

## ADMISSIONS

	Examination Date	Application period
The 1st selection	July 6 and 7, 2024	May 30 – June 6, 2024
The 2nd selection	August 24 and 25, 2024	July 29 – August 2, 2024
The 3rd selection	October 12 and 13, 2024	September 10 – 18, 2024
The 4th selection	January 25, 2025	December 12 – 19, 2024

※For interview and oral examinations will be conducted through the Internet.

※For the 1st, 2nd, and 3rd entrance examination, one of the two days will be respectively designated for the examination day by Graduate School of Life Science and Systems Engineering.

### How to apply

#### 1 Contact

Find a laboratory in your desired field and contact the faculty member.

#### 2 Access

Access the online registration website and read the guidance.

#### 3 Password to apply

Send the requesting email to the admission section

#### 4 Apply

Enter your information.

#### 5 Submit

Print and mail the application documents.

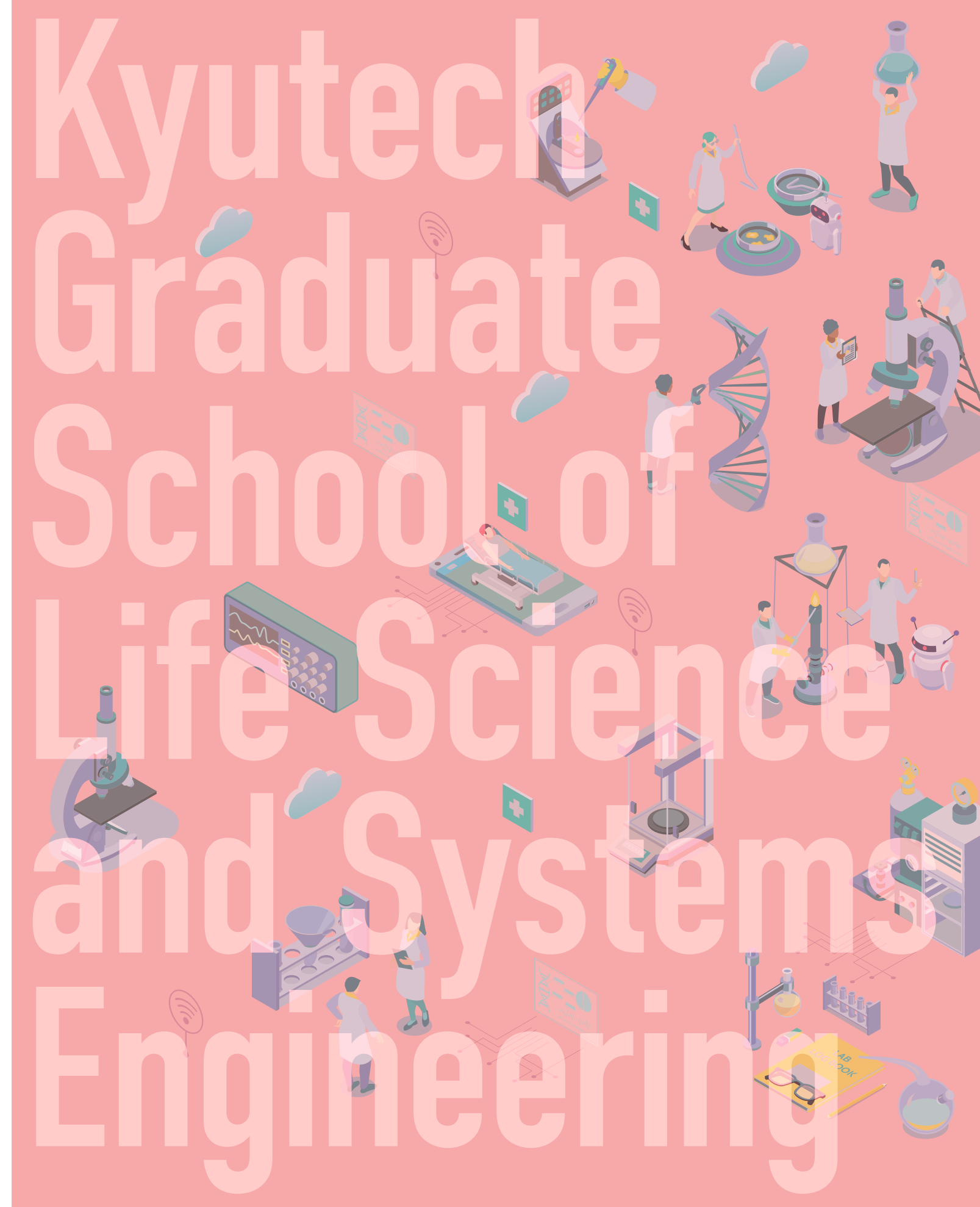
#### Online Registration Website

<https://www.guide.52school.com/guidance/net-kyutech-g/eng/>



#### Admission Application Guidance

<https://www.lsse.kyutech.ac.jp/english/admission/information.html>



Kyushu Institute of Technology

Graduate School of Life Science and Systems Engineering 2024



# Invitation to Life Science and Systems Engineering



Dean  
Chikamune WADA

Graduate School of Life Science and Systems Engineering (LSSE) was established in 2000 at Kitakyushu Science and Research Park to promote advanced research based on superior biological functions and implement them into practical engineering technology. LSSE has succeeded in creating frontier technologies for meeting social needs in broad technical fields related to environment/energy, robot/artificial intelligence, medical application, etc.

Diversity in students is a big feature of LSSE. In addition to students from two undergraduate schools of Kyushu Institute of Technology, many students gather from domestic universities and colleges of technology throughout Japan and from various overseas universities. Collaborative works among these students with different experiences and values generate fresh ideas leading to technical innovation as well as fostering communication ability with recognition of diversity.

LSSE has educational programs and research projects in collaboration with universities and companies within Kitakyushu Science and Research Park. Also, LSSE is offering study abroad programs with overseas partner universities, and conducting many international joint research projects with them. Through these programs and projects students can strongly enhance their global perspectives.

We sincerely invite you to LSSE to immerse yourself in a cutting-edge education and research environment and to launch your promising career on an international stage.

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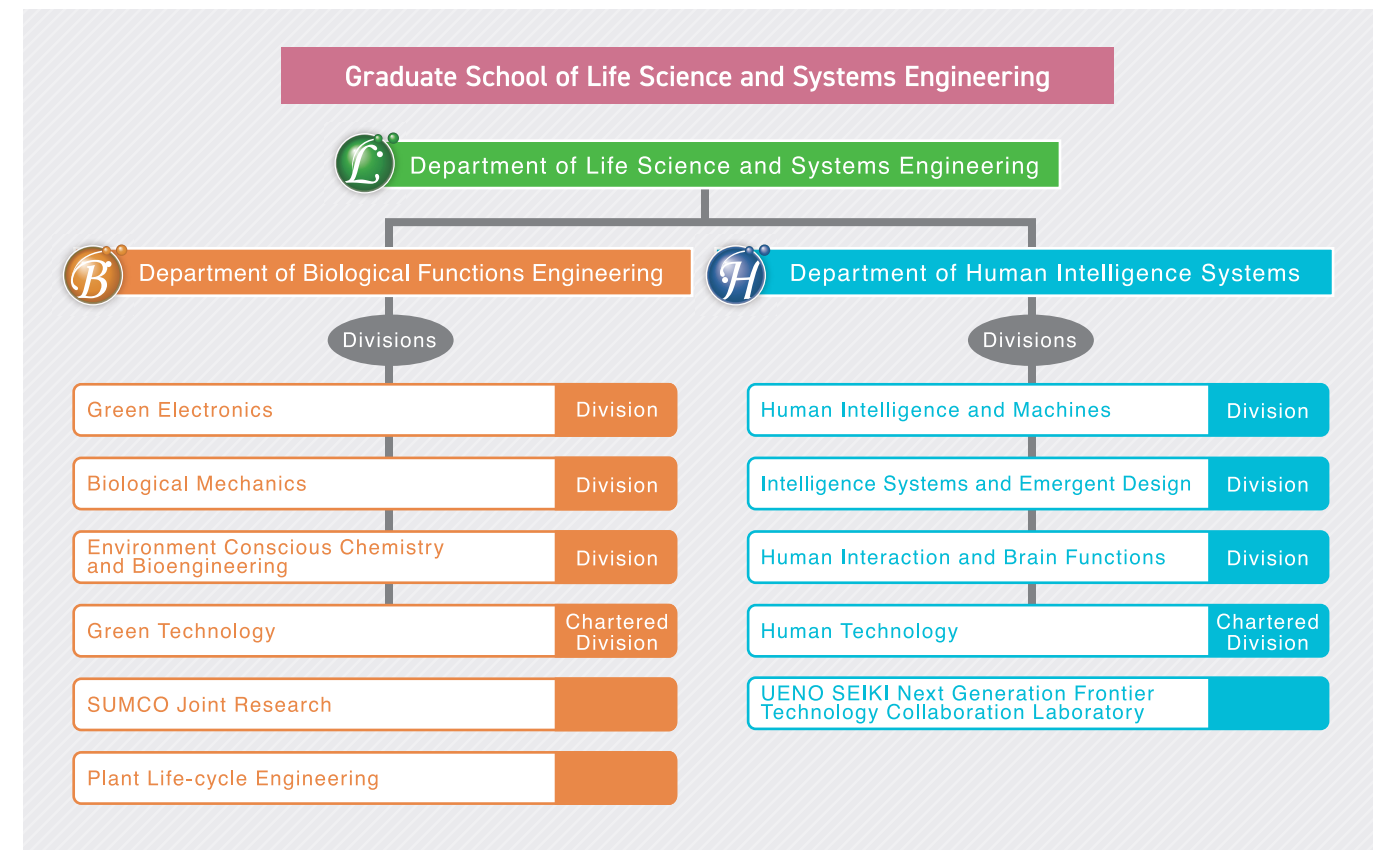
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CHARACTERISTICS of the graduate course

