Information of the Researchers 2016

Digest version Main Research Themes

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

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

The access site is as follows,
http://fais.ksrp.or.jp/05kenkyusha/srch_e.asp

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

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

TEL +81-93/695-3310 URL http://www.kitakyu-u.ac.jp/env/
FAX +81-93/695-3368 E-mail admin-sec@kitakyu-u.ac.jp

Position	Name	Main Theme of Study
Department of Chemical and Environmental Engineering		
Chemical Processes		
Professor	Kenji Asami	Development of Novel Processes for the Production of Synthetic Clean Fuels and their Utilization
Professor	Xiao-Hong Li	1. Woody biomass to syngas at lower temperature 2. The synthesis of super clean diesel fuel (Fischer-Tropsch synthesis) 3. The synthesis of gasoline 4. The synthesis of LPG 5. Eggshell catalyst
Professor	Kazuharu Yoshizuka	1. Lithium recovery from various resources 2. Recycle system of rare metals from various wastes 3. Removal system of arsenic and boron from various underground waters
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	Fumiaki Amano	1. Development of semiconductor photocatalysts and photoelectrodes with high efficiency 2. Precise control of crystalline morphology and alignment of metal oxides 3. Development of systems for photochemical conversion and storage of solar light energy
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
Associate Professor	Takuya Suzuki	1. Titanium oxide photo catalyst 2. Development of high resolution optical and X-ray interference microscope without reference light
Associate 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
Associate Professor	Hiroyuki Imai	1. Development of novel catalysts for application to catalytic reaction processes 2. Synthesis and functionalization of porous materials as a solid catalyst in processes of effective utilization of petrolium resources and production of chemicals from non-petrolium resources
Environmental Processes		
Professor	You Ito	1. Remediation of soil contamination 2. Monitoring on CO_2 geological storage 3. Safekeeping technology of radioactive pollution soil/waste
Professor	Hitoshi Ohya	Development of recycling technology and its system design
Professor	Hidenari Yasui	1. Activated Sludge Population Dynamics 2. Anaerobic Digestion 3. Nutrient Removal and Recovery 4. Pretreatment of Industrial Wastewaters
Professor	Masahide Aikawa	Atmospheric Science(Acid Deposition (Acid Rain, Acid Fog), Air Pollution (Gaseous compounds, Particulate matter))
Associate Professor	Mitsuharu Terashima	1. Hydrodynamics in waste water treatment plant 2. Precipitation of inorganics and bio-fauling in water system
Department of Mechanical Systems Engineering		
Energy System		
Professor	Masaaki Izumi	1. Study on Improvement of Performance and Endurance of Solid Oxide Fuel Cells 2. Study on Diagnostics of Fuel Cell Performance 3. Study on Gas Transfer in Fuel Cells
Professor	Yoshiaki Miyazato	1. Measurements of Shock Train Oscillations by High-Speed Mach-Zehnder Inteferograms 2. Three-Dimensional Density Measurements in Supersonic Jets Using Tomographic Rainbow Schlieren 3. RANS Simulations of Pseudo-Shock Waves in Scramjet Engines
Professor	Sadami Yoshiyama	1. Development of Combustion Diagnostics Method for Production SI Engine Using Ion Sensor 2. Measurement and Modeling of Turbulent Premixed Flame in Internal Combustion Engine 3. Development of Waste Heat Recovery System for Reciprocting Internal Combustion Engines
Professor	Koichi Inoue	1. Thermal management of high-power LED light 2. Heat and mass transfer from noncondensable gas and vapor mixtures 3. Condensation heat transfer on a large tube bank
Associate Professor	Daisuke Ono	1. Study on subsonic flow around a two-dimensional airfoil 2. Quantitative visualization of compressible flows using Mach-Zehnder interferometer
Associate Professor	Shinichirou Nakao	1. Research on applying non-contact measurement techniques to compressible flow fields. 2. Research on methods to soup up small size wind turbines.
Design and Manufacturing System		
Professor	Takanori Kiyota	1. Study on Mechanical System Control Method based on Inherently Safe Design 2. Study on Safe and High-Performance Control of Pneumatic Systems 3. Development and Application of Power Assist Systems
Professor	Ryoichi Matsunaga	Spline Rolling of Deep Drawn Cups
Professor	Nobuhiro Okada	1. 3D visual measurement 2. Robotics 3. System engineering
Associate 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
Associate Professor	Changhee Cho	Study on the Wear of Ultra-High Molecular Weight Polyethylene for Artificial Joints
Associate Professor	Hiroshi Murakami	1. Development of a System for 3-D Micro Metrology Using an Optical Fiber Probe 2. Simple and Simultaneous Measurement of Five-Degrees-of-Freedom Error Motions for a Micro High-Speed Spindle
Associate 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.

