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PS5: IFS Collaborative Research Forum (AFI/TFI-2010)

HAGI

November 2, 2010

Chair: Jun Ishimoto (Tohoku University, Japan)

8:30-9:30

Short Oral Presentation

(3 min for Short Oral Presentation)

- CRF-1 **Investigation of Hypersonic Flows about Leading Edges of Small Bluntness**
Mikhail Ivanov (Khristianovich Institute of Theoretical and Applied Mechanics, Russia), Shigeru Yonemura (Tohoku University, Japan), Yevgeniy Bondar and Dmitry Khotyanovsky (Khristianovich Institute of Theoretical and Applied Mechanics, Russia)
- CRF-2 **Rotor Blade Shape Design Using MDO Platform – MEDOC**
Sanghyun Chae, Kwanjung Yee (Pusan National University, Korea), Shigeru Obayashi and Shinkyu Jeong (Tohoku University, Japan)
- CRF-3 **Computations of Flow Field around an Object Decelerating from Supersonic to Subsonic Velocity**
Kazuaki Hatanaka, Tsutomu Saito (Muroran Institute of Technology, Japan), Hiroshi Yamashita, Toshihiro Ogawa, Shigeru Obayashi and Kazuyoshi Takayama (Tohoku University, Japan)
- CRF-4 **Unsteady Aerodynamics of a Supersonic Silent Biplane at Low Speed Flight**
Hiromitsu Kawazoe (Tottori University, Japan), Shinji Abe (Churyo Engineering, Co., Ltd., Japan), Takashi Matsuno, Goji Yamada (Tottori University, Japan) and Shigeru Obayashi (Tohoku University, Japan)
- CRF-5 **Shuttlecock Aerodynamics and Dynamic Behavior Just after Impact**
Seigo Kitta, Hiroaki Hasegawa (Akita University, Japan), Shigeru Obayashi (Tohoku University, Japan) and Masahide Murakami (University of Tsukuba, Japan)
- CRF-6 **Two-phase Pressure Drop and Heat Transfer for Boiling Liquid Nitrogen Flow in a Horizontal Pipe**
Takayoshi Nagai, Ryo Shimizu, Katsuhide Ohira, Koichi Takahashi (Tohoku University, Japan), Hiroaki Kobayashi, Hideyuki Taguchi, Takayuki Kojima, and Motoyuki Hongo (Japan Aerospace Exploration Agency, Japan)
- CRF-7 **Low Boom Characteristic of Supersonic Biplane with Sears-Haack Fuselage**
Atsushi Toyoda, Shigeru Obayashi (Tohoku University, Japan), Atsushi Matsuda (Meijo University, Japan), Kakuei Suzuki, Katsuya Shimizu and Akihiro Sasoh (Nagoya University, Japan)
- CRF-8 **Parallel Computations on the Base of GPU for Modeling of Flame Balls Dynamics**
Roman Fursenko, Sergey Minaev (SB RAS, Russia), Kaoru Maruta and Hisashi Nakamura (Tohoku University, Japan)

