OS26: The 26th International Symposium on Advanced Fluid Information (AFI-2026)
IFS Collaborative Research Forum

November 10, 2026
Exhibition Hall 3B

Chair: Keisuke Kanayama (Tohoku University, Japan)
13:30-15:00 Short Oral Presentation (3 min for Short Oral Presentation)
15:15-16:45 Poster Presentation (Core Time)

CRF-1 **Aerodynamic Characteristics of FIFA World Cup 2026 Official Ball TRIONDA Measured Using an MSBS**
Kazuya Seo (Kogakuin University, Japan), Hiroyuki Okuizumi, Yasufumi Konishi, Hiroki Nagai (Tohoku University, Japan), Nagi Iwama, Fumio Morishita (Kogakuin University, Japan), Rohith Timothy Katumalla (Yamagata University, Japan)

CRF-2 **Forecasting of PIV Data Using LSTM**
Misato Kurosawa, Kai Yoshikawa, Rihito Yamamoto, Ryuji Kokubo (Waseda University, Japan), Masaki Okawa, Tsubasa Ikami, Hiroki Nagai (Tohoku University, Japan), Yu Matsuda (Waseda University, Japan)

CRF-3 **Impact Compression Behavior of Artificial Pumice Assemblies**
Kohei Tateyama (Muroran Institute of Technology, Japan), Kiyonobu Ohtani (Tohoku University, Japan)

CRF-4 **Fundamental Experiments on Debris Cloud Formation to Improve Performance of Gyroid Structure Space Debris Bumpers**
Masahiro Nishida (National Defense Academy, Japan), Kiyonobu Ohtani (Tohoku University, Japan)

CRF-5 **Estimation of 3D Trajectory of Volcanic Ballistic Blocks**
Kae Tsunematsu, Nils Steinau (Yamagata University, Japan), Kiyonobu Ohtani (Tohoku University, Japan), Kazuya Seo, Akuto Kaneko (Kogakuin University, Japan), Takato Tomizawa (Yamagata University, Japan)

CRF-6 **Understanding the Role of Fluids in the Nucleation Process of the Noto, Japan, 2024, Mw 7.5 Earthquake**
Cornelius Langenbruch (GFZ Helmholtz Centre for Geosciences, Germany), Yusuke Mukuhira, Keisuke Yoshida, Masaoki Uno (Tohoku University, Japan)

CRF-7 **Tracer-Assisted Visualisation of Shear Thickening Fluid Migration and Jamming Behaviour in Confined and Subsurface Systems**
Tongfei Tian (University of the Sunshine Coast, Australia), Yusuke Mukuhira, Sando Sawa, Yasuo Yabe (Tohoku University, Japan)

CRF-8 **Machine Learning-Based Analysis for Microseismic Monitoring at Muara Laboh Geothermal Field, Indonesia**
Dian Darisma (Syiah Kuala University, Indonesia), Yusuke Mukuhira (Tohoku University, Japan), Olivier Lengline (University of Strasbourg, France), Rifa Salma Salsabila (Syiah Kuala University, Indonesia), Kyosuke Okamoto (National Institute of Advanced Industrial Science and Technology, Japan), Herwin Azis, Indra A. Nugroho, Novi Ganefianto (PT. Supreme Energy, Indonesia)

CRF-9 **Hypocenter Determination of Microseismic Data to Elucidate the Hydrothermal System of the Kuju Volcano**
Takehiro Uryu (Kyushu University, Japan), Yusuke Mukuhira (Tohoku University, Japan), Tatsunori Ikeda (Kyushu University, Japan), Dian Darisma (Syiah Kuala University, Indonesia), Kyosuke Okamoto (National Institute of Advanced Industrial Science and Technology, Japan), Keigo Kitamura (Kyushu University, Japan)

CRF-10 **Effects of Cool-Flame Chemistry on Direct Detonation Initiation from One-Dimensional Reactivity Gradients**
Minh Bau Luong (Hanoi University of Science and Technology, Vietnam), Youhi Morii (Tohoku University, Japan), Hong G. Im (King Abdullah University of Science and Technology, Saudi Arabia)

CRF-11 **COMSOL Analysis of Plasma Jet for Ammonia Synthesis**
Shuntaro Sakamoto (Yamaguchi University, Japan), Takashi Tokumasu (Tohoku University, Japan), Ryoya Shiraishi (Yamaguchi University, Japan)

