CS4: IFS Collaborative Research Forum (AFI-2014)

HAGI
October 9, 2014

Chair: Koji Shimoyama (Tohoku University, Japan)
9:00-10:30 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-1 **Study on Improvement of Aerodynamic Performance for an Airborne Projectile －Effect of Air Permeability of Ski Jumpsuit on Aerodynamic Characteristics－**
Shigekazu Tekuramori, Hiroaki Hasegawa (Akita University, Japan), Shigeru Obayashi (Tohoku University, Japan)

CRF-2 **Low Reynolds Number Flow Analysis of Flat Plate**
Yuya Kojima, Daisuke Sasaki, Takeshi Akasaka, Masato Okamoto (Kanazawa Institute of Technology, Japan), Kazuhiko Komatsu, Shigeru Obayashi, Koji Shimoyama (Tohoku University, Japan)

CRF-3 **Optimization of Influential Factors for Practical Application of an Ornithopter**
Tadateru Ishide, Shinsuke Seiji, Hiroyuki Ishikawa, Kazuya Naganuma, Ryo Fujii (Kisarazu National College of Technology, Japan), Shigeru Obayashi, Koji Shimoyama (Tohoku University, Japan)

CRF-4 **Investigation of Flow Characteristics around an Oscillating Airfoil at Large Reduced Frequency**
Ryohei Serizawa, Shun Takahashi (Tokai University, Japan), Daisuke Sasaki, Masato Okamoto (Kanazawa Institute of Technology, Japan)

CRF-5 **Pressure Drop of Vapor-Liquid Nitrogen Flow in a Corrugated Pipe**
Jumpei Ohta, Katsuhide Ohira, Kazushi Miyata, Koichi Takahashi (Tohoku University, Japan), Hiroaki Kobayashi, Hideyuki Taguchi, Motoyuki Hongo, Takayuki Kojima (Japan Aerospace Exploration Agency, Japan)

CRF-6 **Numerical Study of Thermal and Chemical Non-Equilibrium Effects in Near-Continuum Hypersonic Flows**
Georgy Shoev, Yevgeniy Bondar (Khristianovich Institute of Theoretical and Applied Mechanics, Russia), Shigeru Yonemura (Tohoku University, Japan)

CRF-7 **Numerical Studies of Rarefied Chemically Reacting Flows about Space Vehicles**
Alexander Shevyrin, Yevgeniy Bondar, Anton Shershnev, Pavel Vashchenkov (Khristianovich Institute of Theoretical, Applied Mechanics, Russia), Shigeru Yonemura (Tohoku University, Japan)

CRF-8 **Atomizing Characteristics of Water and Liquid Nitrogen Jets under High Pressure Environment**
Rikio Watanabe, Narumi Hiramoto, Hiroki Ishii (Tokyo City University, Japan), Hideaki Kobayashi (Tohoku University, Japan)

CRF-9 **Development of PSP Technique for Ballistic Range Experiments**
Daiju Numata, Keisuke Asai, Kiyonobu Ohtani (Tohoku University, Japan)

CRF-10 **Numerical Investigation of Wave Reflections at the Centerline of Stunted Busemann Intakes**
Hideaki Ogawa (RMIT University, Australia), Sannu Mlder (Ryerson University, Canada), Evgeny V. Timofeev (McGill University, Canada), Hans Hornung (California Institute of Technology, USA), Georgy Shoev, Yevgeniy Bondar (Russian Academy of Sciences, Russia), Kiyonobu Ohtani, Shigeru Obayashi (Tohoku University, Japan)

CRF-11 **Elementary Experiments of Air-Leakage Detection for Space-Debris Impact using Photoluminescent Substance**
Norihiko Matsumoto, Yoshihiro Oki, Kiyonobu Ohtani (Tohoku University, Japan), Sunao Hasegawa (Japan Aerospace Exploration Agency, Japan), Miki Hasegawa (Aoyama Gakuin University, Japan), Kanjuro Makihara (Tohoku University, Japan)