## Utilizing Life in Engineering Applying Engineering to Life

### Distinguishing Features of the Graduate School

The basic objective of this graduate school is the education and development of engineers and researchers capable of elucidating the structures and functions of living organisms for resource and energy saving, environmental symbiosis, human affinity, and other properties, and to develop their technological utilization. To achieve this goal, under the masters program, its Department of Biological Functions Engineering applies the superior functions of organisms to the solution of problems and needs that confront society, and its Department of Human Intelligence Systems develops the skills and capabilities for building an optimum society of ease and comfort in a world of complex intelligence-body-environmental systems. On the other hand, under the doctoral course of obtaining specialization in the life science and systems engineering field, focus is directed towards the promotion and intensification of cross-specialization and global education. The school is accordingly dedicated to the development of professionals that are constantly focusing on the emerging trends in research and technology and working to achieve innovation and advances. The school, in short, is dedicated to the development of globally oriented professionals who can work with society to meet the needs and solve the problems that confront it today and contribute to a sustainable and harmonious future.



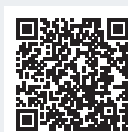
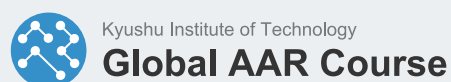


**SPECIAL COURSE**

## Global Advanced Assistive Robotics (Global AAR) Course

This course is an international course operated by our institute since 2015, and consists of Japanese and international students in the Department of Human Intelligence and Systems Engineering (master's course) and the Department of Life Science and Systems Engineering. We have accepted students from diverse fields such as integrated circuits, control, sensing, nanosystems, artificial intelligence, LOT systems, behavioral science, and neuroscience.

The course is designed to accommodate international students by using English as the language for slide presentations and Q&A sessions. Besides, the course provides opportunities for English presentation and communication training through journal clubs where students read and understand the latest papers, AAR seminars with top-notch lecturers, the practicum in Robot Operating System and the practicum in Care and Medical DX.



Website URL: [https://www.brain.kyutech.ac.jp/global\\_aar/](https://www.brain.kyutech.ac.jp/global_aar/)

**ABOUT**



Journal Club group photo



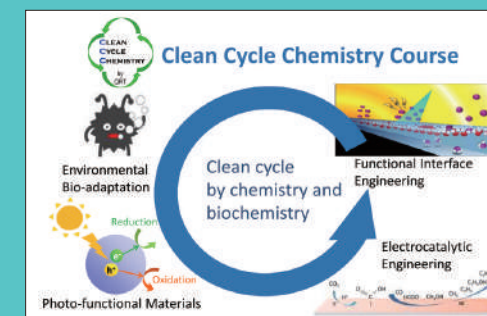
Practicum in Care and Medical DX

**01 ACTIVITY**

## Clean Cycle Chemistry Course to learn SDGs realized by chemistry

The SDGs are the "17 goals set by 193 UN member states to achieve in the 15 years from 2016 to 2030" adopted at the 2015 UN Summit. The "Clean Cycle Chemistry Course" is an active learning program with the theme of research and development aiming at the goals that can be achieved by chemical technology among the 17 goals and the establishment of the chemical technology. Professors in charge of this course are advanced researchers who promote green chemistry research and green biogeochemical research to make elements a recyclable resource. The professors not only give lectures, but also conduct active learning as a FACILITATOR of "cultivation of creativity". In one of the compulsory subjects, students will plan and present concept and chemical methods that students can contribute to achieving their goals in their respective research fields. Excellent Presentation Prize will be awarded to excellent proposal, and in addition, feasible collaboration proposals will be developed into cross-disciplinary cyclical chemistry research by conducting collaboration demonstration experiments between the students and professors in charge of this course. This course is intended for graduate students in the master's program to take the designated 6 compulsory subjects. (The language used for all curriculums is Japanese.) Those who complete the course will be awarded a "Certificate of Completion of the Clean Cycle Chemistry Course".

**ABOUT**



Research fields of Clean Cycle Chemistry Course



Experimental room for collaboration research

**SPECIAL COURSE**

## Global Education of Green Energy and Green Environment (GE<sup>3</sup>) Course

This course provides an integrated program of education and research related to "green energy/green electronics technology" and "carbon-neutral technology", with a view to the future of energy and environmental cooperation across a wide area of Asian countries, including Japan. It is also an innovative program to develop 21st-century global engineers who can maintain a sustainable socio-economy and lead the world through global seminars and collaborative projects. Education and research on these green technologies will not only contribute to the development of peaceful, safe, and secure societies but also step forward towards achieving the Sustainable Development Goals (SDGs). Lectures are also designed for international students, and it is possible to complete the master's course in English only. "GE<sup>3</sup> Seminar" provides state-of-the-art technologies and research topics inviting lecturers from academics and Japanese companies.

- Printable photovoltaic cells
- Biomolecular Engineering
- Functional materials and their electrochemical devices
- Organic electronic devices
- Motor-drive system
- Highly efficient and flexible energy-conversion
- Environmental-Benign Functional Materials
- Next-generation power semiconductor devices and their applications



Website URL: <http://www.life.kyutech.ac.jp/~ge3/en/>



**ABOUT**



Exercises on Measurement Control Systems



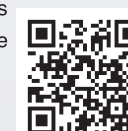
Seminar

**02 ACTIVITY**

## MSSC

The overseas education and research base MSSC, established in 2013, is a joint operation with Universiti Putra Malaysia (UPM). UPM and Kyushu Institute of Technology have a long history of collaborative research. MSSC, serving as an international hub for education and research, supports various activities, including short-term learning programs and research programs at UPM, corporate internships in Malaysian Japanese companies, and alumni gatherings with Malaysian graduates. The annual international exchange and research symposium, SAES, held at each institution, is one of the most prominent forms of collaboration between the two universities. SAES has seen a steady increase in participation, and an online edition held during the COVID-19 pandemic attracted over 500 participants. In 2023, an in-person 11th SAES was held after a long hiatus, gathering over 300 participants in two days. MSSC and SAES play a crucial role in connecting researchers from both institutions, as evidenced by the increasing number of co-authored papers between our university and UPM since MSSC's establishment. The range of research paper topics presented has also expanded. Additionally, co-funded research projects to support joint research initiatives and double-degree programs granting degrees from both universities are in place, fostering even more extensive exchanges in research and education.

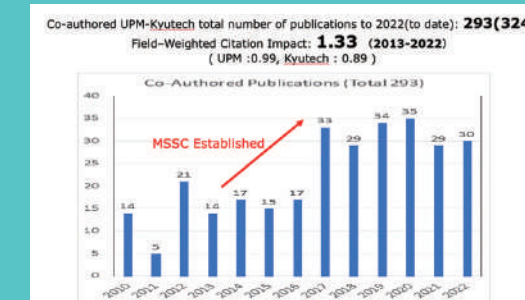
Website URL : <https://www.kyutech.ac.jp/english/mssc/>



**ABOUT**



Alumni event: Look East Policy 40th Anniversary and Kyutech Meets the Alumni in Malaysia (4th Dec 2022 in Malaysia)



The number of papers co-authored by the University and UPM



# MAIN ACTIVITIES

## Join Robot Competitions!!

03  
ACTIVITY

### Hibikino-Musashi@Home

Hibikino-Musashi@Home is the student project team to develop a home service robot that helps our daily lives in a home. Through active participation in the RoboCup@Home league and five times wins in worldwide competitions, they demonstrate their outcomes to realize the future of robots and also focus on robot AI education.