CRF-12 **Characteristics of Ammonia-Air Flames Interacting with Walls**
Pradip Xavier (CNRS-CORIA, France), Akihiro Hayakawa (Tohoku University, Japan)

CRF-13 **Study on the Injection Control of Carbon-Free Fuels**
Noritsune Kawaharada (National Traffic Safety and Environment Laboratory, Japan), Ippei Oshima (Tohoku University, Japan)

CRF-14 **Enhancement of Lean Blowout Limits in a Bluff-Body Stabilized Swirl Spray Burner by Primary Dilution Air Injection**
Eleanor Borrill, Hossein Saraee (University of Sheffield, UK), Akihiro Hayakawa (Tohoku University, Japan), Ruoyang Yuan (University of Sheffield, UK)

CRF-15 **Experimental and Numerical Assessment of Salt Concentration Fields at Gas Hydrate Formation Interfaces in Saline Water**
Yuki Kanda (Tohoku University, Japan), Hiroyuki Komatsu (Niigata University, Japan)

CRF-16 **Experimental Visualization of Stratified Flow Structure near a Gas-Liquid Interface under Temperature Gradient**
Yuki Kanda (Tohoku University, Japan), Junhao Ke (The University of Sydney, Australia)

CRF-17 **Exploration of Electrohydrodynamic Enhancement of Solidification through Solid Extraction Phenomenon**
Mostafa Koura, Ethan Chariandy (McMaster University, Canada), Siwei Liu, Tomoki Nakajima, Takehiko Sato (Tohoku University, Japan), James Cotton (McMaster University, Canada)

CRF-18 **Temperature- and Composition-Dependent CO_2 Transport Through Microalgae Lipid Bilayers: A Molecular Dynamics Simulation Study**
Fakhri Putra Nasution (University of Indonesia, Indonesia), Fayza Yulia (Universitas Pertamina, Indonesia), Nasruddin (University of Indonesia, Indonesia), Takuya Mabuchi (Tohoku University, Japan)

CRF-19 **Active-Learning Construction of Neural-Network Closures for Mixture Adsorption and Diffusion in MIL-101(Cr)**
Erdiyanto Munandar (Universitas Indonesia, Indonesia), Takashi Tokumasu (Tohoku University, Japan), Nasruddin Yusuf Rodjali (Universitas Indonesia, Indonesia)

CRF-20 **Experimental and Computational Investigation of SiC Growth on Carbon Nanotubes by Thermal CVD Using Vinylsilane**
Jiajin Wang, Naoto Oshima (Aichi Institute of Technology, Japan), Kenichi Uehara (Japan Advanced Chemicals Ltd. / Tohoku University, Japan), Yasuo Nakai, Shinya Fukuchi (Koatsu Gas Kogyo Co., Ltd., Japan), Shigeo Yasuhara (Japan Advanced Chemicals Ltd., Japan), Huang Shengfeng, Takashi Tokumasu (Tohoku University, Japan), Wakana Takeuchi (Aichi Institute of Technology, Japan)

CRF-21 **Properties of Silicon-Based Semiconductor Heterostructures for Molecular Dynamics Simulations**
Hiroto Yamaguchi, Ayano Mukai, Ryoga Yotsuya, Noritaka Usami (Nagoya University, Japan), Takashi Tokumasu (Tohoku University, Japan)

CRF-22 **Prediction of Oxygen Ion Conductivity in Solid Oxide Electrolyte Membrane based on Multi-Scale Method**
Takumi Ijichi (Tohoku University, Japan), Hiroki Nagashima (University of the Ryukyus, Japan), Aliza Willsey, Kassidy Fields, Jeongmin Ahn (Syracuse University, USA), Takashi Tokumasu (Tohoku University, Japan)

CRF-23 **Cellulose Nanofibers Modified with Carbon Quantum Dots**
Jiri Jenista (Institute of Plasma Physics of the CAS, Czechia), Hidemasa Takana (Tohoku University, Japan), Maksym Buryi, Shelja Sharma (Institute of Plasma Physics of the CAS, Czechia), Yutaka Kaneko (Tohoku University, Japan), Alan Masláni (Institute of Plasma Physics of the CAS, Czechia)

