Information of the Researchers

Main Research Themes 2026

Faculty of Environmental Engineering and
Graduate School of Environmental Engineering, The University of Kitakyushu

Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology

Graduate School of Information, Production and Systems, Waseda University

Fukuoka University Graduate School of Engineering

Fukuoka Research Commercialization Center for Recycling Systems

KITAKYUSHU SCIENCE AND RESEARCH PARK

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"the Kitakyushu Science and Research Park researchers information search system" by input of professional affiliation or name.

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Kitakyushu Foundation for the Advancement of Industry, Science and Technology
FAIS

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Position	Name	Main Research Theme
Department of Chemical and Environmental Engineering		
Chemical Processes		
Professor	Syouhei Nishihama	1. Separation and recovery process of rare metals from waste materials 2. Removal process of toxic compounds in water environment
Associate Professor	Takao Gunji	I am working on the development of new materials based on nano-particles, such as fuel cell catalysts and electrocatalysts for CO_2 reduction reaction.
Associate Professor	Yamamoto Masanori	1. Synthesis of nanoporous graphene materials for energy and catalysis 2. Green electrosynthesis and electrochemical reaction processes
Lecturer	Yumi Katayama	1. Development of decomposition method of persistence organic pollutants by reductive dehalogenated reaction 2. Development of insolubilization method of heavy metal contaminated soil 3. Development of portable hydrogen storage system using self-assembled monolayers
Lecturer	Anna Nagai	1. Synthesis and immobilization of alloy nanoparticles using porous materials and their catalytic performance 2. Resource conversion of carbon dioxide using waste materials
Advanced Materials		
Professor	Isamu Akiba	1. Synthesis, Properties and Structures of Organic Polymers 2. Mesomorphic Phase Formation of Multicomponent Polymer Materials
Professor	Seung-Woo Lee	1. Nano-structured materials 2. Fabrication and application of chemical sensors 3. Analysis of disease odors
Professor	Katsutoshi Yamamoto	1. Synthesis and application of new structures of porous materials 2. Development of new synthesis routes for porous materials 3. Development of catalysts for bio-fuel synthesis
Professor	Hiroyuki Imai	1. Development of novel composite catalysts combining porous materials with metals 2. Development of catalytic reaction processes for manufacturing high added value chemicals from various carbon resources including fossil resources, biomass, and CO_2
Associate Professor	Takahiro Teramoto	1. Property evaluation of next-generation solar cells using ultrashort pulse lasers 2. Large-scale quantum chemistry calculations using supercomputers
Environmental Processes		
Professor	Hidenari Yasui	1. Activated Sludge Population Dynamics 2. Anaerobic Digestion 3. Nutrient Removal and Recovery 4. Pretreatment of Industrial Wastewaters
Professor	Mitsuharu Terashima	1. Modeling and simulation of water and wastewater treatment process 2. Hydrodynamics in wastewater treatment plant
Associate Professor	Takashi Miyawaki	1. Development of comprehensive analysis method for chemicals using mass spectrometry 2. Environmental pollution survey and ecological effect evaluation in Japan and overseas 3. Study on source analysis of chemicals in the environment
Associate Professor	Kazuki Sugawara	1. Development of environmental remediation technology for heavy metal contaminated soil and water utilizing biological functions 2. Establishment of highly efficient carbon dioxide fixation technology using fast-growing tree species 3. Clarification of elemental dynamics in the environment related to the above processes
Associate Professor	Yasushi Mino	Experimental and numerical studies of flow and transport phenomena in particle-dispersed systems related to resources and environment
Department of Mechanical Systems Engineering		
Energy Systems		
Professor	Yoshiaki Miyazato	Research on application for supersonic flows of rainbow schlieren tomography and laser interferometry
Professor	Sadami Yoshiyama	1. Development of Combustion Diagnostics Method Using Ion Sensor 2. Combustion and Ignition of Carbon-free fuel 3. Development of Heat cycle for Waste Heat Recovery System
Dean, Professor	Koichi Inoue	1. Electronics cooling 2. Condensation heat transfer on a large tube bank 3. Heat spreader 4. Internal natural convection
Associate Professor	Shinichiro Nakao	1. Research on numerical analysis of interference between shockwave and boundary layer 2. Research on application of laser interferometry to flow field accompanied by shockwaves
Associate Professor	Katayama Yusuke	1. Elucidation of multiphase flow phenomena with phase change 2. Turbo machinery and flow phenomena for energy conversion systems 3. Development of small-scale hydro-turbines for renewable energy systems 4. Understanding and control of unsteady flows and vortical structures
Design and Manufacturing System		
Professor	Takanori Kiyota	1. Study on Mechanical System Control Method based on Inherently Safe Design 2. Development and Application of Power Assist Systems based on Inherently Safe Control 3. Study on Safe and High-Performance Control of Pneumatic Systems
Professor	Nobuhiro Okada	1. 3D visual measurement 2. Robotics 3. System engineering
Professor	Changhee Cho	Study on the Wear of Ultra-High Molecular Weight Polyethylene for Artificial Joints
Professor	Hiroshi Murakami	Research on the advancement of precision machining and measurement technology through the integration of AX and other information technologies with advanced machining and measurement technologies
Professor	Takumi Sasaki	1. Development of Nonlinear Vibration Isolator 2. Development of Vibration Analysis Method for Large Scale Systems 3. Development of Vibration Control Device using MR Fluid
Professor	Hiroki Cho	1. Research for performance improvement of shape memory alloy 2. Research and development of actuator and medical equipment using shape memory alloy 3. Research and development of the heat-engine using shape memory alloy
Associate Professor	Takuya Ikeda	1. Sparse modeling 2. Optimal control 3. Multi-agent system
Associate Professor	Takeshi Miyaguni	1. Study on high performance vertical axis micro wind turbine 2. Study on catamaran type water surface cleaning ship with a movable weir
Department of Information Systems Engineering		
Signal Processing		
Associate Professor	Ryo Matsuoka	Study on remote sensing, image processing, medical imaging, medical image analysis, computer vision, signal processing, data analysis, and anomaly detection based on mathematical modeling, artificial intelligence, machine learning, and mathematical optimization
Systems Control		
Professor	Lianming Sun	1. Modeling and system design for control and communication systems 2. Adaptive signal processing
Associate Professor	Yang Guang	1. Physical AI-Driven Robot Behavior Generation 2. Autonomous Navigation and Manipulation in Unstructured Environments 3. Distributed Cooperative Control and Self-Reconfiguration of Modular Robots
Networking		
Associate Professor	Hiroyuki Koga	1. Computer Communication Networks 2. Internet Architecture
Associate Professor	Yusuke Ito	1. Edge cloud computing 2. Information-centric networking

