Fall Semester 2020 Admission

Special Entrance Examination for Recommended International Students

Application Guidelines

Graduate School of Science and Engineering

Kansai University
Graduate School

Privacy Policy

With regards to personal information received on application which is liable to specify the individual (hereafter "Personal Information"),

Kansai University Graduate School (hereafter "the Graduate School") will treat the information carefully in accordance with applicable laws and the Kansai University Graduate School Privacy Policy.

The Kansai University Graduate School Privacy Policy can be found on the top page of the Graduate School's website (http://www.kansai-u.ac.jp) under "Privacy Policy."

1. Use of Personal Information

Personal Information from applicants is used only for the following purposes:

(1) To operate entrance examinations (receipt of applications, delivery of admission forms, and holding of entrance examinations)
(2) To announce examination results
(3) To complete procedures up to enrollment

2. Management of Personal Information

The Graduate School has assigned a personal information protection administrator to ensure that Personal Information from applicants for the three purposes listed above is managed carefully and deleted appropriately in accordance with applicable laws and rules thereafter.

3. Sharing of Personal Information

The Graduate School will share some Personal Information with Kansai University Kyosaikai (an affiliated organ of Kansai University for mutual-aid program) to enhance life on campus.

The Personal Information to be shared and its purposes;

* Administrative numbers, names, address, phone number, dates of birth, assigned graduate school, major, and field of specialization for applicants paying enrollment and registration fees for verification of entry.

4. Disclosure of Personal Information to third parties

With the exception of contractors described in 5 below, the Graduate School will not share Personal Information with third parties without the consent of the applicant, except when compelled by law.

5. Sharing of Personal Information with Contractors

The Graduate School may share some Personal Information with contractors in order to carry out the operations described in 1 above. In such cases it shall contract them to handle the Personal Information appropriately based on its Privacy Policy.

6. Statistical data on entrance examinations

The Graduate School compiles statistical data about entrance examinations but does not identify applicants. This data will be used for individuals interested in the Graduate School, and utilized to analyze the Graduate School's future entrance examinations.

7. Disclosure, correction, and deletion of the Personal Information

When requested by an applicant to disclose, correct, or delete his or her Personal Information, the Graduate School will accommodate that request promptly in accordance with applicable laws, rules, and other guidelines after verifying the applicant. Data pertaining to the entrance examination score will not be disclosed.

8. Inquiries

Inquiries concerning applicants' Personal Information, including requests to disclose, correct, or delete it, will be directed to Graduate School Admissions Division of Kansai University Admissions Center.

Graduate School Admissions Division
Kansai University Admissions Center
3-3-35 Yamate-cho, Suita-shi, Osaka Prefecture 564-8680 Phone: 06-6368-1121 (main)

Contents

Graduate School of Science and Engineering
Special Entrance Examination for
Recommended International Students for fall semester 2020 admission

1. Purpose of the Graduate School of Science and Engineering Special Entrance Examination for Recommended International Students

To open the doors to students from overseas, the Kansai University Graduate School of Science and Engineering offers a special entrance examination for students of its overseas partner universities. Refer to the following overview of the Graduate School when applying for admission.

2. Overview of the Graduate School of Science and Engineering

(1) About Kansai University and the Graduate School of Science and Engineering

Kansai University is more than 130 years old since the Kansai Law School, its predecessor, was founded. Its history as a university began in 1922, and as of 2019, the institution becomes one of the leading universities in the west of Japan with more than 30,000 undergraduate and graduate students studying in 13 faculties, 13 graduate schools, and 2 professional graduate schools.

The Faculty of Engineering was established in 1958, and the Graduate School of Engineering opened four years later. The Graduate School has trained numerous engineers and researchers, and its graduates are active in a broad range of fields in Japan and overseas countries. In 2007, the Faculty of Engineering was reorganized into the Faculty of Engineering Science, the Faculty of Environmental and Urban Engineering, and the Faculty of Chemistry, Materials and Bioengineering. As a result the Graduate School of Engineering became the Graduate School of Science and Engineering in 2009.

The Graduate School of Science and Engineering is dedicated through its educational programs to training researchers and engineers to implement its philosophy of 'Praxis Learning' by way of science and technology. It welcomes applicants who possess not only the necessary level of basic academic skills, but also the wish to master research skills in a field of specialization through serious study and to contribute to society and humankind through the development of natural science and technology.

(2) Organization of the Graduate School of Science and Engineering

The Graduate School of Science and Engineering's Master's Degree Program offers nine disciplines including four under Engineering Science Major (Mathematics, Pure and Applied Physics, Mechanical Engineering, and Electrical and Electronic Engineering), three under Environmental and Urban Engineering Major (Architecture, Civil, Environmental and Applied System Engineering; and Energy and Environmental Engineering), and two under Chemistry, Materials and Bioengineering Major (Chemistry and Materials Engineering, and Life Science and Biotechnology) in order to endow graduates with specialized knowledge and technological skills. In addition, the Graduate School's Ph.D. Degree Program consists of the same nine disciplines under Integrated Science and Engineering Major. The program is designed to endow graduates with exceptional research skills as well as broad knowledge and technological skills that enable them to integrate various research domains.

(3) The Graduate School of Science and Engineering's educational system and requirements for program completion

Students who have been admitted to one of the discipline of Master's Degree Program by the Special Entrance Examination for Recommended International Students from overseas partner universities will take an educational program known as the International Master Course. This program is characterized that lectures are offered in English and students can earn their degree through research guidance in English. In addition to specialized subjects in each field, available lecture subjects include courses to master knowledge about Japanese history and culture. Concerning research, students take required seminar subjects by their advisors and receive research guidance to help them draft their master's thesis.

Students who have been admitted to Ph.D. Degree Program will study only seminar subjects by their advisors, dedicating rest of their time to activities for the drafting of their doctoral thesis.

In the Graduate School of Science and Engineering, each student drafts his or her master's thesis or doctoral thesis under the guidance of one principal advisor and two assistant advisors. While students of Master's Degree Program are required to spend their time for attending, preparing for and reviewing the lectures content, in order to take the program's lecture subjects, they spend the rest for activities necessary for the drafting of their master's thesis, such as personal study, experimentation, and discussion, primarily under the guidance of their principal advisor. Students of Ph.D. Degree Program spend most of their time for research to draft their doctoral thesis under the guidance of their principal advisor. Since education and research guidance offered by the principal advisor comprises an extremely dense experience, applicants to the Graduate School of Science and Engineering need to clarify not only a desired discipline, but also a principal advisor.

To complete Master's Degree Program, students must as a rule be enrolled for two years (four semesters), during which time they must earn at least 30 credits of subjects (including eight credits of seminar subjects) and submit their master's thesis. An additional objective is to increase the quality of research in their master's thesis and present their findings to academic societies or submit them to academic journals during the period of their enrollment.

To earn their degree from Ph.D. Degree Program, students must earn eight credits of seminar subjects and submit their doctoral thesis. In addition, one of the requirements for submitting their doctoral thesis is to publish it on an academic journal. The standard period of enrollment is three years (six semesters), although that period may be shortened.