CRF-12 **Electron Density Measurements Behind a Hypersonic Shock Wave in Argon**
Gouji Yamada, Shunpei Maruyama, Hiromitsu Kawazoe (Tottori University), Shigeru Obayashi (Tohoku University, Japan)

CRF-13 **Aerodynamic Force Measurements in Supersonic Flow Conditions using a Sensitivity-Adjustable Three Component Force Balance**
Aya Miyazaki, Takahiro Mizuguchi, Gouji Yamada, Hiromitsu Kawazoe (Tottori University), Shigeru Obayashi (Tohoku University, Japan)

CRF-14 **Advanced LES of Aircraft Wake Vortices**
Shigeru Obayashi, Takashi Misaka (Tohoku University, Japan), Anton Stephan, Frank Holzäpfel, Thomas Gerz (Deutsches Zentrum für Luft- und Raumfahrt, Germany)

CRF-15 **Stratum-Type Association Analysis for Conceptual Design of Hybrid Rocket in View of Fuels**
Kazuhisa Chiba (Hokkaido University of Science, Japan), Shin'ya Watanabe (Muroran Institute of Technology, Japan), Masahiro Kanazaki (Tokyo Metropolitan University, Japan), Shigeru Obayashi (Tohoku University, Japan)

CRF-16 **Global Design Optimization of Winglet/ Wingtip Shape for Furture Aircraft**
Yosuke Tuchiya, Taichi Sugiyama, Masahiro Kanazaki (Tokyo Metropolitan University, Japan), Mitsuhiro Murayama, Mitsuru Kurita, Masataka Kozai (Japan Aerospace Exploration Agency, Japan)

CRF-17 **A Comparative Visualization Technique for Fluid Simulation Results**
Anna Kuwana, Kaori Hattanda, Takayuki Itoh (Ochanomizu University, Japan), Shigeru Obayashi, Yuriko Takeshima (Tohoku University, Japan)

CRF-18 **Research of Friction and Drilling on Bio-composite Model (Second report)**
Makoto Ohta, Kei Ozawa (Tohoku University, Japan), Vincent Fridrici (École Centrale de Lyon, France), Kaihong Yu (Tohoku University, Japan), Philippe Kapsa (École Centrale de Lyon, France)

CRF-19 **Development of a Program for Blood Flow and Cell Behaviors Based on LBM Method (Second report)**
Makoto Ohta, Sho Matsumoto, Xiaobo Han (Tohoku University, Japan), Bastien Chopard (Geneva University, Switzerland), Mingzi, Zhang, Yujie Li, Yuuki Yoshida, Hitomi Anzai (Tohoku University, Japan)

CRF-20 **Numerical Analysis of Dual-Phase Lag Conduction in a Long Cylindrical Medium using Lattice Boltzmann Method**
Rahul Ku. Chourasia, Subhash C. Mishra (Indian Institute of Technology Guwahati, Guwahati, India), Junnosuke Okajima, Shigenao Maruyama (Tohoku University, Japan)

CRF-21 **Numerical Study on Vehicles Aerodynamic Performances During Straight and Curve Crossings**
Chenguang Lai, Chao Man, Kaiping Wen (Chongqing University of Technology, China)

CRF-22 **Reduction of Radiative Heat Transfer Between Two Metallic Plates due to Interferences**
Yoichiro Tsurimaki (Tohoku University, Japan / INSA de Lyon, France), Pierre-Olivier Chapuis, Rodolphe Vaillon (INSA de Lyon, France), Junnosuke Okajima, Atsuki Komiya, Shigenao Maruyama (Tohoku University, Japan)

CRF-23 **Theoretical and Experimental Studies of Local Heating of Biological Tissue for Laser Therapy**
Tessai Sugiura, Takahiro Okabe, Junnosuke Okajima, Atsuki Komiya (Tohoku University, Japan), Victoria Timchenko (University of New South Wales, Australia), Tetsuya Kodama, Shigenao Maruyama (Tohoku University, Japan)