CRF-24 **Numerical Analysis on Dynamic Characteristics of Closed-Cycle MHD Generation System for Power Control in Next-generation Grids**
Takayasu Fujino (University of Tsukuba, Japan), Hidemasa Takana (Tohoku University, Japan)

CRF-25 **Enhancement of Flow-Induced Vibration for Energy Harvesting in Low-Speed Flows using a Downstream Body**
Kenya Katsuki, Naoto Kato, Kenichi Nakagawa, Hiroaki Hasegawa (Utsunomiya University, Japan), Hiroki Nagai (Tohoku University, Japan)

CRF-26 **Comparative Performance Investigation of the Optical Filter Integrated Non-Imaging Concentrating Photovoltaic Thermal Systems**
Abid Ustaoglu, Bilal Kursuncu (Bartın University, Türkiye), Tayfun Altıok (Mescier Iron and Steel Industry and Trade Inc., Türkiye), Junnosuke Okajima (Tohoku University, Japan)

CRF-27 **Molecular Dynamics Simulation of Water Thermal Transport Properties Under an Electric Field Exited by Microstructures**
Ayumu Takahashi, Kiyoto Kawai (Yamagata University, Japan), Junnosuke Okajima (Tohoku University, Japan), Hiroki Gonome (Yamagata University, Japan)

November 11, 2026
Exhibition Hall 3B

9:00-10:30 Poster Presentation (Non-Core Time)
12:30-13:30 Luncheon Poster Presentation (Core Time)

Chair: Hitomi Anzai (Tohoku University, Japan)
13:30-15:00 Short Oral Presentation (3 min for Short Oral Presentation)

CRF-28 **An EMPECT-based Novel Signal Feature for Multilayered Structures Using High-order Statistical Analysis**
Shejuan Xie, Shuyan Yang (Xi'an Jiaotong University, China), Ming Li, Xiaoguang Li, Guozheng Zhou, Ning Xu (CGNPC Inspection Technology Company Ltd., China), Guohang Lu, Zhenmao Chen (Xi'an Jiaotong University, China), Tetsuya Uchimoto, Toshiyuki Takagi (Tohoku University, Japan)

CRF-29 **Non-Destructive Characterization of Magnetic Incremental Permeability Evolution for Non-Oriented Electrical Steel at High Temperature: Modeling and Experiment**
Zhongqi Xu, Shurui Zhang, Yujue Wang, Bin Wu, Xiucheng Liu (Beijing University of Technology, China), Tetsuya Uchimoto (Tohoku University, Japan)

CRF-30 **Molecular Dynamics Simulation of Lipid Monolayer under High Strain-Rate Sinusoidal Lateral Deformation**
Quoc Nam Nguyen (University of Tsukuba, Japan), Takuya Mabuchi (Tohoku University, Japan), Tetsuya Kanagawa (University of Tsukuba, Japan)

CRF-31 **Investigation of an a-SiOx Model for Understanding the Electronic States of nc-Si/a-SiOx Composite Films**
Kaori Takagi, Kazuhiro Gotoh (Niigata University, Japan), Genta Tamura, Kiyoe Konno, Takashi Tokumasu (Tohoku University, Japan)

CRF-32 **First-Principles Study on the Adsorption Stability of MgO Clusters on Si Substrates ～Effect of Cluster Arrangement～**
Satoru Kaneko (KISTEC / Institute of Science Tokyo, Japan), Masahito Kurouchi, Manabu Yasui, Daishi Shiojiri, Masahiko Mitsuhashi, Masahiro Yoshimura (KISTEC, Japan), Ruei-Sung Yu (National Chin-Yi University of Technology, Taiwan), Musa Mutlu Can (Istanbul University, Türkiye), Sumanta Kumaar Sahoo (Einstein Academy of Technology and Management, India), Ionita Mariana (National University of Science and Technology Politehnica Bucharest, Romania), Sarunas Meskinis (Kauno Technologijos Universiteto, Lithuania), Akifumi Matsuda (Institute of Science Tokyo, Japan), Takashi Tokumasu (Tohoku University, Japan)