Department of Information and Media Engineering		
Communications and Media Processing		
Executive Director, Vice-president, Professor	Akihiro Kajiwara	1. Radio communication systems 2. Microwave/Millimeter wave propagation 3. Radar 4. UWB
Professor	Satoshi Uehara	Sequence design for communications applications
Professor	Masayuki Sato	Psychophysics on human visual perception, especially on depth perception and visual stability during eye movements
Professor	Masahiro Okuda	Multimedia Processing, Signal Processing
Professor	Takashi Satoh	Cryptography and applications of cryptographic protocols
Associate Professor	Yasushi Yamazaki	1. Biometrics 2. Information security 3. Pattern recognition
Associate Professor	Hiroyuki Koga	1. Computer Communication Networks 2. Internet Architecture
Associate Professor	Seisuke Kyochi	My research is fundamental signal processing technique for efficient audio/image/video acquisition, analysis, compression and transmission.
Associate Professor	Isamu Matsunami	1. Development of multiple taget detection, classification and state estimation systems for autonomous car and robot 2. Microwave/Millimeter wave imaging by UWB radar 3. Sensor fusion
Computer Systems		
Professor	Lianming Sun	1. Modeling and system design for control and communication systems 2. Adaptive signal processing
Professor	Kazumi Horiguchi	Systems and Control Theory
Professor	Hiroshi Miyashita	1. Optimization algorithms for VLSI physical design 2. Applied mathematics related to electronic design automation for VLSI
Professor	Toru Takahashi	1. Learning control 2. Intelligent robotics
Professor	Shigetoshi Nakatake	1. VLSI Physical Design 2. Mixed Signal LSI Design
Associate Professor	Yasuhiro Takashima	Algorithms to VLSI system layout design
Associate Professor	Susumu Yamazaki	1. Software engineering education based on instructional design 2. Interdisciplinary research between software engineering and management engineering
Department of Architecture		
Structure and Construction		
Professor	Keigo Tsuda	Seismic Design and Stability Design of Steel and Steel-Concrete Composite Structures
Associate Professor	Masae Kido	Seismic Design and Frame Stability of Steel and Concrete Filled Steel Tubular Structures
Lecturer	Kazuaki Hoki	1. Evaluation of Seismic Performance of Old Building 2. Development of Seismic Retrofit
Building Materials Design		
Professor	Koji Takasu	1. Study on modification of recycled building materials 2. Study on high performance concrete using recycled aggregate 3. Study on properties of the concrete using high volume by-products particles 4. Environmental impact assessment considered performance of building material 5. Study on analysis and test method of concrete by various analysis devices 6. Design of a brick layout drawing for dry-masonry and execution of dry-masonry
Associate Professor	Hidehiro Koyamada	1. Safetey management in buildings 2. Hot weather concreting 3. Medium fluidity concrete 4. Properties of the concrete using by-products particles 5. Research and maintenance of existing and aged buildings 6. Sustainabule system of forest resources
Associate Professor	Hiroki Suyama	1. Performance of concrete containing by-product powder 2. Pore structure in concrete 3. Composition of different concrete 4. New building material made from by-product
Building Environment and Energy System		
Dean,Professor	Yuji Ryu	1. Natural energy utilization technologies in buildings 2. Analysis on thermal storage HVAC systems 3. Field study on Sick House in the Kyushu District
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 controll systems 3. Environmental control engineering for large scale building based on CFD analysis
Lecturer	Shintaro Ando	1. Effect of thermal environment on health (e.g. blood pressure, physical activity, sleep quality, and body temperature) 2. Effect of community environment on physical activity
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 methodes of Japanese ceder 6. Histrical Architecture
Professor	DEWANCKER Bart Julien	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	Takao Akagawa	1. Architectural Design 2. Urban Design 3. Urban Planning
Associate Professor	Noriko Okamoto	1. Prediction of sound field in rooms 2. Measurement of acoustic properties of materials 3. Development of sound absorbers 4. Bioacoustics 5. Acoustical environment in public spaces
Department of Life and Environment Engineering		
Life Science and Biomaterials		
Professor	Kazuo Sakurai	1. Polymer Physics 2. Biopolymer 3. Biochemistry
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