Security		
Professor	Satoshi Uehara	Sequence design for communications applications
Professor	Yasushi Yamazaki	1. Biometrics 2. Information security 3. Pattern recognition 4. Time series analysis
Integrated Systems		
Executive Director, Vice-president, Professor	Shigetoshi Nakatake	1. VLSI Physical Design 2. Mixed Signal LSI Design 3. Sensor System Integration 4. Analog Reconfigurable Device
Professor	Makoto Sugihara	1. VLSI design technique 2. Embedded system designs 3. IT system design for advanced driver assistance
Professor	Yasuhiro Takashima	1. Algorithms to VLSI system layout design 2. Optimization Method 3. Mathematical Programming
Sensing and Robotics		
Professor	Takeshi Nishida	1. Research on AI robots for smart factories 2. Research on Robot Intelligence by Fusion of Cyber Space and Real Space
Software		
Associate Professor	Susumu Yamazaki	1. Semiconductor Design 2. Software
Biomedical Engineering and Human Information Processing		
Professor	Masayuki Sato	Psychophysics on human visual perception, especially on depth perception from binocular stereopsis
Professor	Takehito Hayami	1. Medical Test/Bioelectromagnetism 2. Psychological Test/Behavior Science 3. Surgery Support Systems
Associate Professor	Yasuaki Tamada	1. Proposition of multi-modal stimulation method for 3D or VR contents 2. Development of applications for visual function diagnosis
Department of Architecture		
Structure and Construction		
Professor	Masae Kido	Seismic Design and Frame Stability of Steel and Concrete Filled Steel Tubular Structures
Associate Professor	Kazuaki Hoki	1. Evaluation of Seismic Performance of Old Building 2. Development of Seismic Retrofit
Associate Professor	Masaki Teranishi	1. Non-linear finite element analysis of wooden and steel structure 2. Application of machine learning to structural engineering problems 3. Evaluation of mechanical properties of materials and structures using optical techniques
Building and Construction Materials		
Professor	Koji Takasu	1. Development of carbon negative concrete for carbon neutrality in 2050 2. Study on modification of recycled building materials 3. Study on the Harmless Treatment of Municipal Solid Waste Incineration Ash and Its Utilisation as a Geopolymer Active Filler 4. Study on self-healing type low carbon geopolymer concrete 5. Study on properties of the concrete using recycled aggregate and high volume by-products particles 6. Environmental impact assessment considered performance of building material 7. Study on analysis and test method of concrete by various analysis devices
Professor	Hidehiro Koyamada	1. Safety management in buildings 2. Hot weather concreting 3. Medium fluidity concrete 4. Sustainable system of forest resources 5. Building resource supply system in Japan 6. Research and maintenance of existing and aged buildings
Professor	Hiroki Suyama	1. New building materials manufactured from by-products 2. Cement concrete engineering 3. Impression evaluation of building materials
Building Environment and Energy System		
Professor	Weijun Gao	1. Architectural/urban environment planning/design 2. Building/city energy and resource planning 3. Study on urban environment in Asia
Professor	Yasuyuki Shiraishi	1. Advanced air-conditioning system to realize energy saving and comfort 2. Development of performance prediction method of various passive environmental control systems 3. Environmental control engineering for large scale building based on CFD analysis
Associate Professor	Shintaro Ando	1. Effect of thermal environment on health (e.g. blood pressure, physical activity, sleep quality, and body temperature) 2. Economic evaluation of the disease prevention effects of housing 3. Productivity improvement by activity based working 4. Effect of community environment on physical activity
Associate Professor	Takahiro Ueno	1. Decarbonization of buildings by commissioning and fine tuning 2. Roadmap design to zero energy islands and zero energy communities 3. Environmental evaluation of biophilic design spaces 4. Development of external EMS using IoT and AI cameras
Architectural Design		
Professor	Hiroatsu Fukuda	1. Architectural Design 2. Design of Recyclable Houses, Low-Energy Houses, Recycle of Construction Materials 3. High-Rise Residences 4. Urban Environment, Urban Design, Compact City 5. New construction methods of Japanese cedar 6. Historical Architecture
Professor	Bart Julien Dewancker	1. Research on urban planning and citizen involvement in urban planning 2. Research on Sustainable Architecture and Urban Design 3. Landscape planning, green buildings
Associate Professor	Yumi Fukuda	1. Study on light regulating human biological rhythms 2. Study on light environment and color planning which develop vision 3. Lighting design in public spaces 4. Study on illumination
Department of Life Science and Biotechnology		
Biomaterial		
Professor	Kazuya Uezu	1. Biosensors utilizing the structures and functions of living organisms 2. Biomaterials for capturing the intracellular messengers 3. Design of functional materials with computational chemistry 4. Environmentally-friendly firefighting foam for forest fire
Professor	Kohji Nakazawa	1. Development of cell array 2. Development of sensing technology of cell functions 3. Study of tissue engineering using cultured cells
Professor	Takaaki Isoda	Development of a new bio sensor and the application : 1. Bacteria sensors for food sanitation, 2. fast testing for virus and infection
Professor	Shinichi Mochizuki	1. Development of drug delivery system 2. Novel immunotherapy 3. Glycoengineering 4. Nucleic acid chemistry