- CRF-9 **The Effect of Micro-Cavitation on Interfacial Phenomena and Vortex Structure of Atomizing Flow in Gasoline Injector Nozzle**
Jun Ishimoto (Tohoku University, Japan) and Kozo Saito (University of Kentucky, USA)
- CRF-10 **Investigation of Supersonic Hybrid-Stabilized Argon-Water Arc for Biomass Gasification: A Comparative Numerical Study**
Jiri Jeništa (Institute of Plasma Physics AS CR, Czech Republic), Hidemasa Takana, Hideya Nishiyama (Tohoku University, Japan) and Milan Hrabovský (Institute of Plasma Physics AS CR, Czech Republic)
- CRF-11 **Fundamental Study of Methane-Air Plasma Flow at High Pressure**
Hidemasa Takana (Tohoku University, Japan), Yasunori Tanaka (Kanazawa University, Japan) and Hideya Nishiyama (Tohoku University, Japan)
- CRF-12 **Intrinsic Instability of High-Temperature Premixed Flames: Formation of Cellular Flame Fronts**
Satoshi Kadowaki, Masafumi Yahata (Nagaoka University of Technology, Japan) and Hideaki Kobayashi (Tohoku University, Japan)
- CRF-13 **Diatoms, Diffusion and Membranes**
Gary Rosengarten (University of New South Wales, Australia) and Atsuki Komiya (Tohoku University, Japan)
- CRF-14 **On Location of a Load in a Radiant Furnace for Uniform Thermal Conditions Using REM² and Micro-Genetic Algorithm**
Ramchandra P. Chopade, Subhash C. Mishra, P. Mahanta (Indian Institute of Technology Guwahati, India), Shigenao Maruyama and Atsuki Komiya (Tohoku University, Japan)
- CRF-15 **Inertial Effects in Nonlinear Models of Flame Front Evolution**
Sergey Minaev, Roman Fursenko (SB RAS, Russia) and Kaoru Maruta (Tohoku University, Japan)
- CRF-16 **Direct Numerical Simulation of Turbulence-Radiation Interaction in a Turbulent Channel Flow**
Atsushi Sakurai, Koji Matsubara (Niigata University, Japan) and Shigenao Maruyama (Tohoku University, Japan)
- CRF-17 **Nondestructive Methods for Evaluation of Surface or Subsurface Area**
Hak-Joon Kim, Sung-Jin Song (Sungkyunkwan University, Korea), Sung-Duk Kwon (Andong National University, Korea), Toshiyuki Takagi, Tetsuya Uchimoto and Hiroyuki Miki (Tohoku University, Japan)
- CRF-18 **Viscosity Reduction of Diesel Fuel for Improving Fuel Atomization and Engine Efficiency**
Rongjia Tao (Temple University, USA) and Masami Nakano (Tohoku University, Japan)
- CRF-19 **Energy Transfer Simulation and Analysis on Mega-scale Environment**
Noboru Yamada (Nagaoka University of Technology, Japan), Atsushi Sakurai (Niigata University, Japan), Atsuki Komiya and Shigenao Maruyama (Tohoku University, Japan)

- CRF-20 **Local Magnetization Process of Cr Depression Area for Sensitized Alloy600**
Katsuhiko Yamaguchi, Kenji Suzuki, O. Nittono (Fukushima University, Japan) , Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)
- 9:30-9:40 BREAK
- 9:40-10:40 **Short Oral Presentation**
(3 min for Short Oral Presentation)
- CRF-21 **New Rehabilitation Equipment Using a Magnetic Stimulation Triggered by Electromyographic Activities**
Toshihiko Abe (IFG., Ltd, Japan), Toshiyuki Takagi, Shin-ichi Izumi (Tohoku University, Japan), Toshiaki Ichihara and Kazumi Yashima (IFG.,Ltd, Japan)
- CRF-22 **Fluid Analysis of the Mechanism of Fetal Brain Hemorrhage**
Takuya Ito, Kenichi Funamoto, Kiyoe Funamoto, Kaori Tanabe, Ai Nakamura, Toshiyuki Hayase and Yoshitaka Kimura (Tohoku University, Japan)
- CRF-23 **Detection of Microcalcification in Soft Tissue**
Lei Liu, Masafumi Ogasawara (GE Healthcare, Japan), K. Ozawa, Kenichi Funamoto, Makoto Ohta and Toshiyuki Hayase (Tohoku University, Japan)
- CRF-24 **Bench Top Animal Model for Blast-Induced Traumatic Brain Injury Using Microexplosives: Difference of Pathology by the Presence of the Skull**
Atsuhiko Nakagawa (Tohoku University, Japan), Tatsuhiko Arafune (AIST, Japan), Miki Fujimura (Kohnan Hospital, Japan), Kiyonobu Ohtani, Hiroaki Yamamoto, Tadao Matsunaga (Tohoku University, Japan), Toshikatsu Washio (AIST, Japan), Akira Tsukamoto (National Defense Academy of Japan, Japan), Tohru Nakano, Masaaki Nakai, Masato Yamada, Chiaki Sato (Tohoku University, Japan), Takeshi Goda (University of California, USA), Yoshikazu Ogawa (Kohnan Hospital, Japan), Shukichi Miyazaki, Mingyu Sun, Toshihiro Kumabe (Tohoku University, Japan), Bahram Jalali (University of California, USA), Yoichi Haga (Tohoku University, Japan), Takashi Ushida (The University of Tokyo, Japan), Kazuyoshi Takayama (Tohoku University, Japan), Seiji Nishino (Stanford University, USA) , Mitsuo Niinomi (Tohoku University, Japan), Ichiro Sakuma (The University of Tokyo, Japan) and Teiji Tominaga (Tohoku University, Japan)
- CRF-25 **Development of Stent for Cerebral Aneurysm based on Optimization**
Toshio Nakayama, Shinkyu Jeong (Tohoku University, Japan), Karkenahalli Srinivas (The University of Sydney, Australia) and Makoto Ohta (Tohoku University, Japan)
- CRF-26 **Friction Properties of PVA-H for Biomodel and Steel Ball for Medical Devices**
Makoto Ohta, Hiroyuki Kosukegawa (Tohoku University, Japan) , Vincent Fridrici and Philippe Kapsa (Ecole Centrale de Lyon, France)
- CRF-27 **Water Quality Change Induced by Plasma Formation in Water**
Takashi Miyahara (Shizuoka University, Japan), Takehiko Sato, Masanobu Oizumi (Tohoku University, Japan) and Tatsuyuki Nakatani (Toyo Advanced Technologies Co., Ltd., Japan)