Associate Professor	Takaaki Isoda	1. Development of a bio-micro sensor for application of blood and cell diagnosis 2. Basic research of integrated circuit Devices equipped with the bio-micro sensor
Biological and Ecological Engineering		
Professor	Akira Haraguchi	1. Evaluation of the soil - water - plants interaction in the terrestrial and wetland ecosystems and the rehabilitation of the damaged ecosystems 2. Eco-physiological study on aquatic plants and their function on environmental protection 3. Chemical process of limnological ecosystems with special reference to redox reaction and decomposition of organic materials
Professor	Naoko Ueda	1. Resolution of aquatic ecosystem movement in the enclosed seas adjacent to the large city 2. Development of novel bioremediation technology for improvement of poor aquatic ecosystem 3. Development of bioassay method for sediment using the benthic animals (polychaeta Capitella sp.)
Professor	Hiroshi Morita	1. Study on physiological function of IGUSA 2. Enzyme production in submerged co-culture system 3. Bio-control science of mold spores by fatty acid salts 4. Application of bamboo powders as food materials in bread-making
Professor	Tomonori Kawano	1. Plant Biology and Microbiology 2. Cell Signaling (Ca^{2+} etc.) 3. Redox biochemistry (ROS, prion, enzymes) 4. Environmental Science and Technology (environmental biology; eco-toxicity, water processing) 5. Metal eco-toxicity (heavy metals, rare earth elements, aluminums) 6. Biosensing and microbiorobotics (use of protozoan cells etc.) 7. Fire-fighting technologies and bioengineering 8. Science history (French-Japan research project) 9. Blood biology and biochemistry (hemoglobin, lucocytes etc.) 10. Fish bioengineering (newly started project)
Associate Professor	Takanori Kihara	1. Biomineralization in our body 2. Phenotypic regulation of smooth muscle cells 3. Tissue formation with stem cells
Environmental Management		
Professor	Tohru Futawatari	Regional environmental management
Professor	Atsushi Nogami	1. Computer simulation for environmental assessment 2. Development of atmospheric microparticles sensing system
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
Associate Professor	Takaaki Kato	1. Economic evaluation of environmental and energy policy 2. Evaluation and management of risk

Institute of Environmental Science and Technology, The University of Kitakyushu

TEL +81-93/695-3311 URL http://office.env.kitakyu-u.ac.jp/kangiken/
FAX +81-93/695-3368

Position	Name	Main Theme of Study
Specially Appointed Professor	Kiwao Kadokami	1. Development of automated identification and quantification system using database (AIQS) for GC-MS and LC-MS 2. Development of analytical methods for micro-pollutants 3. Environmental survey on micro-pollutants and risk evaluation
Professor	Tsuruo Matsuda	Biomedeical Eng., and so on. Magnetic and Electrical stimulation of the Human Brain, peripheral nervas system and Blood flow system.
Professor	Masaaki Nagahara	My research interests are fundamental theory of automatic control and artificial intelligence, and their applications to vehicles, drones, power systems, and acoustics.
Professor	Katsushi Fujii	1. Nature (solar light) to chemical energy conversion 2. Nature to chemical energy conversion system 3. Semiconductor photoelectrochemistry 4. Engineering anf evaluation of compound semiconductors
Associate Professor	Shinichi Mochizuki	1. Biopolymer 2. Biomaterial 3. Immunotherapy

Center for Fundamental Education, Hibikino Campus
The University of Kitakyushu

Position	Name	Main Theme of Study
English Education		
Professor	Tetsuya Kashiwagi	1. Learner Corpus Compilation and Analysis for Pedagogical Application in Mitigating L1 Interference 2. Grammar Teaching as a Clue to Output Pedagogy 3. Contrastive Rhetoric Study in Variation and Context
Associate Professor	Kiyomi Okamoto	1. Extensive reading 2. English teaching at companies 3. Development of instructiona models 4. e-learning 5. Corpus linguistics 6. Vocabulary acquisition 7. English for specific purposes
Associate Professor	Masanobu Ueda	Verb Semantics and Constructions: A Comparative Semantic Study of Verbs of Giving and Receiving in English and Japanese
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	Crescini, Anne Marie	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
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 Resouses for International Students Majoring in Environmental Engineering
Liberal Arts		
Professor	Tsukasa Morimoto	1. Philosophy of Life (Hermeneutics, Evolutionary Epistemology, Problem-Solving Thinking) 2. Environmental Ethics
Associate Professor	Hiroyuki Tsujii	Management for Sustainability 1. Corporate Environmental Management 2. Engineering Ethics Education 3. Business Education
Associate Professor	Miyuki Nakaoka	I am engaged in a comparative study of urban mechanisms and urban structures in Asian countries, focusing especially on China. I am also interested in the differences between the Japanese economy during its rapid growth period and the present Chinese economy.