Advanced Bioscience		
Professor	Hiroshi Morita	1. Study on physiological function of IGUSA 2. Bio-control science of mold spores and mites 3. Study on novel co-culture Koji for Sake brewing 4. Development of submerged culture system for brewing
Professor	Takanori Kihara	1. Research on mineralized tissue and smooth muscle cells 2. Cell analysis through physical measurements and computational simulation
Associate Professor	Sakura Yoshida	1. Investigation of trace elements in biological systems 2. Synthesis of biologically aactive nanosphere containing metallic elements
Associate Professor	Kohei Yoneda	Bioproduction using microalgae and related protists. Basic physiological study on metabolisms of polyunsaturated fatty acids, useful pigments such as carotenoids, and hydrocarbon. Application of genome editing techniques for molecular breeding.
Environment and Ecology		
Professor	Tomonori Kawano	1. Plant and microbial biology (photosynthesis, plant immunity, environmental response, cell signaling) 2. Plant-production factory-related technology (light source, monitoring, mathematical models) 3. Redox biochemistry (ROS) 4. .Environmental assessment 5. Metallic ecotoxicity 6. Bioengineering with protists 7. Fire-fighting agents and environment 8. Science history 9. Biochemistry of blood 10. Fish and the environment
Associate Professor	Katsunori Yanagawa	Microbial distribution, community composition and biogeochemical cycles in the geobiosphere including extreme environment.
Associate Professor	Katsushige Uranishi	1. Transboundary Air Pollution from Biomass burning 2. Regional and transboundary pollution in terms of air quality
Associate Professor	Lisa Ito	1. Environmental issues such as heavy metal pollution on coral reef islands 2. Cross-border movement of chemical substances contained in anthropogenic products (including transboundary pollution mediated by the atmosphere) and their impact on ecosystems 3. Relationship between soil formation of atoll sediments and nitrifying bacteria
Associate Professor	Nakano Mitsunori	1. Elucidation of the mechanisms underlying the formation and maintenance of biodiversity through biotic interactions involving freshwater bivalves 2. Development of environmentally friendly rice-farming practices and agricultural ditches based on the ecology of aquatic organisms 3. Studies on the life histories and conservation of freshwater fishes in river ecosystems

Institute of Environmental Science and Technology, The University of Kitakyushu

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Position	Name	Main Research Theme
Professor	Takuya Oda	1. Research on supply and demand management for renewable energy introduction 2. Development of energy management technology through energy demand activation
Professor	Takaaki Kato	1. Economic evaluation of environmental and energy policy 2. Evaluation and governnance of risk
Professor	Tsuruo Matsuda	1. Research and development of various systems for rehabilitation applications 2. Research and development of embedded systems linked to biological signals 3. Research and development of mechatronic control systems utilizing bio-signals 4. Bioelectrical and magnetic stimulation
Professor	Toru Matsumoto	1. Sound material-cycle society and industrial symbiosis 2. Urban environmental management in Asia 3. Servicing as sustainable business models 4. Environmentally conscious life style
Professor	Chooi Ling Goh	1. Applying generative AI in the field of natural language processing 2. English academic paper writing support systems 3. Multilingual machine translation 4. Digital humanities
Associate Professor	Atsushi Fujiyama	1. Study on Consumer Behavior and SDGs Evaluation 2. Study on energy management systems 3. Study on using information technology in the environmental field
Associate Professor	Akira Tsuchiya	1. Modulation of cellular function on biomaterials 2. Establishment of an in vitro osteoporosis model by calcium phosphate-organimc materia 3. Development of antibacterial or osteoconductive implant
Associate Professor	Ryusuke Fujisawa	1. Study on swarm intelligence / swarm robotics 2. Study on the function of recognition of the external world in living organisms 3. Study on identification using machine learning
Associate Professor	Shun Ohki	1. Population genetics research to clarify the evolution and speciation process of organisms 2. Evolutionary biology research using next-generation sequencing technology and bioinformatics

