

IFS Collaborative Research Forum

TACHIBANA

October 11, 2016

Chair Hisashi Nakamura (Tohoku University, Japan)

9:00-10:30 **Short Oral Presentation**

(2.5 min for Short Oral Presentation)

- CRF-1 **Development of Bubble Measurement Method by Plasma-Generated Shockwave**
Takehiko Sato, Yohei Nagasawa, Tomoki Nakajima, Kiyonobu Ohtani (Tohoku University, Japan), Takashi Miyahara (Shizuoka University, Japan), Tatsuyuki Nakatani (Okayama University of Science, Japan)
- CRF-2 **Propagation Process of Negative Streamer Discharge in Water**
Ryo Kumagai (Tohoku University, Japan), Seiji Kanazawa (Oita University, Japan), Kiyonobu Ohtani, Atsuki Komiya, Toshiro Kaneko, Tomoki Nakajima, Takehiko Sato (Tohoku University, Japan)
- CRF-3 **Charge-up on Water Surface by Cold Atmospheric Plasma for Sanitization Device**
Tetsuji Shimizu, Gregor E. Morfill (terraplasma GmbH, Germany), Chaoyi Zhou, Takehiko Sato (Tohoku University, Japan)
- CRF-4 **The Effects of Unburned-Gas Temperature and Heat Loss on the Dynamics of Premixed flames - Fractal Analysis of Flame Fronts -**
Satoshi Kadowaki, Morita Yusuke, Thwe Thwe Aung, Toshiyuki Katsumi (Nagaoka University of Technology, Japan), Hideaki Kobayashi (Tohoku University, Japan)
- CRF-5 **Aerodynamic Design of Hull Geometry for Captive High-Altitude Lighter-Than-Air Platform System**
Ryosuke Nishikawa, Kazuhisa Chiba (The University of Electro-Communications, Japan), Masahiko Onda (Sky Platform Technologies Co. Ltd., Japan), Shigeru Obayashi (Tohoku University, Japan), Shin Satori (Hokkaido Satellite Co. Ltd., Japan), Ryojiro Akiba (Hokkaido Aerospace Science and Technology Incubation Center, Japan)
- CRF-6 **Coupled Analysis of High-Density Hydrogen Safety Management**
Jun Ishimoto (Tohoku University, Japan), Alain Combescure (INSA de Lyon, France)
- CRF-7 **Multiphase Fluid Dynamic Approach for Fire Whirl Risk Mitigation**
Jun Ishimoto (Tohoku University, Japan), Kozo Saito (University of Kentucky, USA)
- CRF-8 **Radiative Carrier Recombination Process in GaAs ND Fabricated by Bio-Template and Neutral Beam Etching Embedded by AlGaAs**
Anri Iwamoto, Daisuke Ohori (University of Miyazaki, Japan), Cedric Thomas, Akio Higo, Seiji Samukawa (Tohoku University, Japan), Tetsuo Ikari, Atsuhiko Fukuyama (University of Miyazaki, Japan)
- CRF-9 **Topology-Based Multisensory Realization for Flow Field**
Yuriko Takeshima (Tokyo University of Technology, Japan), Takashi Misaka, Shigeru Obayashi (Tohoku University, Japan)