CRF-24 **Researches on a Sensing-based Dynamic Forced Ventilation Control of Leaking Hydrogen**
Kazuo Matsuura (Ehime University, Japan), Masami Nakano, Jun Ishimoto (Tohoku University, Japan)

CRF-25 **Numerical Prediction of Compressible Vapor Flow with LDI Erosion**
Jun Ishimoto (Tohoku University, Japan), Kazuo Matsuura (Ehime University, Japan), Kozo Saito (University of Kentucky, USA)

CRF-26 **Investigation of Mixing of Plasma Species in the Hybrid-Stabilized Argon-Water Electric Arc**
Jirí Jenista (Institute of Plasma Physics ASCR, Czech Republic), Hidemasa Takana, Satoshi Uehara, Hideya Nishiyama (Tohoku University, Japan), Milan Hrabovsky (Institute of Plasma Physics ASCR, Czech Republic)

CRF-27 **Titanium Oxide Film Deposition by SPPS using Vortex Ar/N2 Plasma Jet**
Yasutaka Ando, Yoshimasa Noda (Ashikaga Institute of Technology, Japan)
Satoshi Uehara, Hideya Nishiyama (Tohoku University, Japan)

CRF-28 **Instability Analysis of Natural Convection in Closed Cavity Configuration**
Juan F. Torres (Tohoku University, Japan / Ecole Centrale de Lyon, France), Atsuki Komiya (Tohoku University, Japan), Daniel Henry (Ecole Centrale de Lyon, France), Junnosuke Okajima, Shigenao Maruyama (Tohoku University, Japan)

CRF-29 **On Numerical Modeling of Some Features of Heterogeneous Combustion Waves in Porous Media under Free Convection**
Nickolay A. Lutsenko (IACP FEB RAS / Far Eastern Federal University, Russia), Kaoru Maruta (Far Eastern Federal University, Russia / Tohoku University, Japan)

10:30-10:40 Break

Chair: Yuka Iga (Tohoku University, Japan)
10:40-12:10 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-30 **Nucleate Pool Boiling Heat Transfer and Critical Heat Flux of Liquid Nitrogen on the Surface Composed of a High and a Low Thermal Conductivity Materials**
Kazushi Miyata, Katsuhide Ohira (Tohoku University, Japan), Hideo Mori (Kyushu University, Japan)

CRF-31 **The Effects of Intermediate Product on the Intrinsic Instability of Premixed Flames with High Lewis Number Reactant**
Satoshi Kadowaki, Thwe Thwe Aung, Wataru Yamazaki (Nagaoka University of Technology), Hideaki Kobayashi (Tohoku University, Japan)

CRF-32 **Numerical Studies of Ignition in ABC-Flow Modeling 3D Turbulence**
Evgeniy Sereshchenko, Roman Fursenko, Sergey Minaev (SB RAS, Russia / FEFU, Russia), Shenqyang Shy (National Central University, Taiwan), Kaoru Maruta, Hisashi Nakamura (Tohoku University, Japan)

CRF-33 **Development of Radiometer-sonde for Flux Measurement of Solar and Thermal Radiation in Earth's Atmosphere**
Noboru Yamada, Takanori Yoshida (Nagaoka University of Technology, Japan), Junnosuke Okajima, Shigenao Maruyama (Tohoku University, Japan)

CRF-34 **Low-Lewis-Number Premixed Flames Stabilization in Stretched Flow of Two Slot Burners**
Roman Fursenko (FEFU, Russia / ITAM SB RAS, Russia), Sergey Minaev (FEFU, Russia), Kaoru Maruta (FEFU, Russia / Tohoku University, Japan)

CRF-35 **Lattice Boltzmann Simulation on MHD Energy Conversion for Efficient Wind Utilization**
Yuhiro Iwamoto (Doshisha University, Japan), Hidemasa Takana (Tohoku University, Japan), Kenta Taki, Hiroshi Yamaguchi (Doshisha University, Japan)

