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Please note that once the Test Taker Score Report has been delivered to you, please submit it to the CSE office as soon as possible. You may send it by registered mail or bring it to the CSE office.

(b) TOEIC test score sheet

Submit the Official Score Certificate or printed Digital Official Score Certificate.

(c) Those who have graduated from a university where English is the primary language of instruction may omit their score sheet by submitting a medium of instruction certificate from their degree granting (undergraduate) university and graduate school. For more details, please contact the Administration Office.

#### Important Notes

(a) If you submit more than one score sheet, the best score submitted shall be used. Individuals who have already submitted scores at the time of application may submit new scores between February 5 (Wed.) 9:00 a.m. (JST) and February 10 (Mon.) 5:00 p.m. (JST), 2025, by registered mail or bringing it to the office.

(b) Scores for TOEFL ITP, TOEIC IP, TOEIC Bridge, etc. are invalid.

(c) English score sheet will be returned after the exam date.

## 8. Selection Method

Admission decisions will be made based on a comprehensive review (oral examination, etc.) of the applicant's master's thesis or equivalent paper and the applicant's knowledge of the subject matter and foreign-language skills.

## 9. Examination Schedule, Etc.

**February 28 (Fri.), 2025**

Examination subjects are based on the general admission.

## 10. Announcements of the Result

The examination admission numbers of those who passed the examination will be posted in the entrance hall of the School of Engineering and our homepage (<https://www.cse.hokudai.ac.jp>) at 4:30 p.m. (tentatively) on **March 7 (Fri.), 2025**. In addition, all examinees will be notified of their results individually. (results will not be provided over the phone).

## 11. Enrollment Procedures and Expenses

Details regarding enrollment procedures are provided in the notifications mailed to those who have been accepted.

Enrollment fee (expected): ¥282,000

First semester tuition for academic year 2025 (expected): ¥267,900 (total annual amount (expected): ¥535,800)

Notes:

1. If any revision is made while the student is enrolled, the new amount will be applied from the time of the revision.
2. If the enrollment fee is not paid during the admission procedure period, the applicant will be

treated as having no intent to enroll.

3. If tuition is not paid for one semester, the student will be expelled, and his/her record of enrollment will be deleted. If you are having problems paying tuition due to financial hardship, you may be eligible for a tuition exemption or deferral.

## **12. Important Notes**

- (1) Be sure to bring your examination admission card with you on the day of the entrance examination and place it on your desk.
- (2) Incomplete applications may not be accepted. Be sure that there are no errors in your application.
- (3) If any falsified information is found in the application documents, the applicant's admission may be revoked.
- (4) Our graduate school generally does not allow dual enrollment.

## **13. Long-Term Study Program**

Our graduate school has a long-term study program. Those wishing to take advantage of this system should carefully read and follow the application instructions in the section entitled "Information on the Long-Term Study Program" on page 26.

## **14. Others**

- (1) Examination admission cards will be sent out in **mid-February 2025** to those whose applications have been accepted.
- (2) Applicants who are physically disabled and who may need special accommodations to take examinations and attend classes should notify the CSE office of their condition by January 20 (Mon.), 2025.

# **Information on the Long-Term Study Program**

## **1. Overview**

This program is available to students who would not be able to complete the program within the standard course term (three years) due to full-time employment or other circumstances (including responsibilities related to the care of elderly or disabled family members or the raising of children) and therefore want a longer period of time to conduct their studies systematically. Students must file an application and may be approved for a systematically planned course of study (hereinafter referred to as “long-term study”) after an individual review.

## **2. Eligibility**

Individuals who are applying for the long-term study program must meet one of the terms listed below, be unable to make a commitment to full-time studies as a consequence of the circumstances described, and would therefore like to extend in advance the number of years over which they will conduct their studies (research).