- CRF-10 **Functionality Improvement of Nanoparticulate-Filled Carbon Fiber Reinforced Plastic**
Tetsuo Takayama (Yamagata University, Japan), Hiroyuki Kosukegawa, Toshiyuki Takagi (Tohoku University, Japan)
- CRF-11 **Influence of Operating Currents on In-flight Particle Trajectories in Magnetically Driven Arc Plasma Jet**
Hiroki Saito, Takayasu Fujino (University of Tsukuba, Japan), Hidemasa Takana (Tohoku University, Japan), Larry Pershin, Javad Mostaghimi (University of Toronto, Canada)
- CRF-12 **Thermodynamic Effect on Tip Leakage Vortex Cavitation**
Donghyuk Kang (Aoyama Gakuin University, Japan), Daichi Nakai, Yuka Iga (Tohoku University, Japan)
- CRF-13 **Numerical and Experimental Investigations to Improve Flight Performance of MAVs Under Low Reynolds Number Conditions**
Daiki Iioka, Taiki Kunishio, Takeshi Akasaka, Masato Okamoto, Daisuke Sasaki (Kanazawa Institute of Technology, Japan), Shun Takahashi (Tokai University, Japan), Hikaru Otsuka, Keiji Nagatani, Takashi Misaka, Koji Shimoyama, Shigeru Obayashi (Tohoku University, Japan)
- CRF-14 **Fundamental Numerical Study of MHD Energy Conversion in Annular Geometry**
Yuhiro Iwamoto (Nagoya Institute of Technology, Japan), Hidemasa Takana (Tohoku University, Japan), Hiroshi Yamaguchi (Doshisha University, Japan), Yasushi Ido (Nagoya Institute of Technology, Japan)
- CRF-15 **Coupled Photon and Bioheat Transport Simulation for Laser Induced Plasmonic Photothermal Therapy**
Yosuke Nakamura (Niigata University, Japan), Atsuki Komiya, Junnosuke Okajima, Shigenao Maruyama (Tohoku University, Japan), Atsushi Sakurai (Niigata University, Japan)
- CRF-16 **Selection of Silicon Oxide Specific Peptides for Nano-etching Nanoparticle Array Mask**
Ichiro Yamashita (Osaka University, Japan), Naofumi Okamoto, Kenji Iwahori (Nara Institute of Science and Technology, Japan), Seiji Samukawa (Tohoku University, Japan)
- CRF-17 **Study on Energy Transport by Radiation and Convection in Large Scale Environment**
Noboru Yamada (Nagaoka University of Technology, Japan), Junnosuke Okajima, Atsuki Komiya, Shigenao Maruyama (Tohoku University, Japan)
- CRF-18 **Development, Modeling and Characterization of Efficient Magneto-Rheological Elastomers for Vibrational Energy Harvesting**
Gael Sebald (Université de Lyon, France), Masami Nakano (Tohoku University, Japan), Mickael Lallart, Jean-Yves Cavaillé (Université de Lyon, France)
- CRF-19 **Epitaxial Growth of Wide Bandgap Semiconductor on Insulating Substrate**
Rieko Sudo (Sagamihara Incubation Center, Japan), Hironori Torii (JSW-Afty, Japan), Takashi Tokumasu (Tohoku University, Japan), Shigeo Yasuhara (Japan Advanced Chemicals, Japan), Manabu Yasui, Satoru Kaneko (Kanagawa Industrial Technology Center, Japan)

