

PS1: IFS Collaborative Research Forum (AFI/TFI-2012)

SENDAI (WEST)

September 20, 2012

Chair: Kenichi Funamoto (Tohoku University, Japan)

9:00-10:30

Short Oral Presentation

(3 min for Short Oral Presentation)

- CRF-1 **Aerodynamic Performance of an Airfoil with VGJs for Lift Augmentation**
Tetsuya Miyakoshi, Hiroaki Hasegawa, Syuko Ito (Akita University, Japan) and Shigeru Obayashi (Tohoku University, Japan)
- CRF-2 **High Aerodynamic Drag and Flow Behavior of a Badminton Shuttlecock with Spin at High Reynolds Numbers**
Kenichi Nakagawa, Hiroaki Hasegawa (Akita University, Japan), Masahide Murakami (Tsukuba University, Japan) and Shigeru Obayashi (Tohoku University, Japan)
- CRF-3 **Stepped Pressure Rise of Tail Boom with Staged Aft-Body**
Kakuei Suzuki, Takahiro Imaizumi, Atsushi Toyoda and Akihiro Sasoh (Nagoya University, Japan)
- CRF-4 **Study for Development of Flapping Wing Vehicle based on Multidisciplinary Analysis**
Shun Takahashi, Mizuki Yamate, Takeshi Sumita, Yoshihiro Tajika and Norio Arai (Tokyo University of Agriculture and Technology, Japan)
- CRF-5 **Design and Data Mining for Hull Form**
Shinkyu Jeong (Tohoku University, Japan) and Hyunyu Kim (George Mason University, USA)
- CRF-6 **Implementation of Adaptive Wavelet Method for the Efficient Design of Helicopter Rotors**
Sanghyun Chae (Pusan National University, Korea), Shinkyu Jeong (Tohoku University, Japan) and Kwanjung Yee (Pusan National University, Korea)
- CRF-7 **Flow Instabilities of Boiling Nitrogen in a Horizontal Pipe**
Ren Sakata, Katsuhide Ohira, Kazushi Miyata, Koichi Takahashi (Tohoku University, Japan), Hiroaki Kobayashi, Hideyuki Taguchi, Motoyuki Hongoh and Takayuki Kojima (Japan Aerospace Exploration Agency, Japan)
- CRF-8 **Shock Induced Temperature Measurement Using Laser-Induced Thermal Acoustics**
Toshiharu Mizukaki (Tokai University, Japan) and Shigeru Obayashi (Tohoku University, Japan)
- CRF-9 **Numerical Studies of Rarefied Chemically Reacting Flows about Space Vehicles**
Alexander Shevyrin, Mikhail Ivanov, Yevgeniy Bondar (ITAM SB RAS, Russia) and Shigeru Yonemura (Tohoku University, Japan)