- (1) Individuals who are engaged in full-time employment, such as those currently employed by government agencies or companies (excluding those who will continue to receive salaries while being relieved of their work duties), and self-employed individuals
- (2) Individuals who are engaged in temporary or part-time employment that is deemed by this graduate school to adversely affect their studies
- (3) Individuals who have responsibilities, such as raising children or caring for other family members, that are deemed by this graduate school to adversely affect their studies to the same degree as the responsibilities listed in item (2) above
- (4) Individuals who have visual impairments, hearing impairments, physical disabilities, or other disabilities and are deemed by the graduate school to be adversely affected by their disabilities, causing their graduate school studies to suffer for a long term.

## **3. Enrollment Period**

The allowable length of period under the long-term study program is up to six years for the doctoral course. Study periods for long-term study applicants are approved in one-year increments.

The maximum length of enrollment (including the period for time off, etc.) for a student who has been approved for long-term study is up to six years in the doctoral course, the same maximum length of time as students under the standard term of study.

The period of time off that this graduate school will allow is the same for students under either the standard term of study or long-term study program, i.e., three years for doctoral students.

## **4. Application Procedures**

### **(1) Application Deadline**

In general, those wishing to apply for the long-term study program should apply at the time they submit their admission applications.

### **(2) Submission of Documents**

Submit the following documents to CSE office:

- (a) An Application for long-term study (form 1)
- (b) A Long-term study plan (form 2)
- (c) Documents verifying your reasons for needing long-term study approval

### **(3) Review and Notification of Results**

Applications for the long-term study program will be reviewed by the graduate school, and

applicants will be notified of the results of that review with the notification of examination results.

### **5. Contraction or Extension of the Long-Term Study Period**

If deemed necessary by the graduate school, approval may be granted for a contraction or extension of the long-term study period once, and only once, during the student's period of enrollment. However, the long-term study period can only be contracted from six years to four years (one year beyond the standard three-year course term) or five years to four years.

### **6. Tuition Fee**

The tuition of students who have been approved for the long-term study program shall be calculated in annual amounts by dividing the total tuition for the standard term of study (annual tuition  $\times$  3 years) by the number of years for which the long-term study has been approved. In cases where the tuition amount is revised or a change to the long-term study period is approved, tuition will be recalculated at that time. However, any tuition already paid will not be adjusted retroactively.

**※Be sure not to pay the tuition for your current term of study until you are notified of whether your application for the long-term study program or a change thereof has been approved.**

### **7. Other**

To request an application form or clarify any issues, contact CSE office.

## Handling of Personal Information

- (1) All personal information collected by Hokkaido University will be completely protected in compliance with the Act on the Protection of Personal Information Held by Independent Administrative Agencies, etc., and other related acts and pursuant to the Hokkaido University Personal Information Management Regulations.
- (2) Names, addresses, and other personal information provided to the university through application procedures will be used solely for (a) enrollee selection, (b) the announcement of exam results, (c) admission procedures, (d) surveys and research on enrollee selection methods, and (e) related processes.
- (3) Some of these processes may be outsourced by the university to a contracted service provider (hereinafter referred to as “contractor”). All or some of the personal information provided by applicants may be provided to the contractor only as needed to perform the tasks for which it has been contracted.
- (4) Personal information obtained through application procedures will be used only for those who are admitted for (a) school administration purposes (student registration, academic counseling, etc.), (b) student support services (health management, scholarship applications, etc.), and (c) tuition and other administrative purposes.
- (5) Of the personal information described in item (4) above, only names and addresses will be used to facilitate communication with students from the Hokkaido University Frontier Foundation and organizations related to Hokkaido University, such as (a) the Hokkaido University Athletic Union, and (b) the Hokkaido University School of Engineering and School of Science Alumni Association.