- CRF-20 **Scattering Properties of Oxygen Molecule on Nafion Membrane**
Masataka Nakauchi (Tohoku University, Japan), Takuma Hori, Yuta Yoshimoto, Ikuya Kinefuchi (The University of Tokyo, Japan), Hideki Takeuchi (National Institute of Technology, Kochi College, Japan), Takashi Tokumasu (Tohoku University, Japan)
- CRF-21 **Aerodynamic Performance of Car Rear Wing with Multi-attach-angle**
Chenguang Lai, Zhongzheng Fu, Yuting Zhou (Chongqing University of Technology, China), Shigeru Obayashi (Tohoku University, Japan)
- CRF-22 **Numerical Investigation of 3D Flow in Micro-/Nanoscale Channel with Sliding Surface**
Pavel Vashchenkov, Anastasya Belyaeva, Yevgeniy Bondar (ITAM SB RAS, Russia), Shigeru Yonemura, Yoshiaki Kawagoe (Tohoku University, Japan)
- CRF-23 **Shock Behaviour and Centreline Reflection in High-Speed Air Intakes**
Hideaki Ogawa (RMIT University, Australia), Sannu, Mölder (Ryerson University, Canada), Ben Shoosmith, Evgeny Timofeev (McGill University, Canada), Georgy Shoen, Yevgeniy Bondar (Russian Academy of Sciences, Russia), Kiyonobu Ohtani, Shigeru Obayashi (Tohoku University, Japan)
- CRF-24 **Characterization of Plastic Deformation and Residual Stress using Electromagnetic NDT Methods**
Zhenmao Chen, Shejuan Xie, Maru He (Xi'an Jiaotong University, China), Tetsuya Uchimoto, Toshiyuki Takagi (Tohoku University, Japan)
- CRF-25 **Aerodynamic Improvement of a Delta Wing by Using in Combination of Leading Edge Flaps**
Tadateru Ishide, Mao Itazawa, Kodai Nakano, Ryo Fujii (National Institute of Technology, Kisarazu College, Japan), Takashi Misaka, Koji Shimoyama (Tohoku University, Japan)
- CRF-26 **Effectiveness of Flexible Wing in a Flapping Flight**
Tadateru Ishide, Koudai Nakano, Ryo Fujii, Tomoharu Kaeriyama (National Institute of Technology, Kisarazu College, Japan), Koji Shimoyama, Shigeru Obayashi (Tohoku University, Japan)
- CRF-27 **Supersonic Drag Reduction Model Using Thermal Bubble Generated by Repetitive Laser Pulses**
Akira Iwakawa, Akihiro Sasoh (Nagoya University, Japan), Shigeru Obayashi (Tohoku University, Japan)
- CRF-28 **Transport Phenomena of Nanoscale Droplet in a Nano Pore**
Akinori Fukushima (University of Fukui, Japan), Nicolas Fillot (INSA de Lyon, France), Takashi Tokumasu (Tohoku University, Japan), Philippe Vergne (INSA de Lyon, France)
- 10:30-10:40 Break

Chair: Hiroyuki Shimizu (Tohoku University, Japan)

10:40-12:10 **Short Oral Presentation**

(2.5 min for Short Oral Presentation)

- CRF-29 **Analog Memory Operated by MOSFET and MoOx Resistive Random Access Memory**
Mingyu Jo, Reon Katsumura, Atsushi Tsurumaki-Fukuchi, Masashi Arita, Yasuo Takahashi (Hokkaido University, Japan), Hideyuki Ando, Takashi Morie (Kyushu Institute of Technology, Japan), Seiji Samukawa (Tohoku University, Japan)
- CRF-30 **Uncertainty Quantification in Shallow Water Waves via Polynomial Chaos Approach**
Wataru Yamazaki, Tatsuya Kato, Kyohei Hanazaki (Nagaoka University of Technology, Japan), Koji Shimoyama, Shigeru Obayashi (Tohoku University, Japan)
- CRF-31 **Improvement and Micro-Channel Flow Evaluation of Electro-Rheological Nano-Suspensions**
Katsufumi Tanaka, Minori Nishimoto, Hiroki Komatsu, Midori Takasaki, Haruki Kobayashi (Kyoto Institute of Technology, Japan), Masami Nakano, Atsushi Totsuka (Tohoku University, Japan)
- CRF-32 **Spike-Based Neural Learning Hardware Using a Resistance Change Memory Device Toward Brain-Like Systems with Nanostructures**
Hideyuki Ando, Kazumasa Tomizaki, Takashi Tohara, Takashi Morie (Kyushu Institute of Technology, Japan), Atsushi Tsurumaki-Fukuchi, Masashi Arita, Yasuo Takahashi (Hokkaido University, Japan), Seiji Samukawa (Tohoku University, Japan)
- CRF-33 **Inclined Differentially Heated Cavity: Transition to Unsteady Flow**
Nicholas Williamson (University of Sydney, Australia), Atsuki Komiya (Tohoku University, Japan), Steve Armfield (University of Sydney, Australia)
- CRF-34 **Development of Novel Micromotors**
Masami Nakano (Tohoku University, Japan), Miklos Zrinyi (Semmelweis University, Hungary)
- CRF-35 **Miniband Formulation of Neutral Beam Etching Fabricated Si/SiC Nanodisks Array**
Yi-Chia Tsai, Ming-Yi Lee, Yiming Li (National Chiao Tung University, Taiwan), Mohammad Maksudur Rahman, Seiji Samukawa (Tohoku University, Japan)
- CRF-36 **Image-based Finite Element Analysis of Fatigue in a Cast Aluminum Alloy**
Vinicius Aguiar de Souza (Tohoku University, Japan), Osamu Kuwazuru, Katsuyuki Suzuki (The University of Tokyo), Masakazu Kobayashi (Toyohashi University of Technology), Hiroyuki Toda (Kyushu University), Shigeru Obayashi (Tohoku University)
- CRF-37 **Model-Reduced Variational Data Assimilation to Aviation Safety**
Junho Cho (Seoul National University, Korea), Takashi Misaka, Shigeru Obayashi (Tohoku University, Japan), Kwanjung Yee (Seoul National University, Korea), Shinkyu Jeong (Kyunghee University, Korea)