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

TEL +81-93/695-6000 URL http://www.lsse.kyutech.ac.jp/
FAX +81-93/695-6008 E-mail sei-soumu@jimu.kyutech.ac.jp

Position	Name	Main Theme of Study
Department of Biological Functions Engineering		
Green Electronics		
Dean,Professor	Tsuyoshi Hanamoto	Study on intelligent control of motors. Development of the motor control and power conversion systems
Executive Director, Vice-president, Professor	Shuji Hayase	Printable solar cells, perovskite solar cells, dye sensitized solar cells, hybrid solat cells, Photo voltaic cells, small fuel cells and application of organic material to electronics
Professor	Masamichi Naitoh	1. Carbon Nanotubes 2. Graphene 3. Spherical Carbon Particles 4. Nano-wires 5. Fluorescent Proteins
Professor	Tingli Ma	1. Development of functional nano materials 2. Organic and inorganic molecular devices 3. Fuel Cell 4. Na and Li ion battery 5. Supercapacitor
Associate Professor	PANDEY Shyam Sdhir	Dye-sensitized solar cells, bulk heterojunction, organic sensitizer, organic electronics, Soft-Actuator and Biosensor
Associate Professor	Wataru Takashima	1. pi-conjugated Polymer 2. Soft Device 3. Anisotropic Electronics 4. Organic Sensor 5. Electrochemical Actuator
Associate Professor	Seiya Abe	Development of circuit and control technology for switch mode power supply
Assistant Professor	Kazunori Hasegawa	Research of highly efficient and reliable power electronic converters
Assistant Professor	Yuuhei Ogomi	Research and development of organic-inorganic hybrid solar cells
Research Assistant Professor	Teresa Ripolles-Sanchis	Investigation and preparation of third generation photovoltaics cells
Biological Mechanics		
Professor	Hiroshi Ishiguro	1. Biothermal engineering and biothermal technology 2. Biomedical engineering 3. Investigation and application of bioheat and mass transfer in living systems (Biotransport) 4. Measurement, Mathematical modeling, Design of process and device
Professor	Masaaki Tamagawa	1. Drug Delivery Systems by Shock Waves 2. Bioprocess by Shock Waves 3. Prediction of Haemolysis and Thrombus in Blood Pumps 4. Application to tissue engineering by shock waves 5. Development of shock wave generator 6. Multi-fractal analysis for branch flow of blood pipe using medical image data 7. Water Treatment Systems by shock waves and cavitation flows
Professor	Takashi Yasuda	1. Cell stimulation devices for regenerative medicine and drug discovery 2. Microliquid handling using wettability control of device surfaces 3. Blood plasma extraction devices for point-of-care testing 4. Electrochemical bio-sensing for medical diagnosis 5. Derivation and separation of liposomes from human cells 6. Nanowire formation using DNA metallization
Professor	Hiroshi Yamada	1. Mechanical evaulation on human atherosclerosis and other vascular diseases 2. Experimenal and numerical studies to delay pressure ulcers, mechanical evaluation of pressure redistribution mattresses 3. Computer simulation to improve the tooth repair technique
Associate Professor	Kazuto Takashima	1. Development of soft tactile sensor 2. Development of device placement simulator for endovascular treatment 3. Applications of shape-memory polymer and artificial muscle to human-interactive robot
Professor	Toshiki Miyazaki	Development of functional biomaterials for tissue repairing
Associate Professor	Satoshi Iikubo	1. Novel superconductors 2. Magnetism of the itinerant electron system 3. Neutron scattering study of the functional materials
Environmentally-Conscious Chemistry and Bioengineering		
Professor	Yoshihito Shirai	1. Development of rural area by recylcing of not used materials and energy and resulting in yeilding useful human resources 2. Zero discharge from Malaysia palm oil industry and creation of green industries by using excess biomass
Professor	Haruo Nishida	1. Biomass/plastic composites 2. Circulative utilization of renewable materials 3. Kinetic analysis using computer simulation methods 4. Chemical recycling of Biomass-basedpolymers 5. Precise surface modification by vapor-phase assisted surface living polymerization
Professor	Tetsuya Haruyama	Our research activities in a consistent manner, from basic research to applied research, in order to design and create various functional (molecular functionalized) interfaces which can recognize molecules and convert them into information (signals) or energy. Basic research and practical applied research has been developed in parallel. Typical examples of our studies are briefly shown in WEB page. In detail, see http://www.life.kyutech.ac.jp/~haruyama/
Associate Professor	Shinya Ikeno	1. Bioassay by using functinal gold nanoparticles 2. Spore detection using nanoparticles to enhance the Raman signal 3. Boost protein expression system by co-expression of functional peptide
Associate Professor	Tamaki Kato	Study on the functioning structures of biopolymers and the building superstructures
Associate Professor	Toshinari Maeda	1. Microbial biodegradation of environmental pollutants 2. Metabolic and protein engineering to enhance bacterial hydrogen production 3. Reduction and recycling of excess sludge to construct environmentally-friendly technology 4. Probiotics for periodontal pathogens
Associate Professor	Minato Wakisaka	Sustainable Utilization of Biomass
Physiological and Biochemical Adaptation		
Professor	Koji Hirakoba	1. Estimation for muscle metabolism and buffering capacity during muscle contractions 2. Effects of internal and external work on muscular efficiency during exercise 3. Development of health-related fitness from oxygen uptake kinetics during constant-load exercise. 4. Analyses of hierarchical order of muscle fibers during exercise from EMG and NIRS
Associate Professor	Shokichi Ohuchi	1. Bioorganic Chemistry 2. Protein Engineering 3. Bioinformatics and Chemoinformatics 4. Microwave Assisted Chemistry
Associate Professor	Naoya Murakami	1. Development of photo-functional nanomaterials for photocatalyst and photovoltaic cell 2. Spectroscopic analysis for elucidation of photoreaction mechanism over semiconductors
Green Technology		
Visiting Professor	Iwao Sasaki	Research on the optimization of the control mechanisms for mechatronics systems and human-friendly supporting devices.
Visiting Professor	Hideki Honda	Realization of high-performance Mechatronics control system.