Graduate School of Chemical Sciences and Engineering, Hokkaido University

## List of Instructors and Their Fields of Research

Molecular Chemistry and Engineering Course					
No.	Laboratory	Staff	Research Contents	Faculty	
<b>Microscopic Chemical Analyses Unit</b>					
01	Quantum Chemistry	Professor	TAKETSUGU Tetsuya	Development of "Predictive" Chemical Theory for Reaction, Electron, and Spectroscopy and programs, as well as advanced computational chemistry applications. First-principle excited-state reaction dynamics, theory-guiding catalytic design with element strategy, development of a large-scale electronic structure theory, near-field molecular theory, reaction informatics.	Faculty of Science
		Associate Professor	KOBAYASHI Masato		
		Assistant Professor	IWASA Takeshi		
02	Theoretical Chemistry	Professor	MAEDA Satoshi	Development of new theories and computational programs aimed at predicting reaction pathways in molecules and materials, and their applications. The main targets of the applications are organic reaction, photoreaction, enzyme reaction, catalysis, and crystal phase transition.	Faculty of Science
		Assistant Professor	MATSUOKA Wataru		
03	Physical Chemistry	Professor	MURAKOSHI Kei	Surface electrochemistry: ultra-sensitive detection and characterization of surfaces of target materials under electrochemical potential control for novel energy conversion systems and intelligent devices. Electrochemical synthesis of nano-materials with well-defined electronic/geometrical structures for novel catalysis.	Faculty of Science
		Lecturer	FUKUSHIMA Tomohiro		
		Assistant Professor	ITATANI Masaki		
		Assistant Professor	Ruifeng ZHOU		
04	Analytical Chemistry	Professor	UENO Kosei	Light-matter interaction. Ultrafast dynamics and photochemistry/optical physics of nanomaterials in microscopic regions using ultrashort pulse lasers. Chemical and biosensors using nanostructures.	Faculty of Science
		Associate Professor	RYUZAKI Sou		
		Assistant Professor	IMAEDA Keisuke		
<b>Fine Chemical Reactions Unit</b>					
05	Organic Reaction	Professor	INOKUMA Yasuhide	Structural organic chemistry on synthesis and structural analysis of unique functional molecules such as polyketones. Use of machine learning in organic chemistry. Synthetic organic chemistry, electroorganic synthesis, organofluorine chemistry.	Faculty of Engineering
		Associate Professor	SENBOKU Hisanori		
06	Organoelement Chemistry	Professor	ITO Hajime	The research purpose of our laboratory is development of novel synthetic reactions, valuable catalytic process and new functional materials in the field of organoelement chemistry. We aim to challenge to establish a new chemistry frontier that includes organometallics, heteroatom chemistry and coordination chemistry.	Faculty of Engineering
		Associate Professor	ISHIYAMA Tatsuo		
		Associate Professor	KUBOTA Koji		
07	Organic Synthesis	Professor	OHKUMA Takeshi	Molecular catalysis, catalytic asymmetric reactions, practical organic synthesis.	Faculty of Engineering
		Associate Professor	ARAI Noriyoshi		
		Assistant Professor	YURINO Taiga		
08	Organometallic Chemistry	Professor	SAWAMURA Masaya	Catalyst design using supramolecules, solid surfaces, and light for the development of transformative chemical reactions. Quantum chemical calculations for exploring chemical reaction mechanisms and catalyst design.	Faculty of Science
		Associate Professor	SHIMIZU Yohei		
		Assistant Professor	MASUDA Yusuke		
09	Organic Chemistry I	Professor	SUZUKI Takanori	Structural and physical organic chemistry on novel heat- and light-responsive redox systems and strained molecules.	Faculty of Science
		Associate Professor	ISHIGAKI Yusuke		