- CRF-38 **Four-Wave Mixing Measurements and Kinetic Modeling Predictions of Electric Field in a Quasi-Two-Dimensional Ns Pulse Discharge in Air**
Benjamin M. Goldberg, Marien Simeni Simeni (Ohio State University, USA), Cheng Zhang (Chinese Academy of Sciences, China), Hidemasa Takana, Hideya Nishiyama (Tohoku University, Japan), Igor V. Adamovich (Ohio State University, USA)
- CRF-39 **Innovative Cellulose Material -Synthesis by Electrostatic Micro Fibril Alignment and Application to a Functional Composite Materials-**
Yusuke Takeda, Hidemasa Takana, Yuta Muramoto, Makoto Ohta (Tohoku University, Japan), Fredrik Lundell (KTH Royal Institute of Technology, Sweden)
- CRF-40 **Micro Square Pyramid Shape Forming used by Compression Shearing Method at Room Temperature**
Noboru Nakayama, Masaomi Horita, Hayato Inoue (Shinshu University, Japan), Hiroyuki Kosukegawa, Toshiyuki Takagi, Hiroyuki Miki (Tohoku University, Japan), Hiroyuku Takeishi (Chiba Institute of Technology, Japan)
- CRF-41 **Computational and Experimental Studies on the Blood Cells Behavior in Microcirculation**
Tomohiro Fukui, Misa Kawaguchi, Atsuhide Kitagawa (Kyoto Institute of Technology), Kenichi Funamoto, Toshiyuki Hayase (Tohoku University)
- CRF-42 **Mechanism of Thermal Energy Transfer in Nanoscale Solid-Liquid Systems**
Masahiko Shibahara (Osaka University, Japan), Gota Kikugawa, Hari Krishna Chilukoti, Taku Ohara, (Tohoku University, Japan)
- CRF-43 **Mechanism of Shock Wave Propagation within the Cell**
Atsuhiko Nakagawa, Kiyonobu Ohtani, Narumi Harada, Teiji Tominaga (Tohoku University, Japan)
- CRF-44 **Correlation between Physicochemical Properties of Protein Signal Sequence Variation and Subcellular Transportation**
Tatsuki Kikegawa, Tomonao Iibuchi, Kenji Etchuya (Meiji University, Japan), Makoto Ohta (Tohoku University, Japan), Noritaka Kato, Yuri Mukai (Meiji University, Japan)
- CRF-45 **Development of Program for Surveying Stent Strut Position (First Report)**
Makoto Ohta, Kazuhiro Watanabe, Mingzi Zhang (Tohoku University, Japan), Bastien Chopard (Geneva University, Switzerland), Hitomi Anzai (Tohoku University, Japan)
- CRF-46 **Analysis of an Autonomic Nervous System of Mouse Fetus with Congenital Heart Defect**
Kiyoe Funamoto (Tohoku University, Japan), Rika Sugibayashi (National Center for Child Health and Development, Japan), Kenichi Funamoto, Kana Nakanishi, Takuya Ito, Motoyoshi Kawataki, Toshiyuki Hayase, Yoshitaka Kimura (Tohoku University, Japan)
- CRF-47 **Fundamental Study on Biological Influence by Underwater Expansion Wave Irradiation**
Takumi Kanemaru, Tokitada Hashimoto (Saga University, Japan), Kiyonobu Ohtani (Tohoku University, Japan)