Center for Fundamental Education, Hibikino Campus, The University of Kitakyushu

Position	Name	Main Research Theme
English Education		
Professor	Masanobu Ueda	A quantitative and qualitive analysis of verb semantics and construtions
Associate Professor	Eiichiro Tsutsui	1. English education 2. EFL with information and communication technology 3. Creating web apps for Japanese learners of English 4. Analyzing computer-mediated communication data
Associate Professor	Roger J.A. Prior	Translation studies, particularly the potential for translating jokes and humour
Associate Professor	Anne Marie Crescini	1. Research on the Effectiveness of Using Study Abroad as One Way to Improve Language Ability and Increase Cultural Awareness 2. Research on the Relationship between Foreign loanwords and the English Pronunciation of Native Japanese Speakers
Associate Professor	Naoki Kiyama	1. Lexical semantics 2. Construction-semantics interface 3. Text-mining
Lecturer	Shoji Ishibashi	Experimental phonetic research for the relationship between speech production and perception
Japanese Education		
Professor	Ryusuke Ikeda	1. Japanese for Specific Purpose 2. Analysis of The Features of Language Adjustment of Japanese Native Speakers 3. Development of Learning Resources for International Students Majoring in Environmental Engineering 4. Research on Academic Writing Education in Japanese
Liberal Arts		
Professor	Hiroyuki Tsujii	Research on Business Management for Sustainability 1. Corporate Environmental Management 2. Engineering Ethics Education 3. Entrepreneurship
Professor	Takayuki Ishikawa	1. Human Resouce Development 2. Development of PBL Education Program 3. Social Innovation

