

# Outline of the Graduate School of Engineering

## [Division of Aerospace and Marine-System Engineering]

Through the interdisciplinary linkage of Aerospace Engineering and Marine System Engineering, we aim to carry out research into sustainable development with the preservation of a globally harmonious environment. Our mission is to educate future engineers and researchers who will be responsible for new and innovative fields of research and will be active in the international community. This academic major is composed of two departments of Aerospace Engineering and Marine System Engineering.

## [Department of Aerospace Engineering]

The department of Aerospace Engineering aims to educate future key players who will be responsible for comprehensive developments in the innovative field of aerospace engineering with harmonization of sustainable development of our society and natural environments based on a deep understanding of both fundamental and cutting-edge aerospace engineering.

### ◆ Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Space Engineering	Professor	KOGISO Nozomu	Systems Engineering, Reliability Engineering, Resilient Engineering, Optimum Design, Space Structural Systems, Space Engineering, Laminated Composite, Morphing Wing	kogiso
	Associate Professor	NAKAMURA Masao	Space Environment Technology, Space Plasma Simulation and Analysis, Space Weather	m.n
2 Aerospace Control Engineering	Professor	SHIMOMURA Takashi	Aerospace Control Engineering, Dynamics / Kinematics / Guidance / Control of Aircraft / Spacecraft, Vibration Control of Flexible Space Structures, Numerical Optimization	takashi.shimomura
	Associate Professor	KANATA Sayaka	System Control Engineering, System Identification, Multi-Rotor Helicopters, Mobile Robots under Uncertain Environment	kanata
3 Aerospace System Engineering	Professor	TSUJII Toshiaki	Aerospace Navigation Systems, Satellite Navigation and Positioning, Aerospace Information Technology, Optimal Estimation	tsujii.toshiaki
	Associate Professor	ANDREEVA-MORI Adriana	Air Traffic Management, Optimization, Operations of Uncrewed Aerial Systems, Advanced Air Mobility	andreevamori
4 Aerodynamics	Professor	SASAKI Daisuke	Aerodynamics, Low Reynolds Number Flow, Computational Fluid Dynamics, Computational Aeroacoustics, Aerodynamic Design, Design Optimization, Evolutionary Algorithms, Machine Learning	daisuke.sasaki
	Associate Professor	SAKAUE Shoji	Aerodynamics, Laminar-Turbulent Transition, Turbulent Flow Control, Supersonic Mixing Enhancement, Computational Fluid Dynamics	shoji-sakaue
5 Aerospace Structure Engineering	Professor	IWASA Takashi	Aerospace Structure Engineering, Dynamics for Thin-Walled Flexible Structures, Photogrammetry, Shock Response, Membrane Structures	iwasa.takashi
	Lecturer	YAMANO Akio	Dynamics for Fluid-Structure Interaction, Dynamics for Thin-Walled Flexible Structures, Rovers for Small Planetary Bodies	yamano_aero
6 Aerospace Propulsion Engineering	Professor	MORI Koichi	Aerospace Propulsion Engineering, Thermo-fluid Engineering, Space Transportation System, Beamed Propulsion, Plasma Propulsion, Space Debris	koichimori
	Associate Professor	HIEJIMA Toshihiko	Aerospace Propulsion System, Compressible Fluid Dynamics, Computational Fluid Dynamics, Instability of Vortices, Scramjet Engine	hiejima
	Assistant Professor	OGAWA Shinichiro	Aerospace Propulsion Engineering, Supersonic Combustion, Combustion Engineering, Computational Fluid Dynamics, Biojet fuel, Combustion diagnostics, Jet engine, Rocket engine	shinichiro.ogawa

(As of April 1, 2025)

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### [Department of Marine System Engineering]

The department of Marine System Engineering aims to develop human resources who will be responsible for comprehensive technological developments in the ocean with harmonization of the nature and human activities, based on a deep understanding of both artificial systems related to the ocean and natural systems of the ocean.

#### ◆ Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Marine Transportation Engineering	Professor	KATAYAMA Toru	Seakeeping & Safety of High Speed Craft, Ship Stability in Wave, Instabilities of Planing Craft, Nonlinear Motions and Hydrodynamics of Floating Structures, Wind Powerd Ship, Tank Test	katayama.marine
	Lecture	TANIGUCHI Tomoki	Motion Dynamics of Marine Craft and Floating Structure, Ocean Engenneing, Control strategy of Wave Energy Converter, Floating Type Wave Energy Converter, Tank Test	taniguchi.marine
2. Marine Stractual Engineering	Assosiate Professor	IKUSHIMA Kazuki	Structural Engineering, Structural Analysis of Ships, Nonlinear Finite Element Analysis, Large Scale Numerical Simulation, Parallel Computation	ikushima.marine
	Assosiate Professor	TSUBOGO Takashi	Wave Resistance, Offshore Structure, Hydroelasticity, Very Large Floating Structures	tsubogo.marine
3 Marine System Planing	Professor	ARIMA Masakazu	Marine System Planning, Human Factors, Underwater Robotics, Ocean Policy Research	marima.marine
4 Ocean Space Utilization Engineering	Professor	HASHIMOTO Hirotada	Marine System Control, Marine Resources Engineering, Ship Stability and Maneuverability, Marine Computational Fluid Dynamics	hashimoto.marine
	Assosiate Professor	NIHEI Yasunori	Self-navigating vessels in marine aquaculture farms, Floating offshore wind turines, Hydrodynamic Force acting on Offshore Structures, Mechanization and automation of primary industries	nihei
	Assistant Professor	HIGAKI Takefumi	Maritime Autonomous Surface Ship, Machine Learning, Computational Fluid Dynamics	higaki.marine
5 Marine Environmental Information Engineering	Professor	NAKATANI Naoki	Marine Environmental Monitoring, Ocean Environmental Measurement, Marine Ecosystem Engineering, Ecosystem Modeling, Planning of Marine Resource Development	nakatani.marine
	Assosiate Professor	ARAI Rei	Marine Environmental Measurement, Marine Acoustic Engineering, Marine Optics, Instrumentation Engineering	arai.marine
6. Marine Advanced System Engineering	Professor	SHIBAHARA Masakazu	Welding Mechanics, Thermal-Elastic-Plastic FEM, Measurement using Image Processing, Structural Strength of Ships and Offshore Structures, Structural Analysis for Ultra-Scale Problems	shibahara.marine

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### [Division of Mechanical Engineering]

The Department of Mechanical Engineering nurtures researchers and engineers who recognize and consider important issues in mechanical engineering from a multifaceted and bird's-eye view and lead the way in thinking and practicing overcoming and solving these issues to build a sustainable society that is friendly to both people and the environment. This department consists of one field of mechanical engineering.

