

Doctoral Program in Engineering Mechanics and Energy Faculty member list

Field of Research	Faculty	Detailed Description of Research Field
Solid and Structural Engineering	ISOBE Daigoro	Numerical and experimental studies on impact and collapse problems of structures, Development of computer simulation techniques aiming disaster prevention and mitigation, Application of computational mechanics and structural engineering essence to robotics.
	KANAKUBO Toshiyuki	Studies on structural performance of seismic, isolated or controlled structures. Development of high performance structural materials and new techniques for buildings and infrastructures.
	SHOJI Gaku	Earthquake engineering and structural dynamics. Clarification on nonlinear seismic response of infrastructure subjected to extreme ground motions, development of seismic retrofit technologies, structural reliability assessment
	MATSUSHIMA Takashi	Mechanics of granular materials. Mechanics of liquefaction and debris flow. Mechanics of long-term geological formation. Mechanics of planetary surface processes.
	ASAI Takehiko	Smart structural vibration control and self-powered control systems with energy harvesting technologies
	ENAMI Kazuhiro	Studies on three-dimensional shape measurement of various objects
	KAMEDA Toshihiro	Innovative engineering with computational mechanics handling high-power laser. Smart society realization using LPWA and data platform.
	NISHIO Mayuko	Structural engineering, Applied mechanics. Structural health monitoring, inverse analysis, data assimilation, model V&V for the maintenance and operation, and the disaster reduction of infrastructures
	MATSUDA Akihiro	Study on development of design tool for sportswear and sports equipment using computational mechanics. Aging estimation of rubberlike material for electric power industry.
	MATSUDA Tetsuya	Study of multi-scale simulation techniques. Property evaluation of solid materials that exhibit microscopic internal structures using homogenization theory / finite element method based computational mechanics.
	YASOJIMA Akira	Studies on performance evaluation and seismic evaluation technology of reinforced concrete buildings with focuses on maintenance and life extension

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Solid and Structural Engineering	【SHINTAKU Yuichi】	Numerical and experimental study on fracture mechanism of materials, development of crack propagation analysis using enhanced finite element method (FEM) such as finite cover method and s-version FEM, and strength evaluation on engineering product by its application.
	【MITSUME Naoto】	Development of coupled analysis systems and methods for complicated/complex phenomena, Applications to real-world problems such as tsunami-resilient design of structures
	【MORITA Naoki】	Development of analysis systems and parallel computing libraries for numerical simulation. A study on the strength evaluation of structures using multi-scale simulation.
	【YAMAMOTO Kyosuke】	Studies on “Partial Safety Factor Method”, “Efficiency of Updraft Tower Power Generator” and “Structure Health Monitoring based on Vibration Analysis” for civil structures.
Fluid and Environmental Engineering	TAKEWAKA Satoshi	Field survey, numerical computations and remote sensing on coastal environments.
	SHIRAKAWA Naoki	River basin management with engineering and socioeconomic approaches. Environmental flow, environmental economics, decision making process.
	DAIRAKU Koji	Regional climate and water cycle modeling, Environmental disaster resilience (Hydrometeorological hazard and risk information)
	【KANAGAWA Tetsuya】	Physico-mathematical analyses on basic fluid physics: Bubble dynamics and Nonlinear thermo-acoustics.
Energy and Electrical Engineering	ISHIDA Masayoshi	Development of high voltage insulation technique at high temperatures and high output generation systems using fuel cells are being studied to improve efficiency on energy conversion and transmission, and also ultra long HVDC.
	NISHIOKA Makihito	Based on reactive gasdynamics and aerothermochemistry, stabilities of fundamental laminar flames, formation mechanisms and reduction methods of pollutants such as NOx in flames are studied.
	MONJI Hideaki	Basic study and its application on dispersed two-phase flow; Drag force acting on a car in a line arrangement, Bubbly flow.
	AKI Hirohisa	Power and energy systems engineering: studies on demand-side oriented energy systems, including renewable energy resources, and integration of mobilities and energy systems.

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Energy and Electrical Engineering	KANEKO Akiko	Research on flow phenomena of various multiphase flows with a view to energy and environmental issues.
	FUJINO Takayasu	Research on plasma and magnetohydrodynamic technologies for power engineering and aerospace engineering.
	YOKOTA Shigeru	Advanced space propulsion systems, such as electric propulsion or laser propulsion.
	【SHEN Biao】	Development of next-generation high-performance cooling system for electronic devices using hierarchical nanostructure engineering and surface wettability patterning
	【SHIMAMURA Kohei】	Aerospace and aeronautical engineering in terms of advanced energy technology: 1.Space propulsion (Laser propulsion) 2.Wireless power transmission for a flight object via magnetic coupling resonance.
Professors of Cooperative Graduate School	SAKAKITA Hajime (National Institute of Advanced Industrial Science and Technology)	Research on medical, aerospace, energy and environmental applications using plasma technologies.
	SUGITA Hiroyuki (Japan Aerospace Exploration Agency)	Research on active thermal control devices and efficient space cryocoolers for innovative spacecrafts.
	HARADA Yoshihisa (National Institute of Advanced Industrial Science and Technology)	Research and development of materials reliability performance based on damage evaluation for structural and processing components such as transportation, industrial machinery, etc.
	MATSUMOTO Satoshi (Japan Aerospace Exploration Agency)	Study on thermo-fluid phenomena utilizing the International Space Station, Non-linear dynamics of levitating drop.
	YOSHIDA Hiroyuki (Japan Atomic Energy Agency)	Research on evaluation of multi-phase flow behavior for improvement of nuclear reactor safety
	SATO Hiroyuki (Japan Atomic Energy Agency)	Researches on High Temperature Gas-cooled Reactor hydrogen electricity cogeneration systems
	DENDA Masatoshi (The Public Works Research Institute)	Field survey, remote sensing analyses and numerical simulations on problems of river environments.

Field of Research	Faculty	Detailed Description of Research Field
Professors of Cooperative Graduate School	MIZUTANI Tadahito (Japan Aerospace Exploration Agency)	Research on smart structures and structural health monitoring both for spacecraft and space transportation vehicles utilizing precise measurement technologies

(Note)

Before applying, applicants must contact a faculty member and obtain consent to become your prospective supervisor (the person who gives you academic instructions after enrollment).

Applicants cannot choose faculty members whose names are written in square brackets as a prospective supervisor. However, under the supervision of a faculty member without square brackets, you can choose a faculty member with square brackets as a sub-supervisor and conduct research related to the sub-supervisor's research topics. The supervisor and the sub-supervisor must be chosen from the same "Field of Research."

[Contact Information]

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