

## Technological Directory - Graduate School and Faculty of Engineering (2020)

### Department of Electronics and Information Systems Engineering

Discipline	Field	Expertise	Keyword 1	Keyword 2	Keyword 3	Open to consultations on	Lab	Researcher	Related researchers
Engineering	Applied physics, basic engineering, materials chemistry	Inorganic industrial materials, characteristics of thin-film surface interfaces, crystal engineering	Crystals, ceramic materials, glass	Thin film, surface, optical component, lasers	Laser applications micro-processing	Surface processing of optical materials/laser damage evaluation/optical component evaluation/laser micro-processing/growth of optical crystals	Laser Lab	Tomosumi KAMIMURA, Professor	Hisami NISHI, Professor
Engineering	Applied physics/basic engineering	Applied physical properties/crystal engineering	Semiconductors, Ceramics	Epitaxial growth	New functional devices	Thin film growth and characterization of semiconductors and ceramics, and development of new functional devices	Functional System Device Laboratory	Kazuto KOIKE, Professor	Mitsuaki YANO, Professor [Department of General Education] Akira FUJIMOTO, Associate Professor
Engineering	Electrical and electronic engineering	Electronic device / electronic equipment	Electrostatic force microscope	Electron beam lithography	Electron scattering simulation	Development of electrostatic force microscope to measure potential at insulator surface, development of simulations of electron beam interaction with materials	Nano Electronics Lab	Masatoshi KOTERA, Professor	
Engineering	Electrical and electronic engineering	Electromagnetic wave / radar engineering	Electromagnetic wave scattering	Antenna	Radar	High-frequency scattering theory, radar cross section (RCS), antenna analysis and design, near-field transformation to far-field, radar measurement, radar image and signal processing, radar system, Doppler analysis, micrometer and millimeter wave device	Electromagnetic Information System Laboratory	Hirokazu KOBAYASHI, Professor	
Engineering	Electrical and electronic engineering	Communication / network engineering	Telecommunication systems (wireless, mobile, and satellite)	Modulation / demodulation and error control codes	Signal processing	High performance transmission technologies in mobile communications and wireless networks , broadband transmission technologies	Information Communication Laboratory	Hong ZHOU, Professor	Kazuo KUMAMOTO, Associate Professor
Engineering	Applied physics/basic engineering	Applied optics/ optical communication devices	Optoelectronics	Optical devices	Optical measurement	Optical measurement system, micro-optics, optical telecommunication devices, optical fiber applications, optical sensors, confocal optics, 3D measurement systems	Optoelectronics Lab	Hisami NISHI, Professor	Tomosumi KAMIMURA, Professor
Engineering, mathematical and physical science	Integrated engineering and plasma science	Computer simulation and plasma science	Plasma physics	Computer simulation	Magnetohydrodynamics	Computer simulations of plasma characteristics, physical phenomena that occur in plasma and the mechanisms that generate them, and inertial fusion plasma	Simulation Lab	Akio NISHIGUCHI, Professor	

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General	Informatics	Computational systems and networks	Multiagents	Autonomous action	Optimization	Solutions to combinatorial optimization problems and organizational operation analysis making use of multi-agent simulations	Software Systems Lab	Katsumi HARASHIMA, Professor	
Engineering	Applied physics/basic engineering	Applied physical properties/crystal engineering	Semiconductors, Ceramics	Epitaxial growth	Thin-film technology	Thin-film technology for semiconductors and ceramics, and its application to electronic devices	Semiconductor Nanosystem Lab	Mitsuaki YANO, Professor	Kazuto KOIKE, Professor [Department of General Education] Akira FUJIMOTO, Associate Professor
Engineering / Agriculture	Applied physics / basic engineering / Agriculture / Agricultural environment engineering	Applied physical properties / crystal engineering / cultivation / Plant factory	Plant factory, Microcomputer Control of Cultivation technology	Design Method of LED Light Source Device and LED Light Source Device	Plant factory, light quantum density	Application of ultraviolet-infrared LED into plant factory, Research of clarifying the influences of light quantum on plant growth in plant factory	Microcomputer system Lab	Tokuo YODO, Professor	
Engineering	Electrical and electronic engineering, mechanical engineering	Control engineering, dynamics and mechanics of machines	Control theory	Motion control	Vibration control	System identification (method to obtain mathematical models needed to design model-based control systems; models are obtained by processing the data from the object to be controlled) and fault detection methods	Systems Control Lab.	Hiroshi OKU, Associate Professor	[Department of Mechanical Engineering] Shun USHIDA, Professor
Engineering	Electrical and electronic engineering	Communication / network engineering	LAN	Telecommunications methods (optical, wireless, and satellite)	Nonlinear theory	RoFCATVHigh-quality radio over fiber network technologies, high-quality ad hoc radio network technologies, high-speed CATV access technologies	Communication System Lab	Kazuo KUMAMOTO, Associate Professor	Hong ZHOU, Professor
General	Informatics	Media informatics	Multimedia information processing	Computer graphics	Virtual reality	The three-dimensional recomposition of images taken with digital cameras/three-dimensional image processing technologies/multimedia information processing in CG simulations and three-dimensional acoustic systems	Multimedia Information Processing Lab	Masao FUJIMURA, Associate Professor	[Department of System Design] Sigeru OMATU, Professor Kenji MATSUI, Professor
Engineering	Informatics	Affective Informatics, Human agent interaction	Interactive softwares for creative process	Deep learning on four-scene comic story dataset	Contents creators and artificial intelligence	Analysis of creative process on original multimodal dataset such as comics, novels, and photographs by machine learning methods in order to develop useful softwares for enabling collaboration contents creators and artificial intelligence	Creation Affective Informatics Lab	Miki UENO, Assistant Professor	