- CRF-10 **Mechanism of Thermal Effects in Micro-Bubble Cavitation**
Yuka Iga (Tohoku University, Japan) and Kazuki Niiyama (Kanazawa Institute of Technology, Japan)
- CRF-11 **Development of a Compact Three-Component Force Balance and Its Application**
Hiroshi Suemura, Kouhei Takishita, Gouji Yamada, Takashi Matsuno (Tottori University, Japan), Shigeru Obayashi (Tohoku University, Japan) and Hiromitsu Kawazoe (Tottori University, Japan)
- CRF-12 **Shock Tube Study for Electron Behavior in the Shock Layer**
Shota Ago, Gouji Yamada, Yuto Kubo, Takashi Matsuno, Hiromitsu Kawazoe (Tottori University, Japan) and Shigeru Obayashi (Tohoku University, Japan)
- CRF-13 **Formation of Cellular Fronts in High-Temperature Premixed Flames**
Satoshi Kadowaki (Nagaoka University of Technology, Japan) and Hideaki Kobayashi (Tohoku University, Japan)
- CRF-14 **Numerical Investigations on the Influence of Rear Spoiler of Road Vehicle on Wake Structure**
Chenguang Lai, Yuting Zhou, Limin Fu (Chongqing University of Technology, China) and Shigeru Obayashi (Tohoku University, Japan)
- CRF-15 **Numerical Prediction of Cavitation Erosion Using a Coupled Analysis of Cavitating Flow Field and Bubbles**
Naoya Ochiai, Yuka Iga (Tohoku University, Japan), Motohiko Nohmi (EBARA Corporation, Japan), Toshiaki Ikohagi (The Open University, Japan), Jun Ishimoto (Tohoku University, Japan) and Kozo Saito (IR4TD, University of Kentucky, USA)
- CRF-16 **Super Computational Study of High-Speed Droplet-Vapor Flow and LDI Erosion**
Jun Ishimoto (Tohoku University, Japan), Guanghao Wu (SoftFlow Co., Ltd., Japan) and Kazuo Matsuura (Ehime University, Japan)
- CRF-17 **Parallel Computations on the Base of GPU for Modeling of Gas Combustion Processes**
Roman Fursenko, Evgeniy Sereshchenko, Sergey Minaev (ITAM SB RAS / FEFU, Russia), Kaoru Maruta and Hisashi Nakamura (Tohoku University, Japan)
- CRF-18 **Investigations of Sporadic Regimes of Gas Combustion**
Sergey Minaev (ITAM SB RAS, Russia), Evgeniy Sereshchenko (Far Eastern Federal University, Russia), Dmitrii Mazurok, Roman Fursenko (ITAM SB RAS, Russia), Hisashi Nakamura, Koichi Takase, Xing Li, Takuya Tezuka and Kaoru Maruta (Tohoku University, Japan)
- CRF-19 **Visualization, "Real Time" Algorithms and Parallel Computations of Reacting Flows**
Boris Mazurok (IAE SB RAS, Russia), Dmitrii Mazurok (ITAM SB RAS, Russia), Boris Dolgovesov (IAE SB RAS, Russia), Roman Fursenko, Sergey Minaev (ITAM SB RAS / FEFU, Russia), Hisashi Nakamura and Kaoru Maruta (Tohoku University, Japan)

- CRF-20 **Development of the Heat Transfer Surface with Micro-Pits to Enhance the Critical Heat Flux in Nucleate Boiling**
Kazushi Miyata, Katsuhide Ohira (Tohoku University, Japan) and Hideo Mori (Kyushu University, Japan)
- CRF-21 **Measurement of Radiative Properties of Controlled-Films**
Hiroki Gonome (Tohoku University, Japan), Mehdi Baneshi (Shiraz University, Iran), Rodolphe Vaillon (Université de Lyon, CNRS, INSA-Lyon, France), Adil Al Mahdouri, Junnosuke Okajima, Atsuki Komiya and Shigenao Maruyama (Tohoku University, Japan)
- CRF-22 **Experimentally and Numerically Investigations for Light and Heat Transport inside Biological Tissues**
Atsushi Sakurai (Niigata University, Japan), Yoshiyuki Sato, Junnosuke Okajima, Atsuki Komiya and Shigenao Maruyama (Tohoku University, Japan)
- CRF-23 **Dynamic Behavior of Flame Front Instability in Two-Dimensional Radial Microchannels**
Satoshi Onodera, Yuta Shinoda, Shinya Fujita, Hiroshi Gotoda (Ritsumeikan University, Japan), Sergey Minaev (ITAM SB RAS, Russia) and Kaoru Maruta (Tohoku University, Japan)
- CRF-24 **Investigation of Subsonic-Supersonic Hybrid-Stabilized Argon-Water Electric Arc With Inhomogeneous Mixing of Plasma Species: Role of Turbulence and Radiative Transfer Method**
Jiří Jeništa (Institute of Plasma Physics, Czech Republic), Hidemasa Takana, Hideya Nishiyama (Tohoku University, Japan), Milan Hrabovský and Tetyana Kavka (Institute of Plasma Physics, Czech Republic)
- CRF-25 **Instability of Rayleigh-Bénard Convection: Comparison between Experimental and Numerical Approaches**
Juan F. Torres (Tohoku University, Japan / École Centrale de Lyon, France), Daniel Henry (École Centrale de Lyon, France), Atsuki Komiya, Junnosuke Okajima and Shigenao Maruyama (Tohoku University, Japan)
- CRF-26 **Evaluation and Analysis of Atmospheric Radiative Energy Transfer**
Noboru Yamada (Nagaoka University of Technology, Japan), Junnosuke Okajima (Tohoku University, Japan), Atsushi Sakurai (Niigata University, Japan), Atsuki Komiya and Shigenao Maruyama (Tohoku University, Japan)
- CRF-27 **Simulation Analysis on Grain Boundaries Thought Relation between Cr Depletion Distribution and Local Magnetic Properties**
Kenji Suzuki, Katsuhiko Yamaguchi (Fukushima University, Japan), Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)
- 10:30-10:40 Break