- CRF-48 **Collaboration on Aeroacoustics of Low Reynolds Number Flows Via Dynamic Hybrid RANS/LES, SNGR and DNS**
Adrian Sescu, Keith Walters, Shanti Bhushan (Mississippi State University, USA), Bukhari Manshoor, Yuji Hattori (Tohoku University, Japan)
- CRF-R1 **Instability and Nonlinear Dynamics of Curved Vortices**
Yuji Hattori, Makoto Hirota (Tohoku University, Japan), Stéphane Le Dizès, Thomas Leweke (IRPHE, France), Stefan G. Llewellyn Smith (UCSD, USA), Yasuhide Fukumoto (Kyushu University, Japan)
- 12:10-13:10 **Lunch and Poster Session** (CRF-1 to 48, CRF-R1)
- Chair: Takeru Okada (Tohoku University, Japan)
- 13:10-14:40 **Short Oral Presentation**
(2.5 min for Short Oral Presentation)
- CRF-49 **Constructing CFD Model of Marrow Flow in an Ilium**
Toshio Nakayama (National Institute of Technology, Tsuruoka College, Japan), Makoto Ohta (Tohoku University, Japan)
- CRF-50 **Experiment to Detect Air-Leakage in Space-Debris Impact using Photoluminescent Substance**
Shu Kondo, Kazumasa Sasahara, Kiyonobu Ohtani (Tohoku University, Japan), Sunao Hasegawa (JAXA/ISAS, Japan), Miki Hasegawa (Aoyama Gakuin University, Japan), Kanjuro Makihara (Tohoku University, Japan)
- CRF-51 **Fundamental Mechanism of Fluid-Acoustic Interaction in Edge Tone**
Sho Iwagami (Kyushu Institute of Technology, Japan), Taizo Kobayashi (Teikyo University, Japan), Kin'ya Takahashi (Kyushu Institute of Technology, Japan), Yuji Hattori (Tohoku University, Japan)
- CRF-52 **Vortex Dynamics of the High Energy (Negative Temperature) State in Quasi-Geostrophic Turbulence**
Keitaro Ishikawa (The University of Electro-Communications, Japan), Naoya Takahashi (Tokyo Denki University, Japan), Takeshi Miyazaki (The University of Electro-Communications, Japan), Nozomu Hatakeyama (Tohoku University, Japan), Yuji Hattori (Tohoku University, Japan)
- CRF-53 **Aerodynamic Characteristics of a Badminton Shuttlecock with Different Gap Size**
Daizen Oki, Hiroaki Hasegawa (Utsunomiya University, Japan), Shigeru Obayashi (Tohoku University, Japan)
- CRF-54 **Attenuation and Reduction Effect of Underwater Explosion by Porous Materials**
Kazutaka Kitagawa, Daiki Nagahiro (Aichi Institute of Technology, Japan), Kiyonobu Ohtani, Yasufumi Konishi (Tohoku University, Japan), Atsushi Abe (ITOCHU Techno-Solutions Corporation, Japan)
- CRF-55 **Study of the Unsteady Flow at Near Mach number 1.0 (2nd Report)**
Takamasa Kikuchi, Takahito Koshimoto, Masaya Yuguchi, Shota Baba (Nihon University, Japan), Kiyonobu Ohtani (Tohoku University, Japan)

