficiency via Alternating Injection in a Heterogeneous Porous Medium *J.-S. Li, Q. Li, C.-Y. Chen* 11:32-11:45 OS13-25 Miscible Displacements in a Hele-Shaw Cell *P.-C. Lu, C.-Y. Chen* 11:45-11:58 OS13-26 Temporal Increase in Viscoelasticity in a Polymeric Liquid Flow with a Chemical Reaction *T. Ueki, S. Tagawa, J. Iijima, Y. Nagatsu*	

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										11:58-**12:11** OS13-27 A Reacting Liquid Flow with Production of Surfactant *R. Tanaka , R. Tsuzuki, Y. Nagatsu*	
12:10	**LUNCH**						12:10-13:10 CRF-1 to CRF-60, CRF-R1 to CRF-R3 Poster Session and Lunch	**LUNCH**			12:10
13:10	**OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics**	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals** SIP Special: DDT ar *Chair: K. Maruta*	**OS7: Bilateral Programs between South Africa and Japan** *Chairs:D. Meyer & S. Horie*	**GS1: General Session** Combustion and Fuels *Chair: A. Hayakawa*	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications** Non-thermal Plasma 1 *Chairs: M. Okubo & Q. Li*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Instability *Chair:S.G. Llewellyn Smith*	**OS18: IFS Collaborative Research Forum (AFI-2017)** *Chair: J. Okajima*	**OS6: Advanced Physical Stimuli and Biological Responses** *Chair: T. Sato*	**SS: Liaison Office Session** *Chair:M. Ohta*	**OS13: Complex Thermofluid System** Magnetic Fluids & Particles *Chair: Y. Nagatsu*	13:10
	13:30- (15:00) OS17-49 - OS17-73 *Short Oral Presentation*	13:10-13:20 Opening remark of SIP special session *K. Maruta* 13:20-14:10 OS2-21 *Invited* Numerical Simulations in Deflagration-to-Detonation Transition Research *L. Kagan , G. Sivashinsky* 14:10-14:40 OS2-22 *Invited topical* Knocking Characteristics in a Rapid Compression Machine *M. Tanabe , M. Saito, A. Iijima*	13:10-13:30 OS7-4 Simple Green Synthesis of Amino Acid Functionalized CdTe/CdSe/ZnSe Core Multi-Shell with Improved Cell Viability against Fibroblast Histiocytoma Cells *N. Vuyelwa , S. Parani, S. P Songca, T. Kodama, O. S Oluwatobi* 13:30-13:50 OS7-5 Anti-tumor Effects of 5-FU with Lymphatic Drug Delivery System in a Metastatic Lymph Node Mouse Model *H. Fujii , S. Horie, S. Mori, T. Kodama* 13:50-14:10 OS7-6 Green Synthesis of $AgInS_2$ and $AgInS_2$/ZnS Quantum Dots for the Detection of Ascorbic Acid *B. M. M. May , S. Parani, O. S. Oluwafemi*	13:10-13:30 GS1-18 Simulation of Olive Cake Combustion in a Fluidized Bed Burner *A. AlShwawra , J. AlAsfar* 13:30-13:50 GS1-19 Effect of Thermal Characteristics of Wall on Flame Properties in Meso-scale Tubes *N. Srivastava , R. K. Velamati, B. Aravind, S. Kumar* 13:50-14:10 GS1-20 Numerical Investigation of Detonation Development in a Closed Chamber: Influence of Bulk Mixture *A. Sow , B. J. Lee, F.E. Hernández Pérez, H. G. Im*	13:10-13:40 OS15-8 *Invited* Plasma-Liquid Interactions: Multiphase Transport *P. Bruggeman* 13:40-14:00 OS15-9 Bubble Flow Analysis in Multiple-Capillary-Discharges for Water Treatment Device *S. Uehara , Y. Miyaoka, H. Nishiyama* 14:00-14:20 OS15-10 Experimental and Theoretical Study on Chemical Reactions and Radical Diffusions by a Nano-Pulse Discharged Bubble for Advanced Water Treatment *Y. He , S. Uehara, H. Takana, H. Nishiyama* 14:20-14:40 OS15-11 Gas and Liquid Flow Induced by Corona and Glow-Like Discharges *N. Takeuchi*	13:30-13:50 OS14-15 Generation of Instability Waves in Supersonic Boundary Layers by Slow Acoustic Waves Interacting with Wall Roughness *Y. Liu , X. Wu, M. Dong* 13:50-14:10 OS14-16 Linear Instability of Compressible Vortex Pair with Axial Flow *T. Sawa , Y. Hattori, M. Hirota* 14:10-14:30 OS14-17 Hyperbolic Instability of Stratified Vortices *M. K. Khandelwal , S. Suzuki, M. Hirota, Y. Hattori*	13:10-14:40 CRF-61 to CRF-92, CRF-R4, CRF-R5 *Short Oral Presentation 3*	13:10-13:55 OS6-5 *Keynote* Signaling Mechanisms Sensing and Responding to Various Types of Stress *A. Matsuzawa* 13:55-14:40 OS6-6 *Keynote* Biocompatible Moist Microelectrode Systems *M. Nishizawa*	13:10-14:40 Advanced role of the Liaison Offices for the future *M. Yamaguchi T. Okabe M. P. Favre Y. Li A. Vasiliev E. Ovchenkov N. I. Kim B. J. Lee J. Ahn T. Takagi T. Uchimoto H. Takana A. Komiya*	13:10-13:30 OS13-28 *Invited* Viscous Fingering on an Immiscible Reactive Interface with Variation of Interfacial Tension *R. Tsuzuki, Y. Nagatsu, Q. Li, C.-Y. Chen* 13:30-13:50 OS13-29 *Invited* Influence of Magnetic Forces on Pool Boiling Heat Transfer of Magnetic Fluids *H.C. Weng , C.-H. Cheng* 13:50-14:03 OS13-30 A Non-magnetic Micro-particle Driven by a Rotational Micro-magnetic Particle Chain *W.-Y. Lo , R.-C. Shiu, C.-Y. Chen*	