10	Chemical Reaction Development	Professor	Benjamin LIST	Design and discovery of chemical reactions using computational, informational, and experimental science. Development of novel reactions using organocatalysts. Development of materials and functional organic molecules. Prediction of chemical reactions based on chemical informatics. Development of automated reaction pathway search methods and electronic state dynamics simulation methods.	ICReDD
		Professor	MITA Tsuyoshi		
		Associate Professor	Chung-Yang HUANG		
		Associate Professor	Pavel SIDOROV		
		Associate Professor	Mingoo JIN		
		Associate Professor	Min GAO		
Assistant Professor	AKAMA Tomoko				
<b>Catalytic Reactions Unit</b>					
11	Catalytic Transformation	Professor	MURAYAMA Toru	Renewable energy utilization and environmental protection applications based on the precise design of solid catalysts. Reactions at room temperature using gold nanoparticle catalysts, development of catalysts for energy-saving removal of pollutants from the atmospheric environment, and development of catalysts that promote the effective use of CO <sub>2</sub> .	Institute for Catalysis
12	Macromolecular Science	Professor	NAKANO Tamaki	Design and synthesis of chiral polymers and supramolecular systems having innovative functions such as pharmaceutical activities, light emission, electronic and ionic conduction, separation, and catalytic activities focusing on helical polymers, $\pi$ -stacked polymers, liquid crystals, and biopolymers.	Institute for Catalysis
		Associate Professor	SONG Zhiyi		
		Assistant Professor	BANDO Masayoshi		
13	Catalyst Material	Professor	SHIMIZU Kenichi	Development of metal nanocluster catalyst for direct synthesis of chemicals. Development of supported metal catalysts for automobile emission control. Surface chemistry and surface spectroscopy for catalyst design.	Institute for Catalysis
		Associate Professor	TOYAO Takashi		
		Assistant Professor	Abhijit SHROTRI		
		Assistant Professor	ANZAI Akihiko		
14	Catalysis Theory	Professor	HASEGAWA Jun-ya	Theoretical and computational chemistry for catalysis. Analysis of potential energy surface and dynamics of catalytic reactions. Development of chemical concepts, theoretical and computational models, and first-principle molecular simulation method for catalytic reactions.	Institute for Catalysis
		Associate Professor	HIDA Kenji		
		Assistant Professor	MIYAZAKI Ray		
<b>Chemical Process Engineering Unit</b>					
15	Chemical System Engineering	Professor	KIKUCHI Ryuji	Energy carrier direct power generation fuel cells. Green hydrogen production catalysts and devices. Electrochemical synthesis of ammonia. Electrochemical conversion of methane and ethane to valuable chemicals. Valuable chemicals synthesis by CO <sub>2</sub> hydrogenation.	Faculty of Engineering
		Associate Professor	TADA Shohei		
16	Material Design and Engineering	Professor	MUKAI Shin	Material design and engineering, adsorption engineering, separation engineering, precise structural controlling of porous materials, development of new production systems of nanomaterials, development of devices for reaction, separation and energy storage using nanomaterials, material recycling.	Faculty of Engineering
		Associate Professor	NAKASAKA Yuta		
		Assistant Professor	IWASA Nobuhiro		
		Assistant Professor	NAGAISHI Shintaro		
17	Catalytic Reaction Engineering	Associate Professor	OGINO Isao	Reaction engineering, design and tuning of structures and reactive microenvironments of catalysts and separation materials for sustainable chemical processes, microwave-assisted synthesis of solid catalysts and electrode materials	Faculty of Engineering
18	Chemical Energy Conversion Systems	Associate Professor	TSUBOUCHI Naoto	Clean carbon technology for efficient reduction of CO <sub>2</sub> emissions: fundamental research about advanced and novel technologies for biomass, low rank coals, heavy oil residues and low-valued natural gas.	Faculty of Engineering