Pro Active Maintenance (TAKADA)		
Visiting Professor	Toshio Anzai	Microbe corrosion of metal materials and Creation of antibacterial metal materials
Research Professor	Kouichi Nakano	1. Physical properties of metal matrix FGM 2. Static tensile and fatigue properties of Cu/Mo composite materials 3. Mechanical properties, corrosion resistance and cytocompatibility of tungsten short fiber reinforced Ti-6Al-4V alloy 4. Fatigue properties of fillet welded joints in piping system 5. Evaluation of diffusion bonding strength between molybdenum and cupper 6. Study on microbially influenced corrosion
ECO Hybrid Welding (SANKYU)		
Research Professor	Yoji Wada	1. Development on Hybrid Welding for energy-saving and environmental safeguard 2. Development on welding repair 3. Development on evaluation for failure and deterioration of plant materials 4. Visual observation for melting metal behavior
Research Associate Professor	Tatsuya Yoshimoto	1. Development on Hybrid Welding for energy-saving and environmental safeguard 2. Development on welding repair 3. Development on evaluation for failure and deterioration of plant materials 4. Visual observation for melting metal behavior
Department of Human intelligence Systems		
Human Intelligence and Machines		
Professor	Takashi Morie	1. VLSI design for brain-like computers and its application to image recognition systems 2. Information processing circuits using nanostructures
Professor	Kazuo Ishii	1. Robotics 2. Intelligent Mobile Robot 3. Control System based on Neural Network
Professor	Hirofumi Tanaka	1.Fabrication of artificial retina using photo-assisted atomic switch showing synaptic behavior 2.Brain signal reproducing using nanocarbon network devices 3.Single-molecular electric properties for molecular architectonics 4.Haptic sensor for robot and artificial skin
Associate Professor	Hiroyuki Miyamoto	Generation of arm movement trajectory based on minimization principle, Robot learning by watching
Professor	Chikamune Wada	1. Research on human characteristics in order to develop assistive devices for the disabled 2. Application of the results to human interface, virtual reality and robotics
Associate Professor	FOROUGH NASSIRAEI Amir ali	Development of autonomous and self-sufficient practical robotic systems including design of novel actuators and sensors. Designing practical service robots for indoor and outdoor environments, marine vessels and underwater facilities, pipe inspection and manipulation, renewable and new energy facilities, healthcare and medical applications.
Research Associate Professor	Takashi Sonoda	1. Development of Robot Practical Techniques for Analyzing and Solving Problems 2. Design and analysis for robot mechanisms
Associate Professor	Hakaru Tamukoh	A brain-like computer system laboratory aims to realize a brain-like computer and its application to human-friendly systems. We integrate state-of-the-art devices, such as field programmable gate arrays, many-core central processing units, and Internet, to achieve high performance, low-power consumption, and flexible processing. To enable a brain-like computer, we integrate it with an artificial model of learning and growing structures. Furthermore, we widely apply the brain-like computer to an autonomous robot for supporting daily life and a human-friendly interface system including intelligent image processing and recognition.
Intelligence Systems and Emergent Design		