### [Department of Mechanical Engineering]

#### ◆Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Fluid Physics	Professor	WAKIMOTO Tatsuro	Drag reduction of fluid flow by adding surfactant, Development of wave-power generation system, Stability of soap film, Removal of fine particles on a wall by air jet	wakimoto
	Associate Professor	OMORI Takeshi	Micro- and nano-fluid mechanics, Mechanics of solid-liquid wetting and friction, Molecular dynamics, Computational fluid dynamics	t.omori
2 Fluid Mechanics	Professor	TAKAHIRA Hiroyuki	Fluid Mechanics, Cavitation, Bubble Dynamics, Gas-Liquid Two-Phase Flow, Focused Ultrasound	takahira
	Associate Professor	OGASAWARA Toshiyuki	Fluid Mechanics, Gas-Liquid Two-Phase Flow, Bubble Dynamics, Flow Measurement	ogasawara
	Lecturer	NAKAJIMA Tomoya *	Fluid Engineering, Wind Tunnel Test and Flow Visualization, etc.	NNN
3 Thermal Processing and Engineering	Professor	IYOTA Hiroyuki	Humidity Measurement in Extreme Environment, Advanced Use of Superheated Steam, Drying Engineering, Heating and Cooling Engineering, Dielectric Heating, Color Engineering, Food Engineering and Management	h-iyota
	Associate Professor	MASUDA Hayato	Transport phenomena, Heat transfer, Complex fluid, Food engineering	hayato-masuda
4 Heat Transfer	Associate Professor	KANEDA Masayuki	Natural Convection, Computational Fluid Dynamics, Sessile Droplet, Magnetizing Convection, Magnetohydrodynamics	mkaneda
	Associate Professor	KUWATA Yusuke	Modeling and Understanding of Turbulent Heat Transfer over Rough and Permeable walls, Heat Transfer Control by Roughness and Porous Media, Simulations and Measurements of Complex Turbulent Heat Transfer	kuwata
5 Applied Mathematics	Professor	MATSUOKA Chihiro	Fluid Dynamics, Pattern formation, Nonlinear Science, Dynamical systems, Numerical analysis of nonlinear motion of vortex sheets	cmatsuoka
6 Power System Engineering	Associate Professor	TAKIYAMA Takeshi *	Power train system control for optimization of fuel economy and emission purification, Intelligent vehicle control for automated driving	takiyama
7 Engine and Combustion Engineering	Professor	SEGAWA Daisuke	Combustion, Combustion Diagnostics, Internal Combustion Engines, Space Environment Experiments	segawa.daisuke
	Lecturer	KATAOKA Hidefumi	Detonation, Combustion, Shock Wave, Internal Combustion Engines	hkataoka
8 Energy Systems Analysis	Professor	WAKUI Tetsuya	Energy Systems Engineering, Mathematical Optimization, Energy Management, Cycle Simulation, Zero-Carbon Energy Network, Renewable Energy	t-wakui
9 Thermal Environment Systems	Professor	KINOSHITA Shinichi	Environmental Engineering, Countermeasure to Urban Heat Island, Thermophysical Properties, Thermal Science in Human Physiology, Radiative Heat Transfer	kinosita
	Assistant Professor	YASUDA Ryusuke **	Environmental Engineering, Atmospheric Diffusion, Air Pollution, Local Climate	ryasuda
10 Environmental Protection Engineering	Professor	OKUBO Masaaki **	Environmental protection engineering, Plasmas for environmental improvement, Zero-carbon energy conversion, Plasma material processing	mokubo
	Associate Professor	KUROKI Tomoyuki	Environmental protection engineering, Application of nonthermal plasma technology, Exhaust gas treatment, Waste water treatment	kuroki
	Associate Professor	YAMASAKI Haruhiko	Environmental protection engineering, Energy conversions with low environmental load, Magnetic functional fluid, Carbon dioxide cycle	hyamasaki
11 Materials Modeling and Evaluation	Professor	YAMASAKI Tomohiro**	Nondestructive Evaluation of Materials, Mechanics of Materials, Strength of Materials	t-yamasaki
	Assistant Professor	OSHIMA Nobuo	Functional fluid, Control devices, Vibration control	nobuo-oshima

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Research Group	Title	Name	Education and Research Fields	E-mail address
12 Smart Composites Engineering	Associate Professor	NAKATANI Hayato	Composite Materials Engineering, Fracture Mechanics, Carbon Fiber Composites, Molding Process, Damage Tolerance, Joining of Dissimilar Materials, Multi-material Design	hayatonakatani
13 Mechanics of Materials	Associate Professor	UMEDA Tsutomu	Mechanics of Materials, Solid Mechanics, Impact Engineering, Dynamic Structural Analysis, Damage Mechanics	umedat
	Associate Professor	RIKU Isamu	Computational Science, Biomedical Engineering, Biomaterials	riku
14 Applied Mechanics and Design	Professor	ISHIHARA Masayuki	Mathematical analysis of solid mechanics, Hygrothermoelasticity, Electroelasticity, Solid mechanics in green materials	ishihara
	Lecturer	YAMADA Kaori	Engineering Design, Kansei Engineering, Creativity, Human behavior, Product development, Design Thinking	kyama
15 Measurement Engineering	Lecturer	MIZUTANI Akio	Measurement Engineering, Applied Optics, Nanophotonic Devices	mizutani
16 Bioproduction Systems Engineering	Professor	FUKUDA Hirokazu	Agricultural Digital Twin, Agricultural XR Robotics, Biological Rhythm Control Engineering, Plant Factory	fukuda
	Assistant Professor	FUJINAGA Takuya	Field Robotics, Agricultural Robots (Harvesting and Pruning of Crops such as Tomatoes and Strawberries, Multifunctional and Compact), Marine Robots (Underwater and Surface), Digital Twin	tfujinaga
17 Intelligent Systems	Lecturer	IMADU Atsushi	Assistive robotics, Mobile robotics, Tethered multicopter,	imadu
	Assistant Professor	TAKAI Asuka	Human movement analysis and assistive engineering, Musculoskeletal rehabilitation system, Human-human and human-robot interaction	ataikai
18 Mechanical Dynamics	Professor	SHINTANI Atsuhiko	Vibration Engineering, Seismic Engineering, Fluid-Structure Interaction, Active Vibration Control, Human Engineering, Application of Vibration	shintani
	Associate Professor	NAKAGAWA Chihiro	Kinematics of Mechanical Systems, Mobile Vehicle System, Kinematics-related System	chihiro
19 Robotics	Professor	TAKADA Yogo	Researching and developing compact mobile robots which can be used in inspections in hard-to-reach places such as underwater as well as under bridges. Analysis on underwater robots is performed using numerical fluid dynamics to improve driving thrust	takada
20 Systems and Control	Lecturer	KOBAYASHI Tomoaki	Systems and Control, Real-Time Control, Optimal Control, Control Theory and Applications, Mechatronics	kobayashi
21 Production Engineering	Professor	KANASAKI Junichi	Solid state analysis based on surface science and optical science, Optical control of material structure at the atom level to create novel structural phase	kanasaki
	Associate Professor	KAWAKAMI Hiroshi	Antibacterial metals, Microbial control, Microbiologically influenced corrosion, Microbial fuel cells	hkawakam
22 Materials Physics and Engineering	Lecturer	MIYOSHI Eisuke	Engineering Materials, Computational Mechanics, Microstructural Control, Phase-Field Method, Molecular Dynamics	e-miyoshi
23 Materials Physics and Mechanics	Professor	KANEKO Yoshihisa	Materials Engineering, Fatigue, Advanced scanning electron microscopy, Electrodeposition of nanostructured films, Stacking structures	kaneko
	Associate Professor	UCHIDA Makoto	Solid Mechanics, Continuum Mechanics, Computational Mechanics, Experimental Mechanics, Finite Element Method, Digital Image Correlation	m_uchida
24 Materials Advancing Engineering	Lecturer	KUWAHARA Takuya	Multiscale Materials Modeling, Tribology of Carbon Materials, Ceramics, and Metals, Mechanochemistry	kuwa