3. Admissions Policy

The rapid expansion of science and technology demands qualified researchers and engineers who obtain the ability to discover and solve problems along with a broad perspective that encompasses various fields. The Graduate School of Science and Engineering seeks to educate the students for researchers and highly skilled professionals who will utilize their academic experiences to contribute to the improvement of the human welfare in the perspective of science and engineering. Applicants should possess a certain level of scholastic ability as well as intellectual curiosity and mental strength to pursue their studies. In addition to the General Entrance Examination, the Graduate School offers a variety of entrance examinations including an Entrance Examination for International Students and Entrance Examination for Mature Students as part of its commitment to actively accept students from different backgrounds.

4. Admitting Program Majors and Fields

	Major	Disciplines
Master's Degree Program	Engineering Science	Electrical, Electronic and Information Engineering
	Environmental and Urban Engineering	Chemical, Energy and Environmental Engineering
	Chemistry, Materials and Bioengineering	Chemistry and Materials Engineering
		Life Science and Biotechnology
Ph.D. Degree Program	Integrated Science and Engineering	Pure and Applied Physics
		Mechanical Engineering
		Electrical, Electronic and Information Engineering
		Civil, Environmental and Applied Systems Engineering
		Chemical, Energy and Environmental Engineering
		Chemistry and Materials Engineering
		Life Science and Biotechnology

5. Enrollment Capacity

Both Master's Program and Ph.D. Program, recruiting few people at each discipline.

6. Qualification

Master's Degree Program

Applicants who satisfy one of the following conditions:

(1) Applicants who satisfy both of the following conditions:

a. Applicants who have graduated within one year from or are expected to graduate from a university that has been designated by the Graduate School before enrolling.

b. Applicants who receive a recommendation from the president of the university or the dean of the faculty from which they have graduated or are expected to graduate and who have a strong desire to enroll the Graduate School.

(2) Notwithstanding the requirements outlined in (1) above, applicants who have a strong desire to enroll the Master's Degree Program's International Master Course and who have been authorized to take the Special Entrance Examination for Recommended International Students by Committee of the Graduate School of Science and Engineering.

Ph.D. Degree Program

Applicants who satisfy one of the following conditions:

(1) Applicants who satisfy both of the following conditions:

a. Applicants who have received or are expected to earn a degree equivalent to a master's degree from a graduate school that has been designated by the Graduate School before enrolling.

b. Applicants who can receive a recommendation from the president of the university or the dean of the graduate school from which they have earned or are expected to earn the degree and who have a strong desire to enroll the Graduate School

(2) Notwithstanding the requirements outlined in (1) above, applicants who have a strong desire to enroll the Ph.D. Degree Program's International Ph.D. Course and who have been authorized to take the Special Entrance Examination for Recommended International Students by Committee of the Graduate School of Science and Engineering.

7. Application method and schedule

Before application process (Contact the Graduate School Admissions Division.)

Before completing the application process, be sure to E-mail by your university's staff the following information to the Graduate School Admissions Division:

(1) Your name
(2) Your interest in taking an admission examination for the university
(3) The name of the university and faculty (or graduate school) at which you are enrolled (or from which you graduated), your major, etc.
(4) The date on which you graduated from (completed) the program or expect to do so
(5) The program and discipline in which you are interested
(6) Your desired faculty advisor (see "List of Academic Advisor of Graduate School of Science and Engineering for the 2020 academic year" later in this document)
(7) The discipline in which you wish to conduct research and the specific nature of the research in which you are interested, etc.

Contact Address:
Graduate School Admissions Division, Admissions Center Kansai University
E-mail: kugrd-exam@ml.kandai.jp

Application process

You must complete all of the following steps in order to apply.

Only applicants who have received permission from the desired advisor will be allowed to submit their application documents.

[1. Submitting the application documents]

Applicants should submit their application documents to the university from which they have graduated or are expected to graduate by Friday, April 10, 2020 (All documents must be submitted by the deadline.)

<Request for the university recommending the applicant>
Please attach a recommendation to the application of each of your students and submit all of those applications together to the Graduate School Admissions Division by Friday, April 17, 2020. (All documents must be received by the deadline.)

Please note that documents submitted individually by the applicant will not be accepted.

We will notify you of the results of the qualification screening (indicating whether your application has been accepted or not based on your application documents) through the university from which you have graduated or are expected to graduate on the following date:

Thursday, May 14, 2020

If your application has been accepted by the Graduate School of Science and Engineering, pay the application fee during the designated period.

[2. Paying the application fee]

(1) Application fee: ￥35,000
Please note that the application fee is non-refundable.
Once you have paid the application fee, as a general rule it cannot be refunded.

However, in case of overpayment, refunds may be given. In this case, please contact the Graduate School Admissions Division within seven days of the deadline for the application procedures (2).

＊If you paid an amount exceeding the predetermined application fee (including duplicate payments), the overpaid amount will be refunded.

＊If the fee was paid by credit card, or the overpaid amount needs to be refunded to your overseas bank account, the necessary bank transfer fee will be deducted.

(2) Payment period

Friday, May 15, to Friday, May 29, 2020

(3) Payment method

Applicants who have been approved by the Graduate School of Science and Engineering will be notified of the guide of payment method.

Please note once your application has been approved by the Graduate School of Science and Engineering, you must pay the application fee by the designated deadline using the payment method specified by the University.

The application process is completed with the payment of the application fee.

8. Application documents

Applicants must submit all of the documents listed below to the university from which they have graduated or are expected to graduate.

Clearly note the document number at the lower right of each application document based on the separate official form entitled "List of application documents (checklist)." Documents will not be returned once they have been accepted by the University.

Document to be submitted (document number)	Remarks
Documents to be submitted by all applicants	
Application form ①	Use the form designated by the University and write in English.
Statement of reason for applying ②	Use the form designated by the University and write in English.
Original transcript from previously attended university (graduate school), or notarized document certifying courses and grades ③	Original document only. Document must be in English. If you transferred from other universities/institutions to the university from which you have graduated or are expected to graduate, submit all the transcripts as well.
Original certificate of (expected) graduation or completion from previously attended university (graduate school) or notarized document certifying (expected) graduation or completion ④	Original document only. Document must be in English. This document does not need to be submitted if your transcript indicates or certifies your (expected) graduation or completion.
Research plan ⑤	Submit 1 original and 3 copies. Applicants to the Master Degree Program. Write in English about 1,000 words in length. Applicants to the Ph.D Degree Program. Write in English about 2,000 words in length.
Letter of recommendation ⑧	The letter must be written in English and bear the signature (including the position/title and name) and seal of the president of the university or the dean of the faculty (graduate school) from which you have graduated or are expected to graduate.
Copy of ID or passport ⑨	For a passport, submit a copy of pages showing your name, date of birth, photograph, expiration date, and history of past entries to and departures from Japan (if you have previously been to Japan).
Two photographs	Affix a photograph taken within the last three months to each of the application form and to the statement of reason for applying in English. (The photograph affixed to your application form will be used on the student ID that is issued after enrollment.)
List of application documents (checklist)	Use the form designated by the University.
Applicants to the Ph.D. Degree Program who have already submitted a master's thesis	
Copy of master's thesis ⑥	4 copies If the master's thesis is written in a language other than English, submit an English version.
Outline of master's thesis ⑦	1 original and 3 copies Write in English about 2,000 words in length.