<https://www.brain.kyutech.ac.jp/~hma/>



#### ACHIEVEMENT

- World Robot Challenge 2018, 2020 (held in 2021), Service Robotics Category Partner Robot Challenge Real Space first place. METI Minister's Award. RSJ Special Award.
- RoboCup 2019 Sydney, @Home DSPL third place.
- RoboCup 2021 Worldwide (Online), @Home DSPL second place.
- RoboCup Asia-Pacific 2021, @Home OPL first place, DSPL first place, Simulation first place.
- RoboCup 2022 Bangkok, @Home DSPL third place
- RoboCup JapanOpen 2019, @Home OPL first place, DSPL first place.
- RoboCup JapanOpen 2020, @Home OPL first place, DSPL first place, OPL Technical Challenge first place.
- RoboCup JapanOpen 2021, @Home DSPL first place
- RoboCup 2023 Bordeaux, @Home DSPL second place.
- RoboCup JapanOpen 2022, @Home DSPL first place, @Home OPL second place.
- RoboCup JapanOpen 2023, @Home DSPL third place, @Home OPL second place.



#### TEAM INTRODUCTION

**Team KUROSHIO**, the allied team of 8 institutions including Kyutech, won the second place and 1 million US dollars in Shell Ocean Discovery XPRIZE, the international competition of autonomous ocean exploration technologies.



**Kyutech Underwater Team** won in the AUV League of Underwater Robotics Competition in Okinawa URC in 2020-2022. As the URC is held in the sea, AUVs are required to be highly autonomous and hold completeness.



**Hibikino-Toms**, agricultural robots must work in the actual field and need AI, gentle mechanism to living things. Kyutech "Tomatoes" join the Tomato-Harvesting-Robot competition and show good results (Winner in 2019, 3rd in 2020, 2nd in 2021).



**Hibikino-Musashi**, the Kyutech Robo Cup MSL team Hibikino-Musashi won the championship more than 10 times in Japan Open and one of experienced teams in World Cup. Each team joins with 5 soccer robots which act autonomously with mounted sensors only.

## DEPARTMENT OF BIOLOGICAL FUNCTIONS ENGINEERING

Graduate School of Life Science and Systems Engineering

### Division Overview



The research and education in this department deals with the realization of materials, structures and energy conversion functionalities of nature/organisms along with their utilization in engineering. The main objective of this department lies in discovering solutions to social issues like the global environment and human health to promote the creation of new industries, by integrating the fields of the environment, energy, materials, and bioengineering. Apart from this, global education such as international internship has been performed at our international research bases.

## Divisions



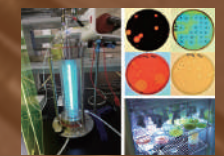
### Division of Green Electronics

This division is devoted to the investigation of "green electronics technology," such as the fabrication and evaluation of printable solar cells, new functional materials, and their application to electrochemical devices, organic photo-electronic devices, construction of flexible and efficient power conversion and motor control systems, development of energy production systems utilizing renewable energies and environmentally friendly devices with carbon materials. The teaching curriculum is provided under the research themes outlined above.



### Division of Biological Mechanics

The research and education in this division are conducted based on mechanical engineering such as the mechanics of materials, fluid and thermodynamics, the dynamics of machinery and micromachining, and the materials science of metals and ceramics. These activities contribute to the following area of industrial/medical applications: (i) the maintenance and recovery of bio-functions, (ii) medical and welfare support, (iii) development of biocompatible materials and medical devices, and (iv) design and development of biomimetic materials and intelligent machines.



### Division of Environment Conscious Chemistry and Bioengineering

The goal of this division is to re-vitalize the engineering technologies responsible for the sustainable development of industries and society with environmental consciousness. The academic field of this division includes chemical and biological research and technologies that are learned from the highly efficient reactions of biological systems. Environmentally conscious chemistry and bioengineering may lead to innovations in chemical and biological technologies. This division strives to globalize our graduate program through the development of frontier research in environmentally conscious chemistry and bioengineering.



Division of Green Electronics

**Research Area** Power Electronics

**Professor, Ph.D. Tsuyoshi HANAMOTO**

**Study on power electronics and its application. Development of motor controls and power conversion systems**

**E-mail** hanamoto@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~hanamoto/

**Keywords** Research Overview

- Power electronics
- Motor control
- Hardware control
- High efficiency power conversion
- Environmentally friendly control

Development of human-friendly and environmentally friendly electrical power conversion systems and application for motor control systems.

Division of Green Electronics

**Research Area** Power Semiconductors, Power Electronics

**Professor, Dr. Eng. Ichiro OMURA**

**Power semiconductors, Power electronics and systems**

**E-mail** omura@life.kyutech.ac.jp  
**URL** https://power.kyutech.ac.jp/

**Keywords** Research Overview

- Power Semiconductor Device
- Power Electronics
- Carbon Neutral
- Silicon Wefer
- Condition Monitoring

Development of ultimate power semiconductor devices to achieve carbon neutral. Power semiconductors are key device for xEVs, PVs and wind firm for the energy efficiency.

Division of Green Electronics

**Research Area** Nanomaterials, solar cells, Metal ion batteries

**Professor, Ph.D. Tingli MA**

**Development of nanomaterials and application for solar cell, metal ion batteries, metal air batteries**

**E-mail** tinglima@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~tinglima/

**Keywords** Research Overview

- Design and synthesis of Nano material
- Li ion battery
- Na ion Battery
- Metal air battery
- Perovskite solar cell
- High performance
- Low cost
- Application

Design and syntheses 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.

Division of Green Electronics

**Research Area** Functional Materials and Devices

**Professor, Ph.D. Shyam S.PANDEY**

**Synthesis and Characterization of Photo-functional Materials for Advanced Device Applications**

**E-mail** shyam@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~shyam/

**Keywords** Research Overview

- Molecular design
- Solar cells
- Organic semiconductors
- Organic devices
- Photo-functional materials
- Smart sensing materials

Design and development of photo-functional materials for energy harvesting and organic electronic devices.

Division of Green Electronics

**Research Area** Power semiconductor, Semiconductor material

**Associate Professor, Dr. Eng. Akihiko WATANABE**

**Development of diamond power devices to realize the next generation power society**

**E-mail** watanabe@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~watanabe/

**Keywords** Research Overview

- Diamond
- Power semiconductor
- Ultra high voltage power device

Research on ultra-high performance power devices based on the superior semiconductor properties of diamond. The realization of diamond power devices will contribute to the realization of a decarbonized society by enabling the highly efficient use of electrical energy and the construction of energy grids with the direct current transmission.

Division of Biological Mechanics

**Research Area** Biomechanics

**Professor, Dr. Eng. Hiroshi YAMADA**

**Biomedical Engineering and Biomechanics for Life-Sustaining Technologies**

**E-mail** yamada@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~yamada/

**Keywords** Research Overview

- Biomedical engineering
- Microbiomechanics
- Mechanical testing
- Finite element method
- Sensor device development
- Vascular diseases
- Pressure injury
- Endodontic instruments

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, endodontic treatments, prevention of pressure injury

Division of Biological Mechanics

**Research Area** Biofluid Engineering

**Professor, Dr.Eng. Masaaki TAMAGAWA**

**Biofluid Engineering for Advanced Medicine and Development of Medical Devices**

**E-mail** tama@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~tama/

**Keywords** Research Overview

- Computational Fluid Dynamics (CFD)
- Flow visualization
- Blood flows
- Hemolysis and Thrombus formation
- Shock wave drug delivery systems
- Micromachine with concentration Marangoni effect engine
- Fractal analysis and network of arterials
- Biomechanical Analysis of Brain Injury by Fall

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 neutrophil, Keyword: Bio-fluid dynamics, Bio Medical Engineering, CFD, Shock Wave

Division of Biological Mechanics

**Research Area** Bio-microdevices

**Professor, Ph.D. Takashi YASUDA**

**Study on Bio-microdevices for Medical Research and Drug Discovery**

**E-mail** yasuda@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~yasuda/

**Keywords** Research Overview

- Semiconductor processing
- MEMS (Micro Electro Mechanical Systems)
- Microfluidic device
- MPS (Microphysiological systems)
- Cell culture
- Cell analysis
- Nerve cell
- iPS cell

Using techniques of semiconductor processing and cell culture, we are developing microdevices for medical and drug discovery applications, including devices for analyzing human iPS cell-derived neurons, microelectrode array devices for measuring electrical signals from neurons, and microfluidic devices with reconstructed brain structure.