		14:10-14:30 OS7-7 Oxygen Partial Pressure in False-negative N0 Lymph Nodes *R. Kikuchi, S. Horie, S. Mori, T. Kodama*	14:10-14:30 GS1-21 Spray Characteristics of Alternative Aviation Fuel Blend of Camelina and Jatropha Biofuels from Aircraft Engine Atomizers *D. Sivakumar, R. Sakthikumar, B. N. Raghunandan, J. T. C. Hu*						14:03-14:16 OS13-31 Numerical Simulation on Miscible Viscous Fingering Involving Viscosity Changes of the Displacing Fluid by Chemical Reactions *K. Omori, Y. Nagatsu* 14:16-14:29 OS13-32 The Estimation of Wispy-velocity in Wispy-annular Flow *F.-J. Kuo, Y.-S. Cheng, H.-J. Lin, M.-S. Lin, S.-W. Chen, J.-D. Lee, J.-R. Wang, C. Shih, B.-S. Pei*
14:40	**BREAK**								14:40
14:50	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2	14:50
	OS17:The 13th International Students / Young Birds Seminar on Multi-scale Flow Dynamics	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals** SIP Special: DDT ar *Chair: M. Tanabe*	**OS7: Bilateral Programs between South Africa and Japan** *Chairs: S. P Songca & A. Komiya*	**GS1: General Session** Material and Molecules *Chairs: G. Kikugawa & T. Okada*	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications** Non-thermal Plasma 2 *Chairs: N. Takeuchi & S. Uehara*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Turbulence 1 *Chair: D. Biswas*	**OS18: IFS Collaborative Research Forum (AFI-2017)**	**OS6: Advanced Physical Stimuli and Biological Responses** *Chair: K. Yano*		**OS13: Complex Thermofluid System** Complex Fluid Flows *Chair: C.-G. Li*	
	13:30- (15:00) OS17-49 - OS17-73 *Short Oral Presentation* (15:00-16:30) OS17-49 - OS17-73 *Poster Presentation*	14:50-15:20 OS2-23 *Invited topical* Autoignition and Detonation Development due to Reactivity Non-Uniformity *Z. Chen* 15:20-15:50 OS2-24 *Invited topical* Pressure Wave Developments with Hot-spot Formation and Autoignition in End-gas Region during Knocking Combustion *H. Terashima*	14:50-15:10 OS7-8 Gelatin Stabilized CdTe/CdS/ZnS Quantum Dots for Improved Stability and Biocompatibility *S. Parani, K. Pandian, O. S. Oluwafemi* 15:10-15:30 OS7-9 A Development of An Early Stage Diagnosis For Lymph Node Metastasis Using Lymphangiography *R. Iwamura, S. Horie, S. Mori, T. Kodama*	14:50-15:10 GS1-22 Considering of V-trough Concentrator and Compound Parabolic Concentrator (CPC) for Concentrating Photovoltaic Applications *A. Ustaoglu, M. Alptekin*	14:50-15:20 OS15-12 *Invited* Electric Field Measurements in Nanosecond Pulse Discharges in Air and in Hydrogen Flame *M. S. Simeni, E. Baratte, C. Zhang, K. Frederickson, I. Adamovich* 15:20-15:40 OS15-13 Computational Simulation on Fundamental Characteristics of Nano-second Pulsed Discharge and Its Application to Combustion Assist *H. Takana, I. V. Adamovich, H. Nishiyama*	14:50-15:10 OS14-18 Identification of Three-Dimensional Vortical Structure of a Spiral Vortex in Wind Turbine with Plural Two-Dimensional Velocity Fields at Different Azimuthal Angles *K. Nakayama, T. Maeda* 15:10-15:30 OS14-19 Experimental Characterization of the Dynamics of Localized Turbulence in Transitional Shear Flow *K. Tamai, M. Sano*	14:50-16:20 CRF-61 to CRF-92, CRF-R4, CRF-R5 *Poster Session*	14:50-15:20 OS6-7 *Invited* Diagnostics of ROS in Atmospheric Plasmas and its Application to Plant Biology *S. Kanazawa, S. Matsuo, S. Akamine, R. Ichiki, M. Kocik* 15:20-15:50 OS6-8 *Invited* Effects of Plasma Irradiation on Artificial Cell Membranes *R. Tero, Y. Suda, F. Oike, Y. Hirose, H. Kurita*		14:50-15:10 OS13-33 *Invited* Numerical Method for Two Phase Flow in T-Junction Channel *S.-Y. Lin, R.-J. Wu* 15:10-15:30 OS13-34 *Invited* Investigate the Effects of Gas Adsorption on Interfacial Nanobubble by using Molecular Dynamics Simulation *T.-H. Yen, Y.-X. Chen, Y.-L. Chen* 15:30-15:43 OS13-35 Numerical Simulation of Ignition in a Helmholtz-type Valveless Self-excited Pulse Combustor *M. Zhai, Z. Wang, L. Guo, Y. Xu, Y. Zhang, P. Dong, Q. Li*