- CRF-56 **Heat and Fluid Flow Characteristics of Liquid Film Flow along Heat Transfer Surface with Microscopic Grooves**
Koji Higashiono, Takahiro Adachi, Yuutarou Takahashi (Akita University, Japan), Junnosuke Okajima (Tohoku University, Japan), Takeshi Akinaga (Aston University, UK)
- CRF-57 **Investigation of Non-Equilibrium Turbulence and Its Application to Flow Control (Cases of Mixing Layer, Grid-Turbulence and Jet)**
Yasuhiko Sakai, Koji Nagata, Yasumasa Ito, Koji Iwano, Tomoaki Watanabe (Nagoya University, Japan), Toshiyuki Hayase (Tohoku University, Japan), Kotaro Takamura, Minghao Li (Nagoya University, Japan)
- CRF-58 **Experimental and Direct Computational Study on Flow-Acoustic Resonance of a Hole Tone System with a Tail Pipe**
Kazuo Matsuura (Ehime University, Japan), Masami Nakano (Tohoku University, Japan)
- CRF-59 **Validation of the Classical Mixing Rule in a Cubic Equation of State for a Non-Ideal Gas Mixture**
Shin-ichi Tsuda (Kyushu University, Japan), Ryuji Takahashi, Nobuyuki Tsuboi (Kyushu Institute of Technology, Japan), Takashi Tokumasu (Tohoku University, Japan)
- CRF-60 **Analysis of Transport Phenomena of Oxygen Ion in Membrane of Solid Oxide Fuel Cell**
Hiroki Nagashima (University of the Ryukyus, Japan), Ryan Falkenstein-Smith (Syracuse University, USA), Takashi Tokumasu (Tohoku University, Japan), Jeongmin Ahn (Syracuse University, USA)
- CRF-61 **Experimental Study on the Dynamic Characteristics of a Forward Swept Wing in Pitching Motion**
Hiroyuki Tomoeda, Yuhei Iwamoto, Seiichiro Morizawa, Hiromitsu Kawazoe (Tottori University, Japan), Shigeru Obayashi (Tohoku University, Japan)
- CRF-62 **Experimental Study on Disintegration of Thin Resin Plate Using an Underwater Shock Wave Induced by Electrical Discharge and Microbubbles**
Taketoshi Koita (Saitama Institute of Technology, Japan), Sun Mingyu (Tohoku University, Japan), Yoshio Fukushima, Susumu Kobayashi (Saitama Institute of Technology, Japan)
- CRF-63 **Flow Characteristics of CO₂-N₂ Plasma in the Hollow Electrode Arc Heater**
Motohiro Nakanishi (Tottori University, Japan), Gouji Yamada (Tokai University, Japan), Takahiro Mizuguchi, Hiromitsu Kawazoe (Tottori University, Japan), Shigeru Obayashi (Tohoku University, Japan)
- CRF-64 **Wake Instability Behind Elliptic-Nose Flat Plates at Low Reynolds Number**
Shohei Takagi (Tokyo Metropolitan University, Japan), Yasufumi Konishi, Hiroyuki Okuizumi, Shigeru Obayashi (Tohoku University, Japan)
- CRF-65 **Development of a Novel Variable Stiffness and Damping Magnetorheological Fluid Damper**
Shuaishuai Sun, Weihua Li (University of Wollongong, Australia), Masami Nakano (Tohoku University, Japan)