CRF-36 **Master Equation Modeling of a Nanosecond Pulse Discharge in Nitrogen in a Pin-to-Pin Geometry**
Zak Eckert (The Ohio State University, USA), Hidemasa Takana, Hideya Nishiyama (Tohoku University, Japan), Igor Adamovich (The Ohio State University, USA)

CRF-37 **Oxygen Ion Transport Phenomena in a Ceramic Membrane**
Hiroki Nagashima, Takashi Tokumasu (Tohoku University, Japan), Jeongmin Ahn (Syracuse University, USA)

CRF-38 **Characterization of Plastic Deformation by using Electromagnetic NDT Methods**
Zhenmao Chen, Hong-En Chen, Shejuan Xie (Xi'an Jiaotong University, China), Tetsuya Uchimoto, Toshiyuki Takagi (Tohoku University, Japan)

CRF-39 **Magnetic Simulation for Localized Structure of Stressed Stainless Steel**
Kenichi Terashima, Katsuhiko Yamaguchi, Kenji Suzuki (Fukushima University, Japan), Tetsuya Uchimoto, Hiroyuki Kosukegawa, Toshiyuki Takagi (Tohoku University, Japan)

CRF-40 **Microscopic Observation of Jumping Organ of Collembola**
Seiichi Sudo (Akita Prefectural University, Japan), Toshiya Kainuma (Akita Prefectural University, Japan), Atsushi Shirai (Tohoku University, Japan), Kosuke Inoue (Tohoku University, Japan), Toshiyuki Hayase (Tohoku University, Japan)

CRF-41 **Attenuation and Reduction Effect of Underwater Explosion by Porous Materials(2nd report)**
Kazutaka Kitagawa (Aichi Institute of Technology, Japan), Kiyonobu Ohtani (Tohoku University, Japan), Atsushi Abe (ITOCHU Techno-Solutions Corporation (CTC), Japan)

CRF-42 **Biological Actuation with the Magnetic Stimulation**
Hitoshi Mori (IFG Corporation, Japan), Kenji Yashima, (IFG Corporation, Japan / Tohoku University, Japan), Toshiyuki Takagi, Shinichi Izumi, Ryoichi Nagatomi , Hiroyuki Kosukegawa, Genji Abe (Tohoku University, Japan), Toshihiko Abe (IFG Corporation, Japan)

CRF-43 **Localization of Protein Tyrosine Phosphatase in Endothelial Cells under Shear Flow**
Daisuke Yoshino (Tohoku University, Japan), Naoya Sakamoto (Kawasaki University of Medical Welfare, Japan), Masaaki Sato (Tohoku University, Japan)

CRF-44 **Sterilization Mechanism of Plasma Discharge against Biofilm-producing Pseudomonas aeruginosa on Contact Lenses**
Yoshihisa Nakano (Tohoku University, Japan), Shigeru Fujimura (Tohoku University, Japan / Tohoku Pharmaceutical University, Japan) , Takehiko Sato, Daisuke Yoshino, Akira Watanabe (Tohoku University, Japan)

CRF-45 **Correlation Between Physicochemical Properties of Protein Signal Sequence Variation and Subcellular Transportation**
Kota Hamada, Naoyuki Takachio, Hiromu Sugita, Noritaka Kato (Meiji University, Japan), Makoto Ohta (Tohoku University, Japan), Kenji Etchuya, Yuri Mukai (Meiji University, Japan)

CRF-46 **Study of 3D Recognition by Glycosyltransferase in Protein Sugar Modification**
Kenji Etchuya (Meiji University, Japan), Makoto Ohta (Tohoku University, Japan), Yuri Mukai (Meiji University, Japan)

CRF-47 **Cardiac Evaluation of Fetal Mice by ECG and Ultrasound**
Rika Sugibayashi (National Center for Child Health and Development, Japan), Takuya Ito, Kenichi Funamoto, Toshiyuki Hayase, Yoshitaka Kimura (Tohoku University, Japan)