	15:50-16:20 OS2-25 *Invited topical* Experimental Analysis of Super Knock Following to Preignition in a Boosted Gasoline Engine *T. Kuboyama, J. Hori, Y. Moriyoshi, H. Hitotsugi*	15:30-15:50 OS7-10 Dendrimer-streptavidin supramolecular nano-architecture for electrochemical biosensor development *O. A. Arotiba, N. Soda, N. Mabuba* 15:50-16:10 OS7-11 Utilization of Nanotechnology in plant sciences *F. B. Lewu, O. S. Oluwafemi*	15:10-15:30 GS1-23 Molecular Simulation Study for Nano-Car Molecule on Au Surface *K. Inaba, Y. Ishizawa, R. Miura, A. Suzuki, N. Miyamoto, N. Hatakeyama, A. Miyamoto* 15:30-15:50 GS1-24 Development of the Molecular Simulation Program for Nano-Car *R. Miura, Y. Ishizawa, K. Inaba, A. Suzuki, N. Miyamoto, N. Hatakeyama, A. Miyamoto*	15:40-16:00 OS15-14 High Efficient Adsorbed CO_2 Dissociation Using Nonthermal Plasma Flow *M. Okubo, S. Kamiya, S. Kamei, T. Kuroki* 16:00-16:20 OS15-15 Dielectric Barrier Discharge Induced Nanoparticle Formation at Atmospheric Pressure *Q. Li*	15:30-15:50 OS14-20 Transition of Local Homogeneity in a Turbulent Mixing Layer *K. Takamure, Y. Ito, Y. Sakai, K. Iwano, T. Hayase* 15:50-16:10 OS14-21 Secondary Motions in Turbulent Couette Flow through a Square Duct *B. E. Owolabi, D. Dennis, C.-A. Lin*		15:50-16:20 OS6-9 *Invited* Effect of Substrate Rigidity and Anisotropy on Cell Migration Using Microchannel Device *T. Ohashi, M. B. Mazalan, J. H. Shin*		15:43-15:56 OS13-36 Quantum Chemical Evaluation of the Hydrogen Formation Process on the Pure Liquid Sodium and that with Containing Ti-Nanoparticles *A. Suzuki, M. Miyano, R. Miura, J. Saito, K. Ara* 15:56-16:09 OS13-37 Numerical Simulation for Laser Melting Process on the Steel Substrate *Y.-Y. Huang, Y.-H. Liu, K.-Y. Huang* 16:09-**16:22** OS13-38 High-resolution Capturing of the interaction of Shock Wave with a Helium Bubble *Y.-Y. Niu, Y.-C. Chen*
16:20									
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16:30	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. TACHIBANA	Conference Bldg. MEETING ROOM 4	Conference Bldg. SHIRAKASHI 1	Conference Bldg. SHIRAKASHI 2
		OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals SIP special: DDT ar *Chair: Z. Chen*	**OS7: Science Café Co-sponsored by South African Embassy** *Chairs: T. Kodama & S. O. Oluwafemi*	**GS1: General Session** Slow Flows *Chair: A. Komiya*	**OS15: International Workshop on Functional Plasma Flows and their Innovative Applications** Thermal Plasma 3 *Chairs: Y. Tanaka & H-P. Li*	**OS14: Vortex Motion: Stability, Nonlinear Dynamics, and Turbulence** Turbulence 2 *Chair: B. Protas*	**OS18: Fluids Science Research Award Lectures**	**OS6: Advanced Physical Stimuli and Biological Responses** *Chair: Y. C. Cheng*		
		16:30-17:00 OS2-26 *Invited topical* Supersonic Chocked Flames and Transition to Detonation in Gases *A. Kiverin, I. Yakovenko*	16:30-16:50 *Invited* Science and technology in South Africa *E. Mabusa* 16:50-17:20 OS7-12 Developing and applying technologies to improve the quality of all life on earth *D. Meyer*	16:30-16:50 GS1-25 Extended Stokes' Problems of Newtonian and Non-Newtonian Fluids *C.-M. Liu*	16:30-17:00 OS15-16 *Invited* Discussions on Non-Equilibrium Effects in Thermal Plasmas *H-P. Li, H. Guo, J. Chen, J. Li*	16:30-16:50 OS14-22 THE STRUCTURE OF THE SCALAR GRADIENT TURBULENT/NON/TURBULENT INTERFACE LAYER *T. S. Silva, C. B.da Silva*	16:30-16:55 FRA-1	16:30-17:00 OS6-10 *Invited* Theoretical Prediction of Optical Trapping and Manipulation of Microparticles in Liquid *K. Doi, F. Nito, R. Nagura, T. Tsuji, S. Kawano*		
16:30										