- CRF-66 **Theoretical and Experimental Study of Flow Stability, Flow Controllability, and Trapped Acoustic Modes in Cylindrical Expansion Chamber-Pipe Systems**
Mikael A. Langthjem (Yamagata University, Japan), Masami Nakano (Tohoku University, Japan)
- CRF-67 **Conservative Immersed Boundary Method for Incompressible Flow on Staggered Grid Arrangement**
Arpiruk Hokpunna (Chiang Mai University, Thailand), Takashi Misaka, Shigeru Obayashi (Tohoku University, Japan)
- CRF-68 **Three-Dimensional Numerical Analysis for an Erythrocyte Behavior near a Wall in a Fluid under an Inclined Centrifugal Force**
Suguru Miyauchi, Toshiyuki Hayase (Tohoku University, Japan), Arash Alizad Banaei, Jean-Christophe Loiseau, Luca Brandt (KTH Mechanics, Sweden)
- CRF-69 **Development of Plasma Electrolytic Oxidation Method for Formation of Protective Coatings on Functional Materials**
Aleksandra A. Gladkova, Vladimir V. Khovaylo, Aleksander G. Rakoch, Nikita A. Predein, Phan Van Truong (National University of Science and Technology “MISiS”, Russia), Hiroyuki Kosukegawa, Hiroyuki Miki, Toshiyuki Takagi (Tohoku University, Japan)
- CRF-70 **Quantitative Temperature Measurement of High Pressure Flame by Using Laser Induced Thermal Grating Spectroscopy (LITGS)**
Akihiro Hayakawa, Tomohisa Yamagami (Tohoku University, Japan), Steven Lowe (University of Cambridge, UK), Taku Kudo (Tohoku University, Japan), Yi Gao, Simone Hochgreb (University of Cambridge, UK), Hideaki Kobayashi (Tohoku University, Japan)
- CRF-71 **Study for Accurate Prediction of Unsteady Aerodynamic Characteristics around Moving Objects**
Shun Takahashi, Yuki Kawamoto, Yusuke Mizuno, Kota Fukuda (Tokai University, Japan), Shigeru Obayashi (Tohoku University, Japan)
- CRF-72 **Observation of Inside of Wooden Biomass during Thermal Pyrolysis by Synchrotron X-ray**
Ryosuke Sasaki, Tadafumi Daitoku, Yasuhiro Ogami (Akita Prefectural University, Japan), Hisashi Nakamura (Tohoku University, Japan)
- CRF-73 **Experimental and Numerical Study on a Flying Pipe**
Kouhei Miyahara, Toshihiro Nakai, Tatsuya Inoue (Doshisha University, Japan), Hirochika Tanigawa (Maizuru National College of Technology, Japan), Katsuya Hirata (Doshisha University, Japan), Masami Nakano (Tohoku University, Japan)
- CRF-74 **Molecular Dynamics Study on Thermal Transpiration Flow in Nanochannels**
Hiroki Yamaguchi (Nagoya University, Japan), Gota Kikugawa (Tohoku University, Japan)
- CRF-75 **Snail Inspired Mobile Robot Using Fluid Adhesion to Travel on Rough Concrete Surface**
Hideyuki Tsukagoshi, Masahiro Watanabe (Tokyo Institute of Technology, Japan), Masami Nakano (Tohoku University, Japan)

- CRF-76 **Liquid Sheet Wave Characteristics of Water Spray from a Fan Spray Nozzle under High Ambient Pressure**
Rikio Watanabe, Hiroaki Ishii, Takamasa Tanaka (Tokyo City University, Japan),
Hideaki Kobayashi (Tohoku University, Japan)
- CRF-77 **Numerical Simulation of an Object Washout by Floodwater**
Fumiya Togashi (Applied Simulations Inc., USA), Rainald Lohner (George Mason University, USA), Orlando A. Soto (Applied Simulations Inc., USA), Masuhiro Beppu (National Defence Academy of Japan, Japan), Shigeru Obayashi (Tohoku University, Japan)
- CRF-78 **Dependence of Angle of Sight on Precision of Background-Oriented Schlieren**
Toshiharu Mizukaki (Tokai University, Japan), Kiyonobu Ohtani, Shigeru Obayashi (Tohoku University, Japan)
- CRF-79 **Development of Conservative Kinetic Force Method with Quasiparticles Pairs**
Vladimir Saveliev, Svetlana Filko (Institute of Ionosphere, Kazakhstan), Shigeru Yonemura, Yoshiaki Kawagoe (Tohoku University, Japan)
- CRF-80 **Numerical Modeling of Hypersonic Flow over a Cone with Real Gas Effects**
Georgy Shoev, Yevgeniy Bondar, Pavel Vashchenkov (Khristianovich Institute of Theoretical and Applied Mechanics, Russia), Shigeru Yonemura (Tohoku University, Japan)
- CRF-81 **Shock Amplification behind Fabrics**
Loïc Ehrhardt (French-German Research Institute of Saint-Louis, France), Mingyu Sun, Ryo Maruyama (Tohoku University, Japan), Pascal Magnan (French-German Research Institute of Saint-Louis, France)
- CRF-82 **The Optical Measurement of Pressure Near an Overexpanded Bubble**
Mingyu Sun, Hiroki Imaeda (Tohoku University, Japan), Jiming Yang (University of Science and Technology of China, China), Nicholas Apazidis (KTH, Sweden), Akihisa Abe (Kobe Univ, Japan), Taketoshi Koita (Saitama Institute of Technology, Japan)
- CRF-R2 **On the Early Stage Deformation of a Shocked Drop**
Xiangyu Yi, Yujian Zhu, Jiming Yang (University of Science and Technology of China, China), Mingyu Sun (Tohoku University, Japan)
- 14:40-14:50 Break
- Chair: Akihiro Hayakawa (Tohoku University, Japan)
- 14:50-16:40 **Short Oral Presentation**
(2.5 min for Short Oral Presentation)
- CRF-83 **Investigation of Nozzle Flows at Low Reynolds Numbers**
Kaoru Maruta (Tohoku University, Japan), Yevgeniy Bondar, Alexey Kudryavtsev,
Anton Shershnev (Novosibirsk State University, Russia)