※Laboratory No.25, No.39 are not recruiting students.

※Laboratory No.26, No.27, No.33~No.36, No.47 are not recruiting Master's Degree Program students.



Materials Chemistry and Engineering Course					
No.	Laboratory	Staff	Research Contents	Faculty	
<b>Molecular Materials Chemistry Unit</b>					
19	Chemical Informatics	Professor	TAKAHASHI Keisuke	Materials discovery through materials informatics. The aim of the research is to develop fully automated materials and catalysts using a combination of high-throughput experiments and calculations, with the integration of artificial intelligence.	Faculty of Science
		Assistant Professor	Lauren TAKAHASHI		
20	Molecule & Life Nonlinear Science	Professor	KOMATSUZAKI Tamiki	Practical-oriented theoretical chemistry. The fundamental principles of chance and necessity of chemical reactions, and new concepts and methodologies to bridge theory and experiments for biological molecular systems.	Research Institute for Electronic Science
		Assistant Professor	MIZUNO Yuta		
		Assistant Professor	NISHIMURA Goro		
<b>Inorganic Materials Chemistry Unit</b>					
21	Inorganic Chemistry	Professor	MATSUI Masaki	Solid-state ionic materials for next-generation battery applications. Low-temperature synthesis of complex metal oxides. Crystal growth mechanisms in less noble metal electrodeposition.	Faculty of Science
		Associate Professor	KOBAYASHI Hiroaki		
		Assistant Professor	NASU Akira		
22	Structural Inorganic Chemistry	Associate Professor	MASUBUCHI Yuji	Preparation of emerging functional ceramics, microstructure control of ceramics and their property evaluation, new nitrides and chlorides for optical, electromagnetic and chemical application.	Faculty of Engineering
		Associate Professor	MIURA Akira		
23	Inorganic Synthesis Chemistry	Professor	TADANAGA Kiyoharu	Development of functional inorganic materials using liquid phase. Preparation of nano-structured thin films and materials for energy conversion and storage by solution processes.	Faculty of Engineering
		Assistant Professor	FUJII Yuta		
24	Solid State Chemistry	Professor	SHIMADA Toshihiro	Synthesis and new functions of nano-structured solids and thin films including inorganic nanomaterials, organic semiconductors, spintronics devices and nanocarbons.	Faculty of Engineering
		Assistant Professor	YOKOKURA Seiya		
		Assistant Professor	WAZUMI Hiroki		
25	Nanostructured Functional Materials and Interfaces	Professor	MATSUO Yasutaka	Fabrication and characterization of new optical and electrical functional materials and interfaces with nano-structures to realize a strong coupling with photon or electron. Development of biomimetic organic/inorganic hybrid materials.	Research Institute for Electronic Science
26	Nano Ceramics	Guest Professor	KUWATA Naoaki	Synthesis and control of functional properties of novel solid-state battery materials and ion dynamics analysis.	National Institute for Materials Science
		Guest Associate Professor	KUBOTA Kei		
27	Applied Materials Chemistry	Guest Professor	KLHIMA Norihito	Synthesis, crystal structure, and functional properties of inorganic materials for energy storage. Development of data-driven methods for continuous production of functional materials (nanoparticles, polymer composites, and chemicals)	National Institute of Advanced Industrial Science and Technology
		Guest Professor	SUE Kiwamu		
<b>Frontier Materials Chemistry Unit</b>					
28	Energy Materials Chemistry	Professor	AOKI Yoshitaka	Design of proton/hydride ion conductive inorganic materials and related all-solid-state energy conversion devices, and theoretical design of electronic materials by quantum theory and computational chemistry.	Faculty of Engineering
		Associate Professor	TACHIKAWA Hiroto		
		Assistant Professor	JEONG Seongwoo		