	17:00-17:30 OS2-27 *Invited topical* Gaseous Detonation in a Porous Medium: Steady States and Dynamics *A. R. Kasimov*, *A. Sow* 17:30-17:50 OS2-28 Emission of Carbonyl and Polyaromatic Hydrocarbons Pollutants from the Combustion of Liquid Fuels Blended with Biofuels and Synthetic Fuels. *P. Dagaut*, *A. Andrade-Eiroa, Y. Bedjanian, G. Dayma, F. Foucher, B. Grosselin, M. Romanias, R. Shahla*	17:20-17:50 OS7-13 Synthesis of Water - Soluble Superparamagnetic Iron Oxide Nanoparticles-Gold Porphyrin Conjugate for Improved Photodynamic Therapy Against Breast Cancer Cells *O. J. Fakayode, S. P. Songca, O. S. Oluwafemi*	16:50-17:10 GS1-26 End Loss for Stokes Flow through a Slippery Circular Pore in a Barrier of Finite Thickness *C.-O. Ng, W. Xie* 17:10-17:30 GS1-27 Optimization of Micro-structured Gas Separator Utilizing the Soret Effect *K. Matsumoto, N. Takeda, K. Okamoto, S. Matsumoto, S. Watanabe, N. Ono*	17:00-17:20 OS15-17 Effects of Working Pressure on Temperature Properties in Multiphase AC Arc *T. Okuma, T. Imatsuji, T. Hashizume, M. Tanaka, T. Watanabe, H. Nagai, T. Koiwasaki* 17:20-17:40 OS15-18 Plasma Jet Characteristics in Long DC Arc with Ring-Shaped Anode *M. Tanaka, H. Soeda, T. Watanabe, K. Otsuki* 17:40-18:00 OS15-19 Numerical Investigation of Axial Magnetic Effects on a Turbulent Thermal Plasma Jet with Nanopowder Using 3D Time-Dependent Simulation *M. Shigeta*	16:50-17:10 OS14-23 Studies on Turbulence Characteristics Associated with Unsteady Flow Separation and Control In Low Pressure Turbine Based on High-order LES Model *D. Biswas, T. Jimbo* 17:10-17:30 OS14-24 Theory and Simulation for Shape Optimization Suppressing Time Periodic Flow *T. Nakazawa* 17:30-17:50 OS14-25 SGS Stress Regression by Neural Network in Isotropic Homogeneous Turbulence *S. Miyazaki, Y. Hattori*	17:00-17:25 FRA-2 17:30-17:55 FRA-3	17:00-17:20 OS6-11 Potential Formation in Water by Cold Atmospheric Plasma *T. Okumura, C. Zhou, E. Kubo, T. Shimizu, T. Nakajima, T. Sato* 17:20-17:40 OS6-12 A Numerical Study of Nanoparticle Trapping by Optical Forces in Liquid Flows *R. Nagura, F. Nito, T. Tsuji, K. Doi, S. Kawano* 17:40-17:45 Closing *T. Ohashi*		
18:00 20:30	**BANQUET @ SAKURA, Conference Bldg.**								

9:00	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	9:00
		OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals OSII-6 *Chair: V. Gubernov*	**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion** Design and Development 1 *Chair: T. Shimada*	**GS1: General Session** Electromagnetic *Chair. H. Takana*	**OS12: Advanced Control of Smart Fluids and Fluid Flows** *Chair: M. Nakano*	**OS11: Flow Realization, Measurement and Visualization** *Chair: T. Yamagata*	**OS5: Biomolecular Dynamics** *Chairs: Y. Ikeda & M. Ohta*	
		9:00-9:20 OS2-29 Acoustic Emission during Combustion of Heterogeneous Systems with the Formation of Condensed Reaction Products A. Kirdyashkin , *R. Gabbasov, V. Salamatov* 9:20-9:40 OS2-30 Characteristics of Low-Temperature Oxidation in a Separated Cool Flame of *n* -Heptane/air Mixture in a Micro Flow Reactor with a Controlled Temperature Profile R. Tatsumi , *H. Nakamura, S. Hasegawa, T. Tezuka, K. Maruta* 9:40-10:00 OS2-31 Multi-stage Oxidation of Refrigerant CH_2F_2/Air Weak Flames in a Micro Flow Reactor with a Controlled Temperature Profile S. Takahashi , *H. Nakamura, T. Tezuka, S. Hasegawa, K. Maruta* 10:00-10:20 OS2-32 Multi-Fuel Cyclone-Swirl Combustion Chambers *K. Shtym, E. Dorogov,* T. Soloveva	9:00-9:25 OS8-1 *Invited* Development of High Volumetric Impulse Hybrid Rocket Propulsion Y.-S. Chen , *J.-W. Lin, S.-S. Wei, J.-S. Wu* 9:25-9:50 OS8-2 Development of Gunpowder Support Type Hybrid Rocket Engine N. Nakayama , *M. Horita, K. Sakaki, K. Seki* 9:50-10:10 OS8-3 Design of a LOX Vaporization Nozzle for an A-SOFT Hybrid Rocket Engine T. Takei , *T. Mizukoshi, T. Sakurai* 10:10-10:30 OS8-4 Ignition Criteria of Grain Using CH_4/O_2 Igniter for Hybrid Rocket Engines Y. Tsubura , *S. Takahashi, T. Sakurai*	9:00-9:20 GS1-28 Theoretical Prediction of Electromagnetic Effect on Solidification Process of Ultra-thin Metal Plate T. Nemoto , *K. Akitsu, N. Ono* 9:20-9:40 GS1-29 Numerical Simulation of Magnetohydrodynamic Relaxation Controlled by External AC Loop Voltages M. Hirota , *P.J. Morrison, W. Horton, Y. Hattori* 9:40-10:00 GS1-30 Gadolinium Solid Solutions as a Perspective Materials for Magnetocaloric Refrigeration S. Taskaev , *K. Skokov, V. Khovaylo, M. Ulyanov, D. Bataev*	9:00-9:30 OS12-1 *Invited* Modeling of Anisotropic Magneto-Rheological Elastomers for Mechanical to Electrical Energy Conversion M. Lallart , *G. Sebald, G. Diguet, J.-Y. Cavaille, M. Nakano* 9:30-9:50 OS12-2 Micro-Gap Flow Behavior and Micro-Structure of Electro-Rheological Nano-Suspensions K. Tanaka , *M. Takasaki, H. Kobayashi, M. Nakano* 9:50-10:10 OS12-3 Overcoming the Conflict Requirement between High Speed Stability and Curving Trafficability of the Train Using an Innovative MR Rubber Joint S. Sun , *J. Yang, W. Li, M. Nakano* 10:10-10:30 OS12-4 The Effect of Silicone Oil in MREs with 45° Iron Particle Alignment T. Tian , *M. Nakano*	9:00-9:20 OS11-1 State Dynamics of a Bubbly Cluster in the Vicinity of a Quasi-empty Rupture V. Kedrinskiy , *E. Bol'shakova* 9:20-9:40 OS11-2 Fundamental Measurement of Pulsation on a Wrist Pulsatile Blood Flow Model Using a Pulse Wave Measurement System Mimicking Pulse Diagnosis T. Tsuboi , *A. Shirai* 9:40-10:00 OS11-3 Detection and Correction of Aliasing and Reverse Flow in Two-Dimensional Ultrasonic-Measurement-Integrated Blood Flow Analysis D. Harada , *T. Hayase, S. Miyauchi, K. Inoue*	**8:40**-9:05 OS5-1 *Invited* Production of Recombinant Proteins in Plants K. Matsuo 9:05-9:30 OS5-2 *Invited* Identification and Characterization of the Diffusion Channel from Thylakoid Membrane of *Cyanophora paradoxa* Chloroplasts S. Kojima 9:30-9:55 OS5-3 *Invited* Spontaneous Stacking of Purple Membranes during Immobilization with Physical Cross-Linked Poly(Vinyl Alcohol) Hydrogel with Retaining Native-Like Functionality of Bacteriorhodopsin Y. Yokoyama , *H. Tanaka, S. Yano, R. Kurita, K. Takenaka, H. Takahashi, T. Kikukawa, M. Sonoyama* 9:55-10:20 OS5-4 *Invited* Germ Cell Extravasation Mechanism in Avian Embryo D. Saito 10:20-10:30 OS5-5 The Role of Transmembrane Region of Type II Transmembrane Protein in Subcellular Localization T. Kikegawa , *M. Ohta, N. Kato, Y. Mukai*	
10:30	**BREAK**							10:30