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The staff(s) marked with \* are scheduled to retire in March 2026.

The staff(s) marked with \*\* are scheduled to retire in March 2027.

### [Division of Urban Engineering]

The Division of Urban Engineering aims to foster highly qualified professionals and researchers with a broad perspective and the ability to make comprehensive judgments based on scientific evidence, which are required at the transitional period when modern cities are moving from the growth stage to the mature stage. In addition, the division has a collaborative structure to formulate project research on cutting-edge issues in mature cities beyond the conventional framework of architecture and civil engineering.

This division consists of two fields of study: Architecture and Urban engineering.

### [Department of Architecture and Building Engineering/Urban Design and Engineering]

#### ◆ Sugimoto Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Architectural Planning and Building System	Professor	TOKUONO Tetsu	Planning of housing complexes, creation of wood communities, building stock renovation and regional regeneration through such renovation, building system design, building system development, and durability design, focused on wooden structures, and process design for space creation that integrates the above.	tokuono
	Professor	ISHIYAMA Hiroki		ishiyama
	Lecturer	NISHINO Yuichiro		nishino.y
2 Architectural Design and History	Professor	KURAKATA Shunsuke	Architectural design, theory and history	kurakata
	Lecturer	YAMAGUCHI Akito		yamaguchi-ak
3 Urban Planning and Design	Professor	KANA Koichi	Urban Planning, Urban Regeneration and Design, Cityscape and Landscape, History of Urban Planning and Design, Community Design	kana
	Lecturer	TAKAGI Yuri		takagi-yu
4 Infrastructure Planning and Transportation Engineering	Professor	UCHIDA Takashi	Construction and operation management on transportation facilities, Analysis on traffic environment, Analysis on urban travel behavior and development of travel support systems.	uchida-ur
	Associate Professor	YOSHIDA Nagahiro	Active transportation policies, urban transportation planning, performance evaluation of urban transportation systems, and geometric design related to traffic engineering.	yoshida-na
5 Architectural Environmental Engineering	Professor	NGUYEN THU LAN	Assessment of urban noise and sound environments in public spaces and residences, Global noise control measures, Design of architectural acoustics toward comprehensive improvements in living environments.	lan
	Associate Professor	KISHIMOTO Yoshihiko	Control of indoor heat and humidity environment using material properties, Prediction of deterioration progression of building materials.	kishimoto
6 Architectural Informatics	Lecturer	KOBAYASHI Yuki	Application of information technology in architecture, Search for analysis and design methods of architecture and city based on mathematics such as geometry and combinatorics	kobayashi-y
7 Regional Environmental Planning	Professor	NISHIOKA Masatoshi **	Heat transfer analysis of buildings and urban structures, Urban heat island measures, Urban thermal environment assessment, Analysis and evaluation of energy supply-demand system for net-zero carbon cities	mnishioka
	Professor	NABESHIMA Minako	Heat source network system for district air conditioning and hot water supply, Development of the evaluation system for improving the urban thermal environment, Net-zero energy method for urban agriculture	nabeshima
8 Water Environmental Engineering *1	Professor	SOHMA Akio	Aquatic ecosystem science and engineering, Mathematical ecosystem modeling, Elucidation of the mechanism and prediction of the dynamics in social and natural ecosystems	sohma
	Associate Professor	ENDO Toru	Urban estuarine and coastal environmental engineering, Monitoring and dynamics analysis of coastal environment, Ecosystem services and environmental restorations in urban coastal shallow waters	t.endo

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Research Group	Title	Name	Education and Research Fields	E-mail address
9 Recycling Engineering in Urban Area *2	Professor	KANJO Yoshinori *	Water quality control technology, Evaluation of water environment, Recovery of resources/energy from waste and wastewater	kanjo
	Associate Professor	MIZUTANI Satoshi	Environmental safety evaluation in utilization of solid waste, by-products, and recycled materials, Chemical substances management under natural disaster	miz
	Lecturer	KOMAKI Yukako	Toxicity evaluation of drinking water disinfection by-products	ykomaki
10 Disaster Prevention and Wind Engineering for Buildings	Professor	TANIGUCHI Tetsuro *	Wind-induced response of high-rise buildings, Characteristics of wind pressures acting on large span structures, Wind resistant design, Evaluation of wind loads on low-rise buildings	taniguchi.t
	Lecturer	FURUKAWA Sachi	Disaster prevention of superstructure-pile foundation system especially focusing on ultimate seismic capacity of steel frame and connections	furukawa-s
11 Structural and Material Engineering for Buildings	Professor	TANIGUCHI Yoshiya *	Improvement of seismic performance by combination of various materials (steel, concrete, and wood) and structural forms. Development of sustainable and self-centering structural system using new materials such as geopolymer and superelastic alloy. Advancing damped structures and performance-based design methods. Earthquake-damage level assessment for buildings based on structural health monitoring using IoT sensors. Development of artificial intelligence and data-driven methods related to seismic-resistant technologies.	ytaniguchi
	Associate Professor	SUZUKI Yusuke		y-suzuki
	Lecturer	KANEKO Kensaku		kanekok
12 Structural Engineering *3	Professor	KITOH Hiroaki *	Composite construction in steel and concrete; its mechanical behavior and also establishment of its rational design method	kitoh
13 Concrete Engineering *3	Professor	TSUNOKAKE Hisao	Concrete repair / reinforcement, Seismic, Durability evaluation, Composite structure, Maintenance, Low environmental burden material	tsuno
14 Bridge and Steel Structural Engineering *3	Professor	YAMAGUCHI Takashi	Load-carrying capacity and design method for steel and composite bridges, Repair and reinforcement method of existing bridges, seismic design, Maintenance systems, Environment for bridge construction, Load-carrying capacity and design method of buckling, Load-carrying capacity and design method of bolted and riveted connections	yamaguti-t
15 Geotechnical Engineering	Associate Professor	YAMADA Suguru	Investigation prediction and countermeasures for earthquake-induced liquefaction, Geotomechanical properties of wasted-recycled materials, Geo-acoustic engineering -sounds at soil failure, Small strain deformation of soil, Geo-informatics database	ymdsgr
	Assistant Professor	OKADA Hirohisa	Measures of slope failure caused by heavy rain, Consolidation settlement of clay	okada-hr
16 River and Coastal Engineering *4	Professor	SHIGEMATSU Takaaki	Fluid-structure interaction, Wave power generation, Impact assessment of coastal disaster, Recover of environmental structure in ports and harbors, Future of Inner Bay environment, Climate change impact assessment and adaptation, composite disaster over wide area	shige
	Associate Professor	NAKAJO Sota	Survey and computational analysis and prediction of meteorological and coastal disasters, Tropical cyclone, Storm surge, High wave, Climate change impact, Numerical simulation of fluid dynamics, Image velocimetry, Image analysis, Beach monitoring, Educational tool for disaster prevention	nakajo
17 Spatial Informatics	Professor	YONEZAWA Go	Urban spatial analysis using GIS (Geographic Information System) and Remote Sensing, DEM Generation based on optimal determination, Spatial modeling for urban development, Application of spatial information for sustainable urban development	yonezawa
	Associate Professor	SUGIMOTO Kenji	Spatial analysis of civil engineering structures with GIS and remote sensing, Spatio-temporal analysis of urban structure and material stock and flow, Nighttime light and human activities, Estimation of dynamic anthropogenic disturbance with DEM	sugimoto