Chair: Kazushi Miyata (Tohoku University, Japan)

10:40-12:10

Short Oral Presentation

(3 min for Short Oral Presentation)

- CRF-28 **Development of Observation Method for Plasma-Generated Bubbles**
Takehiko Sato (Tohoku University, Japan), Takashi Miyahara (Shizuoka University, Japan) and Tatsuyuki Nakatani (Toyo Advanced Technologies Co., Ltd., Japan)
- CRF-29 **Studies on Non-Equilibrium Feature of Radio-Frequency Helium Plasma Flow at Atmospheric-Pressure**
Hidemasa Takana, Hideya Nishiyama (Tohoku University, Japan), Zhi-Bin Wang, Pei-Si Le, He-Ping Li and Cheng-Yu Bao (Tsinghua University, China)
- CRF-30 **Perspectives for the Next Generation Sensors for Super-High Temperature Environment and Their Industrial Applications**
Toshiyuki Takagi (Tohoku University, Japan), Kazuo Shoji (Intelligent Cosmos Research Institute, Japan), Tetsuya Uchimoto, Hiroyuki Miki (Tohoku University, Japan) and the executive board
- CRF-31 **Optimization of a Heavily Aluminized Energetic Material**
Fumiya Togashi (SAIC, USA), Shinkyu Jeong (Tohoku University, Japan) and Rainald Lohner (George Mason University, USA)
- CRF-32 **Comparison of Inversion Methods for Reconstructon of Defect from Pulsed Eddy Current Testing Signals**
Zhenmao Chen (Xi'an Jiaotong University, China), Shejuan Xie (Tohoku University, Japan), Xiaowei Wang, Yong Li (Xi'an Jiaotong University, China), Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)
- CRF-33 **Ultrasound Radiation Force Driven B-Flow Twinkling Sign for Microcalcification Detection**
Lei Liu (GE Healthcare Japan Corporation, Japan), Kenichi Funamoto, Kei Ozawa, Makoto Ohta, Toshiyuki Hayase (Tohoku University, Japan) and Masafumi Ogasawara (GE Healthcare Japan Corporation, Japan)
- CRF-34 **Computational Simulation to Create Low Oxygen Tension in a Microfluidic Device for Cell Culture**
Kenichi Funamoto (Tohoku University, Japan), Ioannis K. Zervantonakis (Massachusetts Institute of Technology, USA), Yuchun Liu (National University of Singapore, Singapore), Christopher J. Ochs (SMART BioSystems & Micromechanics, Singapore) and Roger D. Kamm (Massachusetts Institute of Technology, USA / SMART BioSystems & Micromechanics, Singapore)
- CRF-35 **Study on the Biological Actuation with the Magnetic Stimulation**
Hitoshi Mori (IFG Co.,Ltd., Japan), Toshiyuki Takagi, Shinichi Izumi, Hiroyasu Kanetaka, Eizaburo Suzuki (Tohoku University, Japan), Kazumi Mori, Risa Sasaki and Toshihiko Abe (IFG Co.,Ltd., Japan)
- CRF-36 **Inactivation of MDCK Cell Viability by Exposure to Plasma-Treated Medium**
Yuji Kudo, Michiko Okamoto, Takehiko Sato, Daisuke Yoshino, Akira Suzuki and Hitoshi Oshitani (Tohoku University, Japan)