CRF-33 **Construction of a Long-Term Prediction Model for the Distribution of Cerium Ions in Fuel Cell Membranes by Combining CFD and PINNs**
Seiichiro Morizawa (National Institute of Technology, Okinawa College, Japan), Takashi Tokumasu (Tohoku University, Japan)

CRF-34 **Effect of Ligand Chain Length and Temperature on Nanoscale Interfacial Structure between Alkylphosphonic Acid-Modified TiO_2 and Organic Solvent**
Ronald, Yuto Sato, Takamasa Saito (Tohoku University, Japan), Shohei Yamashita, Yohei Okada (Tokyo University of Agriculture and Technology, Japan), Eita Shoji, Atsuki Komiya, Masaki Kubo (Tohoku University, Japan)

CRF-35 **Automated Molecular Dynamics Simulation and Machine-Learning Prediction for SAM–Solvent Interfacial Affinity**
Gota Kikugawa (Tohoku University, Japan), Hari Krishna Chilukoti (National Institute of Technology Warangal, India), Yusuke Takaoka (Tohoku University, Japan)

CRF-36 **Molecular Dynamics Study of Nano-Bubble on Solid Surface and Surface Property**
Yusuke Jonosono (Tohoku University, Japan), Shin-ichi Tsuda (Kyushu University, Japan), Hiroki Nagashima (University of the Ryukyus, Japan), Takashi Tokumasu (Tohoku University, Japan)

CRF-37 **Experimental and Numerical Investigation of Plasma-Dependent Interface**
Kosuke Tachibana (Oita University, Japan), Siwei Liu (Tohoku University, Japan), Satoshi Uchida (Tokyo Metropolitan University, Japan), Tomoki Nakajima, Takehiko Sato (Tohoku University, Japan)

CRF-38 **Effect of Cracks on the Antibacterial Activity of Ag- and Cu- Containing DLC Nanocomposite Films**
Minoru Goto (National Institute of Technology, Ube College, Japan), Sho Takeda (Ishinomaki Sensyu University, Japan), Katsuya Shimabukuro (National Institute of Technology, Ube College, Japan), Hiroyuki Miki (Ishinomaki Sensyu University, Japan), Kosuke Ito (Nihon University, Japan), Tetsuya Uchimoto (Tohoku University, Japan)

CRF-39 **Controlling Photopolymerization using an Oxygen-Controlled Microfluidic Device**
Satoshi Aratake (Singapore University of Technology and Design, Singapore), Kenichi Funamoto (Tohoku University, Japan), Michinao Hashimoto (Singapore University of Technology and Design, Singapore)

CRF-40 **Cardiac Patches with Built-in Flexible Fibrous Electrodes for Myocardial Tissue Engineering and Electrophysiological Sensing**
Fengqiang Zhao, Tianming Du, Aike Qiao, Yanping Zhang (Beijing University of Technology, China), Hongfang Song (Capital Medical University, China), Hitomi Anzai, Makoto Ohta (Tohoku University, Japan)

CRF-41 **ICA Aneurysm Wall Response using Fluid Structure Interaction**
Yikun Mu (Universiti Teknologi Malaysia, Malaysia), Ryuhei Yamaguchi, Hitomi Anzai (Tohoku University, Japan), Mohd Jamil bin Mohamed Mokhtarudin (Universiti Teknologi Malaysia, Malaysia), Makoto Ohta (Tohoku University, Japan), Nadia Shaira Shafii (Universiti Teknologi Malaysia, Malaysia)

CRF-42 **Modified Polyvinyl Alcohol Hydrogel for Transparent Ultrasound Phantom: Flow Study on Common Carotid Artery Walled Model**
Pradigta Hisyam Ramadhan, Muhammad Zaki Fazansyah, Andrew Chai, Ronaldo Tanuwidjaja, Requint Nurliawan, Muhammad Shiddiq Sayyid Hashuro (Institut Teknologi Bandung, Indonesia), Makoto Ohta, Hitomi Anzai (Tohoku University, Japan)

CRF-43 **Aiming for Development of Elasticity Estimation Method for Blood based on Speed-of-Sound using Ultrasound Measurement with High Temporal Resolution**
Ryo Nagaoka (University of Toyama, Japan), Makoto Ohta (Tohoku University, Japan), Muhammad Shiddiq Sayyid Hashuro (Bandung Institute of Technology, Indonesia), Kei Kaneko, Riko Hasegawa, Liao Jing, Hitomi Anzai (Tohoku University, Japan), Hideyuki Hasegawa (University of Toyama, Japan)