Division of Biological Mechanics

**Research Area** Functional Biomaterials

**Professor, Ph.D. Toshiki MIYAZAKI**

**Development of novel biomaterials for tissue repair**

**E-mail** tmiya@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~tmiya/

**Keywords** Research Overview

- Biomaterial
- Biocompatible material
- Ceramics
- Hybrid material
- Artificial bone
- Artificial joint
- Cancer treatment

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

Division of Biological Mechanics

**Research Area** Intelligent machine

**Associate professor, Ph.D. (Eng.) Kazuto TAKASHIMA**

**Study on soft sensors and actuators, and applications to medical, welfare and industrial technologies**

**E-mail** ktakashima@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~ktakashima/english/index-e.html

**Keywords** Research Overview

- Smart soft materials
- Soft actuator
- Endovascular treatment
- Tactile sensor
- Surgical simulator
- Stiffness control
- Biomimetics
- Biotribology

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.

Division of Biological Mechanics

**Research Area** MEMS-based biomedical engineering

**Associate Professor, Dr. Sci. Momoko KUMEMURA**

**MEMS, Microfluidics for oncological studies**

**E-mail** momo@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~momo/

**Keywords** Research Overview

- MEMS
- Micro Total Analysis Systems
- Micromachining
- Mechanical characterization
- Real-time measurement
- DNA
- Tumor cell
- On-chip analysis

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.

Division of Biological Mechanics

**Research Area** Harmonic Functional Materials

**Associate professor, Ph.D. Jin NAKAMURA**

**Development of harmonic functional materials towards medical and environmental applications**

**E-mail** jin@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~jin

**Keywords** Research Overview

- Functional materials
- Ceramics
- Metals
- Organic molecules
- Tissue regenerative medicine
- Environmental purification

Development of composite materials (ceramics, metals, and organic molecules) that exhibit multifunctions in response to stimuli emitted by living organisms.  
Development of synthetic processes for composite materials with controlled structures at molecular order.  
Development of materials for tissue regeneration medicine and environmental purification.

Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Functional Interface Engineering

**Professor, Dr. Eng. Tetsuya HARUYAMA**

**Establishing technology from elucidation of interface functions: leading to solutions to social issues**

**E-mail** haruyama@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~haruyama/

**Keywords** Research Overview

- Functional interface
- New energy
- CO<sub>2</sub> fixation
- Radical chemical process
- Phases and Interfaces

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<sub>2</sub> into resources", "process technology with low environmental load", "safe decomposition of harmful substances", etc.

Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Microbial Biotechnology

**Professor, Ph. D. Toshinari MAEDA**

**Advanced Biotechnologies using Unique Microbial Functions**

**E-mail** toshi.maeda@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~toshi.maeda/

**Keywords** Research Overview

- Metabolic Engineering
- Protein Engineering
- Genetic Engineering
- Environmental Biotechnology
- White Biotechnology
- Bioremediation
- Environmental Bio-adaptation
- Bacterial interaction

Unique microbial 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.

Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Analytical Physical Chemistry

**Professor, Ph.D. Naoya MURAKAMI**

**Spectroscopic analysis on semiconductor photocatalyst and development of photocatalytic system for light-energy conversion**

**E-mail** murakami@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~murakami/

**Keywords** Research Overview

- Photocatalyst
- Photoacoustic spectroscopy
- Nanomaterial
- Photoelectrode

Analysis of photofunctional material using photoacoustic spectroscopy. Development of photocatalytic system for light-energy conversion.

Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Biopolymers, Structure and Function

**Associate Professor, Ph. D. Tamaki KATO**

**Design, synthesis, and conformational analysis of functional biomolecules.**

**E-mail** tmkato@life.kyutech.ac.jp  
**URL** https://www.life.kyutech.ac.jp/~tmkato/

**Keywords** Research Overview

- Peptide
- Protein
- Enzyme
- Amino acids
- Molecular design
- Organic Synthesis
- SAR

Design, synthesis, and conformational analysis of peptide-based artificial functional molecules (Peptide nanostructures, peptide-based drug design etc) .



Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Biomolecular Engineering

**Associate professor, Ph.D. Shinya IKENO**

**Development and application of functionalized nanomaterials using biomolecular**

**E-mail** [ikeno@life.kyutech.ac.jp](mailto:ikeno@life.kyutech.ac.jp)

**URL** <https://www.life.kyutech.ac.jp/~ikeno/>

**Keywords** Research Overview

- Functionalized peptide
- Genetic engineering
- Recombinant protein
- Biopesticide
- Drug screening
- Biostimulants
- Biosensor
- Nanoparticle

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.

Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Catalyst Electrolytic Engineering

**Associate Professor, Ph.D. Yoshiyuki TAKATSUJI**

**Efficient and selective electrochemical conversion of substances**

**E-mail** [takatsuji@life.kyutech.ac.jp](mailto:takatsuji@life.kyutech.ac.jp)

**Keywords** Research Overview

- Catalytic metal electrode
- Plating technology
- CO<sub>2</sub> fixation
- Energy and environment
- Electrochemistry

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.

Division of Green Technology

**Research Area** Mechatronics

**Visiting Professor, Doctor of Engineering Hideki HONDA**

**Mechatronics Control to fit in human society**

**E-mail** [honda@life.kyutech.ac.jp](mailto:honda@life.kyutech.ac.jp)

**URL** <https://www.life.kyutech.ac.jp/~honda/>

**Keywords** Research Overview

- Mechatronics
- Control Theory
- Motion Control

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.

Next Generation Power Electronics Research Center

**Research Area** Power Electronics, Power semiconductor

**Assistant Professor, Dr. Eng. Tripathi Ravi Nath**

**Power electronic system control and power semiconductor control**

**E-mail** [tripathi.ravi-nath639@mail.kyutech.jp](mailto:tripathi.ravi-nath639@mail.kyutech.jp)

**URL** <https://power.kyutech.ac.jp/>

**Keywords** Research Overview

- Power Electronics
- Power Semiconductor Device
- Gate Driving Control
- Power Converter Control
- Hardware-in-the-loop (HIL)
- Model based design (MBD)

Power electronics systems can utilize green energy by efficiently converting electrical energy. We are conducting research on power semiconductor converters and control technology for environmentally friendly technologies, and virtual prototyping using model-based development and design (MBD).

Department of Biological Functions Engineering

Division of Environment Conscious Chemistry and Bioengineering

**Research Area** Environmental-Benign Functional Materials

**Associate Prof, Ph.D. in Engineering Yoshito ANDO**

**Design and evaluation of high-value functional materials from biomass and waste for a circular economy**

**E-mail** [yando@life.kyutech.ac.jp](mailto:yando@life.kyutech.ac.jp)

**URL** [https://www.life.kyutech.ac.jp/~yando/wp/?page\\_id=34](https://www.life.kyutech.ac.jp/~yando/wp/?page_id=34)

**Keywords** Research Overview

- Biomass
- Sustainable Society
- Additional value
- Cellulose
- Agricultural waste
- Global Issue
- Polymer Materials
- Organic Synthesis

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.

Division of Green Technology

**Research Area** Micro-Technology

**Visiting Professor, Ph.D. Iwao SASAKI**

**The research on the upgrading of the materials for Mechatronics equipments**

**E-mail** [sasaki@life.kyutech.ac.jp](mailto:sasaki@life.kyutech.ac.jp)

**URL** [https://www.life.kyutech.ac.jp/~sasaki/sasaki\\_j.htm](https://www.life.kyutech.ac.jp/~sasaki/sasaki_j.htm)

**Keywords** Research Overview

- Functional Thin Film
- Solid Lubrication Bearing
- Vapor Deposition
- Magnetic Material
- Sensor

Research on functional materials utilizing the unique phenomena, which are prominent in a micro/nanometer scale.