CRF-48 **Generation and Transport of Chemical Species in Low-Temperature Atmospheric Plasma for Sanitization Device**
Tetsuji Shimizu (terraplasma GmbH, Germany), Masahi Hara (Tohoku University, Japan), Gregor E. Morfill (terraplasma GmbH, Germany), Daisuke Yoshino, Takehiko Sato (Tohoku University, Japan)

CRF-49 **Observation of Hypoxia Cellular Response by using Microfluidic Devices**
Shuichiro Fukushima (Osaka University, Japan), Kenichi Funamoto (Tohoku University, Japan)

CRF-50 **Elucidation of Mechanisms of the Frictional Characteristics of Erythrocytes under Inclined Centrifugal Force**
Kenichi Funamoto (Tohoku University, Japan), Luca Brandt (KTH Mechanics, Sweden), Akira Yatsuyanagi, Kosuke Inoue, Toshiyuki Hayase (Tohoku University, Japan)

CRF-51 **Evaluation of Permeability of Endothelial Cell Monolayer under Controlled Oxygen Tension**
Kenichi Funamoto (Tohoku University, Japan), Ioannis K. Zervantonakis (Harvard Medical School, USA), Kento Matsubara, Kiyoe Funamoto, Takuya Ito, Yoshitaka Kimura (Tohoku University, Japan), Roger D. Kamm (Massachusetts Institute of Technology, USA)

CRF-52 **Application of MR-Measurement-Integrated Hemodynamic Simulation to Cerebrovascular Diseases**
Shin-ichiro Sugiyama (Kohnan Hospital), Kenichi Funamoto, Daichi Suzuki, Toshiyuki Hayase, Teiji Tominaga (Tohoku University, Japan)

CRF-53 **Characteristics of a Plasma-induced Flow using a Mesh Electrode for Viral Inactivation**
Yuji Kudo, Michiko Okamoto, Takehiko Sato, Daisuke Yoshino (Tohoku University, Japan), Akira Suzuki (Sendai Medical Center, Japan), Hitoshi Oshitani (Tohoku University, Japan)

CRF-54 **Visualization of the Formation of Shock Waves at the Collapse of a Laser-induced Bubble**
M. Tinguely (Imperial College London, United Kingdom), T. Sato, K. Ohtani (Tohoku University, Japan), M. Farhat (EPFL, Switzerland)

CRF-55 **Hydrophilization of Metal Surface using Thermal-Nonthermal Coupled Plasma Flow System**
Juyong Jang (University of Minnesota, USA), Hidemasa Takana (Tohoku University, Japan), Oleg P. Solonenko (Siberian Branch of Russian Academy of Science, Russia), Hideya Nishiyama (Tohoku University, Japan)

CRF-56 **Molecular Dynamics Study of Static and Dynamic Density Fluctuation of Diatomic Fluids around the Critical Points**
Shohei Ikawa (Shinshu University, Japan), Takashi Tokumasu (Tohoku University, Japan), Nobuyuki Tsuboi (Kyushu Institute of Technology, Japan), Shin-ichi Tsuda (Kyushu University, Japan)

CRF-57 **Development of Micro-Motor using Electrorotation of Smart Polymer**
Miklos Zriny (Semmelweis University, Hungary), Masami Nakano (Tohoku University, Japan)

CRF-58 **Particle Structural Formations of Colloidal MR Fluid and Their Influences on Magnetic Rheological Response**
Hiroya Abe (Osaka University, Japan), Masami Nakano (Tohoku University, Japan)

12:10-13:10 **Lunch and Poster Session** (CRF-1 to CRF-58)

Chair: Atsushi Shirai (Tohoku University, Japan)
13:10-14:40 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-59 **Photoluminescence of Ge Nanodisk Array Structure Fabricated by Bio-Template and Neutral Beam Etching**
Daisuke Ohori, Yuki Murayama, Kiyofumi Kondo (University of Miyazaki, Japan), Fujii Takuya, Takeru Okada, Seiji Samukawa (Tohoku University, Japan), Atsuhiko Fukuyama, Tetsuo Ikari (University of Miyazaki, Japan)