Applicants to the Ph.D. Degree Program who expect to submit a master's thesis	
Copy of the thesis or a draft you plan to submit ⑥	4 copies If the master's thesis is written in a language other than English, submit an English version.
Outline of the thesis or a draft you plan to submit ⑦	1 original and 3 copies Write in English about 2,000 words in length.

Submit your transcript or certificate of (expected) graduation on which both of the entrance and (expected) graduation dates are listed.

9. Screening method

The Graduate School will make screening based on application documents, considering recommendations from the designated partner universities.

10. Announcement of the screening results

Your results of success or failure will be sent to the applicant by international express mail service (EMS) on the following date:

Friday, July 10, 2020

11. School fees and other fees

Refer to "School fees and other fees for the 2020 academic year" (page 9) below.

12. Enrollment steps

Successful applicants must complete the following enrollment process by the designated deadline.

You will not be able to enroll if you fail to complete the process by the deadline.

(1) Enrollment step I-(1) (payment of admission fee <enrollment and registration fees>)

Be sure to remit payment no later than the day before the enrollment deadline as described in the information about the payment method that is enclosed with the notification of admission.

Please note that the admission fee is non-refundable.

(2) Enrollment step I-(2) (payment of tuition and other fees)

Enrollment step II (submission of documents)

Enrollment documents will be sent out in mid August 2020. Pay tuition and other fees and submit the required documents in accordance with the instructions on the Enrollment Process Information (II) that you receive.

You must remit payment of tuition and other fees no later than the day before the enrollment deadline.

Please contact the Graduate School Admissions Division in the following cases:

- If your enrollment documents fail to arrive by Friday, August 21, 2020
- If your address changed after you passed the entrance examination

Enrollment step I-(1) (payment of admission fee <enrollment and registration fees>)	Friday, July 10, to Monday, July 27, 2020
Enrollment step I-(2) (payment of tuition and other fees) Enrollment step II (submission of documents)	Friday, August 21, to Monday, September 7, 2020

＊Requests to withdraw

Enrollees who request to withdraw by Friday, September 18, 2020, for a legitimate reason and who submit a letter of withdrawal from the university from which they have graduated or are expected to graduate (a document bearing the signature [including the position/title and name] and seal of the president of the university or the dean of the faculty [graduate school]), can request to be refunded tuition and other fees.

If you intend to withdraw, inform the university from which you have graduated or are expected to graduate immediately. The Graduate School does not accept requests directly from applicants.

Fees will not be refunded unless the Graduate School receives your request to withdraw from the said university by Sunday, September 20, 2020.

(For specific steps, see the Enrollment Process Information (II).)

13. Others

(1) For the information on scholarship, please refer to page 10. We also offer a variety of scholarship programs for international students in order to support students' study and research activities. For more details, contact the Kansai University Division of International Affairs (kokusai@ml.kandai.jp).
Please note there is no scholarship programs specifically for applicant who have been admitted under this examination.

(2) The University can apply for Eligibility Certificate required for a student visa, on behalf of overseas residents planning to enroll in the Graduate School.
For full information, please check the following website:
【Support for Obtaining Visa】http://www.kansai-u.ac.jp/Gr_sch/international/index_en.html#a_visa

14. Precautions concerning applying

(1) Once you have applied, you may not change your major, discipline, or research discipline.

(2) Your desired advisor may be changed. Notification of any such changes will be made beforehand to the university from which you have graduated or are expected to graduate, so be sure to check before you apply.

(3) Fill your desired major, discipline, and research discipline in the designated spaces on the application documents.

(4) Enter your desired major, discipline, and research discipline in the designated spaces on the application documents after referring to the "List of Academic Advisors of Graduate School of Science and Engineering for the 2020 academic year" (pages 12 to 34).

(5) The application documents must be completed using either black ink or a ballpoint pen. The University's designated forms must be completed by hand. If using a computer or typewriter, you must print directly on the designated forms.

(6) If the name on the certificate differs from the name under which you are applying, submit a separate official certificate or other document that establishes your identity.

(7) Certificates must be in English. If you are submitting one or more certificates in another language, you must also submit a English translation that has been certified by an embassy or other public institution.

(8) Once received, documents will not be returned.

(9) The Graduate School will make special arrangements in the learning environment after enrollment for individuals with special needs such as physical disability, injury, illness, or other circumstances. Please contact the Graduate School Admissions Division before you apply.

(10) Applicants who have passed this entrance examination may not withdraw from enrollment unless they have any legitimate reasons.

School fees and other fees for the 2020 academic year

Master's Degree Program

(Unit: Yen)

Fee		2020 academic year	2021 academic year		2022 and after
		First semester enrolled	Spring semester	Fall semester	Per semester
School Fees	Admission fee	130,000	—	—	—
	Tuition	569,500	569,500	569,500	569,500
Other Fees	Alumni & Alumnae Association fee	—	10,000	—	20,000
Total		699,500	579,500	569,500	589,500

Ph.D. Degree Program

(Unit: Yen)

Fee		2020 academic year	2021 academic year		2022 academic year		2023 and after
		First semester enrolled	Spring semester	Fall semester	Spring semester	Fall semester	Per semester
School Fees	Admission fee	130,000	—	—	—	—	—
	Tuition	409,500	409,500	409,500	409,500	409,500	409,500
Other Fees	Alumni & Alumnae Association fee	—	10,000	—	20,000	—	—
Total		539,500	419,500	409,500	429,500	409,500	409,500

Notes

1. Graduates of Kansai University or Kansai University Graduate School, and undergraduates at the university who satisfy the requirements described by 1-11 of Article 46 Paragraph of the Graduate School Rules are not required to pay the admission fee (enrollment and registration fee) when continuing their studies at one of the university's graduate schools.
2. The University collects ￥10,000 at the time of enrollment and then ￥20,000 the following academic year on behalf of the Alumni Association. Dues are not collected from students who have already paid them as graduates of the university (including any of its graduate schools).

Scholarship Information for the 2020 academic year

The scholarships listed on this page are available for students enrolling in 2020 academic year.

* In all cases, only a small number of recipients are available. For more information such as records about scholarships, contact the staffs put at the bottom of this page.

For All Students (2020 Semester Enrollment)

[1] Kansai University Graduate School Scholarship (awarded for the persons with excellent grades in the Graduate School) (to currently enrolled students)

Award-type * Application-based

Eligibility	Graduate School students with excellent grades who are in difficulty to continue to study for economic reasons.
Awards Amount	See the figure below.
Duration of Award	for one year (You can apply next year again.)

[2] Kansai University Mature Students Scholarship (awarded for excellent working adult graduate students)

Award-type * Application-based

Eligibility	Mature Graduate School students with excellent grades who have gained superior accomplishment in their Graduate School.
Awards Amount	See the figure below.
Duration of Award	for one year (You can apply next year again.)

Awards Amount

Degree Program	Yearly Awards Amount (yen)
Master's Degree Program	375,000
Ph.D. Degree Program	250,000

Inquiries

Senriyama Campus (Student Services Bureau, Scholarships & Financial Aid Division)

3-3-35 Yamate-cho, Suita 564-8680
Phone: 06-6368-1121 (operator)
Hours: 9:00 am to 5:00 pm (except Saturdays, Sundays, public holidays, and university holidays)

For International Students

We also offer a variety of scholarship programs for international students in order to support students' study and research activities.