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Position	Name	Main Research Theme
Department of Life Science and Systems Engineering		
Professor	Shuuhei Ikemoto	Behind sophisticated abilities of living organisms are the mechanisms that exploit demerits, e.g., complexity/flexibility of body and unignorable noise, as merits. Toward understanding and applying the mechanisms, academic studies about biologically inspired systems based on robotics have been conducted.
Professor	Kazuo Ishii	Development of field robots such as underwater robot, agricultural robot, inspection robot, and research on related topics, environment recongnition system, self-localization system, adaptive learning system, motion control system, bio-inspired information processing, etc.
Professor	Sozo Inoue	We develop human activity recognition from smartphones and sensors, and their services. We also cultivate AI by collecting medical and nursing care big data.
Professor	Ichiro Omura	Development of ultimate power semiconductor devices to atcheve carbon neutral. Power semiconductors are key device for xEVs, PVs and wind firm for the energy efficiency.
Professor	Hiroki Obata	The objective of the research is to develop new neurophysiological methods or assistive devices which promote gait rehabilitation and motor skill training by approaching both sides of neuroscience and engineering.
Professor	Hiroshi KONO	My research focuses on wide-bandgap power devices and their applications in power electronics. We conduct concept validation and address key technical challenges to accelerate the widespread adoption of wide-bandgap semiconductors.
Professor	Tomohiro Shibata	・Our research is founded on the concept of Human-centered Physical AI and spans across robotics, artificial intelligence, biomechanics, biosignal processing, and neuroscience. We investigate how humans and AI-enabled robotic systems can co-adapt through physical interaction and apply these findings to caregiving, healthcare, and welfare. ・We are engaged in the research, development, evaluation, and social implementation of assistive technologies, including robots and smart devices, in collaboration with a diverse range of stakeholders such as older adults, persons with disabilities, caregivers, healthcare professionals, and welfare organizations.
Professor	Katsumi Tateno	Our interests are complex behavior of neural activity and theoretical investigation on neural coding in the brain. Specifically, we are currently researching neural network models of the medial temporal lobe.
Professor	Hirofumi Tanaka	Research and development of electric nanodevices for artificial intelligence hardware, whose target is to generate new electrical functionalities by using the circuit of the nanodevices.
Professor	Masaaki Tamagawa	1. Computational and experimental studies of Hemolysis and Thrombus formation in blood flows 2. Application of Shock Waves and Ultrasonic to Drug Delivery Systems, Water treatment, Tissue Engineering 3. Development of driving force of micromachines by investigating chemotaxis of neutrophile, Keyword:Bio-fluid dynamics, Bio Medical Engineering,CFD, Shock Wave
Professor	Hakaru Tamukoh	A brain-like computer system laboratory aims to realize a brain-like computer based on a hardware/software complex system and its application to embedded systems on home-service robots.
Professor	Kiyohisa Natsume	We conduct the research on brain-machine interfaces (BMI), which use brainwaves to transmit human thoughts to machines, robots, and AI.
Professor	Tsuyoshi Hanamoto	Development of human-friendly and environmentally friendly electrical power conversion systems and application for motor control systems
Professor	Tetsuya Haruyama	We are developing research to realize various functional interfaces (reaction fields) by elucidating the functions of heterogeneous interfaces. "Chemical resource conversion of nitrogen, oxygen, and water (phase interface reaction technology)", "interface that converts CO_2 into resources", "process technology with low environmental load", "safe decomposition of harmful substances", etc.
Professor	Shyam Sudhir Pandey	Design and development of photo-functional materials for energy harvesting and organic electronic devices.
Professor	Tetsuo Furukawa	Our destination is to develop the learning theory and its algorithms, which enable us to discover general rules and intrinsic information underlying the given datasets. Typical themes are higher-order modeling throuhgh meta-learning and multi-task learning. We also challenge to devleop embodied knowledge discovery systems from complex data network.
Professor	Keiichi Horio	The Research aimed at estimating and classifying individual characteristics by measuring and analyzing human behavior. Besides, we pursue optimization of the intervention method based on analysis results and aim to apply it to real-world society, especially data analysis involving humans.
Professor	Tingli Ma	Design and syhtheses of nanomaterials and their characterization. Development of new materials for stable perovskite solar cells. Development electrode materials with high performance and low cost for application to Li-ion batteries and Na-ion batteries, as well as metal-air batteries.
Professor	Toshinari Maeda	Unique microbioal functions can be elucidated and improved using biotechnologically-engineered approaches to construct an innovative technology which should be useful to the environment and human society.
Professor	Toshiki Miyazaki	Development of biocompatible materials for repair and regeneration of bone, tooth and nerve. Development of ceramic processing with low energy consumption inspired by biological system. Development of microparticles for cancer treatment
Professor	Naoya Murakami	Analysis of photofunctional material using photoacoustic spectroscopy, Development of photocatalytic system for light-energy conversion.
Professor	Takashi Yasuda	By integrating semiconductor processing technology with cell culture technology, we are developing microdevices —such as microelectrode array devices for measuring electrical signals from nerve cells and brain organoids, and blood-brain barrier devices for evaluating drug permeability from the blood to the nervous system—to elucidate the mechanisms underlying neurological diseases and evaluate the efficacy of therapeutic drugs.
Professor	Hiroshi Yamada	Medical diagnosis assistance and prevention of diseases and injuries through measurement-device development, mechanical testing, constitutive modeling and computational analysis, focusing on mechanics of diseased arteries and, biliary stent migration
Professor	Kaori Yoshida	We study Kansei Information Processing as one of Human-Computer Interaction research. The research aims to design appropriate information systems based on psychological, social, and technical analysis. Research topics include human-centered design, soft computing, usability, conceptual models, interface metaphors, human cognitive models, implicit behavior analysis, and interactivity structures.
Professor	Hiroaki Wagatsuma	We explore systems design inspired by biological emergent intelligence, through an understanding of what makes us human (intelligence), how we are embodied in the environment (body kinetics/morphology), why emotional and social aspects are so important to us (sociality). Our mathematical modeling and investigation are applied to the design of an artificial intelligence, robot development, and rehabilitation tools.
Dean, Professor	Chikamune Wada	Research on developing human-friendly assistive device/substitution system for the disabled/the elderly people based on psychophysical analysis of human sensory-motor systems.
Associate Professor	Yoshito Ando	We aim to pursue environmental conservation and sustainable science by focusing on environmentally friendly materials and processes. Our research involves identifying the properties of biomass and natural materials, including underutilized agricultural waste, and designing and evaluating high-value functional materials that leverage these properties.