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\*1 Specialized subject is [Aquatic Ecosystem Engineering / Aquatic Environmental Engineering]

\*2 Specialized subject is [Water & Waste Treatment Engineering]

\*3 Specialized subject is [Structural and Bridge Engineering]

\*4 Specialized subject is [River and Coastal Engineering]

### [Division of Physics and Electronics]

We prepare students who can be global leaders in science and technology through research-led education for mastering advanced physics and electronics that form the backbone of our technology-intensive nation and for mastering the fundamentals and applications of mathematical science that underlies entire modern engineering.

The Division of Physics and Electronics covers the research field of Physics and Electronics and offers two courses of Physics for Electronics and Electronic Materials.

### [Department of Physics and Electronics]

We emphasize teaching and research the fundamentals and advanced applications in nanoscience and nanotechnologies and prepare excellent researchers and engineers who will contribute to high-tech society through the development of the latest technology based on physics and electronics.

#### ◆Nakamozu Campus (Course of Physics for Electronics)

Research Group	Title	Name	Education and Research Fields	
1 Quantum physics of condensed matter	Professor	TOGAWA Yoshihiko	Spin Electronics, Magnetism, Superconductivity, Electron microscopy, Electron physics, Control and manipulation of electromagnetic fields response	ytogawa
	Associate Professor	KOUSAHA Yusuke	Magnetism, Crystal growth, Synchrotron Radiation, Neutron scattering	koyu
2 Nano Solid State Photo-Physics	Professor	HIGASHIWAKI Masataka	Semiconductor device engineering, Semiconductor physics, Oxide and compound semiconductor electronics, Power device, High-frequency device	higashiwaki
	Associate Professor	TSUTSUMI Takuya	Semiconductor device engineering, Device fabrication process, High-frequency device, Device physics, Compound semiconductor electronics, Millimeter-wave application	takuya.tsutsumi
3 Physics of Organic Semiconductors	Associate Professor	KOBAYASHI Takashi	Organic semiconductors, Organic Photovoltaics, Organic Light-emitting Diodes, Device Physics	tkobaya
	Associate Professor	NAGASE Takasni	Organic semiconductor, Molecular electronics, Nanoelectronics, Semiconductor physics, Nanofabrication	nagase
4 Nanodevice	Professor	AKITA Seiji	Solid state physics in nanoscale, Nanomaterials, Electronic properties in nanoscale	akita
	Associate Professor	ARIE Takayuki	Low dimensional materials and devices Phonon engineering, Phononic crystals, Nanoscale thermophysics and thermoelectronics	arie
	Associate Professor	YOKOSHI Nobuhiko	Solid state photophysics in nanoscale, Nanostructured semiconductor, Quantum information theory	n.yokoshi
5 Integrated Device	Professor	ANDO Yuichiro	Semiconductor spin devices, Spintronics, Spin-related phenomena, Topological materials, Integrated circuits, Integrated devices	yuichiro.ando
	Associate Professor	YASUDA Masaaki	Electron beam engineering, Semiconductor lithography, Scanning electron microscopy, Computational nanoscience	yasuda.masaaki
6 Quantum and Optical Device Engineering	Professor	OKAMOTO Koichi	Plasmonics, Nano-photonics, Quantum and optical device engineering, Laser application	okamot
	Lecturer	MURAI Shunsuke	Nanoantenna, Metasurface, Metronics, Photoluminescence engineering, Nanoimprint	murai
	Assistant Professor	MATSUYAMA Tetsuya	Quantum and optical device engineering, Optical Properties of Semiconductors, Laser application	matsuyama.tetsuya
7 Physics of Novel Device Group	Professor	FUJIMURA Norifumi *	Neuromorphic AI hardware, Ferroelectric devices, Power devices, Multiferroic devices, IR~THz sensors, Smart sensors, Semiconductor Processes	fujim
	Associate Professor	YOSHIMURA Takeshi	Oxide electronics, Semiconductor device, Piezoelectric MEMS, Piezoelectric films, Ferroelectric films	yoshimura
8 Nonlinear Dynamics	Professor	HORITA Takehiko	Nonlinear Dynamics, Chaos, Basin Structure, Stochastic Resonance	t.horita
	Associate Professor	OIKAWA Noriko	Nonlinear Physics, Reaction-Diffusion Systems, Softmatter Physics	noriko.oikawa
	Assistant Professor	HAGA Taiki	Nonequilibrium statistical mechanics, Fundamental theory of condensed matter physics, Nonlinear dynamics	taiki.haga