For more details, contact the Kansai University Division of International Affairs.

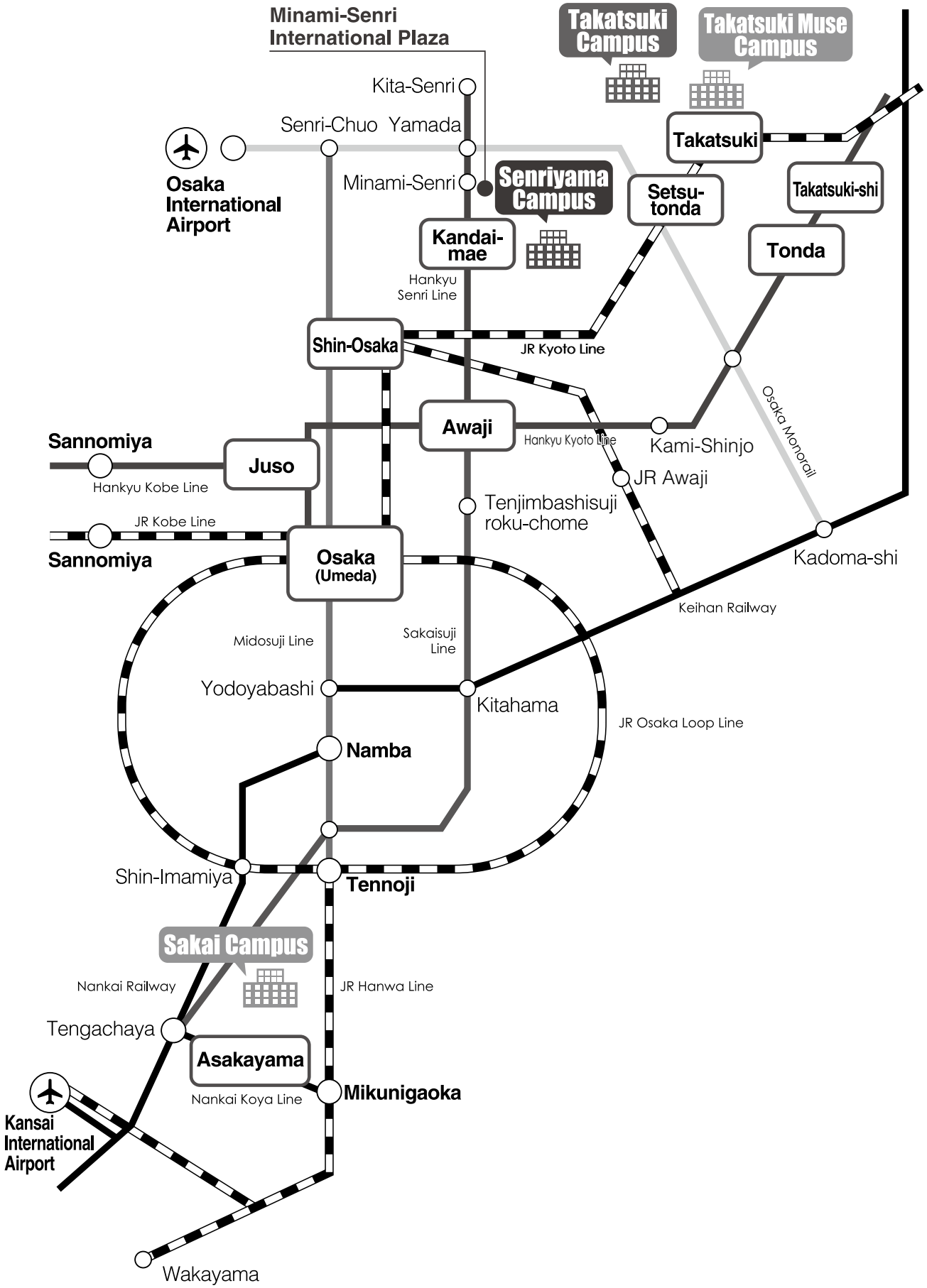
* Please note international students are not eligible for both "Scholarship for All Students" and "Scholarship for International Students".

Inquiries

Division of International Affairs

3-3-35 Yamate-cho, Suita 564-8680
E-mail: kokusai@ml.kandai.jp
Phone: 06-6368-1121 (operator)
Hours: 9:00 am to 5:00 pm (except Saturdays, Sundays, public holidays, and university holidays)

Getting to Kansai University



List of Academic Advisors of Graduate School of Science and Engineering

for the 2020 academic year

Pure and Applied Physics

Research Field	Teachers list		
Physics	ITANO Tomoaki **Master's Program** **Ph.D.Program**	Professor Doctor of Science Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①Coherent structure and sustenance mechanism in wall-bounded turbulence ②Understanding of physical mechanisms in a variety of fluid phenomena **Key Words** Fluid Physics, Coherent Structure, Channel Flow, Numerical Simulation, Turbulence Structure of Wall- Bounded Channel Flow, Osmotic Flow **Applications** Controll of Turbulence for Resistance Reduction, Interdisciplinary and Educational Studies in Fluid Dynamics
	ITO Makoto **Master's Program** **Ph.D.Program**	Professor Doctor of Science Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①Alpha cluster structures in nuclei artificially synthesized in laboratory ②Nuclear transmutation by non-accelerator driven systems **Key Words** Nuclear structures, Nuclear reactions, Alpha decays, Non-Hermite Quantum mechanics, Few-body problem, Nucleosynthesis in universe **Applications** Nuclear energy, Radiation shielding, Radiation Therapy, Transmutation of nuclear waste
	ITOH Hiroyoshi **Ph.D.Program**	Professor Doctor of Engineering Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①Magnetic nano-structure (spintronics) ②Mesoscopic system ③Superconductivity ④Strongly correlated electronics ⑤Device design using computational simulation **Key Words** Spintronics, Magnetism, Superconductivity, Mesoscopic System, Theoretical Solid State Physics, Computational Material Science, Device Design **Application** Magnetic Recording (HDD Head, MRAM, Magnetic Race Track Memory), Spin Circuit (Spin-MOSFET, Quantum Computer), New Functional Device
	SUGIHARA-SEKI Masako **Ph.D.Program**	Professor Doctor of Science Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①Micro-rheological study on blood blow ②Fluid dynamical study of particle motion and deformation in channel flow ③Model studies of microvessel permeability ④Sports fluid mechanics **Key Words** Blood flow, Blood Cells, Micro-biorheology, Deformation, Platelet Aggregation, Fluid Dynamical Interaction, Microchannel Flow, Permeability **Application** Biological Flow, Physiological Flow, Microfluidics, Suspension Flow, Blood Cell Substitutes, Microdevices
	INADA Mitsuru **Master's Program** **Ph.D.Program**	Professor Doctor of Materials Science Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①Optical, electronic transport and magnetic properties in nanostructures ②Development of environment-adaptive nanostructure devices **Key Words** Low dimensional physics, Organic-inorganic hybrid structures, Metal nanocluster, Scanning Probe microscopy, Pulsed laser ablation **Application** Quantum dot solar cell, Super capacitor, Bio-medical sensor, Biomimetic device