Associate Professor	Shinya Ikeno	I have been studying development of functionalized nanomaterial combined with biomolecule and nanoparticle, and application of functionalized biomolecular to bioprocess such as production of recombinant protein.
Associate Professor	Yoshitaka Otsubo	We investigate the cellular and molecular mechanisms underlying the signal processing occurred in mammalian taste buds and we contribute to develop a new signal processing based on features of taste buds.
Associate Professor	Tamaki Kato	Design, synthesis, and conformational analysis of peptide-based artificial functional molecules (Peptide nanostructures, peptide-based drug design etc).
Associate Professor	Momoko Kumemura	Applying MEMS (Micro Electro Mechanical Systems) technology to biological research at the molecular, cellular, and tissue level. Development and characterization of novel microfluidics for mechanical, chemical, and genetic assays for oncological studies.
Associate Professor	Kazuto Takashima	Applications of shape-memory materials and artificial muscle to human-interactive robot. Development of soft tactile sensor. Development of device placement simulator for endovascular treatment.
Associate Professor	Yoshiyuki Takatsuji	Our research has committed to solving to environmental and energy problems with the catalytic a metal electrode that can produce the efficiency substance. The catalytic metal electrodes have been developing and also analyzing the reaction mechanism and the produced substance.We will pursue research in the field of clean cycle chemistry (Tri-C) and achieve the goals of the SDGs.
Associate Professor	Yuichiro Tanaka	1. Development of brain-inspired artificial intelligence models 2. Development of fast and low-power hardware for artificial intelligence models 3. Application for service robots
Associate Professor	Tsunegi Sumito	With the limitations of semiconductor miniaturization, nanodevices utilizing novel physical properties have attract much attention. We study spiking neural networks (SNNs) that mimic the behavior of synapses and neurons using nanodevices, including spintronics devices, aiming for applications such as robotic recognition processing.
Associate Professor	Jin Nakamura	Design of composite materials (ceramics, metals, and organic molecules) that exhibit various degradation behaviors in response to environments such as in vivo conditions and seawater Development of inorganic ion-releasing materials that enhance bone repair Development of seawater purification materials inspired by the microstructure of seashells
Associate Professor	Yuuya Nishida	To reliably accomplish the mission, our laboratory develops robot that robustly navigates in actual environment, and its elemental technology. We survey actual environment using developed robot and system to benefit society.
Associate Professor	Yusuke FUJII	Development of High-Speed and High Power Bearngless Motor, Torque Enhancement of Permanet Magnet-Type Vernier Motor with Concentrated Winding, Vibration Reduction of Permant Magnet Motor by Mutiple and Multi-Phase Drive
Associate Professor	Muhammad Salman AL FARISI	We conduct research on MEMS (Micro-electro mechanical systems) for biomedical and healthcare applications, spanning materials, devices, and integrated sensing systems. Our work includes flexible sensors, unconventional microfabrication processes, and portable biomedical monitoring platforms, aiming to enable sustainable sensing solutions and accessible healthcare diagnostics.
Associate Professor	Shinsuke Yasukawa	Our research focuses on robotic technologies for biological observation and manipulation, simulation-based studies of the visual nervous system, bio-inspired sensing and control technologies based on biological sensory information processing, and embedded system implementation of these technologies. We also deploy these technologies in field environments such as farms and underwater sites.
Associate Professor	Akihiko Watanabe	We are conducting research on ultra-high-performance power devices that utilize the outstanding semiconductor properties of diamond. Diamond power devices can contribute to the efficient use of electrical energy and the realization of next-generation power networks. In addition, they enable the miniaturization and weight reduction of power equipment and can operate in extreme environments such as high demperatures and high-radiation conditions. As a result, they are expected to create new application fields, including space exploration and next-generation mobility systems.
Assistant Professor	Hideaki Ishibashi	The aim of our research is to develop the learning theory and its algorithms for meta-modeling, which enables to discover meta-knowledge by modeling a set of knowledges or models. We also aim to construct universal framework for actively modeling of meta-knowledge by connecting the Friston's free energy principle.
Assistant Professor	Yuki Usami	Research and development of nanoscale various basic pysical properties of organic/inorganic materials for extracting flexible bio-inspired function. Creation of unconventional nanodevices by circuitization and deviceization from nanomaterial function.
Assistant Professor	Ravi Nath Tripathi	Conducting research on power devices and power electronics. In particular, I am focusing on devices using wide-bandgap materials to realise carbon neutrality, and I am working to demonstrate and solve problems related to new concepts for their widespread adoption, such as intelligent control for parallelising devices and high-frequency feedback control for power converters.
Visiting Professor	Iwao Sasaki	Research on the upgrading of the materials for Mechatoronics equipments.
Visiting Professor	Hiroshi Nakajima	Research and development on algorithms of intelligent systems by studying soft computing, statistical analysis, and social intelligence in human-machine collaboration systems with application studies.
Visiting Professor	Hideki Honda	As robots are good examples, mechatronic devices are now used in various fields as well as in the industry. Therefore, in addition to research on the high-speed and high-accuracy performance required by the industry, we also study mechatronics technology that is kind to people and supports them.
Visiting Professor	Takayuki Matsuo	Development of mobile robot systems inspired by mechanisms of animals for irregular terrain, underwater and so on.
Specially Appointed Associate Professor	Masahiro Nakano	Plant Life Cycle Engineering (Research on autonomously controlled robot welding, and Research on thermal elasto-plastic analysis of welds and optimization of welding order)

Research Center for Neuromorphic AI Hardware, Kyushu Institute of Technology

U R L https://www.brain.kyutech.ac.jp/~neuro/?lang=en

Position	Name	Main Research Theme
Distinguished Professor	Takashi Morie	Research and development of brain-like processing models, new functional devices and digital/analog integrated circuits (VLSI) and systems mainly targeted to service robots toward achieving brain-like artificial intelligence.
Specially Appointed Professor	Takuya Matsumoto	Surface science and nanoscale physical chemistry of molecular materials and nanomaterials, as well as their applied technologies, with a particular focus on neural-type physical computations
Assistant Professor	Muzhen Xu	To develop in-materio computing materials (metal oxide single crystals and semiconducting polymers) and establish microfluidics-based physical reservoir computing systems. Utilizing these platforms, I fabricate low-power, stable physical reservoir devices. The ultimate goal is to apply them to voice recognition and single-microparticle classification for intelligent robots and sensors.
Specially Appointed Assistant Professor	Akinobu Mizutani	Experimental research on foundation models for home service robots and the development of energy-efficient intelligent systems using brain-inspired artificial intelligence running on embedded devices.