29	Interfacial Electrochemistry	Professor	HABAZAKI Hiroki	Electrochemical fabrication of nanostructure-controlled materials and thin films and their mechanistic understanding and functional applications, nano- and micro-electrochemical characterizations of advanced and practical materials, and electrochemical energy conversion and storage devices.	Faculty of Engineering
		Associate Professor	FUSHIMI Koji		
		Assistant Professor	IWAI Mana		
		Assistant Professor	KITANO Sho		
30	Advanced Materials Chemistry	Professor	HASEGAWA Yasuchika	Development of strong-luminescent and photofunctional advanced materials based on photochemistry and coordination chemistry.	Faculty of Engineering
		Associate Professor	KITAGAWA Yuichi		
		Assistant Professor	WANG Mengfei		
31	Material Chemistry	Professor	SADA Kazuki	Creation of innovative functions, structures, and reactions by controlling intermolecular forces in mixtures. Discovery and understanding of novel physical phenomena and development of novel functional materials, photocatalytic systems and photoelectric conversion devices through collaboration between experimental chemistry, computational chemistry, and materials informatics. Analytical chemistry, photochemistry, and spectroscopy in minute dimensions including chemistry/physics of single micro-/nano-particles.	Faculty of Science
		Associate Professor	MIURA Atsushi		
		Associate Professor	KOBAYASHI Atsushi		
		Assistant Professor	MATSUOKA Keitaro		
		Assistant Professor	TSUTSUMI Takuro		
32	Interactive Functional Materials	Professor	NAGASHIMA Kazuki	Designed nanomaterials synthesis and nanostructure control based on inorganic chemistry and nanomaterial chemistry, exploration of nanoscale functional properties, creation of novel nano/microdevices, and application to large-area thin film devices and data science. Application examples include the artificial olfactory sensors and the optoelectronic devices.	Research Institute for Electronic Science
		Associate Professor	YOMOGIDA Yohei		
		Assistant Professor	OKA Sayuki		
<b>Functional Materials Chemistry Unit</b>					
33	Interfacial Energy Conversion Materials Chemistry	Guest Professor	NOGUCHI Hidenori	Fundamental study of chemical-electric energy conversion, including novel batteries, fuel cell catalysts, and microbial electrode catalysts. In situ determination of geometric, electronic, and molecular structures at solid/liquid interfaces and electron transfer dynamics by ultrafast laser spectroscopy.	National Institute for Materials Science
		Guest Professor	OKAMOTO Akihiro		
34	Superconducting Materials	Guest Professor	YAMAURA Kazunari	We aim to make materials based on quantum mechanics useful for society by searching for new materials and performing precise structural analysis and property evaluations. By using these techniques, we hope to create excellent quantum functional materials.	National Institute for Materials Science
		Guest Associate Professor	TSUJIMOTO Yoshihiro		
35	Nanoscience	Guest Professor	SHIRAHATA Naoto	Our focus is on researching and developing new optoelectronic and electronic-functional materials that will contribute to advancements in nanoscience and nanotechnology. Our research is rooted in physical and device science, with the aim of exploring new phenomena and applications. To achieve our goals, we utilize advanced material design and synthesis techniques, along with cutting-edge nanoscopic analysis.	National Institute for Materials Science
		Guest Professor	KITaura Ryo		
36	Nano-Assembled Materials Chemistry	Guest Professor	YOSHIO Masafumi	Development of nanostructured functional materials that contribute to highly efficient energy conversion devices such as fuel cells, lithium ion batteries, and actuators, and understanding of interfacial physicochemical phenomena by in-situ observation techniques.	National Institute for Materials Science
		Guest Professor	MASUDA Takuya		

