Gunma University Graduate School of Science and Technology (Doctoral Program)
Faculty Members and Fields of Specialization

※Please make sure to receive an approval for acceptance from the supervisor before applying.

※Please put "gunma-u.ac.jp" after the at sign (@).

◆ Domain of Materials and Bioscience

Faculty Members	E-mail	Fields of Specialization
Professors		
Naoki Asakawa	asakawa@	・Bio-inspired devices using emergent property found in polymers
* Motoko S. Asano	motoko@	・Photophysics and design of photofunctional composite molecular systems including coordination compounds
Hideki Amii	amii@	・Development of synthetic organic reactions and their applications
Yusuke Inoue	yinoue@	・Functional analysis of the liver-enriched nuclear receptors using gene-targeted mice
Hiroki Uehara	hirokiuehara@	・Development of property and functionality of polymeric materials by drawing techniques
* Tetsuo Okutsu	okutsu@	・Physical chemistry, photochemistry and crystal growth
* Hiroaki Ozaki	h-ozaki@	・Development of modified nucleic acids and its application
Ken-ichi Kasuya	kkasuya@	・Structure and function of polyester-degrading enzymes, screening of microorganisms involved in the environmental cleanup
Toru Kyomen	tkyomen@	・Solid state chemistry and design of functional oxides
Hideo Satsu	satsu@	・Search and analysis of functional food ingredients expected to prevent disease and promote health
Kiichi Sato	kiichi.sato@	・Development of micro bioanalysis systems
Soshi Shiraishi	soshishiraishi3@	・Development of carbon-based nanoporous materials and electrochemical capacitors
Yoshihiro Sumiyoshi	y-sumiyoshi@	・Studies on molecular structures of transient species and complexes consisting of radicals
Masashi Sonoyama	sonoyama@	・Biomolecular science, Biophysical chemistry of proteins, Biospectroscopy, Bioinformatics
Hiroshi Takahashi	hirotakahashi@	・Structural analysis and thermal study of model biomembranes
Shigeki Takeda	stakeda@	・Functional analysis of receptors, characterization and application of protein self-assembly
Yuya Tachibana	tachibana@	・Development of biobased and biodegradable polymers
Yosuke Nakamura	nakamura@	・Construction and properties of novel π-conjugated systems including fullerene chemistry and supramolecular chemistry
Minoru Hanaya	mhanaya@	・Development and characterization of functional solid-state materials
Jun-ichi Fujisawa	jfujisawa@	・Studies of organic-inorganic hybrid materials for light energy conversions
Ichiro Matsuo	matsuo@	・Glycoscience, Glycotechnology, Synthetic study of glycoconjugates
Takako Muraoka	takakomuraoka@	・Studies on unique ligands with heavier typical elements and their transition metal complexes
Toshitada Yoshihara	yoshihara@	・Photophysical and photochemical studies of aromatic compounds and its
Associate Professors		
Shinji Iwamoto	siwamoto@	・Solvothermal synthesis of inorganic materials and their performance as catalysts autoantigens, advanced functional foods for prevention of diseases
Hiroyuki Oku	oku@	・Synthetic vaccines and diagnosis material; biofunctional chemistry; biomedical and functional polymers
Masaki Kakiage	kakiage@	・Development of high-performance polymer fiber and film materials and ceramics by green processing
Ryohei Kakuchi	kakuchi@	・Synthesis of polymeric materials through a combination of computational and experimental chemistry
Koki Kamiya	kamiya@	・Design of biomolecular complexes and exploration of biological phenomena through synthetic biology
Ken-ichiro Kanno	kkanno@	・Synthesis and properties of novel organosilicon compounds using transition-metal complexes
Masanao Kinoshita	kinoshi@	・Structure and property of biomembranes and their functions
Takafumi Shimoaka	shimoaka@	・Physical chemistry and vibrational spectroscopy on molecular aggregation systems transition-metal complexes
Tsuyoshi Takahashi	ttakahas@	・Construction and application of functional molecules using peptide and protein engineering
Nobuhiro Takeda	ntakeda@	・Synthesis of metal complexes bearing new ligands for the purpose of activating small molecules
Hiroyuki Takeno	takeno@	・Self-assembling structure and dynamics of multicomponent polymer systems
Nobukazu Nameki	nameki@	・Analyses of novel translation regulation mechanisms, and structural bioinformatics
Tomohisa Moriguchi	moriguchi@	・Development of functional oligonucleotides, chemistry of natural products
Minoru Yamaji	yamaji@	・Photophysics and photochemistry of organic and organometallic compounds
Keiichi Yamada	kyamada@	・Development of novel bioactive peptides utilizing molecular imaging technique application for bioimaging
Visiting Professors		
Noriaki Seko		・R＆D of the polymer modification technique by radiation processing
Mitumasa Taguchi		・Quantum beam reaction and environmental / medical applied research
Tetsuya Yamaki		・Nanotechnology Research and Material Development for Application to Next-Generation Energy Devices
Hiroki Yamamoto		・Study on Ultra-finefabrication Matterials Based on Reaction Induced by Quantum Beam
Zhao Yue		・Synthesis and structure/property analysis for functional polymer materials