- CRF-84 **Application of the Titanium Oxide Film Deposited by ASPPS Using Vortex Plasma Jet to DSSC**
Dickson Kindole, Yasutaka Ando (Ashikaga Institute of Technology, Japan), Hideya Nishiyama, Tomoki Nakajima, Satoshi Uehara (Tohoku University, Japan), Oleg P. Solonenko (Khristianovich Institute of Theoretical and Applied Mechanics, Russia)
- CRF-R3 **Investigation of Diffusion of Plasma Species in Argon-Steam Arc Discharge**
Jiří Jeništa (Institute of Plasma Physics AS CR, v.v.i., Czech Republic), Hidemasa Takana, Satoshi Uehara, Hideya Nishiyama (Tohoku University, Japan), Anthony B. Murphy (CSIRO Materials Science and Engineering, Australia), Milada Bartlová, Vladimír Aubrecht (Brno University of Technology, Czech Republic)
- CRF-R4 **International Collaborative Research on Smart Layered Materials and Structures for Energy Saving**
Toshiyuki Takagi, Tetsuya Uchimoto (Tohoku University, Japan), Jean-Yves Cavallé (INSA-Lyon, France), Christian Boller (Fraunhofer Institute for NDT, Germany), Jinhao Qiu (Nanjing University of Aeronautics and Astronautics, China), Julien Fontaine (Ecole Centrale de Lyon, France), Manfred Kohl (Karlsruhe Institute of Technology, Germany), Fredrik Lundell (KTH Mechanics, Sweden)
- CRF-R5 **Investigation of Pulsating Instabilities of Hydrogen-Air Flames in the Model with Detailed Reaction Mechanism**
Anna Korsakova, Vladimir Gubernov, Andrei Kolobov (P.N. Lebedev Physical Institute, Russia), Viatcheslav Bykov, Ulrich Maas (Karlsruhe Institute of Technology, Germany), Kaoru Maruta (Tohoku University, Japan)

15:25-16:20 **Poster Session (CRF-49 to 84, CRF-R2 to R5)**

Young Researcher Overseas Visits Program Research Forum

TACHIBANA

October 11, 2016

Chair: Hisashi Nakamura, Hiroyuki Shimizu, Akihiro Hayakawa (Tohoku University, Japan)

YRF-1 **Laser Induced Thermal Grating Spectroscopy (LITGS) and Thermographic PIV for Quantitative Measurement**
10:15-10:30

Akihiro Hayakawa (Tohoku University, Japan), Steven Lowe, Yi Gao, Luming Fan, Simone Hochgreb (University of Cambridge, UK)

YRF-2 **Development of New Variational Approaches to Determining Stability of Fluids and Plasmas**
11:35-11:50

Makoto Hirota (Tohoku University, Japan), Philip J. Morrison (University of Texas at Austin, USA), Yuji Hattori (Tohoku University, Japan)

YRF-3 **Study of Mechanobiology and Machanopathology in Endothelial Cells at the Mechanobiology Institute, Singapore**
11:50-12:05

Daisuke Yoshino (Tohoku University, Japan)

YRF-4 **Multiscale Effect in Near-Wall Evaporative Heat Transfer for High Heat Flux Cooling**
15:10-15:25

Junnosuke Okajima (Tohoku University, Japan), Peter Stephan (Technische Universität Darmstadt, Germany)