Division of Plant Life-cycle Engineering

**Research Area** Plant Life Cycle Engineering

**Special Appointment Associate Professor Masahiro NAKANO**

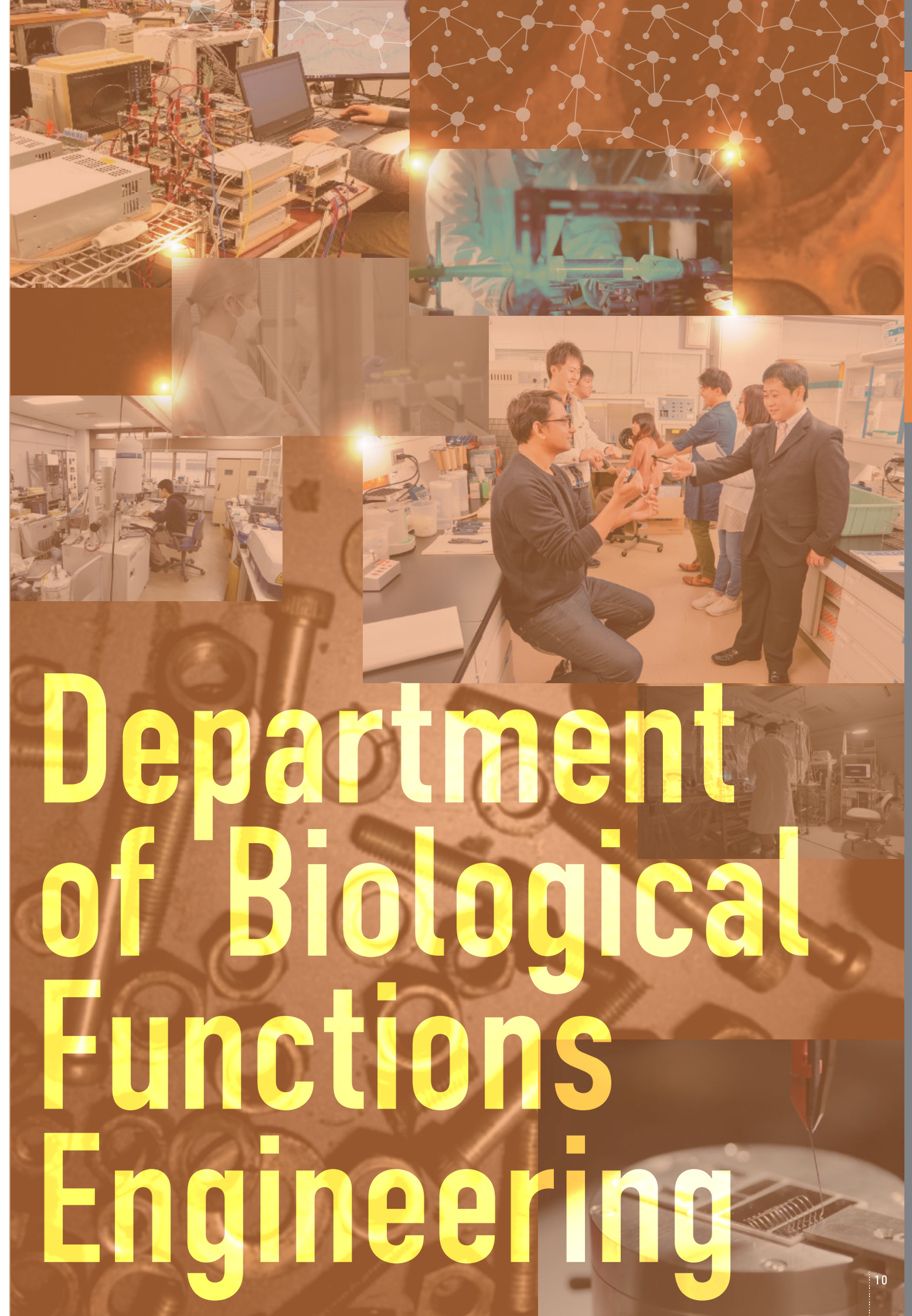
**Plant Life Cycle Engineering**

**E-mail** [nakano@life.kyutech.ac.jp](mailto:nakano@life.kyutech.ac.jp)

**Keywords** Research Overview

- Plant Life Cycle
- Robot welding
- Image analysis
- Thermal elasto-plastic analysis
- AI
- Equipment diagnosis
- Welding repair

Plant Life Cycle Engineering (Research on autonomously controlled robot welding, and Research on thermal elasto-plastic analysis of welds and optimization of welding order)

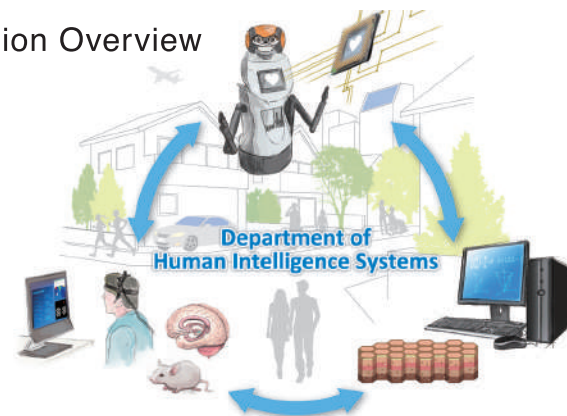




# DEPARTMENT OF HUMAN INTELLIGENCE SYSTEMS

Graduate School of Life Science and Systems Engineering

## Division Overview



Department of Human Intelligence Systems aims to incorporate the principles of human intelligence into intelligent information processing platforms and artificial intelligent systems, as well as to actively contribute to the development in the industry. The research and education in this department covers but is not limited to (i) advanced development of mechanical systems and devices such as intelligent autonomous robots, (ii) intelligent information system development and artificial intelligence algorithms design that incorporates the principles of human reasoning, (iii) scientific analysis of social activities and human intelligence by using mathematical modeling, brain science and cognitive science in general.

## Divisions



### Division of Human Intelligence and Machines

Division of Human Intelligence and Machines is teaching and researching in the fields of robotics and devices, which could realize human-like intelligence by utilizing rational and significant structures as well as functions of biological organisms to achieve low-energy consumption, harmony with the environment, and human-friendly behavior. Through the teaching and research, we will bring students up to be persons and professionals who are actively involved in the global world with to create new public services, new business, and new social value.



### Division of Intelligence Systems and Emergent Design

The division is engaged in the design of new technologies and theories that are inspired by human intelligence. It is a form of societal engineering focusing not only on cognitive functions of recognition, learning, and reasoning, but also on social abilities with emotions, Kansei, and communications. This field requires the study of mathematical modeling, informatics, and systems engineering toward a comprehensive understanding of computation in brain-body environment interaction and an advanced development of intelligent partners and platforms.



### Division of Human Interaction and Brain Functions

It is important to study the relationship between the function of the brain, and the nature of society made by humans to clarify human intelligence. In this division, we study the characteristics of neurons of which the brain consists, the information processing in which many neurons are involved, behaviors as results of the processing, and the communication mechanism of humans in a society.

### Division of Human Intelligence and Machines

**Research Area** Field Robotics

**Professor, Ph.D** **Kazuo ISHII**

**Research on field robotics and their applications**

**E-mail** ishii@brain.kyutech.ac.jp

**URL** <https://www.brain.kyutech.ac.jp/~ishii/>

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Field robot</li> <li>Underwater robot</li> <li>Agricultural robot</li> <li>Soccer robot</li> <li>Inspection robot</li> <li>Motion control system</li> <li>Neural networks</li> </ul>	Development of field robots such as underwater robot, agricultural robot, inspection robot, and research on related topics, environment recognition system, self-localization system, adaptive learning system, motion control system, bio-inspired information processing, etc.

### Division of Human Intelligence and Machines

**Research Area** Human function substitution systems

**Professor, Ph.D. (Eng.)** **Chikamune WADA**

**Research on developing functional substitution system for the disabled/the elderly people based on human sensory/motor characteristics**

**E-mail** wada@brain.kyutech.ac.jp

**URL** <https://www.brain.kyutech.ac.jp/~wada/>

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Human interface</li> <li>Assistive technology</li> <li>Functional substitution</li> <li>Biological information</li> <li>Biological data measurement</li> <li>Rehabilitation engineering</li> </ul>	Research on developing human-friendly assistive device/substitution system for the disabled/the elderly people based on psychophysical analysis of human sensory-motor systems.

### Division of Human Intelligence and Machines

**Research Area** Brain-Like Intelligent Machines

**Associate Professor, Ph. D.** **Hiroyuki MIYAMOTO**

**Development of brain-like intelligent machines based on computational neuroscience, with emphasis on construction of self-learning robots**

**E-mail** miyamo@brain.kyutech.ac.jp

**URL** <http://www.brain.kyutech.ac.jp/~miyamo/>

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Learning by watching</li> <li>Skill acquisition</li> <li>Motor learning</li> <li>Autonomous robots</li> <li>Image processing</li> <li>Neural network</li> </ul>	Development of learning by watching robot, skill acquisition robot, motor learning robot, welfare robot.

### Division of Human Intelligence and Machines

**Research Area** Field Robotics

**Associate professor, Dr.Eng.** **Yuya NISHIDA**

**Development of control system and technology for field robot**

**E-mail** y-nishida@brain.kyutech.ac.jp

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Field robot</li> <li>Autonomous underwater robot</li> <li>Motion control</li> <li>Motion analysis</li> </ul>	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.

### Division of Human Intelligence and Machines

**Research Area** Intelligence Emerging Nanosystems

**Professor, Dr. Eng.** **Hirofumi TANAKA**

**Design, development, and integration of nanodevices for artificial intelligence hardware devices**

**E-mail** tanaka@brain.kyutech.ac.jp

**URL** <https://www.brain.kyutech.ac.jp/~tanaka/>

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Intelligent information processing nanodevices</li> <li>Artificial intelligence nanodevices</li> <li>Neuromorphic nanodevices</li> <li>Integrated circuits for nonlinear dynamical nanosystems, and nanostructure device designing</li> </ul>	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.