Physics	WADA Takahiro **Ph.D.Program**	Professor Doctor of Science Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①Synthesis of super-heavy elements, fluctuation- dissipation dynamics of fusion and fission reaction of heavy nuclei ②Element synthesis in stars, microscopic theory of nuclear reaction involving unstable nuclei **Key Words** Microscopic Theory of Quantum Many-body System, Semi-classical Approach to Quantum Physics, Brownian Motion, Stochastic Differential Equation, Sub-critical Reactors, Transmutation of Nuclear Waste **Application** New Type of Nuclear Reactor, Accelerator Driven Nuclear Transmutation, Stochastic Process in Biotic System
Applied Physics	ASAKAWA Makoto **Ph.D.Program**	Professor Doctor of Engineering Department of Pure and Applied Physics Faculty of Engineering Science	**Research Topics** ①The terahertz radiation sources based on the electron beam ②The radiation process of the ultra-short electron bunch **Key Words** Photon Radiation, Terahertz Wave, Free-Electron Laser, Electron Accelerator, Photocathode, Femto-second Laser, Plasma Physics **Application** Terahertz Time-Domain Spectroscopy, Non Destructive Inspection Using Infrared/ Terahertz/ Microwave Radiation, Bio-sensing With Far-infrared, Molecule Decomposition Using Infrared

Mechanical Engineering

Research Field	Teachers list		
Nanophysics and Nanomaterials Engineering	SHINGUBARA Shoso **Ph.D.Program**	Professor Doctor of Science Department of Mechanical Engineering Applied Physics Laboratory Faculty of Engineering Science	**Research Topics** ①Fabrication and functionalization of various ferromagnetic and semiconductor nanowires using porous alumina template. ②Nanospintronics devices and nano memory devices. ③Fabrication and reliability study of through-Si Via of 3-dimensional LSIs. ④Electroless and Electro-plating of metal interconnections. **Key Words** Nanotechnology, Selforganization, Spitronics, Quantum Size Effect Devices, MEMS, Sensor, Plating, Reliability, Electromigration, Nanowire **Application** Magnetic Recording, 3-D LSI, Nano-Bio Sensor, Solar Cell, Energy Conversion Device, Jisso Technology
Materials Engineering	SAITOH Ken-ichi **Ph.D.Program**	Professor Ph. D. in Engineering Department of Mechanical Engineering Faculty of Engineering Science	**Research Topics** ①Microscopic evaluation of strength and function of materials by molecular dynamics ②Numerical simulation and experiment of shape memory effect in nano-sized materials ③Development of computational mechanics **Key Words** Computational Mechanics, Molecular Dynamics, NEMS, Particle Methods, Interface, Atomic Cluster, Shape Memory Alloys, Strength and Mechanical Properties **Application** Evaluation of Materials, New Materials, Metals, Plastics, Information Technology, Micromechatronics, Biological System, Plastic Working, Stable Structures
Tribology and Micromechatronics for Information Equipment	TAGAWA Norio **Ph.D.Program**	Professor Doctor of Engineering Department of Mechanical Engineering Faculty of Engineering Science	**Research Topics** ①Nano-tribology and Nano-mechatronics of information storage devices and systems ②Micro-electoro-mechanical systems (MEMS) and Nano-electro-mechanical systems (NEMS) ③Triblogy, design, and dynamics of mechanical systems **Key Words** Nano-technology in Mechanical Engineering, Tribology, Mechanics, Dynamics, HDD, Head Disk Interface, Lubricant, DLC, Ultra-thin Films **Application** Information and Precision Equipments, Hard Disk Drives, Optical Storage, Probe Storage Devices, Printer, High Speed Positioning Systems
Measurement Systems	TAKATA Keiji **Ph.D.Program**	Professor Doctor of Science Department of Mechanical Engineering Faculty of Engineering Science	**Research Topics** ①Development and application of novel measurement techniques using scanning probe microscopy ②Scanning tunneling microscope with an ultrasonic detector to observe nonconductive material. ③Novel method, strain imaging, for imaging ferroelectric and ferromagnetic properties with high resolution. **Key Words** Scanning Probe Microscopy, Strain Imaging, Piezoelectric Properties, Lead Zirconate Titanate, Magnetic Properties, Magnetostriction, Hard Disk Drive Head, Li-ion Batteries **Application** Hard Disk Drives, High Density Memory Devices
Ergonomics and Biomedical Engineering	KOTANI Kentaro **Ph.D.Program**	Professor Ph. D. Department of Mechanical Engineering Faculty of Engineering Science	**Research Topics** ①Neurophysiological characteristics of tactile perception ②Industrial and medical applications of eye movement characteristics. **Key Words** Tactile Perception, Saccadic Eye Movement, Magnetoencephalography, Mechanoreceptors, Human-Computer Interaction, Input Device **Application** Design of Input Device, Virtual Reality, Tactile Display, Medical Screening Device, Usability Evaluation, Ergonomics of Human Work, Work Physiology

Electrical, Electronic and Information Engineering

Research field	Academic Advisors list		
Electrical Engineering	OHASHI Shunsuke **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Motor drive ②Linear drive system and magnetic levitation system for transportation and conveyance system ③Application for superconductor ④New generation system using clean energy **Key Words** Magnetic Levitation, Electrical Machine, Electric Car, Linear Motor, High Temperature Superconductor, Renewable Energy **Applications** Magnetically Levitated Transportation and Conveyance System, Magnetic Bearing, Electric Car, Generator without CO_2 **E-mail:** ohashi@kansai-u.ac.jp
	HAMADA Shoji **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Safety investigation related to human exposure to electric and magnetic fields around electric power equipment ②Lightning shielding of electric power transmission and distribution systems ③Control of eddy-current distribution using arrayed coils for magnetic stimulation **Key Words** Electric power equipment, Nondestructive inspection, Bioelectromagnetics, Numerical electromagnetic field analysis, High performance computing, Voxel modeling **Applications** Improvement of dielectric strength, Lightning shielding, Protection form electric shock, Electric/magnetic stimulation **E-mail:** shamada@kansai-u.ac.jp
	YAMAMOTO Yasushi **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Liquid blanket and diverter for nuclear fusion reactors ②Electrical grids ③Hydrogen permeation through ceramics **Key Words** Liquid blanket, lead lithium, silicon carbide, plasma discharge, neutron source, particle simulation, hydrogen permeation **Applications** Potable neutron source, Neutron diffraction, Fusion power generation **E-mail:** yama3707@kansai-u.ac.jp
	YONETSU Daigo **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Evaluation and optimizing technique about electromagnetic induction phenomena for IH cooker and inductive power transfer apparatus ②Evaluation and optimizing technique about electromagnetic environment **Key Words** Inverse Problem, Multi-objective Optimum Design, Finite Element Method, Method of Moment, FDTD Method, Evolutionary Computation, Electromagnetic Measurement **Applications** IT, Electric Power Engineering, Nondestructive Test, ITS, Electric Equipment Design **E-mail:** yonetsu@kansai-u.ac.jp

