

## List of selected projects for Collaborative Research Project 2010, IFS, Tohoku University

Project Code	Project Title	Applicant	Institution	IFS responsible member or non-IFS responsible member	Institution
J10001	Flow and heat transfer characteristics of cryogenic gas-liquid two-phase flow in a pipe	Ohira Katsuhide	Tohoku University	Kobayashi Hiroaki	JAXA
J10002	Variability mechanism study between advanced device characteristics and LSI patterning using neutral beam	Mogami Tohru	Selete	Samukawa Seiji	Tohoku University
J10003	Experimental and numerical studies of Sonic Boom using a two-stage light gas gun	Saito Tsutomu	MURORAN Institute of Technology	Obayashi Shigeru	Tohoku University
J10004	Instability of high-temperature premixed flames	Kadowaki Satoshi	Nagaoka University of Technology	Kobayashi Hideaki	Tohoku University
J10005	Basic Investigation of Spike Neuron Devices	Morie Takashi	Kyushu Institute of Technology	Samukawa Seiji	Tohoku University
J10006	Shuttlecock aerodynamics and dynamic behavior during impact	Hasegawa Hiroaki	Akita University	Obayashi Shigeru	Tohoku University
J10007	Alternating field characteristics of complex flow in magnet-ferrofluid system	Sudo Seiichi	Akita Prefectural University	Nishiyama Hideya	Tohoku University
J10008	Development and Flow Evaluation of Electro-Rheological	Tanaka Katsufumi	Kyoto Institute of Technology	Nakano Masami	Tohoku University
J10009	Blood flow analysis in left atrium	Shibata Muneichi	Miyagi Cardiovascular and Respiratory Center	Funamoto Kenichi	Tohoku University
J10010	Direct Numerical Simulation on the Effects of Free-stream Turbulence on Neutral, Stably and Unstably Stratified turbulent	Sakai Yasuhiko	Nagoya University	Hayase Toshiyuki	Tohoku University
J10011	Application of Deep Brain Magnetic stimulation	Yashima Kazumi	IFG Co., Ltd.	Takagi Toshiyuki	Tohoku University
J10012	Fluid analysis of the mechanism of fetal brain hemorrhage	Ito Takuya	Tohoku University	Funamoto Kenichi	Tohoku University
J10013	Investigations of reacting flow in micro channels directed to development of eco-friendly technologies of energy	Minaev Sergey	SB RAS	Maruta Kaoru	Tohoku University
J10014	Parallel computations on the base of GPU for modeling of gas combustion processes	Fursenko Roman	SB RAS	Maruta Kaoru	Tohoku University
J10015	Simulations of convection-enhanced delivery in rat brain	Smith Joshua	Lafayette College	Funamoto Kenichi	Tohoku University
J10016	Numerical studies of the reacting rarefied flows in tubes	Ivanov Mikhail	SB RAS	Maruta Kaoru	Tohoku University
J10017	Investigation of hypersonic flows about leading edges of small bluntness	Ivanov Mikhail	SB RAS	Yonemura Shigeru	Tohoku University
J10018	Temperature measurement of unsteady supersonic flows using laser-induced thermal acoustics	Mizukaki Toshiharu	Tokai University	Takayama Kazuyoshi	Tohoku University
J10019	Experimental study on aerodynamic characteristics of a silent supersonic aircraft in low speed flight	Kawazoe Hiromitsu	Tottori University	Obayashi Shigeru	Tohoku University
J10021	Local magnetization process of Cr depression area for sensitized Alloy600	Yamaguchi Katsuhiko	Fukushima University	Takagi Toshiyuki	Tohoku University
J10022	New exact solutions for vortex rings with swirl and magnetic field	Llewellyn Smith Stefan	University of California, San Diego	Hattori Yuji	Tohoku University
J10023	Experimental study on aerodynamic characteristics of a silent supersonic	Obayashi Shigeru	Tohoku University	Sasoh Akihiro	Nagoya University
J10024	Transport phenomena at nano-structured interfaces	Ohara Taku	Tohoku University	Shibahara Masahiko	Osaka University
J10025	Development Optimization Design Method for Low Noise and High Aerodynamic Performance Helicopter	Jeong Shinkyu	Tohoku University	Yee Kwanjung	Pusan National University
J10026	Real-time Numerical Simulation of Reactive Non-equilibrium Plasma Jet	Nishiyama Hideya	Tohoku University	Tanaka Yasunori	Kanazawa University