### Division of Human Intelligence and Machines

**Research Area** Brain-like Computer System

**Professor, Ph.D.** **Hakaru TAMUKOH**

**Realization of a brain-like computer system and its application to human-friendly systems**

**E-mail** tamukoh@brain.kyutech.ac.jp

**URL** <https://www.brain.kyutech.ac.jp/~tamukoh/>

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Brain-like computer</li> <li>Softcomputing</li> <li>hw/sw complex system</li> <li>Digital hardware design</li> <li>Home service robotics</li> </ul>	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.

### Division of Human Intelligence and Machines

**Research Area** Bio-inspired artificial vision

**Associate Professor, Ph.D** **Shinsuke YASUKAWA**

**Information processing in biological sensory systems and their applications in field robotics**

**E-mail** s-yasukawa@brain.kyutech.ac.jp

**URL** <http://www.brain.kyutech.ac.jp/~s-yasukawa/>

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Bio-inspired system</li> <li>Visual information processing</li> <li>Robot vision</li> <li>Embedded system</li> </ul>	Development of living creature observation/manipulation technique using robot, Simulation of the visual nervous system, Development of Bio-inspired robot vision system, Trials of their techniques in field, etc...

### Division of Human Intelligence and Machines

**Research Area** Brain-inspired integrated system

**Associate professor, Ph.D.** **Yuichiro TANAKA**

**Development of brain-inspired artificial intelligence and its application for robots**

**Email** tanaka-yuichiro@brain.kyutech.ac.jp

Keywords	Research Overview
<ul style="list-style-type: none"> <li>Soft computing</li> <li>Computer systems</li> <li>Hippocampus</li> <li>Amygdala</li> <li>Prefrontal cortex</li> <li>FPGA</li> <li>Home service robot</li> </ul>	Aiming for a future in which home service robots work as human partners, I develop artificial intelligence models that mimic the functions of the brain, especially those of the hippocampus, amygdala, and prefrontal cortex, and hardware that operates them with low power consumption.



Division of Human Intelligence and Machines

**Research Area** Nanomaterial Intelligence

Assistant prof, Dr. Sci. **Yuki USAMI**

**Creation for brain-inspired information processing system by nanomaterial**

**E-mail** usami@brain.kyutech.ac.jp

**Keywords** Research Overview

- Nanomaterial
- Hybrid material
- Mesoscopic physics
- Neuromorphic computing
- Nanostructure analysis
- Molecular electronics
- In-material reservoir

Research and development of nanoscale various basic physical properties of organic/inorganic materials for extracting flexible bio-inspired function. Creation of unconventional nanodevices by circuitization and deviceization from nanomaterial function.

Division of Human Intelligence and Machines

**Research Area** Brain-like Integrated Systems

Specially Appointed Professor, Dr.Eng. **Takashi MORIE**

**Design and development of integrated circuits, devices and systems for brain-like artificial intelligence**

**E-mail** morie@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~morie/

**Keywords** Research Overview

- Brain-like artificial intelligence
- Vision and image recognition model
- Integrated systems for robots
- Integrated circuit for nonlinear dynamical system
- Analog integrated system

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.

Division of Intelligence Systems and Emergent Design

**Research Area** Bioinspired Intelligence Systems

Associate Professor, Ph.D. **Shuhei IKEMOTO**

**Robots/Algorithms inspired from biological systems**

**E-mail** ikemoto@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~ikemoto/index.html

**Keywords** Research Overview

- Bioinspired robot
- Bioinspired algorithm
- Learning control
- Stochastic resonance

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.

Division of Intelligence Systems and Emergent Design

**Research Area** Statistical learning theory

Assistant Professor, Ph.D. **Hideaki ISHIBASHI**

**Information geometry based meta-modeling systems**

**E-mail** ishibashi@brain.kyutech.ac.jp

**Keywords** Research Overview

- Meta-modeling
- Multi-task learning
- Meta-learning
- Bayesian inference
- Information geometry
- Friston's free energy principle
- Active inference

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.

Division of Intelligence Systems and Emergent Design

**Research Area** Learning theory of brain-like artificial intelligence

Professor, Ph.D. **Tetsuo FURUKAWA**

**Learning theories of brain-like artificial intelligence and embodied knowledge discovery from complex data network**

**E-mail** furukawa@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~furukawa/

**Keywords** Research Overview

- Brain-like artificial intelligence
- Learning theory of meta-modeling
- Emergence of intelligence
- Visual analytics
- Embodied knowledge discovery

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 through meta-learning and multi-task learning. We also challenge to develop embodied knowledge discovery systems from complex data network.

Division of Intelligence Systems and Emergent Design

**Research Area** Human and Social Intelligence Systems

Professor, Ph.D. **Tomohiro SHIBATA**

**Science and Engineering Understanding of Humans and Societies, Assistive System Development for Nursing and Medical Care, and Welfare, and Social Implementation**

**E-mail** tom@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~tom/

**Keywords** Research Overview

- Robotics
- Artificial intelligence
- Biomechanics
- Biological Signal Processing
- Mixed Reality/Metaverse
- Brain Science
- Nursing and Medical Care, Welfare
- Social Implementation

We are researching and developing assistive technologies to apply various knowledge and technologies, such as robotics, artificial intelligence, biomechanics, and biological signal processing, to the medical, nursing, and welfare fields. We are also promoting the social implementation of these technologies in collaboration with various players, including the elderly, people with disabilities, medical, nursing, and nursing care professionals, private companies, and governments.

Division of Human Interaction and Brain Functions

**Research Area** Neuronal rhythm and Brain Machine Interface (BMI)

Professor, Ph.D. **Kiyohisa NATSUME**

**The relationship between the generation of neuronal rhythm and memory process**

**E-mail** natsume@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~natsume/

**Keywords** Research Overview

- Neuronal rhythm
- EEG
- Circadian rhythm
- Hippocampal
- Brain machine interface
- L2 English learning
- Music rhythm
- esports

We study experimentally on the generation of neuronal rhythm and compute the rhythm on the computer. We also developed the e-learning system for Japanese English learners using BMI technology.

Division of Human Interaction and Brain Functions

**Research Area** Team Management

Professor, Ph.D. **Doosub JAHNG**

**A Story of diverse individuals becoming one as a team**

**E-mail** jahng@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~jahng/

**Keywords** Research Overview

- Team Communication
- Occupational Health Marketing
- Key Words Meeting\*
- Versatile Educational Tools
- Comprehensive Health Resources Integrated Solution

For diverse individuals to agree with each other and become one as a team, innate needs, learned knowledge/skills acquired needs from personal/ environmental circumstances, self-action, health resources and communication become essential. We conduct research on the factors above by utilizing both people's conceptual needs and experimental/ statistical designs to further our study on team management.

Division of Intelligence Systems and Emergent Design

**Research Area** Intelligent Information Processing Systems

Professor, Ph.D. **Keiichi HORIO**

**Development of fundamental technology of intelligent information processing system aiming at modeling and analyzing behavior of human beings**

**E-mail** horio@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~horio/

**Keywords** Research Overview

- Behavior analysis
- Communication analysis
- Estimation of personality
- Intelligent data analysis
- Intelligent image processing
- Learning system

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.

Division of Intelligence Systems and Emergent Design

**Research Area** IoT / Big Data

Professor, Doctor of Engineering **Sozo INOUE**

**Human Activity Recognition and Application to Elderly and Nursing Care**

**E-mail** sozo@brain.kyutech.ac.jp

**URL** https://sozolah.jp

**Keywords** Research Overview

- Human Activity Recognition
- Web / Ubiquitous
- Application of Machine Learning
- Big Data
- Application for Healthcare / Nursing
- Behavior Change

We develop human activity recognition from smartphones and sensors, and their services. We also cultivate AI by collecting medical and nursing care big data.

Division of Human Interaction and Brain Functions

**Research Area** Mathematical Neural Network

Associate Professor, Ph.D. **Katsumi TATENO**

**Neural coding and Neurodynamics**

**E-mail** tateno@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~tateno/

**Keywords** Research Overview

- Neural coding
- Hippocampus
- Medial entorhinal cortex
- Memory
- Learning
- Glass catfish
- Electroreceptor

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.

Division of Human Interaction and Brain Functions

**Research Area** Neuroscience

Associate Professor, Ph.D. **Yoshitaka OTSUBO**

**Taste transduction mechanisms**

**E-mail** otsubo@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~otsubo/

**Keywords** Research Overview

- Oscillating receptor potentials with action potentials
- Taste signal transduction
- Patch-clamp
- Ca<sup>2+</sup>-imaging
- Immunohistochemistry
- Single cell RT-PCR
- Confocal laser microscope

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.