Materials and Devices for Electronics and Optics	KITAMURA Toshiaki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Electromagnetic Field Simulation ②Optical Devices ③Near-Field Optics ④Microwave Devices **Key Words** Finite-Difference Time-Domain Method, Nonlinear Optics, Magneto-Optical Effect, Optical Scattering, Microwave Filter, Antenna **Applications** Optical Communication, Optical Disk, Mobile Telephone, Wireless LAN **E-mail:** kita@kansai-u.ac.jp
	TAJITSU Yoshiro **Master's Program** **Ph.D.Program**	Professor Ph. D Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Electroactive Polymer ②Sensor & Actuator **Key Words** Piezoelectricity, Photoelasticity, Dielectrics, Ferroelectricty, Polymer, Sensing, Actuating, AFM Optical Activity, Biodegradablity, Electrets, Chirality **Applications** Eco-cable, Optical Film for LCD, Touch Panel Transparency Speaker, Optical Modulator, Soft Sensor Galvanic Tweezers, Ultrasonic Motor **URL:** http://www2.ipcku.kansai-u.ac.jp/~tajitsu/
Materials and Devices for Electronics and Optics	SAIKI Taku **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Development of high-power and high-efficient solar-pumped solid-state lasers ②Development of new laser materials ③Production of renewable energy using metalic nanoparticles based on laser ablation **Key Words** Solar Light, Ceramics, Laser, Metal Nanoparticle, Renewable Energy **Applications** Electric Power Generation, Hydrogen Production and Storing, New Material Production, Laser Energy Transmission **E-mail:** tsaiki@kansai-u.ac.jp
	SATO Shingo **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical and Electronic Engineering Faculty of Engineering Science	**Research Topics** ①Device and process simulation ②TEG development for device analysis ③Theory and modeling on semiconductor physics **Key Words** Scaling, MOSFET, SOI structure, LSI design, TEG development, quantum effect, device simulation **Applications** Electronic devices, VLSI, electronic measurement **E-mail:** satos@kansai-u.ac.jp
	NAKAMURA Kazuhiro **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Low-cost fabrication processes for silicon solar cells ②Deposition and characterization of ZnO thin films ③Si/$FeSi_2$ heterojunction solar cells **Key Words** Solar Cell, Silicon, Low Cost, Thin-film Deposition, TiO_2, $FeSi_2$, Indium Tin Oxide (ITO), Anti-Reflection Coating (ARC), Semiconductor Material Characterization, Heterojunction **Applications** Solar Cells, Semiconductor Devices, Nanotechnology, Surface Science, Environmental Engineering **E-mail:** knaka@kansai-u.ac.jp

Information and Communication Engineering	YAMAMOTO Miki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①New Generation Networks(Future Internet) ②Content Delivery **Key Words** New Generation Internet, Content Delivery, Traffic Control, Congestion Control, Wired and Wireless Internet Design **Applications** Future Internet, Content Delivery, Traffic Control, Network Performance Evaluation **E-mail:** yama-m@kansai-u.ac.jp
	YOMO Hiroyuki **Master's Program** **Ph.D.Program**	Professor Ph. D. (Osaka University, 2002) Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Wireless network control for mobile communications network ②Advanced radio resource management with intelligent wireless access ③Cross-layer protocol design for wireless network **Key Words** Wireless Network, Mobile Communications, Mesh Network, Cognitive Radio, Protocol Design, Radio Resource Management, Energy-Efficient Protocol Design **Applications** Wireless System Design **E-mail:** yomo@kansai-u.ac.jp
Information and Communication Engineering	HIRATA Kouji **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Future networking ②All-optical networking ③Network optimization **Key Words** Information network, All-optical network, Future Internet, Green ICT **Applications** Network design, the Internet **E-mail:** hirata@kansai-u.ac.jp
	WADA Tomotaka **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Inter-vehicle communications for next generation Intelligent Transport Systems ②Fast localization of passive RFID tags ③Emergency Rescue Evacuation Support System **Key Words** Wireless Communications, Mobile Communications, Intelligent Transport Systems, Road-to-Vehicle Communications, Ubiquitous Computing **Applications** Wireless Communication System, Traffic Information System, Vehicular Collision Avoidance Support System, Sensor Network, Mobile Ad-hoc Network **E-mail:** wadat@kansai-u.ac.jp
System Informatics	HIKAWA Hiroomi **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Hardware neural network ②Pattern classifier ③Frequency synthesizer **Key Words** Neural Network, Self-organizing Map, Direct Digital Frequency Synthesizer, Hand Sign Recognition System, Image Compression, Digital Signal Processing, Field Programmable Gate Array, Digital Circuit Design **Applications** Information System, Signal Processing System, Communication System **E-mail:** hikawa@kansai-u.ac.jp

System Informatics	MAEDA Yutaka **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①FPGA or analog implementations of artificial neural networks ②Applications of simultaneous perturbation optimization method ③Robot control via visual information ④Digital watermarking **Key Words** Simultaneous Perturbation Method, Neural Networks, FPGA, FPAA, Robot, Control **Applications** Visual Feedback Robot Control System, Simultaneous Perturbation Particle Swarm Optimization and Its Hardware Implementation, Adaptive Control Using Simultaneous Perturbation Method **E-mail:** maedayut@kansai-u.ac.jp
System Informatics **System Informatics**	MIYOSHI Seiji **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Analysis of online learning and associative memory model ②Statistical image processing **Key Words** Statistical Mechanical Analysis of Information Processing, Statistical Learning Theory, Associative Memory Model, Replica Method, Signal Processing, Image Processing **Applications** Pattern Recognition, Signal Processing, Image Processing **E-mail:** miyoshi@kansai-u.ac.jp
	ITO Hidetaka **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Numerical analysis/design of pattern formation, bifurcation, and chaos in nonlinear dynamical systems ②Knowledge and image information processing for various applications **Key Words** Ordinary/Delay/Partial Differential Equations, Coupled Dynamical Systems, Numerical Schemes, Optimization, Intelligent Computing, Image Processing **Applications** Numerical Analysis Software, Pattern Generators, Multimedia and Interactive Computer Software, Functional Devices
Media Processing	KAJIKAWA Yoshinobu **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Audio and Electroacoustics (Analysis and Design for Micro Speakers and Microphones) ②Signal Processing for Audio and Acoustic Systems (Active Noise Control, Parametric Loudspeakers, 3D Audio, Linearization of Loudspeakers, Biometrics Authentication Using Acoustic Information) **Key Words** Signal Processing, Active Noise Control, Active Sound Control, Digital Audio, Parametric Loudspeakers, Micro Speakers, Micro Microphones, 3D Audio, Biometrics Authentication **Applications** Transportations, Factory and Plants, Smartphones, Medical Equipment, Audio and Acoustic Systems, Security **E-mail:** kaji@kansai-u.ac.jp
	MATSUSHIMA Kyoji **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Creation of 3D images by computer holography ②Capture of high-definition wave-field ③Simulation in wave-optics **Key Words** 3D Imaging, Computer Holography, Digital Holography, Diffractive Optical Element, Wave Field, Wave Optics **Applications** 3D Imaging, Display Device, Optical Device, Optical Measurement, Optical Simulation **E-mail:** matsu@kansai-u.ac.jp