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Research Groups	Job Title	Name	Research Interests	E-mail address
9 Quantum Physics	Professor	UOZUMI Takayuki	Theoretical solid-state physics, Strongly correlated electron systems, Optical physics	uozumi
	Associate Professor	KATO Masaru *	Theory of many-particle systems, strongly correlated system, and superconductivity	mkato76
	Associate Professor	HARIKI Atsushi	Correlated electron systems, Density functional theory calculation, Theory of x-ray spectroscopies (photoemission, absorption, resonant inelastic x-ray scattering)	hariki
10 Solid State Physics	Professor	IWAZUMI Toshiaki *	X-Ray Spectroscopy, Photo-Induced Phase Transition	iwazumi
	Professor	MIMURA Kojiro	Photoemission Spectroscopy, X-Ray Spectroscopy, Electronic State, Synchrotron Radiation, Strongly Correlated Electron System	k.mimura
	Associate Professor	ANZAI Hiroaki	Strongly Correlated Electron System, Electronic State, Synchrotron Radiation	anzai
	Associate Professor	TAGUCHI Yukihiro	Photoemission and Inverse-Photoemission Spectroscopies, Electron Spectroscopy for Solid Surface, Synchrotron Radiation, Strongly Correlated Electron System	y.taguchi
12 Surface/Interface Science	Associate Professor	NOUCHI Ryo	Field-effect surface science, Nano interface control, 2D atomic layer devices, Organic molecular devices	r-nouchi

◆Nakamozu Campus (Course of Electronic Materials)

Research Groups	Job Title	Name	Research Interests	E-mail address
13 Optical Science and Engineering	Professor	KIM DaeGwi	Quantum dots, Nanoparticles, Optical properties of condensed matter, Advanced optical nanomaterials	kimtegi
	Associate Professor	SHIBUTA Masahiro	Functional thin film, Ultrafast spectroscopy, Electronic property, Electron dynamics	shibuta
	Associate Professor	TAKEUCHI Hideo	Optical properties and functions of semiconductor bulk crystals, epitaxial structures (multiple quantum wells, superlattices and so on) nanometer-order ultrathin films	Hideo.Takeuchi_PhD
	Lecturer	NASHIMA Shigeki	Ultrashort optical pulse technology, Terahertz spectroscopic technology, Terahertz spectroscopic sensing	nashima
14 Mathematical Physics	Professor	TERAI Akira *	Molecular crystals, Organic conductors, Nonlinear excitations, Solitons, Polarons, Optical response, Electronic-state control, Strongly correlated electrons, Computational Physics	terai.akira
	Associate professor	SUGITA Ayumu	Nonequilibrium Statistical Physics, Quantum Chaos, Quantum Information	a.sugita
15 Applied Surface Engineering <sup>s</sup>	Professor	SHIKOH Eiji	Spintronics, Magnetic materials, Metals, Semiconductors, Organic molecules, Thin films, Multi-layers	shikoh
	Associate professor	KOBAYASHI Ataru *	Surface electronic properties, Nano-scale analysis, Charged-particle beam source, Field ion microscopy	a-kobayashi
	Associate professor	FUKUDA Tsuneo *	Surface science, Scanning probe microscopy, Organic-inorganic hybrid electronic devices	d21911s
	Assistant professor	TANAKA Kenji		tanaka-knj
16 Power electronics	Professor	SHIGEKAWA Naoteru **	Photovoltaics and power devices based on heterogeneous integration of foreign materials	shigekawa
	Associate professor	LIANG Jianbo	Diamond electronics, Thermal dissipation of semiconductor devices, Fabrication and nanostructural characterization of bonding of foreign materials	liang
	Associate professor	TAKECHI Seiji	Cosmic dust, Radiation, Particle detector	takechi
17 Plasma Engineering	Professor	SHIRAFUJI Tatsuru	Plasma materials processing, Plasma physics, Plasma chemistry	shirafuji
	Professor	OH Jun-Seok	Atmospheric-pressure plasma materials processing, Plasma diagnostics, Plasma life science	jsoh

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The staff(s) marked with \*\* are scheduled to retire in March 2027.

The research group(s) marked with \$ are scheduled to be renamed Spin Engineering on April 1st, 2026.



### [Division of Electrical and Electronic Engineering]

The Division of Electrical and Electronic Engineering fosters researchers and engineers who will acquire highly specialized expertise related to electric power systems, electrical-electronic systems, system control, information and communications, networks, electronic information systems, intelligent robotics and design/management of product systems, and be able to proceed research activities themselves and create new leading fields of electrical and electronic system engineering.

The Division of Electrical and Electronic Engineering comprise Department of Electrical and Electronic Engineering.

### [Department of Electrical and Electronic Systems Engineering]

#### ◆Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Motor Drive System	Professor	SANADA Masayuki	Motor Drive, Motor Design, Electro-Magnetic Field Analysis	m.snd
	Associate Professor	INOUE Yukinori	Motor Drives, Power Electronics, Energy Conversion	yukinori.inoue
2 Power System	Professor	ISHIGAME Atsushi	Power System Analysis and Control, Optimization Technique, Intelligent Control	ishigame
	Associate Professor	TAKAYAMA Satoshi	Power System Operation and Control, Renewable Energy System Operation and Control	takayama
3 Electrical Control Systems	Professor	KONISHI Keiji	Control Systems, Complex (Chaotic) Systems, System Dynamics	konishi-ees
	Associate Professor	HARA Naoyuki	Control Systems, Model Predictive Control, Control Applications	naoyuki.hara
	Associate Professor	SUGITANI Yoshiki	Control Systems, Nonlinear Dynamics, Complex Network	sugitani
4 Photonic Innovative Systems	Professor	YAMADA Makoto *	Information & Communication Engineering, Optical Amplifiers and Next Generation Networks, Optical Sensing System	yamada.makoto
	Associate Professor	KOYAMA Osanori	IP Network System, Optical Fiber Sensing System	koyama
	Associate Professor	IKEDA Kanami	Optical Sensing, Optical Computing, Optical Signal Processing , Optical Functional System	kanami
6 Smart Information and Communication Systems	Professor	LIN Hai	Wireless Communication, Signal Processing	lin
	Associate Professor	CHIANG Yi-Han	Wireless Network, Edge Computing	chiang
7 Management Systems	Professor	MORIZAWA Kazuko	System Optimization, Production Management Systems, Scheduling, Operations Research, Multi-objective Decision Support	morizawa
	Associate Professor	KUSUKAWA Etsuko	Supply Chain Management, Operations Research, System Optimization, Quality Control	Etsuko-Kusukawa
	Lecturer	MORITA Daisuke	Scheduling, Project Management, Production Management	morita
8 Electrical Information Systems	Professor	NOGUCHI Hiroshi	Nursing Engineering, IoT, Unrestrained Physiology Measurement, Human Behavior Measurement, Sensor Network, Mechatronics, Healthcare Engineering (Mimamori engineering)	hnoguchi
	Associate Professor	MIYAZAKI Daisuke	3D-Display System, 3D-Optical Measurement, Optical Functional Device, Optical Biometric Measurement, High-Performance Image Measurement	miyazaki
	Lecturer	YOSHIMOTO Kayo	Biometric Information Sensing, Medical Image Processing, Medical Support Systems, 3-Dimensional Measurement	yoshimoto
9 Intelligent Robotics	Professor	TAKUBO Tomohito	Robotics, Motion Control, Autonomous Mobile Robots, Intelligent Systems	takubo
	Associate Professor	TSUJIOKA Tetsuo	Communication Systems, Web Databases, Measurement Systems, Application of Wireless Communications	tsujioka-R4

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The staff(s) marked with \* are scheduled to retire in March 2026.