- CRF-28 **Development of Next-Generation Plasma Autoclave**
Takehiko Sato (Tohoku University, Japan), Kei Igarashi (Hirayama Manufacturing Co., Japan) and Takeshi Furui (Tohoku University, Japan)
- CRF-29 **Analysis of Plasma Flow at Gas-Liquid Interface for Biological Interaction**
Tetsuji Shimizu (Max-Planck Institute for Extraterrestrial Physics, Germany), Yutaka Iwafuchi (Tohoku University, Japan), Gregor E. Morfill (Max-Planck Institute for Extraterrestrial Physics, Germany) and Takehiko Sato (Tohoku University, Japan)
- CRF-30 **Left Atrial Appendage**
Muneichi Shibata (Miyagi Cardiovascular and Respiratory Center and Tohoku University, Japan), Tomoyuki Yambe (Tohoku University, Japan), T. Yamaguchi (Tohoku Kousei Nenkin Hospital, Japan), Ryo Koizumi, Kenichi Funamoto and Toshiyuki Hayase (Tohoku University, Japan)
- CRF-31 **Considerations for Simulations of Infusion in Realistic Animal Brain Geometries**
Joshua H. Smith (Lafayette College, USA), Kenichi Funamoto (Tohoku University, Japan), Kathleen Starkweather (Lafayette College, USA) and Toshiyuki Hayase (Tohoku University, Japan)
- CRF-32 **Computer Simulation Predicts the Convective Drug Distribution in the Primate Brainstem**
Shin-ichiro Sugiyama, Ryuta Saito, Kenichi Funamoto, Yukihiko Sonoda, Toshihiro Kumabe, Toshiyuki Hayase and Teiji Tominaga (Tohoku University, Japan)
- CRF-33 **Characterization of γ -Hemolysin on Liposome**
Noriko Tomita (Tohoku University, Japan), Yoshiyuki Kamio (Shokei Gakuin University, Japan) and Makoto Ohta (Tohoku University, Japan)
- CRF-34 **Numerical Studies of the Reacting Rarefied Flows in Tubes**
Yevgeniy Bondar (ITAM, Russia), Kaoru Maruta (Tohoku University, Japan) and Mikhail Ivanov (ITAM, Russia)
- CRF-35 **Investigation on Splats Formed from the Impact of Molten Tin Drops on Grooved Surfaces**
Deivandren Sivakumar (Indian Institute of Science, India), Kazunari Katagiri, Tomoki Nakajima, Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)
- CRF-36 **Tribological Behavior and Electrical Contact Resistance of Metal-Containing DLC Coating for Electrically Conductive Tribo-Elements**
Julien Fontaine, Michel Belin (Ecole Centrale de Lyon, France), Toshiyuki Takagi, Hiroyuki Miki, Koshi Adachi, Takanori Takeno (Tohoku University, Japan), Minoru Goto (Ube National College of Technology, Japan) and Kosuke Ito (Ecole Centrale de Lyon, France and Nihon University, Japan)
- CRF-37 **Proton Transport in Hydrogen Bond Network of Confined Water**
Nobuya Miyoshi, Ikuya Kinefuchi (The University of Tokyo, Japan), Takashi Tokumasu (Tohoku University, Japan), Shu Takagi and Yoichiro Matsumoto (The University of Tokyo, Japan)