Media Processing	MUNEYASU Mitsuji **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Moving image processing and its applications ②Data embedding and extraction for printed images and their applications ③Medical image processing ④Noise reduction for images **Key Words** Digital Image Processing, Intelligent Image Processing, Object Finding, Object Tracking, Nonlinear Image Filtering, Digital Watermarking, Image Retrieval **Applications** Surveillance System, Security System, ITS, Image Restoration, Advertisement, Augmented Reality, Automatic Diagnosis for Medical Image **E-mail:** muneyasu@kansai-u.ac.jp
Intelligent Software Engineering	EBARA Hiroyuki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Parallel Algorithm for Combinatorial Optimization Problem ②Cloud Computing System ③Web Application for Laboratory **Key Words** Combinatorial Optimization, Parallel Algorithm, Cloud Computing, PC Cluster, Web Application **Applications** Computer, Software, Internet, Web, Algorithm **E-mail:** ebara@kansai-u.ac.jp
	TOKUMARU Masataka **Master's Program** **Ph.D.Program**	Professor Doctor (Engineering) Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Human interface for an interactive evolutionary computing ②Intelligent model for Kansei robot action generation ③Kansei analysis using fuzzy decision tree **Key Words** Kansei Information Processing, Partner Robot, Emotion Model, Human Computer Interaction, Evolutionary Computation, Data Mining **Applications** Soft Computing, Multimedia, Humanoid Robot, Color Coordinate System, Product Design Support **E-mail:** toku@kansai-u.ac.jp
Intelligent Software Engineering	KOJIRI Tomoko **Master's Program**	Associate Professor Doctor of Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Verbalization Support System for Tacit Knowledge ②Logical Thinking Support System ③Environment Design for Intelligent Activity **Key Words** Education/Learning Support, Intelligent Tutoring System, Skill Learning Support, Idea Creation Support, Navigation, Meta-learning Support, Visualization, Communication Interface, CSCL, CSCW **Applications** Education/Learning Support System, Intelligent Activity Support System, e-Learning, Groupware, User Interface Design **E-mail:** kojiri@kansai-u.ac.jp
	HANADA Yoshiko **Master's Program**	Associate Professor Ph. D. in Engineering Department of Electrical, Electronic and Information Engineering Faculty of Engineering Science	**Research Topics** ①Heuristics, optimization and its applications ②Parallel processing **Key Words** Optimization, Evolutionary Computation, Genetic Algorithm, Combinatorial Problem, Multiobjective Optimization, Intelligent Processing, Learning **Applications** Design Optimization, Intelligent Processing **E-mail:** hanada@kansai-u.ac.jp

Civil, Environmental and Applied Systems Engineering

Research Field	Teachers list		
Environmental Engineering	ISHIGAKI Taisuke **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Urban environment, Flood disaster and its recent and traditional counter measures ②Urban flood and evacuation – its mechanism and disaster prevention, disaster mitigation– **Key Words** Flood Disaster, River Hydraulics, Turbulence Structure of Open Channel Flow, Hydraulic Modeling, Flow Visualization and Flow Measurement **Application** Hydraulics for Disaster Prevention, Natural Disaster Science, Hydraulics, River Engineering, Applied Fluid Dynamics, Historical Studies in Civil Engineering
	KUSUMI Harushige **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Safety analysis of ground slope and tunnelling by numerical method ②Monitoring method of aging slope using geophysical prospecting by self organizing map ③Establishing ground water management system using seepage analysis **Key Words** Slope, Tunnelling, Distinct Element Method, Ground Water, Numerical Method, Geophysical Prospecting, Monitoring, Aging Slope **Application** Monitoring Method of Ground Movement, Management of Ground Water, Slope Engineering, Development of Slope Stability Method, Prevention of Ground Water Pollution
Design and Construction	SAKANO Masahiro **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Fatigue and corrosion problems in steel bridges ②Retrofit and rehabilitation of existing bridges. **Key Words** Steel Structures, Bridge, Fatigue, Corrosion, Crack, Design, Retrofit, Rehabilitation, Health Monitoring, Inspection, Diagnosis **Application** Design, Inspection, Diagnosis, Retrofit, Rehabilitation, and Monitoring of Steel, Composite, and Hybrid Structures
	TSURUTA Hiroaki **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Effective utilization of industrial wastes for concrete ②Durability in concrete structures ③Effects of surface protection methods on concrete structure ④Estimation of semi-self compacting concrete **Key Words** Aggregate Quality, Concrete, Strength, Young's Modulus, Shrinkage, Effective Use of Waste, Durability, Surface Protection, Maintenance **Application** Estimation of Performance in Concrete, Effective Use of Natural Resources, Keeping a Long Service Life in Concrete Structures, Building a Sustainable Society
Planning and Management	AKIYAMA Takamasa **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Urban Transport Planning and Traffic Engineering with Soft Computing Techniques ②Urban and Regional Planning in terms of Environ-mental Aspects. **Key Words** Traffic Engineering, Urban Planning, Traffic Simulation, Fuzzy Logic, Soundscape Design, Traffic Safety Analysis, Travel Behaviour Analysis, Low Carbon Society **Application** Travel Behaviour Modelling, Fuzzy Traffic Control, Pricing Policy for Urban Expressway, Local City Development, Soundscape Design in City Planning, The Mental Climate Analysis for Regional Planning, Complex Modelling, Smart Mobility

Planning and Management	KITAZUME Keiichi **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Meso- and microscopic land-use model using Geographic Information System(GIS) ②Assessment and management of Infrastructure Projects and PPP ③Urban Revitalization and community regeneration **Key Words** Cost Benefit Analysis, Land-use Model, Micro Simulation, Hedonic Approach, GIS, Generational Accounting, Management Accounting **Application** Urban Planning, City Planning, Urban Revitalization, Public Private Partnership, Asset Management, Risk Analysis
	YUN Yeboon **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Multi-objective optimization and sequential approximate optimization ②Data envelopment analysis and its applications ③Computational intelligent methods **Key Words** Optimization, Computational Intelligence, Data Mining **Application** Optimal Design, Optimal Control, Predictive Control, Development of Systems on Disaster Prevention and Measures
Applied Systems Engineering	KANEKIYO Hiroaki **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Application of Probability Theory to Risk analysis ②Reliability analysis for Structural Systems ③Application of Probability Theory to Simulation Technologies **Key Words** Risk analysis, Reliability Engineering, Structural Reliability, Probabilistic Model, Simulation **Application** Optimal maintenance strategy for tunnel concrete linings Fast Monte Carlo scheme based upon probability measure transformation Probabilistic analysis of random fatigue crack growth
	KUBOTA Satoshi **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** Information management system for civil infrastructures, Advanced research of GIS and geospatial information, Application system of threedimensional CAD, GIS, and CG **Key Words** Civil Infrastructure, Geospatial Information, GIS, Product Data Model, 3D-CAD, 3D Spatial and Temporal Information **Application** Civil Infrastructure, Maintenance of Civil Infrastructure, Survey Fields, Smart City, Smart Infrastructure
	TAKIZAWA Yasuhisa **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Wireless Networks ②Ubiquitous Computing ③Mobile Computing ④Network Dynamics **Key Words** Wireless Ad-hoc Networks, Wireless Sensor Actuator Networks, Self Organizing Networks, Distributed System, Internet of Things, Swarm Intelligence **Applications** Smart City, Environment Monitoring Systems, Emergency Systems, Energy on Demand, Smart Grid Systems
	YASUMURO Yoshihiro **Ph.D.Program**	Professor Doctor of Engineering Department of Civil, Environmental and Applied Systems Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①3 dimensional measurement and modeling - scanning scheme and adaptive data processing for scalable 3D modeling - ②Human-friendly system - easy-to-understand and interactive human-machine interface - **Key Words** Computer Vision, Computer Graphics, 3D visualization, 3D Modeling, Augmented and/or Mixed Reality, physic-based simulation, Human Interface **Application** Supporting and Assistive System for Medical, Productive, Archaeological and Constructive Fields, Visual Simulation for Designing and Planning