＊ will retire in March, 2027

◆**Domain of Mechanical Science and Technology**

Faculty Members	E-mail	Fields of Specialization
Professors		
Kenji Amagai	amagai@	・Thermo-fluid engineering, Interfacial flow, Atomization, Environmental fluid engineering
Mikiya Araki	mikiya.araki@	・Jet engines, Jet noise, Combustion, Spray
Tsuneaki Ishima	ishima@	・The experimental elucidation for flow, heat and mass transfer and laser application for flow including small particle
Atsushi Iwasaki	aiwasaki@	・Structural health monitoring and composite material
Shinji Koyama	koyama@	・Precision bonding, surface hardening, corrosion resistance, wear resistance
Ikuo Shohji	shohji@	・Heterophase interface science, micro joining, electronics packaging materials, brazing, surface treatment and corrosion of metals
Takaaki Suzuki	suzuki.taka@	・Micromachines and MEMS for bio, optical and IoT applications
Nobuaki Nakazawa	n.nakazawa@	・Human interface, biomedical motion control, and motion planning for a robot
Yoshihiko Hangai	hanhan@	・Fabrication and mechanical evaluation of porous metals
Yusaku Fujii	fujii@	・Precision measurement, Optical measurement, Electrical-mechanical measurement
Tomohiko Furuhata	tfuruhata@	・Combustion, spray flow, exhaust gas aftertreatment and gas turbines
Shinichi Maruyama	maruyama@	・Vibration analysis and measurements of machines and structures, Nonlinear phenomenon
Takao Yamaguchi	yamagme3@	・Numerical analysis for dynamics of cars, machines and living bodies, Vibration damping, Sound-proof structure, Acoustic black hole
Ko Yamada	yamada@	・System control theory and its application, control of machine and robot, and intelligent control of the machine
Weimin Lin	wlin@	・Developing a high efficiency ultra-precision polishing machine. Reseach for the application of ELID process. Creating a desktop processing machine and test.
Associate Professors		
Masahiro Inoue	masa-inoue@	・Development and characterization of organic/metal/inorganic hybrid materials, and their application to novel electronic systems
Takahiro Kawaguchi	kawaguchi@	・Control engineering, system identification, state estimation, machine learning
Hisanobu Kawashima	hkawa@	・Bubble dynamics, heat and fluid flow measurement, and multiphase flow
Yoshio Zama	yzama@	・Spray flow, Quantitative visualization measurement, Automotive engineering
Ryosuke Suzuki	r_suzuki@	・Smart manufacturing, IoT utilization, Digital communications, Material testing technology
Akihiro Takita	takita@	・Optical measurement, Image processing, Social safety, IoT devices
Yuya Tanaka	yuya.tanaka@	・Characterization of organic materials and their application to semiconductor and mechatronic devices
Masato Funatsu	mfunatsu@	・Hypersonic and high-temperature gas dynamics, Thermal protection system for space vehicle, Plasma diagnoses by spectroscopy
Iwanori Murakami	murakami@	・Applied electromagnetics, Actuator, Applied of superconducting levitation, Jumping robot
Md Abdus Samad Kamal	maskamal@	・Control of next generation vehicular traffic system, model predictive control and intelligent control and their applications
Visiting Professors		
Satoshi Okajima		・Design evaluation method for fast reactors, Coupling of probabilistic risk assessment and structural reliability evaluation
Takashi Wakai		・Structural design and material strength evaluation techniques for Fast Breeder Reactors
Tomoyoshi Watakabe		・Seismic design evaluation techniques for Fast Reactors