10:40	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	10:40
		OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals OSII-7 *Chair: P. Grajetzki*	**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion** Combustion and Flow Dynamics *Chair: S. Aso*	**GS1: General Session** Numerical Methods and Models *Chair: M. Hirota*	**OS12: Advanced Control of Smart Fluids and Fluid Flows** *Chair: M. Lallart*	**OS11: Flow Realization, Measurement and Visualization** *Chair: T. Hayase*	**OS4: Biomedical Flow Dynamics** *Chair: K. Takashima*	
		10:40-11:00 OS2-33 Construction of Simple Reaction Mechanisms of CH_4/air Flames and Their Application to CFD *Y. Sasaki , H. Nakamura, K. Maruta* 11:00-11:20 OS2-34 Improving Efficiency of the Coal Heating process in the Radiative-Convective Defrosting Devices *E. Y. Dorogov, K. A. Shtym A. V.Kulik, Y. B. Goncharenko* 11:20-11:40 OS2-35 Combustion Characteristics of Counterflow Radiative Porous Rurner *K. Tcoi , K. Shtym, B. Anton, P. Daniil* 11:40-12:00 OS2-36 Features of the Formation of Nitrogen Oxides In Boilers With Cyclone-Vortex Chambers *A. V. Lesnykh , K. A. Shtym, A. V. Kulik*	10:40-11:05 OS8-5 Combustion in a Lab-Scale Vortex Flow Hybrid Rocket Engine *C. Paravan , S. Carlotti, F. Maggi, L. Galfetti* 11:05-11:30 OS8-6 Pressure Minimum Feature of Eigen-Vortical-Axis Line *K. Nakayama* 11:30-11:50 OS8-7 Numerical Analysis of Entrainment Phenomena in Liquefying Hybrid Rocket Fuels using CFD *K. Yadav , T. Shimada*	10:40-11:00 GS1-31 Numerical Simulations of Compressible Flow past a Triangular Column Using the Inviscid Cartesian Cut-Cell Method *Y. Takeda , K. Ueno* 11:00-11:20 GS1-32 A Study of Fast Analysis Based on Automatic Generation of Thermal Network Model and Successive Parameter Estimation by Data Assimilation *T. Kobari , W. Sato* 11:20-11:40 GS1-33 Improved Helmholtz Decomposition (*iH-d*) and the *iH-d* Elements *J. Imamura*	10:40-11:10 OS12-5 *Invited* Experimental Verification of an Advanced Vehicle Suspension with Variable Stiffness and Damping MR Damper *S. Sun, X. Tang, J. Yang, W. Li , M. Nakano* 11:10-11:30 OS12-6 Novel MR Brake of Disk Type utilizing Dry MR Fluids *M. Nakano , H. Abe, T. Tian, A. Totsuka, O. Taguchi, F. Shibata* 11:30-11:50 OS12-7 Effects of Charge Injection and Field-Enhanced Dissociation on Electrohydrodynamic Flow and Pumping *H. Yanada , M. Nishikawara, K. Shomura* 11:50-12:10 OS12-8 Shock-induced Boundary Layer Separation Control Using 2-D Sinusoidal Cavities *A. Chitharenjan , V. Menezes*	10:40-11:00 OS11-4 Visualization of 2nd Mode Instability in Hypersonic Boundary Layer *H. Tanno , K. Itoh, T. Komuro* 11:00-11:20 OS11-5 Prediction of Skin Friction on a Hypersonic Compression Corner *M. Kshetrimayum , V. Menezes* 11:20-11:40 OS11-6 SWBLI Mitigation Technique for a Hypersonic Inlet *A. Ruban , V. Menezes, S. Balasubramanian*	10:40-11:10 OS4-1 *Invited* Toward a Development of Medical Support Simulator of Endovascular Coiling Using High Performance Computing *T. Otani , S. Wada* 11:10-11:40 OS4-2 *Invited* An Overview of the Role of Hemodynamics in Inducing Endothelial Dysfunction in Cerebral Aneurysm *K. M. Saqr , M. Ohta, T. Hassan* 11:40-11:55 OS4-3 Fundamental Study of MR-Measurement-Integrated Simulation of Heart-Aorta System: Inflow Estimation Using 4D Flow MR data *M. Ogitsu , T. Hayase, S. Miyauchi, K. Inoue, A. Lalande, C. Acquitter, J.-J. Christophe* 11:55-12:10 OS4-4 Patient-Specific Analysis of Flow Patterns and Stress Areas Associated with Tricuspid and Bicuspid Valve *C. Acquitter , M. Ogitsu, S. Bricq, J.-J. Christophe, O. Bouchot, S. Miyauchi, T. Hayase, A. Lalande*	
12:10	**LUNCH**							12:10
13:10	Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4	13:10
	OS1:The Fifth International Symposium on Innovative Energy Research I **Tohoku University-National Chiao Tung University 2nd Technical Workshop 2017** *Chairs: S. Samukawa, Y. Li*	**OS2:The Fifth International Symposium on Innovative Energy Research II International Workshop on Combustion Technology and Fundamentals** OSII-8 *Chair: R. Fursenko*	**OS8: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion** Combustion Instability *Chair: Y.-S. Chen*	**GS1: General Session** Visualization *Chair: T.Misaka*	**OS12: Advanced Control of Smart Fluids and Fluid Flows** *Chair: M. Langthjem*	**OS11: Flow Realization, Measurement and Visualization** *Chair: N. Fujisawa*	**OS4: Biomedical Flow Dynamics** *Chair: H. Anzai*	
	13:05-13:10 Opening Remarks *S. Obayashi*		13:10-13:35 OS8-8 Experimental Investigation of the Combustion Response Function of Hybrid Rocket Motors *Y. Kurosawa , S. Imafuku, S. Sasahara, T. Morita*	13:10-13:30 GS1-34 Shock Oscillations in Transonic Diffuser Flows (Quantitative Flow Visualization) *S. Goto , S. Nakao, Y. Miyazato*	13:10-13:40 OS12-9 *Invited* Micro-Motors of Electro-Active Polymer Rotor Rotating in Dielectric Liquid *M. Zrinyi , M. Nakano*	13:10-13:30 OS11-7 Effect of Amplitude Modulation on Bursting Phenomena in Turbulent Boundary Layer *K. Iwano , Y. Sawaguchi, Y. Sakai, Y. Ito*	13:10-13:40 OS4-5 *Invited* A Geometrical Characteristics Study for Blood Flow in the Thoracic Aorta *H. Suito , V. Q. H. Huynh, K. Takizawa, T. Ueda*	