### [Division of Science and Engineering for Materials, Chemistry and Biology]

Sustainable development of human society requires the evolution of new materials and the effective and recyclable use of finite resources. The program aims to foster engineers and researchers who can create new science and technologies of materials, and also who can play an active role on the international stage.

Division of Science and Engineering for Materials, Chemistry and Biology consists of four fields: Applied Chemistry, Chemical Engineering, Materials Science, and Chemistry and Bioengineering.

### [Department of Applied Chemistry]

In the Department of Applied Chemistry, you will study everything from the basics of chemistry to state-of-the-art advanced chemistry comprehensively. Our program will grow an intelligent and energetic chemist with a wide range of knowledges and skills in chemical analysis, synthesis, and characterization, as well as with rich humanity and profound ethics.

#### ◆Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Analytical Chemistry	Professor	HISAMOTO Hideaki	Chemical sensing, Biosensing, Molecular recognition, Color-changeable dyes for chemical sensing, Microanalytical devices	hisamoto
	Associate Professor	ENDO Tatsuro	Biosensor, Nanophotonics, Plasmonics, Micro total analysis systems	t_endo
2 Inorganic Chemistry	Professor	HAYASHI Akitoshi	Inorganic materials science, Glass materials, Solid electrolytes, All-solid-state energy storage devices	akitoshihayashi
	Associate Professor	SAKUDA Atsushi	Inorganic materials science, Electrode materials, All-solid-state batteries	saku
	Assistant Professor	MOTOHASHI Kota	Solid state ionics, Solid electrolytes, All-solid-state batteries	kota.motohashi
3 Physical Chemistry	Professor	MATSUOKA Masaya	Catalyst chemistry ( $H_2$ · $CO_2$ utilization) , Metal-organic frameworks (MOFs), Solar energy Conversion, DFT · MD Calculations	matsuoka
	Associate Professor	KAMEGAWA Takashi	Physical chemistry, Catalyst chemistry, Environmental catalysts, Nanostructured catalysts, Chemistry of porous materials, Spectrochemistry, Computational chemistry	kamegawa
	Associate Professor	TAKEUCHI Masato	Visible-light-responsive photocatalysts, Environmental purification, FT-IR spectroscopy, Near-infrared spectroscopy, Surface wettability, Reaction mechanism	masato.takeuchi
	Associate Professor	HORIUCHI Yu	Solar energy conversion, Photocatalytic $H_2$ production, Visible-light-responsive photocatalysts, Metal-organic frameworks	yu.horiuchi
4 Electrochemistry	Professor	INOUE Hiroshi	Electrochemical energy conversion, Rechargeable batteries/capacitors, Electrocatalysts for fuel cells, Hydrogen generation/storage	inoue-chem
	Associate Professor	CHIKU Masanobu	Electrochemistry, Rechargeable battery, Electrochemical capacitor	chiku
	Associate Professor	HIGUCHI Eiji	Electrocatalysts for fuel cells, Electrochemical energy conversion, Battery and electrochemical materials	higuchi
5 Physical Organic Chemistry	Professor	IKEDA Hiroshi	Photochemistry, Organic electron-transfer chemistry, Heteroelement chemistry, Organic reaction mechanism, Organic synthetic chemistry, Functional organic materials	hiroshi_ikeda
	Associate Professor	MATSUI Yasunori	Organic photochemistry, Photochemical energy conversion, Laser chemistry, Kinetics, Computational chemistry, Organometallic chemistry	matsui_yasunori
6 Organic Functional Materials Chemistry	Professor	YAGI Shigeyuki	Organic materials chemistry, Functional dyes, Organic electronics, Organic light-emitting diode, Fluorescent materials, Phosphorescent materials	yagi
	Associate Professor	KATO Shin-ichiro	Structural organic chemistry, Organic $\pi$ -electron systems, Open-shell molecules, Noncovalent interactions, Supramolecular materials	shin-ichiro.kato
	Associate Professor	KODAMA Shintaro	Synthetic organic chemistry, Coordination chemistry, Organometallic chemistry, Oxidation reaction, Metal oxide cluster	skodama
	Associate Professor	MAEDA Takeshi	Functional dyes, Supramolecular chemistry, Organic electronics, Organic solar cell, Chemosensor	tmaeda

continued on the next page

Research Group	Title	Name	Education and Research Fields	E-mail address
7 Polymer Chemistry	Associate Professor	OKAMURA Haruyuki	Polymer materials chemistry, Photofunctional polymers, Crosslinking and degradation of polymers	okamura
	Associate Professor	SUZUKI Yasuhito	Advanced polymeric materials, Glass transition, Polymer crystallization, Reaction kinetics, Polymer interfaces, Composite materials	suzuki_y
8 Biopolymer Chemistry	Professor	HARADA Atsushi	Biofunctional materials chemistry, Self-assembled polymers, Nanomedicine, Drug delivery system	atsushi_harada
	Associate Professor	KITAYAMA Yukiya	Colloid and interface chemistry, Polymer synthesis, Drug delivery system, Photo reaction, Molecular recognition	kitayama
9 Surface Analytical Chemistry	Professor	SHIIGI Hiroshi	Bioelectrochemistry, Bioanalysis, Surface chemistry, Molecular recognition, Molecular imprinting, Nanobiomaterials	shii
10 Atmospheric Reaction Chemistry	Professor	SADANAGA Yasuhiro	Atmospheric chemistry, Reaction chemistry, Atmospheric measurements, Reaction kinetics, Transboundary air pollutants, Photochemical oxidants, Nitrogen oxides	sadanaga

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### [Department of Chemical Engineering]

In chemical engineering department, we develop engineers and researchers having specialized knowledge and practical skill that can meet the demands of a recycling-oriented society based on the cutting-edge and systematic disciplinarity of chemical engineering with its basic philosophy of constructing a chemical process that takes resource recycling into comprehensive consideration