Collaborative Research Center for Green Materials on Environmental Technology, Kyushu Institute of Technology

U R L https://www.life.kyutech.ac.jp/~green_material/wp/

Position	Name	Main Research Theme
Assistant Professor	Jacqueline Lease	Sustainable polymer materials from renewable biomass resources, particularly cellulose, are developed through surface functionalization, mechanochemical processing, and green modification techniques. Research focuses on creating high-performance bio-based materials while promoting biomass valorization and environmentally responsible manufacturing for a circular and low-carbon society.

Graduate School of Information, Production and Systems, Waseda University

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Position	Name	Main Research Theme
Information Architecture Field		
Dean, Professor	Shigeru Fujimura	1. Production Planning and Scheduling 2. Production Management 3. Project Management 4. Digital transformation 5. Business Process Modeling
Professor	Jinglu Hu	Neurocomputing Systems and their Applications to Identification and Control of Nonlinear Systems
Professor	Mizuho Iwaihara	1. Database Query Processing 2. Web Information Systems 3. Text Mining 4.Knowledge Management 5. Social Media
Professor	Seiichiro Kamata	1. Image Processing 2. Pattern Recognition and Computer Vision 3. Applications of Space-filling curves 4. Image & Video Retrieval 5. Visual Information Processing
Professor	Jun Kameoka	1. Development of Wearable biosensor and IOMT platofrm 2. Integration of IOMT and AI Platform technologies for early detection of disease and prognosis management 3. Application of IOMT for agriculture
Professor	Yves Lepage	1. Natural language processing and Artificial intelligence 2. Example-based, statistical and neural machine translation 3. Study of analogy, application to morphology, syntax and semantics, machine translation and paraphrasing 4. Multilingual word and sentence alignement 5. Academic writing aid system for researchers who are non-native English speakers
Professor	Takafumi Matsumaru	Bio-Robotics & Human-Mechatronics 1. Human-Symbiotic / Synergetic Robot 2. Human-Robot Interaction (physical / informative / psychological) 3. Intelligent / Behavioral Robotics 4. Social / Ethical Robotics 5. International Cooperation / Collaboration Robotics 6. Human Understanding / Education
Professor	Osamu Yoshie	1. Global machine diagnosis service using the Internet technologies 2. Environmental Information Processing 3. IoT application to manufacturing 4. Analysis of consensus building 5. Knowledge logistics
Professor	Jun Wu	1. Network Intelligence 2. Network Security 3. Application and System Development for Intelligent Security 4. International standard for security management of intelligent networks
Associate Professor	Yuya Ieiri	1. Agent Simulation 2. Cyber-Physical System 3. Augmented Reality 4. Information Utilization for Revitalizing Community 5. Social System Construction in Collaboration with Stakeholders
Production Systems Field		
Professor	Masao Arakawa	1. Design Engineering 2. Multiple Decision Making and its applications 3. Design of Heuristic Search and its applications 4. Practice by Design Thinking 5. Design of Data Mining and its aplications
Professor	Kenji Hashimoto	1. Problem-solving oriented robotics 2. Autonomous mobile system 3. Mobile robot (legged robot, wheeled robot) 4. Humanoid robot 5. Physical AI
Professor	Kazuma Mawatari	Micro- and Nanofluidic dic Engineering 1. Mobile chemical and bioanalysis device 2. Biomimetic device 3. High-performance bio-analysis device 4. Medical diagnosis device 5. In air and realtime virus detection device
Professor	Takeo Miyake	1. Smart contact lens using integrated circuits 2. Wearable biofuel cell using enzyme catalysts 3. H+-mediated control of biofunction with electrochemical pH modulation 4. DDS system with nanostraw membrane
Professor	Eiichiro Tanaka	1. Automatic Remote Diagnosis of Gear Driving System Using a Small Laser Sensor 2. Development of a Walking Assistance Device for Gait Training of Patients and Promotion Exercise of the Elderly 3. Development of Various Assistance Devices for ADL, lifting up and standing up, etc.
Professor	Shigeyuki Tateno	1. Development of fault detection and diagnosis systems for chemical plants 2. Estimation of Corrosion Rates for Corrosion Under Insulation in Petrochemical Plants 3. Wireless Communication support system for rescue actions 4. Development of on-demand PC BTO systems
Professor	Kenji Ueda	1. Semiconducting materials and devices 2. Thin film growth 3. Carbon electronics 4. AI electronics
Professor	Takayoshi Shimura	1. Semiconductor devices, materials, and processes characterization 2. Development of synchrotron radiation technology 3. Development of optoelectronic integrated devices 4. Development of germanium based devices
Professor	Junko Takahashi	1. Development of therapeutic methods using radiation responsive organic compounds (radiosensitizers) 2. Analysis of micro changes of physiological status 3. Bioinformatics
Associate Professor	Kyohei Yamaguchi	1. Elucidating the phenomena of powertrain systems 2. Modeling of powertrain systems 3. Development of powertrain control methods 4. Optimization of powertrain systems 5. Performance evaluation during real driving
Lecturer	Gabor Mehes	1. Bacterial electronics devices (energy conversion, sensing) 2. Extracellular electron transfer 3. Bioelectrode engineering by organic electronics materials
Assistant Professor	Jose Miguel ARAGON JURADO	1. Green and sustainable computing 2. Software security and code obfuscation 3. Sustainable public transportation systems
Research Associate	Zhendong Du	1. Natural Language Processing 2. Automated Planning 3. Classical Planning 4. Symbolic Reasoning 5. Intelligent Decision-Making 6. Neuro-Symbolic AI