- CRF-37 **Anti-Bacterial Effect of a Plasma Irradiation against Biofilm-Producing Pseudomonas Aeruginosa and Acinetobacter Baumannii**
Yoshihisa Nakano, Sigeru Fujimura and Takehiko Sato (Tohoku University, Japan)
- CRF-38 **Formation of Thermal Flow Field in Shallow Water Cell by Plasma Flow**
Naoya Kishimoto (Tohoku University, Japan), Tetsuji Shimizu, Gregor E Morfill (Max Planck Institute for Extraterrestrial Physics, Germany) and Takehiko Sato (Tohoku University, Japan)
- CRF-39 **Characterization of Design of Stent Strut Positioning Using LBM Method**
Makoto Ohta (Tohoku University, Japan), Bastien Chopard (Geneva University, Switzerland) and Hitomi Anzai (Tohoku University, Japan)
- CRF-40 **Channel Properties of Membrane Proteins on Lipid Bilayers**
Makoto Ohta (Tohoku University, Japan), Liviu Movileanu (Syracuse University, USA) and Noriko Tomita (Tohoku University, Japan)
- CRF-41 **Tribology of Medical Materials on PVA-H Biomodel**
Hiroyuki Kosukegawa (École Centrale de Lyon, France), Makoto Ohta (Tohoku University, Japan), Vincent Fridrici and Philippe Kapsa (École Centrale de Lyon, France)
- CRF-42 **Possibility of Emission Energy Control of Individual Quantum Dots Using Volume Expansion of Phase Change Material**
Nurrul Syafawati Binti Human, Motoki Takahashi, Nobuhiro Tsumori and Toshiharu Saiki (Keio University, Japan)
- CRF-43 **Management of Light by Si/SiO₂ Stack Photonic Band Gap Structure for Neutral Beam Technology based Tandem Solar Cell**
Jingnan Cai (The University of Tokyo, Japan), Seiji Samukawa (Tohoku University, Japan) and Kazumi Wada (The University of Tokyo, Japan)
- CRF-44 **Development and Micro-Channel Flow Evaluation of Electro-Rheological Nano-Suspensions**
Katsufumi Tanaka, Takanobu Hira, Ryuichi Fukui, Haruki Kobayashi, Ryuichi Akiyama (Kyoto Institute of Technology, Japan), Masami Nakano and Shouta Enami (Tohoku University, Japan)
- CRF-45 **A Study of the Next Generation CMOS by the Neutral Beam Process**
Kazuhiko Endo (AIST, Japan), Akira Wada and Seiji Samukawa (Tohoku University, Japan)
- CRF-46 **Intelligent Information Processing Circuits Using Nanodisk Array Structure**
Takashi Morie, Haichao Liang, Takashi Tohara (Kyushu Institute of Technology, Japan), Kazuhiko Endo (National Institute of Advanced Industrial Science and Technology, Japan), Makoto Igarashi and Seiji Samukawa (Tohoku University, Japan)
- CRF-47 **Thermomechanical Nano Device Resist Removal-Cleaning Technology by Using Cryogenic Spray Flow of Solid Nitrogen**
U Oh, Jun Ishimoto (Tohoku University, Japan) and Jin-Goo Park (Hanyang University, Korea)