CRF-44 **Comprehensive Insights into Leukapheresis: Techniques, Challenges, and Clinical Relevance**
Rahma M. Yaqoub, Ahmed T. Ghonim, Mohamed G. AbdElKader, Muhamed Albadawi, Yasser Abuouf (Alexandria University, Egypt), Makoto Ohta (Tohoku University, Japan)

CRF-45 **Epithelial Cell's Migration Modeling and Simulation of Wound Healing Mechanism**
Narendra Kurnia Putra, Dicky Setianto, Fadjar Faturrahman, Pritta Etriana Putri (Institut Teknologi Bandung, Indonesia), Makoto Ohta, Hitomi Anzai (Tohoku University, Japan)

CRF-46 **Human Blood-Brain Barrier Microfluidic Model for Brain Metastasis Research**
Sakura Mama, Momoka Kondo (Tokushima University, Japan), Hideaki Nishihara, Kinya Matsuo, Ayano Sasakura (Yamaguchi University, Japan), Masami Tsuchiya, Satoko Hori (Keio University, Japan), Kenichi Funamoto (Tohoku University, Japan), Kaoru Sawasaki, Mai Inagaki, Masanori Tachikawa (Tokushima University, Japan)

CRF-47 **Engineering 3D Oxygen Gradients in Biomaterials**
Lee Cheng Pau (Singapore University of Technology and Design, Singapore), Kenichi Funamoto (Tohoku University, Japan), Michinao Hashimoto (Singapore University of Technology and Design, Singapore)

CRF-48 **Measurement of Hydroxyl Radicals Generated by Collisions of High-Speed Nanodroplets Using Electron Spin Resonance**
Naoto Kawata, Kosuke Tachibana, Seiji Kanazawa (Oita University, Japan), Takehiko Sato (Tohoku University, Japan)

CRF-49 **Lissajous Curve Analysis on the Initial Transient States of Dielectric Plasma Discharge Generated with Planar Ionic Liquid Electrodes**
Po-Cheng Chen, Dai-En Li, Shin-Pon Ju (National Sun Yat-sen University, Taiwan), Takehiko Sato (Tohoku University, Japan), Che-Hsin Lin (National Sun Yat-sen University, Taiwan)

CRF-50 **Analysis of Hydrogen Peroxide Permeability Across Lipid Bilayers Using Molecular Dynamics Simulations: Evaluation of Membrane-Type and Temperature Dependence**

Yuki Iijima, Rina Sekiguchi, Misaki Endo, Ippei Yagi, Satoshi Uchida (Tokyo Metropolitan University, Japan), Kosuke Tachibana (Oita University, Japan), Akinori Oda (Chiba Institute of Technology, Japan), Takehiko Sato (Tohoku University, Japan)

CRF-51 **Evaluation of Respiratory Effects on Gas Flow Dynamics and Advection–Diffusion in an MRI-Compatible Olfactory Stimulation Environment**

Yusuke Inoue (Asahikawa Medical University / Tohoku University Japan), Akihiro Yamada (Komatsu University / Tohoku University Japan), Terumi Yurimoto, Fumiko Seki (Central Institute for Experimental Medicine and Life Science, Japan), Yoshiaki Takewa (Asahikawa Medical University, Japan), Junnosuke Okajima (Tohoku University, Japan)

CRF-52 **Experimental Observation and Characterization of Plasma-Affected Cavitation Bubble Dynamics**

Siwei Liu (Tohoku University, Japan), Outi Supponen (ETH Zurich, Switzerland), Mohamed Farhat (EPFL, Switzerland), Tomoki Nakajima, Yuji Aoyama, Zihan Song, Takehiko Sato (Tohoku University, Japan)

CRF-53 **Optical Emission Spectroscopy Probes Water Vapor Pressure within Cavitation Bubbles**

Davide Bernardo Preso, Giancarlo Cravotto (University of Turin, Italy), Takehiko Sato, Siwei Liu (Tohoku University, Japan)