Division of Intelligence Systems and Emergent Design

**Research Area** Brain-Inspired Robotics and Intelligence Dynamics

Professor, Ph.D. **Hiroaki WAGATSUMA**

**Investigating principles of neural dynamics, body kinetics/morphology and societal abilities to understand biological intelligence**

**E-mail** waga@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~waga/

**Keywords** Research Overview

- Nonlinear dynamics
- Emergent intelligence
- Episodic memory and emotion
- Societal robot
- Computational neuroscience
- Neuroinformatics
- Sport biomechanics
- Rehabilitation support

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.

Division of Intelligence Systems and Emergent Design

**Research Area** Kansei Information Processing, Soft Computing

Associate Professor, Dr. (Eng.) **Kaori YOSHIDA**

**Designing information system based on Kansei Information Processing**

**E-mail** kaori@brain.kyutech.ac.jp

**URL** https://www.brain.kyutech.ac.jp/~kaori/

**Keywords** Research Overview

- Kansei Information Processing
- Human-Computer Interaction
- Soft Computing
- Cognitive Psychology
- Intelligent Image Processing
- Information System Design

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.

Division of Human Technology

**Research Area** Systems Intelligence

Visiting Professor, Ph.D. **Hiroshi NAKAJIMA**

**Basic and applied research on intelligent system development**

**Keywords** Research Overview

- Intelligent system
- Soft computing
- Computational intelligence
- Causal analysis
- Social intelligence
- Systems healthcare
- Health management
- Machine learning

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.

Division of Human Technology

**Research Area** Vision Sensing

Visiting Professor, Ph.D. **Masaki SUWA**

**Basic and applied research on intelligent vision system**

**Keywords** Research Overview

- Vision Sensing
- 3D Sensing
- Physics-based Vision
- Pattern Recognition

Research and development on vision sensing technologies such as object detection, 3D surface reconstruction and reflectance property analysis, for applications in factory automation or society's infrastructure.





Division of Human Technology



**Research Area** Biomimetic Robot System  
 Visiting Associate Professor, **Takayuki MATSUO**, Ph.D.  
**Development of Robot Systems based on motion control and information processing system of animals**

**Keywords**  
 ● Biomimetic robot  
 ● Adaptive control  
 ● Nonlinear oscillator  
 ● Neural network

**Research Overview**  
 Development of mobile robot systems inspired by mechanisms of animals for irregular terrain, underwater and so on.

UENO SEIKI Next Generation Frontier Technology Collaboration Laboratory



**Research Area** Image sensing  
 Specially Appointed Associate Professor **Kazumichi TANAKA**  
**Creating added value for semiconductor inspection machine using AI technology**

**Email** k-tanakazu@brain.kyutech.ac.jp

**Keywords**  
 ● Artificial Intelligence  
 ● Control  
 ● Energy Conservation  
 ● Image Processing  
 ● Vibration Control/Vibration Isolation

**Research Overview**  
 Value-added creation for mechatronics technologies such as Machine Vision System, high-speed, high-precision, energy-saving, and vibration control by combining AI technology with semiconductor inspection machine manufactured by Ueno Seiki

Center for Socio-Robotic Synthesis



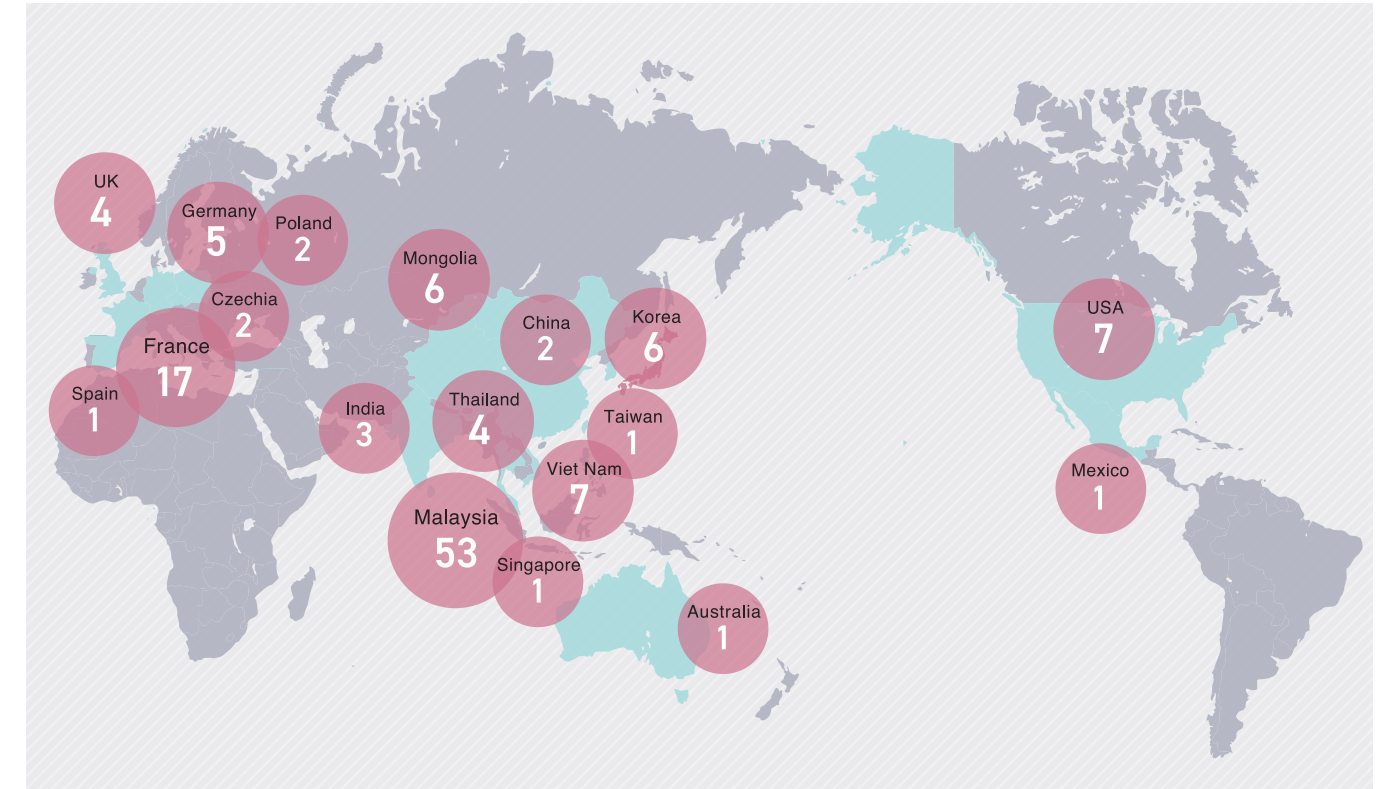
**Research Area** Mobile Intelligence Systems  
 Assistant Professor, **Daigo KATAYAMA**, Ph.D.  
**Development of Intelligence Mobile/IoT Systems by Robotics Application**

**Email** katayama@brain.kyutech.ac.jp

**Keywords**  
 ● Edge Computing  
 ● Augmented Reality  
 ● Human Interface  
 ● Field Robotics

**Research Overview**  
 Research on robotics applications for advanced information on mobile/IoT systems, such as self-position estimation or point cloud processing implementation on smartphones or IoT devices. This research also includes system application in fields such as welfare, marine engineering, agriculture, and civil engineering.

List of overseas dispatched students in FY2023 (by country)



# Department of Human Intelligence Systems

Tuition and other fees, and exemption	Only a limited number of students can get exemption of full or half of fees through a selection procedure. ▶ Application fee: ¥30,000 ▶ Enrollment fee: ¥282,000 ▶ Tuition fee: ¥267,900 per half year
Scholarship, research assistant and living cost	Students can apply for various scholarships financed by foundations. The monthly stipend is from ¥20,000 to ¥140,000. Doctoral course students may get about ¥45,000 per month as a research assistant. The monthly cost of living in Kitakyushu city is approximately from ¥60,000 to ¥80,000 including house rent and utilities.
Accommodation	Students can apply to stay in the international student housing (Sakura House) near Wakamatsu campus. However, as we have limited rooms available, not all students will be able to stay at Sakura House. The rent of Sakura House is from ¥11,700 to ¥18,000 per month.
Tutor	A tutor, who is current student in the laboratory, can help new students for their study and daily life in Japan. This tutor system is available for the first three months after enrollment.
Japanese language class	Students can take Japanese language classes appropriate to their level.

▼English Information for international students in our web site is as follows.