- CRF-48 **Rheological Analysis of the Mechanism of Fetal Brain Hemorrhage**
Takuya Ito, Kenichi Funamoto, Kiyoe Funamoto, Toshiyuki Hayase and Yoshitaka Kimura (Tohoku University, Japan)
- CRF-49 **Magnetic Resonance Fluid Dynamics for Intracranial Aneurysms**
Shin-ichiro Sugiyama (Kohnan Hospital, Japan), Kenichi Funamoto, Toshiyuki Hayase and Teiji Tominaga (Tohoku University, Japan)
- CRF-50 **Oscillatory and Stagnant Flow in Intracranial Aneurysms : A Possible Association with Atherosclerosis**
Shin-ichiro Sugiyama, Hiroaki Shimizu (Kohnan Hospital, Japan), Toshio Nakayama, Makoto Ohta and Teiji Tominaga (Tohoku University, Japan)
- CRF-51 **Observation of Hypoxia Cellular Response by Using Microfluidic Devices**
Shuichiro Fukushima, Reiko Maehara (Osaka University, Japan) and Kenichi Funamoto (Tohoku University, Japan)
- CRF-52 **Propagation of Shock Wave within Complex Biomaterial Layer: Implications for the Mechanism Blast-Induced Traumatic Brain Injury**
Atsuhiko Nakagawa, Kiyonobu Ohtani (Tohoku University, Japan), Keisuke Goda (University of California, Los Angeles, USA), Tatsuhiko Arafune (Tokyo University, Japan), Toshikatsu Washio (National Institute of Advanced Industrial and Science Technology, Japan), Toshiyuki Hayase and Teiji Tominaga (Tohoku University, Japan)
- CRF-B1 **Integrated Research Collaboration for Frontier Science of Next Generation Reactive Fluid**
Jun Ishimoto, Kaoru Maruta and Takehiko Sato (Tohoku University, Japan)
- 12:10-13:10 **Lunch and Poster Session**
- Chair: Yuriko Takeshima (Tohoku University, Japan)
13:10-14:40 **Short Oral Presentation**
(3 min for Short Oral Presentation)
- CRF-53 **High-Frequency Characteristics of Si Single-Electron Transistor**
Hiroto Takenaka, Michito Shinohara, Takafumi Uchida, Masashi Arita (Hokkaido University, Japan), Seiji Samukawa (Tohoku University, Japan) and Yasuo Takahashi (Hokkaido University, Japan)
- CRF-54 **Development of High Performance Strained-Ge Channel Device Utilizing Neutral-Beam Oxidized Film**
Kentarou Sawano, Masato Watanabe, Arata Komatsu, Hiroshi Nohira (Tokyo City University, Japan), Akira Wada and Seiji Samukawa (Tohoku University, Japan)
- CRF-55 **Numerical Study of Shock Wave Entering and Propagation in Microchannel**
Georgy Shoey, Yevgeniy Bondar (ITAM SB RAS, Russia), Kaoru Maruta (Tohoku University, Japan) and Mikhail Ivanov (ITAM SB RAS, Russia)