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J10027	Development of an innovative plasma autoclave	Sato Takehiko	Tohoku University	Igarashi Kei	HIRAYAMA MANUFACTURING COMPANY
J10028	Research on detection method of calcification in soft tissue	Ogasawara Masafumi	GE Helthcare Japan	Funamoto Kenichi	Tohoku University
J10029	Effects of swirl on the stability of vortices	Hattori Yuji	Tohoku University	Fukumoto Yasuhide	Kyusyu University
J10030	Fabrication of composite material by compression revolution shearing method under room temperature	Nakayama Noboru	Shinshu University	Miki Hiroyuki	Tohoku University
J10031	Entropy flow in magnetically ordered Heusler alloys under influence of temperature or magnetic field	Khovaylo Vladimir	National University of Science and Technology	Miki Hiroyuki	Tohoku University
J10032	Optimization of Droplet Formation of Continuous Ink Jet	Nakano Masami	Tohoku University	Nakanishi Tameo	Yamagata University
J10033	Non-destructive detection of cracks using electromagnetic phenomena	Qiu Jinhao	Nanjing University of Aeronautics and Astronautics	Takagi Toshiyuki	Tohoku University
J10034	Analysis of convective flow during Convection-enhanced drug delivery	Tominaga Teiji	Tohoku University	Hayase Toshiyuki	Tohoku University
J10035	Propagation pathway and dynamics of blast /shock wave into the skull: Impact on traumatic brain injury	Nakagawa Atsuhiko	Tohoku University Hospital	Takayama Kazuyoshi	Tohoku University
J10036	Numerical and experimental research on active control of the hole-tone feedback	Langthjem, Mikael A.	Yamagata University	Nakano Masami	Tohoku University
J10037	Visual Knowledge Discovery Lifecycle Management and its Evaluation with Flow Dynamics Applications	Fujishiro Issei	Keio University	Hayase Toshiyuki	Tohoku University
J10038	Mechanism of radical generation and sterilization by a plasma flow at atmospheric pressure	Sato Takehiko	Tohoku University	Miyahara Takashi	Shizuoka University
J10039	Development of bubble generation method by plasma	Sato Takehiko	Tohoku University	Nakatani Tatsuyuki	Toyo Advanced Technologies Co., Ltd.
J10040	Analysis of plasma flow at gas-liquid interface for biological interaction	Sato Takehiko	Tohoku University	Morfill Gregor	Max-Planck-Institute for Extraterrestrial Physics
J10041	Mechanism of bubble generation and disappearance by plasma	Sato Takehiko	Tohoku University	Farhat Mohamed	Ecole Polytechnique Federale de Lausanne (EPFL)
J10042	Study on friction of soft tissue biomodel by PVA	Ohta Makoto	Tohoku University	Kapsa Philippe	ECL
J10043	Optimization of stent design based on Blood flow analysis using LBM method	Ohta Makoto	Tohoku University	Bastien Chopard	Geneva University
J10044	Development of Micro-Motor for MEMS utilizing Novel Smart Polymer Composite	Nakano Masami	Tohoku University	Zrinyi Mikols	Semmelweis University
J10045	Viscosity Reduction of Complex Fluid with Suspended Particles	Nakano Masami	Tohoku University	Rongjia Tao	Temple University
J10046	Tribological Behavior and Electrical Contact Resistance of Metal-Containing DLC Coating for Electrically Conductive Tribo-elements	Fontaine Julien	Ecole Centrale de Lyon	Takagi Toshiyuki	Tohoku University
J10047	Integrated Analysis by Kinetic Model and Fluid Model for Innovative Plasma	LI He-Ping	Tsinghua University	Takana Hidemasa	Tohoku University
J10048	Development of Kinetic Force Method for Two-/Three-Dimensional Numerical Modeling Relaxation of Rarefied Gas flows	Saveliev Vladimir	National Center of Space Researches and Technologies	Yonemura Shigeru	Tohoku University
J10049	Investigation of supersonic hybrid-stabilized argon-water arc for biomass gasification	Jenista Jiri	Institute of Plasma Physics ASCR, v.v.i.	Nishiyama Hideya	Tohoku University
J10050	Development of Analysis Techniques for Novel Quantum Devices using Nanodisk	Takahashi Yasuo	Hokkaido University	Samukawa Seiji	Tohoku University
J10051	Development of structure-controllable multi-disk single-electron transistors by ultimate etching technique with bio-templating	Yamashita Ichiro	NAIST	Samukawa Seiji	Tohoku University

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J10052	Molecular study of thermodynamic/transport properties of liquid hydrogen	Tokumasu Takashi	Tohoku University	Tsuboi Nobuyuki	Kyusyu Institute of Technology
J10053	Investigation of proton transport in liquid water network	Tokumasu Takashi	Tohoku University	Kinefuchi Ikuya	Tokyo University
J10054	Nano-Scale Modeling of Confined Liquid Films and Bridges	Tokumasu Takashi	Tohoku University	Vergne Philippe	INSA-Lyon
J10055	Radiative and Convective Heat Transfer Analysis by REM2	Maruyama Shigenao	Tohoku University	Sakurai Atsushi	Niitagata University
J10056	Evaluation and Analysis of Mega-scale Energy Transfer	Maruyama Shigenao	Tohoku University	Yamada Noboru	Nagaoka University of Technology
J10057	Measurement of Radiative Properties in Micro-Nano Structure	Maruyama Shigenao	Tohoku University	Vaillon Rodolphe	INSA Lyon
J10058	Non-Fourier Heat Transfer in Complex Materials	Maruyama Shigenao	Tohoku University	Mishra Subhash Chandr	IIT
J10059	A Study of Precise Measurement Method of Diffusion Field in Micro Channel	Komiya Atsuki	Tohoku University	Gary Rosengarten	The University of New South Wales
J10060	Experimental Analysis of Droplet Impact Process onto Rough Substrate with Solidification (Chemical Reaction)	Deivandren Sivakumar	Indian Institute of Science	Nishiyama Hideya	Tohoku University
J10061	Massively parallel integrated computation of micro-atomizing spray mechanism	Ishimoto Jun	Tohoku University	Saito Kozo	University of Kentucky
J10062	Development of Biomodel for fragile Blood cell	Ohta Makoto	Tohoku University	Liviu Movileanu	Syracuse University
J10063	Aerodynamical Properties of a Hard Baseball	Miyazaki Takeshi	University of Electro-Communications	Obayashi Shigeru	Tohoku University
J10064	Evaluation of surface and sub-surface area of structural components	Song Sung-Jin	Sungkyunkwan University	Takagi Toshiyuki	Tohoku University