CRF-60 **Gate-Voltage Tunable Coupling Capacitance of Si Double-Quantum-Dots with Multiple Gates**
Takafumi Uchida, Masashi Arita (Hokkaido University, Japan), Akira Fujiwara (NTT Basic Research Laboratories, Japan), Yasuo Takahashi (Hokkaido University, Japan), Seiji Samukawa (Tohoku University, Japan),

CRF-61 **Intelligent Information Processing Circuits using Nanodisk Array Structure**
Takashi Morie, Takashi Tohara, Yoshiaki Kuramitsu (Kyushu Institute of Technology, Japan), Kazuhiko Endo (National Institute of Advanced Industrial Science and Technology, Japan), Takeo Ohno, Seiji Samukawa (Tohoku University, Japan)

CRF-62 **Numerical Study on Charge Transfer by Collision of Particle from Plasma against Surface**
Satoshi Hamaguchi (Osaka University, Japan), Tomohiro Kubota, Seiji Samukawa (Tohoku University, Japan)

CRF-63 **Propagation Processes of Primary and Secondary Streamers by Pulsed Discharge in Water**
Hidemasa Fujita (Tohoku University, Japan), Seiji Kanazawa (Oita University, Japan), Kiyonobu Ohtani, Atsuki Komiya, Toshiro Kaneko, Takehiko Sato (Tohoku University, Japan)

CRF-64 **Computational Study of Bubble Behavior for Clarification of Particle Removal Mechanism in Megasonic Cleaning**
Naoya Ochiai, Jun Ishimoto (Tohoku University, Japan), Jin-Goo Park (Hanyang University, Korea)

CRF-65 **Development of Thermomechanical Resist Removal-Cleaning Technology using Cryogenic Micro-Solid Nitrogen Spray**
Jun Ishimoto (Tohoku University, Japan), Hideo Horibe (Osaka City University, Japan)

CRF-66 **Investigation of Shock Waves Propagation on Microscales**
Dmitry Khotyanovsky, Georgy Shoev, Yevgeniy Bondar (Khristianovich Institute of Theoretical and Applied Mechanics, Russia), Kaoru Maruta (Tohoku University, Japan)

CRF-67 **Thermal Resistance between Nano-structured Surfaces and Liquids**
Taku Ohara (Tohoku University, Japan), Masahiko Shibahara (Osaka University, Japan), Gota Kikugawa, Chilukoti Hari Krishna (Tohoku University, Japan)

CRF-68 **Construction of Lattice Constant in Aluminum Nitride Prepared by ECR Sputtering**
Satoru Kaneko (Kanagawa Industrial Technology Center, Japan), Hironori Torii (JSW-AFTY, Japan), Manabu Yasui, Takeshi Ito (Kanagawa Industrial Technology Center, Japan), Shigeo Yasuhara (Japan Advanced Chemicals, Japan), Rieko Sudo (Sagamihara Surface Technology Laboratry, Japan), Takashi Tokumasu (Tohoku University, Japan)

CRF-69 **Fabrication of Al/Ti Composite Material by Compression Shearing Method at Room Temperature**
Shota Sakagami, Masaomi Horita, Noboru Nakayama (Shinshu University, Japan), Hiroyuki Miki, Toshiyuki Takagi, Hiroyuki Kosukegawa (Tohoku University, Japan), Hiroyuku Takeishi (Chiba Institute of Technology, Japan)

CRF-70 **Molecular Dynamics Study of the Droplet Shearing by Solid Walls**
Akinori Fukushima (Tohoku University, Japan), Nicolas Fillot, Marie-Hélène Meurisse (Université de Lyon, France), Takashi Tokumasu (Tohoku University, Japan), Philippe Vergne (Université de Lyon, France)

CRF-71 **Research on the Physical and the Tribological Properties of a Soft Metal Layer Originating in Me-DLC on Sliding Surface**
Minoru Goto (Ube National College of Technology, Japan), Toshiyuki Takagi (Tohoku University, Japan), Kosuke Ito (Nihon University, Japan), Takanori Takeno, Hiroyuki Miki, Hiroyuki Kosukegawa (Tohoku University, Japan)