13:10-13:55 OS1-1 *Keynote* Spintronics, a Route to Stand-by Power-Free Integrated Circuits *H. Ohno* 13:55-14:40 OS1-2 *Keynote* Exploring Reactions of Criegee Intermediate CH2OO using a Step-Scan FTIR Spectrometer *Y.-P. Lee*	**13:00**-13:20 OS2-37 On the Equivalence Ratio Dependence of the Reactivity of Ultra-Lean Gasoline Surrogate/Air Weak Flames in a Micro Flow Reactor with a Controlled Temperature Profile *P. Grajetzki , H. Nakamura, T. Tezuka, S. Hasegawa, K. Maruta* 13:20-13:40 OS2-38 Optical Investigation of DME/CH_4 Weak Flames at Elevated Pressure in a Micro Flow Reactor with a Controlled Temperature Profile. *T. Sugita , H. Nakamura, T. Tezuka, S. Hasegawa, K. Maruta* 13:40-14:00 OS2-39 Effect of *n* -Butanol addition to the Sooting Limits and PAH Formation of *n* -Heptane in a Micro Flow Reactor with a Controlled Temperature Profile *M. H. B. M. Hanafi , H. Nakamura, S. Hasegawa, T. Tezuka, K. Maruta*	13:35-14:00 OS8-9 Evaluation of Non-steady Combustion Characteristics for Tangential-Axial Injection Hybrid Rocket by Large Eddy Simulation *T. Shimada , T. Matsuno, K. Obata, G. Karthikeyan, M. Motoe* 14:00-14:20 OS8-10 Relationship between Swirl Intensity of Flow and Low-frequency Combustion Instability based on Proper Orthogonal Decomposition *K. Obata , T. Shimada, K. Kitagawa* 14:20-14:40 OS8-11 Validation of Numerical Prediction of Hybrid Rocket Combustion Instability *G. Karthikeyan , T. Shimada*	13:30-13:50 GS1-35 Study of Shock-Wave Boundary Layer Interactions in Constant-Area Ducts (Part 1, Quantitative Flow Visualization) *T. Takeshita , S. Nakao, Y. Miyazato* 13:50-14:10 GS1-36 Influence of Flow Separation on Bow-Shock Instability around an Edged Blunt Body *Y. Inabe , M. Takahashi, N. Ohnishi, K. Ohtani* 14:10-14:30 GS1-37 Study of Fee Jets from Axisymmetric Supersonic Micro Nozzles (Part 1, Quantitative Flow Visualization) *H. Fukuda , S. Nakao, Y. Miyazato, Y. Ishino*	13:40-14:00 OS12-10 Experimental Study on Influence of Various Nanoparticles on Flow Resistance and Heat Transfer of Viscoelastic Fluid Flow *M. Inaba , M. Motozawa, M. Fukuta* 14:00-14:20 OS12-11 2D Analysis on a Simplified Flip-Flop Jet Nozzle *H. Ota , K. Umemura, T. Inoue, H. Tanigawa, K. Hirata* 14:20-14:40 OS12-12 Topological Effect in Vortex Transition in an Isotropic Homogeneous Turbulence *K. Nakayama*	13:30-13:50 OS11-8 Direct Numerical Simulation of Planer Turbulent Jet with Chemical Reaction *S. Nagaya , K. Iwano, Y. Sakai, Y. Ito, T. Watanabe, T. Hayase* 13:50-14:10 OS11-9 Boundary Layer Transition Subject to Small-Scale Free Stream Turbulence *M. Otsu , S. Shimizu, M. Azmeer, M. Matsubara* 14:10-14:30 OS11-10 Beam Overlapped Scanning PIV Method and Its Application to the Calorimetry of Ground Source Heat Pump System *S. Funatani , S. Amano, T. Takeda*	13:40-14:00 OS4-6 *Invited* The Influence of TGF-β1 from ECs on SMC MMP Productions under Shear Stress using a Co-Culture Model *X. Han , N. Sakamoto, N. Tomita, H. Meng, M. Sato, M. Ohta* 14:00-14:20 OS4-7 Modeling of Carotid Artery with the Axisymmetric Flow *A. Saini , V. K. Katiyar* 14:20-14:35 OS4-8 Numerical Analysis of the Effect of the Inner Structure of a Left Ventricle on the Blood Flow Field: Effect of a Simplified Papillary Muscle Model *K. Hosoi , T. Hayase, S. Miyauchi*
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Exhibition Bldg. MEETING ROOM 1	Exhibition Bldg. MEETING ROOM 2	Exhibition Bldg. MEETING ROOM 3	Exhibition Bldg. MEETING ROOM 4-B	Conference Bldg. MEETING ROOM 1	Conference Bldg. MEETING ROOM 2	Conference Bldg. MEETING ROOM 4
14:50						14:50
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M. Goto, T. Takagi, K. Ito, H. Miki, H. Kosukegawa