Q <https://www.kyutech.ac.jp/english/>



01

**Ahmed Mustafa Kamel Saber**  
Biological Functions Engineering



**My future dream**

My future dream is to have the ability to apply the science from experiments in the lab into applications for society as I believe that the biotechnology market has a lot of investments to come since there is a high demand for food security and pharmaceutical industries and that is where science can come to solve problems.

**Why Kyutech?**

In September 2022, I came to Kyutech on the Sakura Science project invited by Professor Ikeno and a graduated PhD student from his lab Dr. Khaled Metwaly. During this period, I found a lot of research that is being done in Kyutech and the friendly research environment that helps excel your abilities. By the end of the program, I decided that I would like to do my Master's Degree here in Kyutech.

**About Research**

Environmental stress represents a big challenge for human on Earth, the lack of natural resources due to increasing the population are demanding that researchers and decision-makers provide food security and clean water to the next generations. Functional peptides when applied to plants can do various biological functions based on their sequence and one of those functions is combating abiotic stress. Nanoparticles have been used extensively in the delivery of biological macromolecules inside biological systems. My Research is focused on loading short functional peptides that are considered to have a function in combating abiotic stress in plants on different nanoparticles and testing their activity on plant biological systems.

**Best point of Kyutech**

There are a lot of good points in Kyutech but if I had to choose one, I would choose the people. The professors, staff, and students in Kyutech are very kind and decent and always meet you with their smiles and answer your inquiries.

**My recommended place from Kyutech**

I enjoy staying and working in the lab and my office,

the view of the green sights from the window of the lab is fabulous, but if I have to say a place outside the lab and the office is the worship and Masjid room on the 7th floor. I am glad to Kyutech for supporting different religions and for assigning a prayer room for Muslims.

**What surprised me most in Japan**

When I first came to Japan, I was fascinated by the robots that are almost everywhere I found them in the airports and different restaurants. I do not know if you know that or not but back in my country Egypt or Arabic culture, we consider Japan as a different planet that is coming from the future that's due to the numerous technological advancements that Japan has and you could not find it anywhere else on the planet. Also, I liked the nature of Japan and the green sightseeing but I think that every country has a nature of its own that is beautiful and different from what you have seen in your life before. What I see distinct about Japan is that once you land in Japan, you will realize that you have arrived in a country from the future, a different planet.

**What kind of life**

I am the kind of a person that does not like free time, so, I try to fulfill it with activities that I enjoy and also give me a return, so, I do like reading, playing chess, playing sports, and working out at the gym. When I first arrived here, my lab members were very friendly and helped me to find a good gym to exercise at. Also, I like watching football games, movies, series, and anime recently. So, outside working in the lab, I do a lot of activities either with friends who share the same interests or alone and that helps me to fulfill my spare time with good activities and also enjoy doing them.

**Wakamatsu Campus in Kitakyushu Science and Research Park**



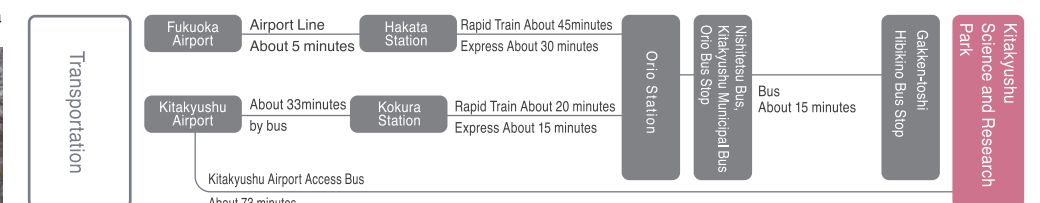
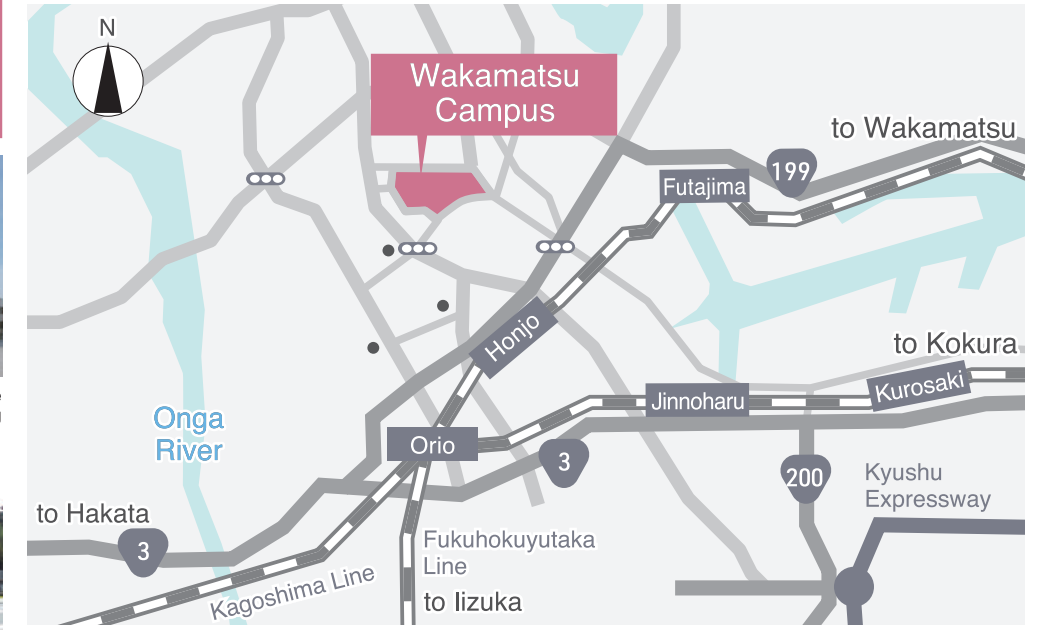
Graduate School of Life Science and Systems Engineering



Cafeteria



Kitakyushu Science and Research Park



Mode	Route	Time Required
Shinkansen (Nozomi)	Tokyo — Kokura	About 4H45M
	Shin Osaka — Kokura	About 2H
	Hakata — Kokura	About 17M
	Tokyo — Kitakyushu	About 1H35M
Airlane	Tokyo — Fukuoka	About 1H40M
	Seoul — Fukuoka	About 1H10M
	Beijin — Fukuoka	About 2H15M
	HongKong — Fukuoka	About 2H50M
Car	From Kitakyushu Airport	About 60M
	From Fukuoka Airport	About 70M
	From Kokura Station	About 35M
	From Orio Station	About 10M

02

**Nazmun Nahid**  
Life Science and System Engineering, Human Intelligence Systems



**Why Kyutech?**

In 2020, I visited Japan for the Sakura Science Program at Osaka Prefecture University. I then fell in love with the Japanese way of life and decided to further my education in Japan. I researched the programs of many Japanese institutions and spoke with several professors. I knew this was the lab I wanted to join for my graduate studies after my interview with Sozo Inoue Sensei. In addition, I spoke with my seniors, who were students at Kyutech at the time, and the environment felt appropriate for me because the study here is more research-oriented.

**About Research**

I enrolled at Kyutech as a master's student, and currently, I am in the 2nd year of my Ph.D. under Professor Sozo Inoue. My main research focus is Human Robot Collaboration and Interaction for Well-being. For my master's, I worked on the Yaskawa Robotics project, but in my Ph.D., I switched my focus to the nursing care facility. Our project is funded by JST. I am overjoyed to have had the opportunity to work on such fascinating projects.

**Best point of Kyutech**

My favorite aspect of Kyutech is its student-friendly policies. The staff here is quite cooperative. We also have a lot of financial and other kinds of help. It is difficult for us international students to support everything with our limited funds, but Kyutech is always willing to lend a helping hand in those situations. Kyutech also assists us in integrating into life here by alerting us about various activities and gatherings.

**My recommended place from Kyutech**

Kyutech has three campuses; however, I have yet to visit the Iizuka location. My favorite spot on the Wakamatsu campus is my lab table. My table has one of the nicest views, specifically the sunset and night view. In addition, I admire the side path near the parking lot. The sunset and autumn views are the greatest. In Tobata, I like the entrance gate since different Kyutech histories are inscribed around it.

**What surprised me most in Japan**

The time management in Japan surprised me the most. The services here are extremely well-organized. I have visited multiple countries in Europe and Asia, but I have never seen such punctuality and organization anywhere else.

**What kind of life**

The people here are quite friendly. Now I say I have two families, one at home and one here. Kitakyushu has a very serene and pleasant way of life.

**My future dream**

If possible, I would prefer to work in academics. I am not sure if I'll be able to acquire a job here because my Japanese language proficiency is lacking. Even if I am unable to obtain a position here, I would like to collaborate with Japanese researchers and Kyutech.



**Other Campuses of Kyushu Institute of Technology**



Tobata Campus



Iizuka Campus