CRF-54 **Generation and Characteristics of Charged Bubble**

Takehiko Sato (Tohoku University, Japan), Mohamed Farhat (École Polytechnique Fédérale de Lausanne, Switzerland), Zihan Song, Yuji Aoyama, Tomoki Nakajima, Siwei Liu (Tohoku University, Japan)

November 11, 2026
Exhibition Hall 3B

Chair: Donatas Surblys (Tohoku University, Japan)
15:15-16:45 Short Oral Presentation (3 min for Short Oral Presentation)

CRF-55 **Collapse of Gas Pore by Motion of Metal Liquid Droplet for Gas Atomization Process**
Joe Yoshikawa, Keisuke Itoh (Industrial Technology Institute, Miyagi Prefectural Government, Japan), Hidemasa Takana (Tohoku University, Japan)

CRF-56 **Analysis of Heat and Momentum Transport Characteristics Through Droplets Inside Nano Order Channels**
Akinori Fukushima (University of Fukui, Japan), Takashi Tokumasu (Tohoku University, Japan)

CRF-57 **Investigation of Aerodynamic Effects of Structural Features and Rotation in Sports Projectiles**
Kenichi Nakagawa, Yuki Shibusawa, Naoto Kato, Hiroaki Hasegawa (Utsunomiya University, Japan), Yasufumi Konishi, Hiroyuki Okuizumi, Hiroki Nagai (Tohoku University, Japan)

CRF-58 **Fundamental Study of the Unsteady Pressure Field on the Ground Surface Generated by Projectile-Induced Shock Waves Using DP-AA-PSP**
Daiju Numata, Yuma Kawamata, Kiharu Yoneyama (Tokai University, Japan), Kiyonobu Ohtani (Tohoku University, Japan)

CRF-59 **Hypervelocity Impact Experiments on Partially Cured Targets**
Yuta Yamakoshi, Yoshihiro Sugiyama, Kaiki Wakai, Hayata Kanbayashi, Kiyonobu Ohtani, Yushin Hara, Kanjuro Makihara (Tohoku University, Japan)

CRF-60 **On the Friction Drag Reduction Mechanism by Distributed Micro Roughness in Transitional Boundary Layer Flow**
Rikuto Osaki (Shibaura Institute of Technology, Japan), Kosuke Nakagawa, Aiko Yakeno (Tohoku University, Japan), Takuya Kawata (Shibaura Institute of Technology, Japan)

CRF-61 **Feasibility Study on Uncertainty Quantification of Sonic Boom Propagation in Turbulent Fields**
Ryosuke Tamba, Takahiro Ukai (Osaka Institute of Technology, Japan), Takashi Misaka (National Institute of Advanced Industrial Science and Technology, Japan), Hiroshi Yamashita, Bastian Kern (German Aerospace Center, Germany), Aiko Yakeno (Tohoku University, Japan)

CRF-62 **Four-Dimensional Density Field Measurement for Unsteady Flow Field around a Re-entry Capsule Using the BOS method with Eight High-Speed Cameras**
Hayato Tsuura, Ryota Miyazaki, Masanobu Nakamura, Masanori Ota (Chiba University, Japan), Tatsuro Inage (Shonan Institute of Technology, Japan), Masato Yamagishi (National Institute of Advanced Industrial Science and Technology, Japan), Kiyonobu Ohtani, Hiroki Nagai (Tohoku University, Japan)

CRF-63 **Experimental Characterization of Boundary Layers under Cooling and Heating Conditions**
Yuma Miki, Ryota Saso, Yuki Koizumi, Kiyoshi Kinefuchi (Nagoya University, Japan), Tsubasa Ikami, Hiroki Nagai (Tohoku University, Japan)

CRF-64 **Numerical Simulation of Weakly Ionized Flows in Electric Propulsion and Beamed-Energy Rockets**
Masayuki Takahashi, Sakira Uno, Ken Sakamoto, Hiroki Nagai (Tohoku University, Japan)

CRF-65 **ShockWave Experiments Around a Hypersonic Vehicle for CFD Validation Data Acquisition II**
Young Jo Kim, Michiko Ahn Furudate (Chungnam National University, Korea), Jinhwi Kim, Bok Jik Lee (Seoul National University, Korea), Kiyonobu Ohtani, Hiroki Nagai (Tohoku University, Japan)