CRF-47: FEM Simulation Method for Electromagnetic Ultrasonic Testing and Its Application
T. Yamamoto, R. Urayama, T. Uchimoto, T. Takagi

CRF-48: Coupled Analysis of High-Density Hydrogen Safety Management
J. Ishimoto, A. Combescure

CRF-49: Validation of Classical Mixing Rule in Van Der Waals Type Equation of State Applied to a Non-Ideal Binary Mixture Fluid
R. Takahashi, N. Tsuboi, T. Tokumasu, S. Tsuda

CRF-50: Theoritical Optimization of Epitaxial Magnesium Oxide Film on Silicon Substrate
S. Kaneko, R. Sudo, S. Yasuhara, M. Yasui, M. Kurouchi, T. Tokumasu

CRF-51: Numerical Analysis of Scattering Behavior and Surface Diffusion of Oxygen Molecules on Ionomer Surface
M. Nakauchi, T. Mabuchi, T. Hori, Y. Yoshimoto, I. Kinefuchi, H. Takeuchi, T. Tokumasu

CRF-52: Molecular Dynamics of Nano Droplet Shearing
A. Fukushima, N. Fillot, T. Tokumasu, P. Vergne

CRF-53: Characterization of Transport Phenomena of Oxygen Ion in Electrolyte of Solid Oxide Fuel Cell
H. Nagashima, R. F. Smith, T. Tokumasu, J. Ahn

CRF-54: Microcombustion for Micro-Tubular Flame-Assisted Fuel Cell Cogeneration
R. J. Milcarek, H. Nakamura, K. Maruta, J. Ahn

CRF-55: Numerical Study on the Intrinsic Instability of Premixed Flames Based on the One-Step and Detail Chemical Reaction Models
S. Kadowaki, R. Ohki, T. Takahashi, T. T. Aung, T. Katsumi, H. Kobayashi

CRF-56: Numerical Investigation of 3D Flow in Textured Micro-/Nanoscale Channel by the DSMC Method
P. Vashchenkov, Y. Bondar, Y. Kawagoe, S. Yonemura

CRF-57: Theoretical Consideration on Mechanical Properties of Nanoparticle Dispersed Carbon Fiber Reinforced Plastic
T. Takayama, H. Kosukegawa, T. Takagi

CRF-58: Thermodynamic Effect on Tip Leakage Vortex Cavitation
D. Kang, Y. Iga

CRF-59: 2017 Maintenance Science Summer School in Sendai
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CRF-60: Experimental Study on Y250 Vortex of Formula-1 Racing
Z. Fu, C. Lai, Y. Zhou, S. Obayashi

CRF-R2: Link between Tracer and Microseismic Analysis to Comprehensive Understanding of Hydraulic Feature of Fractured Geothermal Reservoir
A. Suzuki, Y. Mukuhira, R. N. Horne, M. C. Fehler

CRF-R3: Filtrational Gas Combustion in Porous Media and Micro Combustion
S. Minaev, K. Maruta, R. Fursenko, A. Kirdyashkin, V. Gubernov, A. Shmakov

CRF-61: Mechanism of Shock Wave Propagation within the Cell: Experimental Model
A. Nakagawa, K. Ohtani, T. Tominaga.