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Biological Chemistry and Engineering Course					
No.	Laboratory	Staff	Research Contents	Faculty	
<b>Biomolecular Chemistry Unit</b>					
37	Biological Chemistry	Professor	SAKAGUCHI Kazuyasu	Functional regulation of tumor suppressor-related proteins through post-translational modification and localization. Function and evolution of oligomeric structure in tumor suppressor protein p53. Regulation of differentiation, metabolism, and function in innate immune cells. Fundamental principles of life and their applications.	Faculty of Science
		Associate Professor	KAMADA Rui		
		Assistant Professor	NAKAGAWA Natsumi		
38	Biostructural Chemistry	Professor	ISHIMORI Koichiro	Functional and structural characterization and molecular design of proteins using spectroscopy. Development of functional molecular crystals. Exploring collective function of molecules derived from chemical reactions.	Faculty of Science
		Associate Professor	UCHIDA Takeshi		
		Associate Professor	HARADA Jun		
		Assistant Professor	KAGEYAMA Yoshiyuki		
39	Bioorganic Chemistry	Professor	TAKAHASHI Masayuki	Studies of structure-function of chromatin and chromosome, which is involved in maintenance and expression of genetic information; studies of regulatory mechanism of cell shape and movement.	Faculty of Science
		Lecturer	TAKAHATA Shinya		
40	Molecular Biochemistry	Professor	ABE Kazuhiro	Structural and functional analysis to elucidate molecular mechanisms of membrane transport proteins including primary transporters, employing X-ray crystallography, cryo-EM SPA combined with various biochemical and biophysical analysis.	Faculty of Science
41	Microsystem Chemistry	Professor	TOKESHI Manabu	Development of on-site analysis systems and functional nanoparticles using microfluidic devices and new measurement technologies.	Faculty of Engineering
		Associate Professor	MAEKI Masatoshi		
		Assistant Professor	ISHIDA Akihiko		
<b>Biofunctional Chemistry Unit</b>					
42	Mechanistic Organic Chemistry	Professor	NAGAKI Aiichiro	Flash organic chemistry led by flow microreactor research, flash creation of functional molecules.	Faculty of Science
		Associate Professor	OKAMOTO Kazuhiro		
		Assistant Professor	MIYAGISHI Hiromichi		
43	Organic Chemistry II	Professor	TANINO Keiji	Total synthesis of natural products having a complex structure and novel bioactivities. Development of efficient methodologies and new reactions to construct polycyclic skeleton with various functional groups on the basis of carbocation chemistry, heteroatom chemistry, and organometallic chemistry.	Faculty of Science
		Associate Professor	SUZUKI Takahiro		
		Assistant Professor	TAKINO Junya		
44	Chemistry of Molecular Assemblies	Associate Professor	SATO Shinichiro	Synthesis and computational chemistry of functional molecular assemblies based on soft matter such as synthetic polymers and carbohydrate chains.	Faculty of Engineering
		Associate Professor	YAMAMOTO Takuya		
45	Polymer Chemistry	Professor	SATOH Toshifumi	Synthetic and structure-property relationship studies of architecturally complex polymers; synthetic study and application of conductive polymers; synthetic study and application of functional block copolymers; development of environmentally benign polymer synthesis process; creation of environmentally benign polymers.	Faculty of Engineering
		Associate Professor	ISONO Takuya		
		Assistant Professor	LI Feng		
46	Biosynthetic Chemistry	Professor	MATSUMOTO Ken' ichiro	Biosynthesis of useful and unnatural chemicals using engineered biosynthetic systems, and in vitro evolution of enzymes to achieve the goal. The targets are biodegradable plastics, biocompatible polymers, chiral compounds, CO <sub>2</sub> fixation, lipid production and antibacterial lipid.	Faculty of Engineering
		Associate Professor	KIKUKAWA Hiroshi		
		Assistant Professor	HACHISUKA Shin-ichi		
47	Chemical Biotechnology	Guest Professor	HIRAIISHI Tomohiro	Elucidation of reaction mechanism of bio-based polymer-degrading enzymes, and development of highly functional and efficient enzymes for biotechnological applications. Materials science for designing advanced functional bio-based polymers.	RIKEN
		Guest Professor	FUJITA Masahiro		
<b>Cell Engineering Unit</b>					
48	Applied Biochemistry	Professor	DAIRI Tohru	Search for and characterization of novel primary/secondary metabolic pathways in microorganisms and their application for production of useful compounds by biosynthetic and metabolic engineering.	Faculty of Engineering
		Associate Professor	OGASAWARA Yasushi		
		Assistant Professor	SATOH Yasuharu		
49	Biomolecular Chemistry	Associate Professor	TAJIMA Kenji	Biopolymer Chemistry(Elucidation of cellulose synthetic mechanism in bacteria, Creation of eco-recycling polymer materials with high mechanical strength, and Mass production of nanocellulose by bacteria and its application), Cell processing engineering (process development with stem cells), Animal cell cultivation engineering for pharmaceuticals production, Bioanalytical chemistry (development of novel biochemical analysis systems using microdevices and molecular assemblies as reaction media).	Faculty of Engineering
		Associate Professor	TANI Hirofumi		
<b>Molecular Medical Biochemistry Unit</b>					
50	Signaling in Cancer and Immunology	Professor	TAKAOKA Akinori	Research on molecular mechanisms underlying cellular response to infection and cancer. (i) Pathogen recognition receptors (innate sensors) and their signaling pathways, (ii) Innate immune response against cancer)	Institute for Genetic Medicine
		Associate Professor	SATO Seiichi		
		Assistant Professor	SUZUKI Hiraku		
51	Developmental Physiology	Professor	MOTEGI Fumio	Cell and developmental mechanisms underlying cell polarity, soma-germ fate dichotomy, asymmetric cell division, and morphogenesis. Development of new optical techniques for in vivo molecular imaging.	Institute for Genetic Medicine
		Lecturer	KIMURA Kenji		
		Lecturer	NISHIMURA Yukako		

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