Professor	Tetsuo Furukawa	1. Multi-perspective big data analysis and visualization methods. 2. Learning theory of finding out essence from experiences for brain-like intelligence. 3. Developoing brain-like artificial intelligence which learns oneself through interaction with others. 4. Theoretical study on statistical learning, manifold learning.
Professor	Tomohiro Shibata	Understanding and Assisting humans and societies from the viewpoint of learning/adaptive systems. 1. Motor Skill Transfer to Robots and its Application to Assistive Robots 2. Adaptive Asssistance of Human Motor Learning and Its Application to Assistive Rehabilitation Systems 3. Rapid Prototyping and its Application to In-home Nursinng Caring Innovation 4. Understanding the Purchase Decision-Making Process and Its Application to Marketing 5. Understanding Driving Skill and its Application to Adaptive Assistance of Learning Driving Skill
Associate Professor	Keiichi Horio	Intelligent Information Processing Inspired by Human Expert and its Application to 1. Analysis of Relational Data, 2. Image Processing, 3. Optimization Problem
Associate Professor	Hiroaki Wagatsuma	1. Bio-medical signal processing, efficient sparse coding and the applications 2. Artificial intelligence, system design, rehabilitation supports inspired from non-linear dynamics in the brain-body-environment coordination 3. Sport dynamics and synergy analysis based on mathematical methods focusing on the non-linearity 4. Computational neuroscience based on theta phase coding and brain-inspired robotics
Associate Professor	Kaori Yoshida	1. Human-Computer Interaction 2. Kansei Information Processing 3. Visual Perception
Lecture	Eiichi Inohira	1. Control of a myoelectric arm prosthesis for supporting two-handed tasks 2. Acquisition and teaching of new actions of an autonomous robot via human-robot communication
Assistant Professor	Hiroshi Sho	1. Dynamic model selection based on evolutionary computation 2. Data interpretation by inverse optimization 3. Technical development for multi-objective optimization 4. Pattern analysis
Human Interaction and Brain Functions		
Professor	Kiyohisa Natsume	1. Electrophysiological and computer simulation studies on the role of brain rhythm or neuronal oscillation in the information processing 2. Glial $[Ca^{2+}]i$ oscillation and wave 3. Brain Simulator 4. E-learning system for English rhythm using Brain Computer Interface.
Professor	Doosub Jahng	Occupational Health Marketing, Health Resources Management, Team Management, Communication
Associate Professor	Katsumi Tateno	1. Neurodynamics 2. Chemical sensor array inspired by mouse taste buds
Associate Professor	Yoshitaka Otsubo	Research for taste transduction mechanisms
Human Behavioral Sciences		
Professor	Takashi Toyoshima	1. Economy principles and the computational complexity for generation of syntactic structures in natural language 2. Differences between the parallel serial model and the neural-network model in computation of structured symbols 3. Mapping system from syntactic structures to linear morphophonemes in natural language
Associate Professor	Hirohisa Isogai	Mechanisms of human motor behavior
Human Technology		
Visiting Associate Professor	Makoto Kato	Processing of visual information and eye movement control in human brain
Visiting Professor	Satoru Miyauchi	Non-invasive measurements of human brain activity, Psychophysiology