- CRF-38 **Fundamental Study on Spiking Neuron Devices**
Takashi Morie, Yilai Sun, Haichao Liang, Kazuki Nakada (Kyushu Institute of Technology, Japan), Makoto Igarashi, Chi-Hsien Huang and Seiji Samukawa (Tohoku University, Japan)
- CRF-39 **A Molecular Study on the Thermodynamic Properties of Cryogenic Hydrogen**
Hiroki Nagashima (Aoyama Gakuin University, Japan), Takashi Tokumasu (Tohoku University, Japan), Shinichi Tsuda (Shinshu University, Japan), Nobuyuki Tsuboi (Kyushu Institute of Technology, Japan) and A. Koichi Hayashi (Aoyama Gakuin University, Japan)
- CRF-40 **Optimization of Nozzle Shape and Ink Viscosity Toward Uniform Droplet Formation of a Continuous Inkjet**
Masami Nakano (Tohoku University, Japan), Tameo Nakanishi and Hinoki Tunokane (Yamagata University, Japan)
- 10:40-10:50 BREAK
- 10:50-12:00 **Short Oral Presentation**
(3 min for Short Oral Presentation)
- CRF-41 **Consolidation of Ti Powder by a Compression Rotation Shearing Method under Room Temperature**
Sou Kato, Noboru Nakayama (Shinshu University, Japan), Hiroyuki Miki (Tohoku University, Japan) and Hiroyuku Takeishi (Chiba Institute of Technology, Japan)
- CRF-42 **Reliability Verification of Edge-element FEM Code for ECT Simulation of Steam Generator Tube**
Jun Cheng, Jinhao Qiu (Nanjing University of Aeronautics & Astronautics, China), Toshiyuki Takagi and Tetsuya Uchimoto (Tohoku University, Japan)
- CRF-43 **Residual Microbubbles after Collapse of Discharge-Induced or Laser-Induced Bubbles in Water**
Marc Tinguely (Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland), Masanobu Oizumi, Takehiko Sato (Tohoku University, Japan), Mohamed Farhat (Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland)
- CRF-44 **Transport Phenomena at Nano-structured Interfaces**
Taku Ohara, Gota Kikugawa (Tohoku University, Japan) and Masahiko Shibahara (Osaka University, Japan)
- CRF-45 **Analysis of Tunneling Potential Structure of Si SETs Formed by Pattern-Dependent Oxidation**
Yuki Kato, Mingyu Jo, Masashi Arita (Hokkaido University, Japan), Akira Fujiwara, Yukinori Ono, Katsuhiko Nishiguchi (NTT Basic Research Laboratories, Japan), Hiroshi Inokawa (Shizuoka University, Japan) and Yasuo Takahashi (Hokkaido University, Japan)