CRF-72 **Study on the High-Performance and High-Mobility MOS Transistor by the Neutral Beam Process**
Kazuhiko Endo, Wataru Mizubayashi, Meishoku Masahara (National Institute of Advanced Industrial Science and Technology, Japan), Seiji Samukawa (Tohoku University, Japan)

CRF-73 **Adsorption Control of Ferritin Molecules with Nano Particles**
Ichiro Yamashita (Nara Institute of Science and Technology, Japan), Rikako Tsukamoto, Seiji Samukawa (Tohoku University, Japan)

CRF-74 **Photoluminescence Properties of InAs Quantum Dots on Nitrogen δ-doped GaAs**
Toshiyuki Kaizu, Takashi Kita (Kobe University, Japan)

CRF-75 **Bottom-up Construction of Coarse-grained Interaction Models from Molecular Dynamics Simulations**
Ikuya Kinefuchi, Yuta Yoshimoto, Toshiki Mima (The University of Tokyo, Japan), Akinori Fukushima, Takashi Tokumasu (Tohoku University, Japan), Shu Takagi (The University of Tokyo, Japan)

CRF-76 **Development and Micro-Channel Flow Evaluation of Electro-Rheological Nano-Suspensions**
Katsufumi Tanaka, Seiya Robson, Keita Kitaura, Haruki Kobayashi (Kyoto Institute of Technology, Japan), Masami Nakano, Atsushi Totsuka (Tohoku University, Japan)

CRF-77 **Structural and Transformational Properties of $Ni_{46.4}Mn_{38.8}In_{12.8}Co_2$ Thin Films**
Anna Kosogor (National University of Science and Technology, Russia / Institute of Magnetism, Ukraine), Maria Lyange, Michail Gorshenkov (National University of Science and Technology, Russia), Vladimir Khovaylo (National University of Science and Technology, Russia / ITMO University, Russia), Makoto Ohtsuka, Hiroyuki Miki, Toshiyuki Takagi (Tohoku University, Japan)

CRF-78 **Measurement on Wake Flow Induced by Soft Fins' Vibration**
Akira Rinoshika, Shunya Suzuki (Yamagata University, Japan), Masami Nakano (Tohoku University, Japan)

CRF-79 **Manipulation of 3-D Boundary-Layer Transition on a Swept NLF Wing**
Shohei Takagi (Tokyo Metroplitan University, Japan), Yusuke Fushikida, Tsutomu Saito (Muroran Institute of Technology and Aerospace Plane Research Center, Jpan), Shigeru Obayashi, Yasufumi Konishi (Tohoku University, Japan)

CRF-80 **Quantitative Visualization of Unsteady High-Speed Fluid Phenomena in Nature Environment**
Toshiharu Mizukaki (Tokai University, Japan), Shigeru Obayashi (Tohoku University, Japan)

CRF-81 **The Dynamic Behavior of Magnetic Fluid Adsorbed on the Cylindrical Permanent Magnet in Water Container Subjected to Alternating Magnetic Field**
Masato Nakanishi, Seiichi Sudo (Akita Prefectural University, Japan), Hideya Nishiyama (Tohoku University, Japan)

CRF-82 **Rheology of MR Shear Thickening Fluids under Instantaneous Flow**
Gangrou Peng, Weihua Li, Tongfei Tian (University of Wollongong, Australia), Masami Nakano (Tohoku University, Japan)

CRF-83 **Researches on the Suppression Control of Hole Tone Phenomena**
Kazuo Matsuura (Ehime University, Japan), Masami Nakano (Tohoku University, Japan)

CRF-84 **Numerical and Experimental Research on Active Control of Self-sustained Flow Oscillations with Sound Interaction**
Mikael A. Langthjem (Yamagata University, Japan), Masami Nakano (Tohoku University, Japan)