- CRF-56 **Towards Development of Micromotors Based on Electrorotation of Smart Polymers**
Miklós Zrínyi (Semmelweis University, Hungary) and Masami Nakano (Tohoku University, Japan)
- CRF-57 **Thermal Resistance between Nano-Structured Surfaces and Liquids**
Masahiko Shibahara (Osaka University, Japan), Taku Ohara and Gota Kikugawa (Tohoku University, Japan)
- CRF-58 **Fabrication of Ti/Al Composite Material by Compression Shearing Method at Room Temperature**
Syou Takeda, Noboru Nakayama, Masaomi Horita, Shintaro Abe (Shinshu University, Japan), Hiroyuki Miki (Tohoku University, Japan) and Hiroyuku Takeishi (Chiba Institute of Technology, Japan)
- CRF-59 **Study of Contact Alignment for the Slider Specimen of Tribometer.**
Minoru Goto (Ube National College of Technology, Japan), Kosuke Ito (Nihon University, Japan), Hiroyuki Miki, Takanori Takeno and Toshiyuki Takagi (Tohoku University, Japan)
- CRF-60 **Effect of Cavitation Generation on Dissolved Oxygen Concentration in the Cavitation Tunnel Downstream**
Naoya Kishimoto, Takehiko Sato (Tohoku University, Japan), Marc Tinguely, Matthieu Dreyer and Mohamed Farhat (École Polytechnique Fédérale de Lausanne, Switzerland)
- CRF-61 **Development of Visualization Methods of Streamers in Water**
Hidemasa Fujita (Tohoku University, Japan), Seiji Kanazawa (Oita University, Japan), Kiyonobu Ohtani, Atsuki Komiya and Takehiko Sato (Tohoku University, Japan)
- CRF-62 **A Molecular Dynamics Study on the Density Fluctuation of Diatomic Fluid around the Critical Point**
Masato Tomi, Nobuyuki Tsuboi (Kyushu Institute of Technology, Japan), Shin-ichi Tsuda (Shinshu University, Japan), Hiroki Nagashima and Takashi Tokumasu (Tohoku University, Japan)
- CRF-63 **Construction of Interaction Models of Dissipative Particle Dynamics by Coarse-Graining Lennard-Jones Fluids**
Yuta Yoshimoto, Toshiki Mima (The University of Tokyo, Japan), Akinori Fukushima (Tohoku University, Japan), Ikuya Kinefuchi (The University of Tokyo, Japan), Takashi Tokumasu (Tohoku University, Japan), Shu Takagi and Yoichiro Matsumoto (The University of Tokyo, Japan)
- CRF-64 **Nano-Scale Modeling of Confined Liquid Films and Bridges**
Takashi Tokumasu (Tohoku University, Japan), Marie-Hélène Meurisse, Nicolas Fillot and Philippe Vergne (Université de Lyon, CNRS, INSA-Lyon, France)
- CRF-65 **Dynamics of Micro Magnetic Fluid Hole in an Alternating Field**
Michihiro Shinozaki, Seiichi Sudo (Akita Prefectural University, Japan), Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

- CRF-66 **Rheology of Magnetorheological Shear Thickening Fluid**
Weihua Li (University of Wollongong, Australia) and Masami Nakano (Tohoku University, Japan)
- CRF-67 **A Numerical Study of the Effect of Large Deformations of a Trailing Vortex on Its Breakdown**
Naoya Takahashi (Tokyo Denki University, Japan), Takeshi Miyazaki (University of Electro-Communications, Japan), Nozomu Hatakeyama and Yuji Hattori (Tohoku University, Japan)
- CRF-68 **Effects of External Disturbances on Spatially Developing Turbulence and Its Application to Control of Thermo-Fluid Dynamics**
Yasuhiko Sakai, Kouji Nagata (Nagoya University, Japan), Toshiyuki Hayase (Tohoku University, Japan), Osamu Terashima, Nannan Wu, Shuang Xia, Tomoaki Watanabe, Takuya Kitamura, Kosuke Hiruta, Hiroki Saito, Takeharu Sakai, Akihiro Sasoh and Yasumasa Ito (Nagoya University, Japan)
- CRF-69 **Generation Mechanism of Rising Film Flow along the Rotating Conical Outer Surface and the Subsequent Atomization Characteristics**
Keisuke Matsuda, Takahiro Adachi, Yusuke Ryu (Akita University, Japan), Junnosuke Okajima (Tohoku University, Japan) and Takeshi Akinaga (Aston University, UK)
- CRF-70 **Improvement of Reality of CG Motion Pictures by Hydrodynamic Effects: Effects of Turbulence**
Takashi Ishihara (Nagoya University, Japan) and Yuji Hattori (Tohoku University, Japan)
- CRF-71 **Quantitative Visualization of Flow Field around High-Speed Projectiles by Using Background-Oriented Schlieren**
Toshiharu Mizukaki (Tokai University, Japan), Kiyonobu Ohtani and Shigeru Obayashi (Tohoku University, Japan)
- CRF-72 **Researches on the Suppression Control of Hole-Tone Phenomena**
Kazuo Matsuura (Ehime University, Japan) and Masami Nakano (Tohoku University, Japan)
- CRF-73 **Contour Dynamics of Vortex Rings with Swirl and Magnetic Field**
Yuji Hattori (Tohoku University, Japan) and Stefan G. Llewellyn Smith (UCSD, USA)
- CRF-74 **Modal Stability Analysis of a Helical Vortex Tube with Axial Flow**
Yuji Hattori (Tohoku University, Japan) and Yasuhide Fukumoto (Kyushu University, Japan)
- CRF-75 **Magnetic Field Induced Entropy Change in Ni-Mn(Cu)-Ga Heusler Alloys**
Vladimir Khovaylo (National University of Science and Technology "MISiS", Russia), Konstantin Skokov (Tver State University, Russia), Ekaterina Avilova (National University of Science and Technology "MISiS", Russia), Vladimir Sokolovskiy, Vasiliy Buchelnikov, Sergey Taskaev (Chelyabinsk State University, Russia), Hiroyuki Miki and Toshiyuki Takagi (Tohoku University, Japan)