- CRF-46 **Development and Flow Evaluation of Electro-Rheological Nano-Suspensions**
Katsufumi Tanaka, Takanobu Hira, Ryuichi Fukui, Nozomi Nakagawa,
 Ryuichi Akiyama (Kyoto Institute of Technology, Japan), Masami Nakano,
 Keisuke Yoshida and Teppei Tsujita (Tohoku University, Japan)
- CRF-47 **Assessment of Different Thermostating Techniques in the Simulation of
 Molecular Lubrication**
 H. Berro (Université de Lyon, France), Takashi Tokumasu, Taku Ohara, Gota
 Kikugawa (Tohoku University, Japan), N. Fillot and Philippe Vergne
 (Université de Lyon, France)
- CRF-48 **Self-Assembled Bio-Conjugates Nano-Masks for Sub-10nm Ultra-Fine
 Nano-Etching**
Rikako Tsukamoto, Ichiro Yamashita (Nara Institute of Science and
 Technology, Japan) and Seiji Samukawa (Tohoku University, Japan)
- CRF-49 **Study on Micro-motor Utilizing Quincke Rotation of Novel Smart Polymers**
Miklós Zrínyi, Mrudul Gadhvi (Semmelweis University, Hungary), Masami
 Nakano and Teppei Tsujita (Tohoku University, Japan)
- CRF-50 **Design of Version Tree Operators for Sophisticated Visualization Provenance**
 Issei Fujishiro (Keio University, Japan), Yuriko Takeshima (Tohoku
 University, Japan), Yuusuke Seshita (Keio University, Japan) and
 Toshiyuki Hayase (Tohoku University, Japan)
- CRF-51 **Normal-Mode Stability Analysis of a Helical Vortex Tube**
Yasuhide Fukumoto (Kyushu University, Japan) and Yuji Hattori (Tohoku
 University, Japan)
- CRF-52 **Entropy Change in Heusler Alloys under Influence of a Magnetic Field**
Vladimir Khovaylo (National University of Science and Technology “MISiS”,
 Russia), Konstantin Skokov (Tver State University and Institute for Metallic
 Materials, Russia), Yuri Koshkid'ko (Tver State University, Russia),
 Ekaterina Avilova (National University of Science and Technology “MISiS”,
 Russia), Vasilij Buchelnikov, Sergey Taskaev (Chelyabinsk State University,
 Russia), Oliver Gutfleisch (Institute for Metallic Materials, Germany),
 Hiroyuki Miki and Toshiyuki Takagi (Tohoku University, Japan)
- CRF-53 **Numerical and Experimental Research on Active Control of the Hole-Tone
 Feedback Problem**
Mikael A. Langthjem (Yamagata University, Japan) and Masami Nakano
 (Tohoku University, Japan)
- CRF-54 **Simulations on a Radio-Frequency, Atmospheric-Pressure Glow Discharge
 Using an Integrated Kinetic-Fluid Model**
 Pei-Si Le, Zhi-Bin Wang, He-Ping Li, Cheng-Yu Bao (Tsinghua University,
 China), Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)
- CRF-55 **Axisymmetric Steady Magnetic Vortices with Swirl**
Stefan G. Llewellyn Smith (UCSD, USA) and Yuji Hattori (Tohoku University,
 Japan)

- CRF-56 **Instantaneous and Remote Flow Measurement using Laser-Induced Thermal Acoustics**
Toshiharu Mizukaki (Tokai University, Japan)
- CRF-57 **Direct Numerical Simulation on the Effects of Free-stream Turbulence on an Isothermal Turbulent Boundary Layer**
Kouji Nagata, Yasuhiko Sakai, Hiroki Suzuki (Nagoya University, Japan) and Toshiyuki Hayase (Tohoku University, Japan)
- CRF-58 **Observation of Streamer and Bubble Generation by Plasma**
Takehiko Sato, Masanobu Oizumi (Tohoku University, Japan), Takashi Miyahara (Shizuoka University, Japan) and Tatsuyuki Nakatani (Toyo Advanced Technologies Co., Ltd., Japan)
- CRF-59 **Surface Oscillations of Magnetic Fluid Droplet Adsorbed to Magnetized Needlepoint in Alternating Magnetic Field**
Seiichi Sudo, Sohta Inomata, Daisaku Asano (Akita Prefectural University, Japan), Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)
- CRF-60 **Kinetic Force Method with Quasiparticle Pairs for Numerical Modeling Micro Gas Flow in a Vacuum Pump**
Vladimir L. Saveliev (Institute of Ionosphere, Kazakhstan), Svetlana A. Filko (Institute of Ionosphere and Zhetysay State University, Kazakhstan), Ko Tomarikawa and Shigeru Yonemura (Tohoku University, Japan)
- CRF-61 **Drag Crisis of a Hard Baseball**
Kensuke Uchizono, Takayuki Fukujyu, Takeshi Miyazaki (University of Electro-Communications, Japan), Ryutaro Himeno (RIKEN, Japan) and Shigeru Obayashi (Tohoku University, Japan)
- 12:00-12:30 BREAK
- 12:30-14:30 **Poster Session**