CRF-85 **Effects of External Disturbances on Spatial Development of Turbulence and toward the Control of Thermo-Fluid Dynamics (Cases of Boundary Layer, Wake, and Jet)**
Yasuhiko Sakai, Kouji Nagata, Yasumasa Ito (Nagoya University, Japan), Toshiyuki Hayase (Tohoku University, Japan), Shuang Xia, Zhou Yi, Tomoaki Watanabe, Akihiro Sasoh, Nannan Wu, Kousuke Takeuchi (Nagoya University, Japan)

CRF-86 **Analysis of Complex Spatiotemporal Structures of Vortices in Turbulence: Extraction of Strong Vortical Clusters in High-Reynolds-Number Turbulence**
Takashi Ishihara (JST, Japan / Nagoya University, Japan), Yuji Hattori (Tohoku University)

CRF-87 **Vortex Dynamics of the High Energy (Negative Temperature) State in Quasi-Geostrophic Turbulence**
Masaya Ishihara (University of Electro-Communications, Japan), Naoya Takahashi (Tokyo Denki University, Japan), Takeshi Miyazaki (University of Electro-Communications, Japan), Nozomu Hatakeyama (Tohoku University, Japan), Yuji Hattori (Tohoku University, Japan)

14:40-14:50 Break

Chair: Mingyu Sun (Tohoku University, Japan)

14:50-16:20 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-88 **Stability Analysis of Vortices with Axial Flow based on Energetics and its Application**
Yasuhide Fukumoto (Kyushu University, Japan), Makoto Hirota, Yuji Hattori (Tohoku University, Japan)

CRF-89 **The Continuous Spectrum in the Moore–Saffman–Tsai–Widnall Instability**
Yuji Hattori, Makoto Hirota (Tohoku University, Japan), Stefan G. Llewellyn Smith (UCSD, USA)

CRF-90 **Serial Recalculation of Velocities of Quasiparticles in Kinetic Force Method**
Vladimir Saveliev (Institute of Ionosphere, National Center of Space Researches and Technologies, Kazakhstan), Svetlana Filko (Zhetysu State University, Kazakhstan), Shigeru Yonemura (Tohoku University, Japan)

CRF-91 **Generation Mechanism of Rising Film Flow along the Rotating Conical Outer Surface and the Subsequent Atomization Characteristics**
Keisuke Matsuda, Takahiro Adachi (Akita University, Japan), Junnosuke Okajima (Tohoku University, Japan), Takeshi Akinaga (Aston University, United Kingdom)

CRF-92 **Hopf Bifurcation of 2D Driven Cavity Flows**
Reima Iwatsu, Kazuyuki Itoi (Tokyo Denki University, Japan)

CRF-93 **Development of New Visualization Method for Plasma-Generated Nano-Micro Bubbles**
Takehiko Sato, Yuki Yamaguchi, Kiyonobu Ohtani (Tohoku University, Japan), Takashi Miyahara (Shizuoka University, Japan), Tatsuyuki Nakatani (Okayama University of Science, Japan)

CRF-94 **Development of CFD Code for Tsunami using Shallow Water Equations**
Fumiya Togashi (Applied Simulations Inc., USA), Rainald Lohner (George Mason University, USA), Masuhiro Beppu (National Defense Academy of Japan, Japan), Hiroshi Tatesawa (Bousai Consultant Co., Ltd., Japan), Shigeru Obayashi (Tohoku University, Japan)

CRF-R1 **Numerical Study of Flotsam Mixed Tsunami and Tsunami Scale Modeling**
Jun Ishimoto (Tohoku University, Japan), Kozo Saito (University of Kentucky, USA),

CRF-R2 **Investigation on Advanced Medical Ultrasound Imaging Technology**
Masayuki Tanabe (Kumamoto University, Japan), Hiroshi Hashimoto (GE Healthcare Japan, Japan), Kenichi Funamoto, Yoshiki Chiba, Toshiyuki Hayase (Tohoku University, Japan)

15:20-16:20 **Poster Session** (CRF-59 to CRF-94, CRF-R1, CRF-R2)