CRF-66 **Toward Diagnosis-Informed Plasma-Actuator Control for Transition Delay in Swept-Wing Boundary Layers**
Takashi Matsuno, Sogo Fujimaru, Miki Taito (Tottori University, Japan), Hiroki Nagai (Tohoku University, Japan)

CRF-67 **An Experimental Study on Boundary Layer Transition Over an Airfoil with Vortex Generators at a Low Reynolds Number of 30,000**
Hikaru Otsuka (Kanazawa University, Japan), Tsubasa Ikami (Tohoku University, Japan), Haruto Sasaki, Uta Imamura (Kanazawa University, Japan), Daisuke Sasaki (Osaka Metropolitan University, Japan), Hiroshi Tokutake (Kanazawa University, Japan), Hiroki Nagai (Tohoku University, Japan)

CRF-68 **Aerodynamic Effects of Vein-like Structural Patterns on Membrane Wings**
Yusuke Yamazaki, Masahiro Kanazaki (Tokyo Metropolitan University, Japan), Tsubasa Ikami, Hiroki Nagai (Tohoku University, Japan)

CRF-69 **Experimental Study for the Improved Aerodynamic Performance of a Roadable Aircraft using Six-component Force and PSP measurements**
Seiichiro Morizawa, Yusuke Shinzato (National Institute of Technology, Okinawa College, Japan), Masaki Okawa, Hiroyuki Okuizumi, Yasufumi Konishi, Tsubasa Ikami (Tohoku University, Japan)

CRF-70 **Experiment and Computation on Aerodynamic Performance of a Flying Ring Wing**
Katsuya Hirata (Doshisha University, Japan), Jun Ishimoto (Tohoku University, Japan), Koki Hijiri (Doshisha University, Japan), Takahiro Adachi (Akita University, Japan), Gakuto Ogawa (Doshisha University, Japan)

CRF-71 **Fundamental Study on the Design of a Lightweight Portable Wind Tunnel Using Additive Manufacturing**
Hajime Izumi, Kyosuke Nomoto (National Institute of Technology, Kisarazu College, Japan), Hiroki Nagai (Tohoku University, Japan)

CRF-72 **Direct Numerical Investigation of Open-Rotor Engine–Airframe Interference**
Kazuhisa Chiba, Jan Mueller (The University of Electro-Communications, Japan), Yoshinori Oba (IHI Corporation, Japan), Yoshiaki Abe (Tohoku University, Japan)

CRF-73 **Actuator Selection for Time-Series Control based on a Linearized Framework towards Heavy Rainfall Modification**
Shan Jiang, Masahito Watanabe, Takayuki Nagata, Jiyuji Takatsu, Yuto Nakamura (Nagoya University, Japan), Yoshiaki Abe (Tohoku University, Japan), Taku Nonomura (Nagoya University, Japan)

CRF-74 **Numerical Study on Jet Entrainment under Various Initial Velocity Conditions**
Diksan Muhammad, Yasumasa Ito (Nagoya University, Japan), Koji Nagata, Tomoaki Watanabe (Kyoto University, Japan), Yi Zhou (Nanjing University of Science and Technology, China), Muyang Wang (Harbin Engineering University, China), Yuji Hattori (Tohoku University, Japan)

CRF-75 **An Analysis of Mechanism of Geometrical Characteristics of Bundles of Vortical Axis Lines and Spacial Structure of Local Swirl Plane**
Katsuyuki Nakayama, Tomoki Nishino, Kazuki Sakurai (Aichi Institute of Technology, Japan), Yuji Hattori (Tohoku University, Japan)

CRF-76 **Visualization Study on Shock Wave Propagation and Bubble Pulsation in Underwater Explosion Phenomena of High-Energy Material**
Kazutaka Kitagawa (Aichi Institute of Technology, Japan), Kiyonobu Ohtani (Tohoku University, Japan), Hayate Ueda (Gifu University, Japan), Shiro Kubota (National Institute of Advanced Industrial Science and Technology, Japan), Yasufumi Konishi (Tohoku University, Japan)

CRF-77 **Experimental Investigation on Shock Wave Development in Opaque Media**
Toshiharu Mizukaki, Keisuke Kiura, Ryouma Ando (Tokai University, Japan), Kiyonobu Ohtani (Tohoku University, Japan)