Kyushu Institute of Technology Organization fir Promotion of Research and innovation Wakamatsu-branch

TEL +81-93/695-6150 URL http://www.lsse.kyutech.ac.jp/~hit/
FAX +81-93/695-6151

Position	Name	Main Theme of Study
Professor	Yasushi Sato	1. Controlling of Device Installed Artificial Intelligence 2. Sound Compression and Noise Removal by Sound Signal Process 3. Noise Removal by Array microphone 4. High Quality Sound and Lossless Compression by Sound Signal Process 5. Interface by Dialogue System 6. High Quality image and Search System by image Processing Technology 7. Development of Microwave Parts Using Dielectric

Graduate School of Information, Production and Systems, Waseda University

TEL +81-93/692-5017 URL http://www.waseda.jp/fsci/gips/
FAX +81-93/692-5021 E-mail gsips@list.waseda.jp

Position	Name	Main Theme of Study
Information Architecture Field		
Professor	Shigeru Fujimura	1. Production Planning and Scheduling 2. Production Management 3. Project Management 4. 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. Web Mining 4. XML Document Processing 5. Security and Privacy
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	Keiichi Koyanagi	For studying 'Thinking Networks', we develop 'Bottom-up Intelligent Networks', 'Streaming Grid Computing' and 'Global IP Network Management'
Professor	LEPAGE, Yves	1. Natural language processing 2. Artificial intelligence 3. Information theory 4. Example-based and statistical machine translation 5. Study of analogy and application to morphology, syntax and semantics 6. Use of analogy in machine translation and paraphrasing 7. Multilingual word alignement
Professor	Takafumi Matsumaru	Bio-Robotics & Human-Mechatronics 1. Remote Operation System of Mobile Robot 2. Preliminary Announcement of Mobile Robot's Intention 3. Form and Movement of Human Synergetic Robot 4. Interaction with Human Symbiotic Robot 5. Measurement and Analysis of Human Motion and Behavior 6. Systematic Learning on Mechatronics
Professor	Makoto Tsubokawa	1. Optical network architecture (Survivable access network architecture, Maintenance techniques) 2. Fiber-optic sensing technologies (Fiber-optic distribution sensing technology,Optical measurement techniques) 3. Optical waveguide devices (Optical fiber textile, Light concentrator, Nano device)
Dean, 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	Jiro Tanaka	We are interested in future computing environment, ubiquitous computing, programming languages and software engineering. The current research topics include lifelog system, fusion of the real world and the virtual world, remote communication support system, gesture interface, and augmented reality.
Assistant Professor	Wei, WENG	Planning and logistics; scheduling and production control; operations research; job shop and flow shop problems; just-in-time produciton; multi-agent systems; cellular manufacturing; green production; refinery scheduling
Production Systems Field		
Professor	Hiroshi Inujima	Plant diagnosis technologies
Professor	Hee-Hyol Lee	1. Development of Binary Power Generation Plant 2. Bayesian Network and Production & Inventory Control 3. Cellular Automaton and Traffic Flow Modeling 4. Traffic Signal Control 5. Cooperative Action Learning of Carrier Robot Swarn 6. Design of Decoupling Control System for MIMO Large-Scale Systems 7. Design of Sliding Mode Control System and Its Applications to Servo-Systems and Process Systems 8. Intelligent Control 9. Stochastic Control
Professor	Tomohiro Murata	Research on modeling, analysis and synthesis of Discrete Event Systems and its application for design
Professor	Harutoshi Ogai	1. Seel process modeling , Simulator building and Control system design 2. Operation prediction and Control of Waste combuster 3. Microorganism application for environment control 4. Automobile Engine Control, Autonomous Driving Control 5. Bridge diagnosis technique using sensor network 6. Office lighting control using sensor network 7. Pope inspection robot using wireless communication 8. Modeling of labor fatigue and Medical Imformation Processing
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	Kohei Tatsumi	1. Semiconductor Packaging Materials and Technologies 2. Electronics Materials 3. Microstructure in Crystalline Materials 4. Marerials and technologies for energy and environment field
Associate 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
Associate 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	Masahide Inuishi	1. Power electronics (Conversion circuit) 2. Power semiconductor devices ①Structure design and process ②Reliability study 3. Modeling of advanced power devices for circuit simulation
Professor	Koichi Shimizu	Biomedical application of optical techniques: 1. Tranillumination imaging of animal body (Optical scattering analysis, Optical trans-body imaging, Optical CT, etc.), 2. Optical noninvasive measurement of physiological information *in vivo*, 3. Remote measurement and transmission of biomedical data (Optical biotelemetry, Optical body-area-network, etc.)
Assistant Professor	Satoshi Ikezawa	1. Sensor 2. Sensing System 3. Particle Measurement 4. Laser 5. Laser-induced Plasma 6. Laser-induced Breakdown Spectroscopy (LIBS) 7. Laser-induced Incandescence Technique 8. Application of Ink-jet Technology
Integrated Systems Field		
Professor	Takaaki Baba	Intelligent Mobile System and its Application
Professor	Takeshi Ikenaga	Video compression, video filter and video recognition systems
Professor	Shinji Kimura	High Level System LSI Design and Verification, Design for Testability