#### ◆ Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Particle Science and Engineering	Professor	NOMURA Toshiyuki	Fine particle engineering, Nano / Meso material creation, Microbial colloid, Aerosol engineering	tsnomura
	Associate Professor	YAMAMOTO Takuya	Fine particle engineering, Interfacial transport phenomena, Numerical analysis, Phase change, Sonochemistry	takuya.yamamoto
2 Resource Engineering	Professor	IWASAKI Tomohiro	Resource engineering, Powder engineering, Functional nanoparticles, Mechanical chemistry, Numerical simulation	tomohiro.iwasaki
3 Process Systems Engineering	Professor	WATANO Satoru	Equipment engineering, Process systems engineering, Powder engineering, Fluidized bed engineering, Nanotechnology, Instrumentation engineering, Pharmaceuticals / Pharmaceutics	watano
	Associate Professor	OHSAKI Shuji	Equipment engineering, Process systems engineering, Powder engineering, Computational particle engineering, Materials engineering	shuji.ohsaki
4 Chemical Reaction Engineering	Professor	OGINO Hiroyasu	Reaction engineering, Biochemical engineering, Microbial engineering, Protein engineering, Enzyme engineering	ogino
	Associate Professor	YAMADA Ryosuke	Reaction engineering, Biochemical engineering, Microbial engineering, Protein engineering, Enzyme engineering	ryamada
	Associate Professor	MATSUMOTO Takuya	Reaction engineering, Biochemical engineering, Microbial engineering, Protein engineering, Enzyme engineering	t_matsumoto
5 Computational Chemical Engineering	Professor	NAKAMURA Hideya	Numerical simulation, Computational modeling of granular flow, Molecular dynamics, Machine learning, Powder technology, All-solid-state battery	hideyanakamura
6 Materials Process Engineering	Professor	SAITO Takeyasu	Materials process engineering, Plating, CVD reaction engineering, Ferroelectric materials, Wide bandgap materials, Process engineering of wiring materials for semiconductor devices	tsaito
	Associate Professor	OKAMOTO Naoki	Material process engineering, Electrochemical engineering, Microplating, Plating process (electric folding, electroless), Materials engineering	w21056l
7 Environment and Energy Process Engineering	Professor	YASUDA Masahiro	Environmental energy process engineering, Reaction engineering, Biochemical engineering, Polymerization engineering, Biotissue engineering	m-yasuda
	Associate Professor	HORIE Takafumi	Environmental energy process engineering, Transport phenomenon engineering, Reaction engineering, Process intensification, Microreactor, Crystallization	horie
8 Nano Chemical Systems Engineering	Professor	XU Yan	Nanochemical systems engineering, Micro-/Nanofluidics, Single-molecule chemistry and engineering, Single cell analysis, Biomaterials, Analytical chemistry, Nanomedicine	xuy

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### [Department of Materials Science]

Department of Materials Science offers a wide range of materials science and technology concerning such as metals, ceramics, polymer materials, and develop human resources who can flexibly respond to the demands of a recycling society via the development of advanced materials.

#### ◆Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Materials Structure and Physics	Professor	MORI Shigeo	Structure Physics, Nanoscale Structure Analysis, Electron Microscopy, Solid State Battery Materials, Ferroic Materials	moris
	Associate Professor	KASAI Hidetaka	In situ Synchrotron X-ray Diffraction Monitoring, X-ray Crystallography, Materials Structure Science, Energy Materials, Process of Material Synthesis	kasai.hidetaka
2 Materials Science and Nanotechnology	Professor	TAKAHASHI Masahide	Organic-inorganic hybrid, Self-organization, Nano materials, Smart materials, Solution processing, Soft actuators, Optical and electronics materials	masa
	Associate Professor	OKADA Kenji	Nanomaterials, Porous materials, Inorganic materials, Organic-inorganic hybrid materials, Organic-inorganic interface	k_okada
	Assistant Professor	FUKATSU Arisa	Organic-inorganic hybrid materials, Nanomaterials, Soft actuators, DNA materials, Self-organization, Coordination chemistry	fukatsu
3 Industrial Materials Innovation	Professor	KANENO Yasuyuki **	High temperature structural materials, Intermetallics, Alloy design, Microstructure design, Crystal plasticity	y_kaneno
	Associate Professor	INOUE Hiroyuki	Corrosion of metals and its prevention, Electrochemical measurement, Geological disposal of radioactive waste, Electrochemical noise technique, Corrosion monitoring	hiro-inoue
4 Reliable Materials	Professor	TAKIGAWA Yorinobu	Nanocrystalline and Amorphous Materials Processing, Grain Boundary Plasticity, High-temperature Deformation	takigawa
	Assistant Professor	WATANABE Atsuya	Nanocrystalline alloys, Electrodeposition, Deformation and embrittlement behavior, Net shape	wtnb
5 Advanced Polymer Materials	Professor	OHNO Kohji	Polymer, Controlled polymerization, Fine particle, Colloid, Self-assembly	kohji.ohno
	Assistant Professor	KINOSE Yuji	Polymer, Controlled polymerization, Polymer brush, Cellulose, Liquid crystal	yuji.kinose
6 Materials Design Theory	Professor	SUZUKI Michito	Material design, Condensed matter theory, Magnetism, Strongly correlated materials, First-principles calculation, Materials informatics	mts
	Assistant Professor	TERADA Ibuki	First-principles calculation, Magnetism, Non-equilibrium physics, Quantum transport phenomena, Optical properties	iterada
7 Biomaterials	Professor	TOKUDOME Yasuaki	Solid acid/base catalysts, Liquid-phase reaction, Colloid & Interface, Bionanotechnology, Clay minerals, Layered materials	tokudome
8 Computational Materials Science	Professor	IKENO Hidekazu	Computational materials science, First-principles calculations, Materials informatics, Electron spectroscopy, Catalysts, Inorganic phosphors	h-ikeno
9 Bioelectronics Materials	Professor	TOKONAMI Shiho	Biosensor, Optical analysis, Micro- and nanostructure, Useful bacteria, Microbial power generation, Environment/Energy	tokonami
10 Hybrid Nanomaterials	Associate Professor	MAKIURA Rie	Nanomaterials, Nanosheets, Energy materials, Metal-organic frameworks, Surface/interface science, Thin films, Coordination chemistry, Electronic devices	rie.makiura
11 Electromagnetic Responsive Materials	Associate Professor	KIMURA Kenta	Magnetism, Ferroelectricity, Chirality, Multiferroics, Optical functional Materials, Transition metal compounds, Materials Exploration	kentakimura

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**[Department of Chemistry and Bioengineering]**

The program aims to foster human resources who can elucidate the diverse properties of molecules and materials from the perspectives of both chemistry and life science, design and create molecules and materials, innovate in the field of medicine such as antibodies, nucleic acids, and cells, solve various problems in the environment and health, and create a sustainable future.