◆**Domain of Environmental Engineering Science**

Faculty Members	E-mail	Fields of Specialization
Professors		
Hideyuki Itabashi	itabashi@	・Speciation and removal of heavy metal ions in the environment
* Jun-ichi Ozaki	jozaki@	・Design and preparation of catalytic carbon materials, particularly used in the applications of fuel cell and biomass conversion.
Mitsuo Ozawa	ozawa@	・Fire resistance of concrete, Control of cracking due to volume change in concrete at early age
* Shinji Katsura	katsura@	・Development of manipulation technologies for biological molecules and their industry applications
Masanobu Kanai	kanai@	・Local disaster prevention, evacuation, disaster information, disaster education
Kazuyoshi Sato	kazuyoshi-sato@	・Synthesis and processing of ceramic materials and application for enegy and environmental devices
* Nobuyoshi Nakagawa	nob.nakagawa@	・Development of an efficient liquid fuel cell by means of catalyst preparation and by optimizing the electrode structure.
Hideyuki Morimoto	hmorimoto@	・Development of all-solid-state batteries and novel battery materials
Akihiko Wakai	wakai@	・Slope failure mechanisms, soil-structure interaction and their numerical simulation
Tomohide Watanabe	watanabe@	・Biological wastewater treatment, microbial and physicochemical degradation of water pollutants, Advanced water / wastewater treatment , resource recovery
Associate Professors		
Takafumi Ishii	ishii@	・Development of surface analysis techniques for carbon materials, application of carbon materials to material conversion catalysts and energy devices
Tsukasa Ito	t.ito@	・Water treatment, environmental microbiology and biodegradation of environmental pollutants
Ken-ichi Uzaki	k-uzaki@	・A study of regional sediment transport from rivers to coastal regions. Development of the calculation model to estimate the sediment discharge of river by using the simple model and field data.
Masahiko Oshige	oshige@	・Development of bio-molecular manipulation methods and application of reaction process analysis by using molecule design techniques
Fei Cai	feicai@	・Earthquake-resistant measures for ground and earth structures, safety evaluation of landslides, and shallow ground thermal energy utilization
Takahiro Saitoh	t-saitoh@	・Applied mechanics, computational mechanics and non-destructive evaluation for civil engineering structures
Reiji Noda	noda_r@	・Development and evaluation of waste/biomass energy utilization processes, Evaluation and design of a local society based on energy/mass flow analysis
Miyabi Hiyama	miyabi@	・Application of electrostatics on bio-separation and micro-chemical systems, development of bio-micro-electromechanical systems
Junpei Fujiki	jun.fujiki@	・Development of functionalized porous materials, analysis and modeling of adsorption properties, and application to adsorption processes
Visiting Professors		
Hiromi Shirai		・Environmental combustion engineering, clean energy conversion engineering
Kenji Tanno		・Numerical combustion simulation, Energy control
Naoki Noda		・Environmental combustion engineering, aerosol engineering, energy conversion of coal and biomass