Professor	Takahiro Watanabe	1. Design Automation for ASIC 2. IP-reused Design Methodology 3. Network-on-Chip 4. FPGA application 5. Processor Design
Professor	Noriyoshi Yamauchi	Wearable Body Sensor Network (WBSN)
Professor	Tsutomu Yoshihara	Analog/Digital LSI Design and On-chip Memory
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
Professor	Takeshi Yoshimura	1. Design Automation for System LSI 2. Optimization Technologies using Graph and Network Algorithms
Associate Professor	Kiyoto Takahata	Integration of optical devices and LSIs 1. Opto-electronic integrated circuits 2. High-speed optical transmitter/receiver modules 3. Photonic microwave/millimeter-wave devices
Professor	Hirofumi Shinohara	1. Hardware security 2. Neuro information processing 3. Energy Efficient circuits and systems
Assistant Professor	Dajiang Zhou	VLSI Architectures for Multimedia and Communication; Video Coding (H.264, HEVC,...); Low Power Computer Architecture.

Information, Production and Systems Research Center, Waseda University

TEL +81-93/692-5396 URL http://www.waseda.jp/fsci/ipsrc/
FAX +81-93/692-5021 E-mail ipsrc@list.waseda.jp

Position	Name	Main Theme of Study
Research Associate	Kenjiro Sugimoto	Image processing and pattern recognition based on fast and accurate digital filtering algorithms
Senior Researcher	Masakazu Inagaki	1. Semiconductor interconnection technology development by use of electroplating and electroless method 2. Advanced semiconductor packaging technology development 3. Reliability improvement of SiC power device 4. Microplating technology development
Senior Researcher	Kazuhito Kamei	1. Research & development of high temperature packaging technology for SiC power devices 2. Crystal growth of wide band gap semiconductor focusing on solution growth technique
Research Associate	Yasunori Tanaka	Study on high temperature resistant packaging for SiC power devices
Research Associate	Wa SI	Real-time Model-based Lighting Control by Improved PSO and Lambertian-RBFNN
Research Associate	Nan, WU,	autonomous driving system, platooning
Research Associate	Tomonori Iizuka	1. Nano/Micro-Composite Insulator Materials for Electronics Device Packaging 2. Voltage Endurance Improvement and High Thermal Conductivity Characteristics by Nano/Micro-composite Technologies
Junior Researcher	Jinjia, ZHOU	Video coding algorithms; VLSI architectures for multimedia signal processing.
Junior Researcher	Kui-Ting CHEN	A Research on High Performance Hardware for Real-Time Big Data Application.
Research Associate	Tieyuan, PAN	Placement & Routing Algorithm and the Application on Dynamic Reconfigurable Device
Research Associate	Xin, JIANG	Architecture and Routing optimization on TSV based 3D NoC
Research Associate	Lian ZENG	The optimization of router architecture and routing algorithm for Network-on-Chip
Research Associate	Yun-Ting LIAO	Control System Engineering
Research Associate	Jiayi, ZHU	1. Video compression (H.264, HEVC) algorithms 2. VLSI Architecture for Multimedia

Fukuoka University Graduate School of Engineering

TEL +81-93/695-3061 URL http://www.fukuoka-u.ac.jp/english/
FAX +81-93/695-3047 E-mail kogaku@adm.fukuoka-u.ac.jp

Position	Name	Main Theme of Study
Recycling and Eco-Technology		
Professor	Sotaro Higuchi	Municipal Solid Waste Management System
Professor	Choei Konda	(1) Corporate Environmental Management Analysis and evaluation of the relationship between environmental management and economic benefit, cooperation and collaboration with other stakeholders, and others; and (2) Public Environmental Management Effectiveness and limitation of environmental planning and environmental impact assessment, and others.

Fukuoka Research Commercialization Center for Recycling Systems

TEL +81-93/695-3068 URL http://www.recycle-ken.or.jp/
FAX +81-93/692-3066 E-mail http://www.recycle-ken.or.jp/toiawase.html

Fundamental function
◇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.

【Contact】 Industry-Academia Cooperation General Center
Kitakyushu Foundation for the Advancement of Industry,Science and Technology
2-1 Hibikino,Wakamatsu-ku,Kitakyushu,808-0135,Japan
TEL +81-93/695-3006 FAX +81-93/695-3018
URL http://www.ksrp.or.jp/fais/iac/ E-mail iac@ksrp.or.jp

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