- CRF-76 **Two-Particle and One-Particle Kinetic Equations in Landau-Fokker-Planck like Form**
Vladimir Saveliev (National Center of Space Researches and Technologies, Kazakhstan) and Shigeru Yonemura (Tohoku University, Japan)
- CRF-77 **Development of Numerical Solver to Calculate Eddy Current Testing Signals for Anisotropic Laminated Epoxy-Carbon Fibre Composite**
Jun Cheng, Jinhao Qiu (Nanjing University of Aeronautics and Astronautics, China), Toshiyuki Takagi, Tetsuya Uchimoto (Tohoku University, Japan) and Ning Hu (Chiba University, Japan)
- CRF-78 **Development of a Field Effect Transistor with Channel Surface Covoered by Probe-Biomolecules with a Newly Developed Aptamer**
Ichiro Yamashita (NAIST, Japan) and Seiji Samukawa (Tohoku University, Japan)
- CRF-79 **Metal-Containing DLC: Toward a Smart Coating**
Hiroyuki Miki, Toshiyuki Takagi, Takanori Takeno, Koshi Adachi (Tohoku University, Japan), Julien Fontaine, Michel Belin, Sandrine Bec and Thierry Le Mogne (École Centrale de Lyon, France)
- 14:40-14:50 Break
- The 1st Young Researcher Overseas Visits Program Research Forum**
Chair: Hidemasa Takana (Tohoku University, Japan)
- 14:50-15:05 **Moving on to the Small World: Microfluidic Cell Culture**
Kenichi Funamoto (Tohoku University, Japan)
- 15:05-15:20 **Chemical Kinetics of Biofuels and Its Experimental Validation - Collaboration between Quantum Chemistry and Combustion Engineering -**
Hisashi Nakamura (Tohoku University, Japan)
- 15:20-15:35 **Nondestructive Evaluation of Material Degradation and Damage in Power Plants**
Tetsuya Uchimoto (Tohoku University, Japan)
- 15:35-16:20 **Poster Session**
- 16:20-16:30 Break
- Fluids Science Research Award Lecture**
Chair: Toshiyuki Hayase (Tohoku University, Japan)
- 16:30-17:10 **Developing Advanced Thermal Plasma Processes of Coatings Spraying and Hollow Powders Production**
Oleg Solonenko (ITAM SB RAS, Russia)
- 17:10-17:50 **Aeronautical CFD: Past, Present and Future**
Kazuhiro Nakahashi (Japan Aerospace Exploration Agency, Japan)