◆Sugimoto Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Physical and Analytical Chemistry	Professor	TSUJI Kouichi	Development of X-ray trace elemental analysis and XRF elemental imaging methods, and their applications to characterization of materials and environmental analysis	k-tsuji
2 Inorganic Materials Chemistry	Professor	YAMADA Yusuke	Heterogeneous catalysts utilizing metal complexes and nanoparticles for energy and environmental issues	ymd
	Associate Professor	ARIYOSHI Kingo	Lithium-ion battery, Electrode materials for advanced batteries, Solid-state electrochemistry for insertion materials	ariyoshi
3 Organic Materials Chemistry	Professor	KOBATAKE Seiya	Design of photofunctional organic crystal materials and control of their solid physical properties, synthesis of photofunctional polymer materials and evaluation of their physical properties, development of molecular functional devices	kobatake
	Lecturer	KITAGAWA Daichi		kitagawa
4 Catalytic Organic Chemistry	Associate Professor	TAMURA Masazumi	Design of highly-functionalized catalyst systems and development of new catalytic reaction systems that contribute to carbon-neutral and upcycling of resources	mtamura
5 Functional Molecular Chemistry	Professor	SATO Eriko	Development of controlled polymer synthesis, precise control of polymer reactions, biomass utilization, design and development of stimuli-responsive-, functional adhesive-, and interfacial functional-materials	sato-eriko
6 Polymer Chemistry	Professor	HORIBE Hideo **	Compatibility and crystal structure analysis of multi-component polymers, conductivity of filler-dispersed polymers, resist development with high resolution and sensitivity, chemical reaction analysis of active species with organic compounds	hhoribe
7 Chemical Reaction Engineering	Professor	KOMETANI Noritsugu	Reaction analysis in subcritical and supercritical fluids and its engineering application, physicochemical study of biomass in extreme environments, application of photocatalysts to environmental chemistry	kometani
8 Immuno-engineering	Associate Professor	YUBA Eiji	Nanomedicine, Drug delivery, Functional polymer chemistry, Biomaterial, Vaccine, Immunotherapy	yuba
9 Biochemical Engineering/Separation Engineering	Associate Professor	IGARASHI Koichi	Advanced crystallization for organic compounds such as pharmaceutical, functional foods, production of useful substances from biomass	igarashi
10 Biofunctional Engineering	Professor	NAGASAKI Takeshi	Development of biopolymer-based medical materials (DDS, Boron neutron capture therapy, hemostat, adhesion barrier materials), Regulated polarization of tumor associated macrophage and sensitization of cancer therapy, Synthesis of sphingolipid analogs, Anti-cancer agents and anti-inflammatory agents based on natural products	nagasaki
	Lecturer	AZUMA Hideki		azumah
11 Cell Engineering	Professor	AZUMA Masayuki	Discovery of new functions of cells and construction of new functional cells by synthetic biotechnology, development to the fields of medicine, environment, energy, and food from engineering applications of these useful cells. [Keywords: microorganisms and cell surface]	azuma
	Associate Professor	OJIMA Yoshihiro		ojima
12 Biomolecular Engineering	Professor	KITAMURA Masaya	Structure-function relationship of redox proteins, Industrial application of enzymes	kitamura
	Associate Professor	NAKANISHI Takeshi	Design of artificial antibodies for development of biologics and their production using genetic engineering techniques	nakanishi
13 Biomaterials	Professor	TACHIBANA Akira	Development of biological medicine using RNA interference, RNA editing, genome editing and synthetic biology methods.	akira-tachibana
14 Drug Discovery and Biotechnology	Professor	TACHIBANA Taro	Drug discovery based on the biotechnology, development of the methods for generation of highly functional monoclonal antibodies and biopharmaceuticals	taro-tachibana
	Lecturer	YOKOYAMA Chikako		c-yokoyama
15 Heterogeneous Catalysts	Professor	ISHIDA Tamao <sup>1)</sup>	Design of novel nanostructured heterogeneous catalysts, catalysis by metal nanoparticles and clusters, and development of environmentally benign chemical processes over heterogeneous metal catalysts	tishida

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1) Professor, Research Center for Artificial Photosynthesis and Graduate School of Engineering (Concurrent post)

Application is accepted only for 2025 Fall enrollment. No application is accepted for 2026 Spring enrollment.

**[Division of Quantum and Radiation Engineering]**

The Division of Quantum and Radiation is an engineering field that applies quantum beams such as radiation, ions, and electrons to various fields. Through practical education using our large-scale radiation facilities, students acquire advanced scientific technology and research skills related to quantum and radiation, and are trained to become engineers and researchers who understand radiation safety and contribute to the development of modern society.

**[Department of Quantum and Radiation Engineering]**

◆Nakamozu Campus

Research Group	Title	Name	Education and Research Fields	E-mail address
1 Quantum-Beam Materials Science	Professor	UMEZAWA Kenji *	Surface Science (Low energy ion/atom scattering spectroscopy, LEED/AES, STM, RBS/Ion beam channeling, Surface structural analysis(Top 1 <sup>st</sup> - 3 <sup>rd</sup> atoms), Development of surface analysis techniques, Ultrahigh Vacuum	umezawa
2 Radiation Metrological Science	Professor	MIYAMARU Hiroyuki	Radiation Metrology, Radiation Physics, Radiation Simulation	miyamaru
	Assistant Professor	KOJIMA Takao	Nuclear Plant Engineering, Radiation Process Engineering	Kojima.takao
3 Quantum beam energy reaction science	Professor	HORI Fuminobu	Positron Physics, Lattice Defects, Radiation Effects, Hydrogen Storage, Metals, Semiconductors, Nano Materials, Amorphous Alloys, Functional Materials, Accelerator Irradiation	horif
	Associate Professor	YOSHIOKA Satoru	Metal/Ceramics, Radiation effects, X-ray structural analysis, First principles calculations	satoru.yoshioka
	Assistant Professor	KIYODA Shunji *	Syntheses of poly nuclear complexes	kiyoda
4 Quantum Science of Nanoscale Materials and Devices	Professor	KAWAMATA Shuich *	Superconductors, Magnetic Materials, Compound Semiconductors, Magnetic Measurements, Electric Transport Measurements, Nano-Fabrication	s-kawamata
	Associate Professor	TSUKUI Shigeki	Quantum solid-state science engineering, Energy Conversion Materials (fuel cells, thermoelectric power generation devices, hydrogen absorbing alloy, solar cells, etc), Functional Thin Film Materials & Devices	a21630n
5 Radiation Safety Management	Professor	MATSUURA Hiroto *	Plasma Science and Engineering, Nuclear Fusion, Nuclear Engineering, Plasma Application to Environment Problem, Radiation Safety Management	matsuura
	Associate Professor	AKIYOSHI Masafumi	Radiation safety management, Radiometry, Development of divertor materials for fusion reactor, Infection control using quantum radiation, Radiological education	akiyoshi-masafumi
	Associate Professor	ASADA Ryoko	Radiation Biology, Food Science, Microbial Control Science, Sterilization Engineering, Hyperthermia	asada.ryoko

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