CRF-62: Attenuation and Reduction Effect of Underwater Explosion by Porous Materials
K. Kitagawa, D. Nagahiro, K. Ohtani, Y. Konishi, A. Abe

CRF-63: Experimental Study on High-Speed Flow Control Using Small-Sized Oscillatory Jet
M. Takemura, A. Urita, T. Handa, K. Ohtani, Y. Matsuda, Y. Egami

CRF-64: Development of Molecular Imaging Technology for Investigation of Projectile Aerodynamics
D. Numata, K. Ohtani

CRF-65: Investigation of Non-Equilibrium Turbulence and Its Application to Flow Control (Cases of Inhomogeneous, Anisotropic and Compressible Turbulence)
Y. Sakai, Y. Ito, K. Nagata, K. Iwano, T. Watanabe, T. Hayase, K. Takamure, K.Tanaka, S. Nagaya

CRF-66: Three-Dimensional Numerical Analysis for an Erythrocyte Behavior near a Wall in a Fluid under an Inclined Centrifugal Force: The Effect of Bending Stiffness of an Erythrocyte on the Deformation
S. Miyauchi, T. Hayase, A. A. Banaei, J. C. Loiseau, L. Brandt

CRF-67: Attitude Control of a Supersonic Projectile by Pulsation of Bow Shock
T. Mizukaki, K. Ohtani, S. Obayashi

CRF-68: Study for Accurate Prediction of Unsteady Aerodynamic Characteristics around Moving Objects
Y. Mizuno, Y. Hamagata, Y. Goda, S. Takahashi, K. Fukuda, S. Obayashi

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R. Maeta, Y. Kawabata, H. Hasegawa, K. Seo, S. Obayashi

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Y. Fujisawa, D. Oki, H. Hasegawa, H. Nagai

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Y. Egami, H. Ogura, Y. Matsuda, H. Nagai

CRF-72: The Development and Applications of Pressure-Sensitive Paint on the Investigations of Gases Mixing in T-Type Micromixers
C. Huang, Y. Hu, H. Nagai

CRF-73: Quantitative Density Measurement of Unsteady Flow Field around the Projectile
K. Kurihara, K. Yoshida, K. Ishikawa, K. Shida, M. Ota, T. Inage, H. Nagai

CRF-74: Application of Carbon Nanotubes and Temperature-Sensitive Paint for the Detection of Boundary Layer Transition under Low-Speed Flow
D. Yorita, J. Ost, U. Henne, C. Klein, V. Ondrus, U. Beifuss, H. Nagai

CRF-75: Surface Pressure Measurement over Free Flight Object in Ballistic Range Facility
D. Kurihara, A. Duarte, S. Claucherty, H. Sakaue, M. Nomura, H. Nagai

CRF-76: Application of Nanostructured Surfaces to Enhance the Thermal Performance of Heat Pipe
P. Zhang, F. Lv, H. Nagai

CRF-77: Deployable Wing Simulation Using Flexible Multibody Dynamics
K. Otsuka, K. Makihara, H. Nagai

CRF-78: Computation of Weakly Ionized Flows around Re-Entry Bodies at Orbital Velocity
G. Shoev, Y. Bondar, P. Vashchenkov, S. Yonemura

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V. Saveliev, S. Yonemura, Y. Kawagoe

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N. Yamada, V. V. Thai, J. Okajima, A. Komiya, S. Maruyama

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S. Usune, M. Kubo, E. Shoji, A. Komiya, T. Tsukada

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Y. Takahashi, T. Adachi, T. Akinaga, J. Okajima

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S. Taniguchi, Y. Nakamura, T. Kogawa, J. Okajima, A. Komiya, S. Maruyama, A. Sakurai

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R. Watanabe, D. Tsuchida, T. Tanaka, H. Kobayashi

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K. Miyahara, Y. Naito, T. Inoue, H. Tanigawa, M. Nakano, K. Hirata

CRF-86: Theoretical and Experimental Study of Flow Stability, Flow Controllability, and Trapped Acoustic Modes in Cylindrical Expansion Chamber-Pipe Systems
M. A. Langthjem, M. Nakano

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S. Sun, T. Yildirim, W. Li, M. Nakano

CRF-88: Investigation of Nozzle Flows at Low Reynolds Numbers
K. Maruta, Y. Bondar, A. Kudryavtsev, A. Shershnev

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S. Morizawa, S. Nishimura, A. Yasuda, K. Sakamoto, H. Kawazoe, S. Obayashi

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G. Yamada, S. Yanai, H. Kawazoe, S. Obayashi

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T. Koita, S. Mingyu, T. Koike, M. Numata

CRF-92: Aeroacoustics of Low Reynolds Number Flows Via Dynamic Hybrid RANS/LES and Stochastic Modeling
J. Blake, X. Wang, B. Manshoor, S. Bhushan, D. Thompson, A. Sescu, Y. Hattori

CRF-R4: Instability and Nonlinear Dynamics of Curved Vortices
Y. Hattori, M. Hirota, S. Le Dizès, T. Leweke, S. G. Llewellyn Smith, Y. Fukumoto

CRF-R5: Effect of Inhomogeneous Mixing of Plasma Species on the Properties of Argon–Steam Arc Discharge
J. Jeništa, H. Takana, S. Uehara, H. Nishiyama, A. B. Murphy, M. Bartlová, V. Aubrecht