Research Associate	WANG, Chang-Wen	1. Reinforcement learning 2. Exoskeleton control 3. Human walking motion imitation
Integrated Systems Field		
Professor	Tamio Ikehashi	Micro Electro-Mechanical Systems(MEMS) 1. MEMS Sensors(accelerometer, vibrometer, gravimeter, gyro, etc) 2. Sensor system(pressure/ height monitoring) 3. Actuator devices 4. FEM simulation 5. MEMS fabrication
Professor	Takeshi Ikenaga	1. Ultra High Speed Vision System 2. 3D Human/Sports Analysis 3. 6DoF Object Tracking 4. Video Filter 5. Video Compression
Professor	Takaaki Kakitsuka	Information-communication systems employing light emitting devices 1. Semiconductor lasers and light emitting devices 2. Optical circuit design 3. Nanophotonics 4. Optical signal processing
Professor	Shinji Kimura	High Level System LSI Design and Verification, Design for Testability
Professor	Shoji Makino	1. Blind Source Separation 2. Speech Enhancement 3. Speech Dereverberation 4. Microphone Array 5. Acoustic Scene Analysis 6. Acoustic Event Detection 7. Acoustic Scene Classification
Professor	Kiyoto Takahata	Opto-electronic integration technology 1. Opto-electronic integrated circuits 2. High functional optical devices 3. Photonic microwave/millimeter-wave devices
Professor	Toru Tanzawa	Greening of integrated systems, especially on 1) Energy harvesting technology, 2) Semiconductor memory system, 3) Analog circuit system, 4) Power conversion system
Professor	Shintaro Yamasaki	1. Structural optimum design of various integrated devices such as power semiconductors and optical MEMS 2. Integrative optimal design of integrated systems composed of integrated devices 3. Optimal design of other devices
Professor	Toshihiko Yoshimasu	1. RF IC circuit design methodologies such as power amplifiers, VCOs, filters, and so on 2. RF transistor modeling for SiGe HBTs, Si CMOS, and so on
Associate Professor	Kazunori Serita	1. Terahertz sensing applications 2. Terahertz imaging applications 3. Terahertz sensor development using metamaterials 4. Terahertz integrated device development
Research Associate	Jun Yang	1. Development and application of data-driven topology design with high robustness and efficiency 2. Prediction of DDTD parameters based on deep learning

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Position	Name	Main Research Theme
Junior Researcher	Saman Azhari	1. CNT/PDMS nanocomposites for pressure sensing and robotics 2. topological effects of SWNT-POM reservoir computing on temporal information processing 3. wireless power transfer for sensors 4. synthesis and characterization of carbon nanotubes
Junior Researcher	Ryoichi Ohta	Micro- and Nanofluidic dic Engineering 1. High-performance bio-analysis device 2. Micro/Nano fabrication 3. Semiconductor heat transport device
Assistant Professor	JIA Siyu	1.Semiconductor materials and devices 2. Growth of thin film (Graphene, Diamond) 3. Carbon Electronics
Research Associate	LIAO Wenjie	Research on Intelligent Fault Diagnosis Methods for Industrial Equipment using Few-shot and Zero-shot Learning
Research Associate	NOHGI Toru	1. Development of wearable biosensors and foundational IoMT technologies. 2. Integration of IoMT infrastructure with AI for early disease detection and applications in home healthcare and caregiving. 3. Research on creating next-generation point-of-care (POC) devices.

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Position	Name	Main Research Theme
Recycling and Eco-Technology		
Professor	Kazuo Tameda	Waste Management System, Total system for the landfill
Associate Professor	Fumiko Taura	1. Green Infrastructure and Rain Gardens: Implementation and Evaluation 2. Community Resilience and Landscape Design: Leveraging Natural Resources

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Main Research Theme
◇Research and development function Studies improving social system concerning waste disposal, such as separate collection, recycling technology, are carried out synthetically by cooperating with industries, governments, universities, and citizens. ◇Practice support function Regional development and making the result of the research achieved by a joint research are supported. ◇Environmental information function Information on recycling technology and the social system are sent, and the measure of related each subject for the construction of the recycling society is supported.

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