＊will retire in March, 2027

◆Domain of Electronics and Informatics, Mathematics and Physics

Faculty Members	E-mail	Fields of Specialization
Professors		
** Kazuyuki Amano	amano@	・Computational complexity, theory of algorithms, machine learnig
You Yin	yinyou@	・Materials and devices for brain-like chip and information storage, nanofabrication, nanometrology
** Hiromasa Oku	h.oku@	・Dynamic image control, High-speed image processing, High-speed optical devices
Syun-ji Ozaki	shunji@	・The optical properties and electronic energy-band structures of nanoatructured semiconductors and ternary compound semiconductors
** Tsuyoshi Kato	katotsu.cs@	・Bioinformatics, machine learning, and statistical analysis
Tamihiro Gotoh	tgotoh@	・Material science for optical devices
Hiroshi Sakurai	sakuraih@	・Spintronics, Lithium ion battery, X-ray imaging, medical engineering
** Kaoru Shimada	k.shimada@	・Evolutionary computation, knowledge discovery and data mining
** Koji Jimura	jimura@	・Human cognitive neuroscience, neuroinformatics, and decision neuroscience
Hayato Sone	hayatosone@	・Nanometer measurement and fabrication, nanoelectronic devices, high-sensitive biosensor for medical use, crystal growth
Toshiki Takahashi	t-tak@	・Physics of compact torus plasmas for thermonuclear fusion reactors
Manabu Takahashi	mtakahas@	・Theoretical study on electronic properties and magnetism in transition metal compounds
* Kazumi Tanuma	tanuma@	・Elasticity equations, inverse problems
** Shin-ichi Nakano	nakano@	・Graph algorithm, and Information visualization, optimization
Tatsuya Nagao	nagao@	・Theory of strongly correlated electron system
Seiji Hashimoto	hashimotos@	・Motion control, system identification, vibration control, precision control, renewable energy
Kenta Miura	mkenta@	・Light-emitting materials and devices, Photoelectric devices
Takashi Miwa	miwa@	・Applied measurement for electromagnetic and ultrasonic wave
Kuniyuki Motojima	motojima@	・Radio wave propagation, Wireless measurement, Electromagnetic wave simulation
Masakazu Yamamoto	mk-yamamoto@	・Nonlinear partial differential equations, Mathematical model of diffusion phenomena, Time evolution of nonlinear diffusion
Yasushi Yuminaka	yuminaka@	・Multiple-valued logic and new-paradigm analog/digital integrated circuits
Associate Professors		
** Toru Araki	arakit@	・Graph theory, Graph algorithm, Combinatorial optimization
** Ken-ichi Kawanishi	kawanisi@	・Information and communication systems, performance evaluation, queueing theory
Ren Koda	koda@	・Medical ultrasound imaging, Tissue elasticity measurement, Wave propagation, Micro/nano-bubble treatment
Kosuke Suzuki	kosuzuki@	・X-ray characterization, Backscatter imaging, Electronic structure, Functional oxide, Lithium rechargeable battery
Masako Suzuki-Sakamaki	masakoss@	・Synchrotron Science, Surface/Interface Science, Multiferroics
Yuki Tanaka	ytanaka@	・High-speed arithmetic algorithm, IoT device and its management system, graph theory
Akito Chiba	chiba@	・Photonics, Optoelectronics
Hui Zhang	huizhang@	・Nano-fabrication and measurement, nanoelectronic devices, ultra-sensitive biosensors, and simulation-based
Hirofumi Nagoshi	nagoshi@	・Analytic number theory, value-distribution of arithmetic functions
Toshiya Hikihara	hikihara@	・Low-dimensional strongly correlated electron systems, quantum spin systems, numerical calculation
Takafumi Miyazaki	tmiyazaki@	・Exponential Diophantine equation, Diophantine analysis
Yoshifumi Morita	morita@	・Theoretical study on low dimensional quantum systems and superconductors
Visiting Professors		
Tomio Iwasaki		・Sustainable and bio-compatible materials design with molecular simulations and materials informatics
Teruo Kohashi		・Magnetic metrology, Spin polarized scanning electron microscopy
Kazuo Saito		・Advanced electronic engineering
Ken Harada		・Electron microscopy, electron interferometry, electron holography, and their physical applications
Naoki Kawachi		・Research utilizing radioisotope imaging technologies to address challenges in agriculture, medicine, and the environment
Mitsutaka Yamaguchi	m-yamaguchi@	・Development of radioisotope (RI) imaging technologies in the field of life sciences

＊will retire in March, 2027

**will transfer to Graduate School of Informatics in April, 2026

◆Gunma University Initiative for Advanced Research (GIAR)

Faculty Members	E-mail	Fields of Specialization
Professor		
Keisuke Nimura	nimura@	・Gene expression, Gene Therapy, Oncotherapy, DNA barcode, Next Generation Sequencing
Md. Zakir Hossain	zakir@	・Chemical modification of epitaxial graphene on SiC substrate
Assistant Professor		
Takehiko Yokobori	bori45@	・Biomarker research using clinical cancer specimens, Development of cancer treatment tools