Chemical, Energy and Environmental Engineering

Research Field	Teachers list		
Energy Engineering	IKENAGA Naoki **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Hydrogen production from some kinds of hydrocarbons and bio fuels ②Light olefins production through F-T synthesis and oxidative dehydrogenation of paraffins ③Production of meso-porous materials **Key Words** Partial Oxidation, Steam Reforming, F-T Synthesis, Oxidative Dehydrogenation, Meso-porous Material, Bio Diesel Fuel, Carbon Nanotube, Chlorofluorocarbon **Application** Hydrogen Production, Bio Diesel Fuel Production, Carbon Nanotube Production, Chlorofluorocarbon
	NAKAGAWA Kiyoharu **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Diamond surface chemistry. ②Nanocarbon synthesis. **Key Words** Diamond, Carbon Nanotube, Hydrogen Synthesis **Application** Fuel Cell, Electric Double-layer Capacitor, Catalyst Material
	MIYAKE Takanori **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Hydrothermal synthesis of micro- and meso-porous manganese-containing composite oxides ②Partial oxidation to produce petro-chemicals, total oxidation of organic compounds and hydrogenation of esters to produce alcohols with catalysts **Key Words** Hydrothermal Synthesis, Manganese Oxide, Catalyst, Oxidation, Hydrogenation, Bio-ethanol, Micro-porous, Meso-porous, Volatile Organic Compound, Ion Exchange, Adsorption **Application** Petrochemical, Environmental Remediation, Fuel Cell, Biomass Conversion, Catalysis
	MURAYAMA Norihiro **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Preparation of functional inorganic materials using industrial wastes such as coal fly ash, incineration ash, aluminum dross, steel slag ②Removal of toxic materials with ion exchangers and adsorbents synthesized from wastes and by-product **Key Words** Zeolite, Layered Double Hydroxide, Hydrotalcite-like Compounds, $AlPO_4$-n, Functional Inorganic Materials, Ion Exchanger, Adsorbent, Porous Materials **Application** Recycling and Effective Use of Industrial Wastes and By-product, Waste Water Treatment, Gas Adsorption, Removal and Fixation of Toxic Materials, Recovery of Valuables

Environmental Chemistry	OKADA Yoshiki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Measurement and synthesis of gas-born nanoparticles ②Reaction control in microreactors ③Water purification using microbubbles **Key Words** Nanoparticles in Gas Phase, Size Classification, Measurement of Chemical Compositions of Nanoparticles, Production of Non-aggregated Nanoparticles, Microreactors, Water Purification, Microbubbles **Application** Environmental Engineering, Particle Production, Chemical Reactor Engineering
	TANAKA Shunsuke **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Synthesis of ordered nanoporous materials ②Application of nanoporous materials to separation, catalysis, and devices **Key Words** Self-Assembly of Nanoporous Materials, Morphology Control, Structural Analysis, Nanoporous Thin Films, Monodisperse Spherical Particles, Zeolite, Metal-Organic Frameworks, Molecular Sieving **Application** Membrane Separation, Pervaporation, Devices for Energy Applications, Low-k, Fuel Cell, Electric Double Layer Capacitor, Photocatalyst
	YAMAMOTO Hideki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemical, Energy and Environmental Engineering Faculty of Environmental and Urban Engineering	**Research Topics** ①Regeneration of high-purity CaF_2 from global warming gases(HFC, PFC) using chemical reaction ②Distillation separation of acid(HF, HNO_3 and HCl) from etching waste in semiconductor manufacturing process ③Development of compact sized falling needle rheometer(FNR) for measurement of human blood viscosity ④Estimation of solubility parameter(SP value) for materials and their application for evaluation **Key Words** Regeneration, Recycle, Distillation, Global Warming Gas, Acid Waste, Phase Equilibrium, Flow Properties, Rheometer, Blood Viscosity, Solubility Parameter **Application** Proposition of Novel and Regenerative Chemical Production System for Environmental Protection Development of Recycling and Recovery System for Valuable Materials from Industrial Wastes

Chemistry and Materials Engineering

Research Field	Teachers list		
Metallic Materials Design	IKEDA Masahiko **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of cost affordable titanium alloys for health-care and medical applications ②Development of Tin, Sn alloys for Lead, Pb free solder **Key Words** Titanium Alloys, Tin Alloys, Ubiquitous Metallic Elements, Low Cost and Price, Aging Behavior, Phase Transformation, Mechanical Properties **Application** Health-care Applications (e.g. Wheel-chair), Medical Applications, Sport Goods, Automobile
	UEDA Masato **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Low temperature synthesis of inorganic films. ②Control of bioactivity in metallic and inorganic materials. ③Photochemical reaction in nano-ordered structure and improvement of light energy conversion efficiency. **Key Words** Ceramics, Composites, Surface Modification, Morphological Control, Hydrothermal Synthesis, Phase Transformation, Electron Microscope, EBSP **Application** Biomaterials, Biomedical Applications, Solar Cells, Photocatalysts, Photoelectrode, Sensors
Metallic Materials Proccessing	TAKENAKA Toshihide **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①innovative production process of rare-metals ②progressive recycling process of rare-metals ③chemical phenomena in high temperature medium ④improvement of lifetime of rare-metals **Key Words** Rare-metal, Titanium, Magnesium, Lithium, Calcium, Nuclear Waste, Refining, Recycle, Energy Reduction, Molten Salt, High-temperature Chemistry **Application** Metal Production, Metal Recycling
	NISHIMOTO Akio **Master's Program** **Ph.D.Program**	Professor Ph. D. Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Surface modification of metallic materials ②Preparation of functional materials by pulsed electric current sintering ③Metallographic investigation on bonding of dissimilar materials **Key Words** Plasma-nitriding, Active Screen Plasma Nitriding (ASPN), Diffusion-coating, CVD, Stainless Steel, Pulsed Electric Current Sitering (PECS), Spark Plasma Sintering (SPS), Ceramics, Metal, Bonding, DLC **Application** Materials Science and Engineering, Automotive Parts, Nuclear Industry, Hard Coating Parts, Industrial Parts
	HOSHIYAMA Yasuhiro **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of rapidly solidified composite deposits ②Development of low environmental load type casting ③Surface modification of metallic materials **Key Words** Plasma Spraying, Casting, Plasma Nitriding, Rapid Solidification, Composite Deposit, Frozen Mold, Full Mold, Precipitate, Stainless Steel, Cast Iron **Application** Automobile Parts, Industrial Machine Parts, Machine Tools

Metallic Materials Proccessing	MARUYAMA Toru **Master's Program** **Ph.D.Program**	Professor Doctor of Philosophy Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Castings (Full mold process, Investment casting) ②Alloy design of cast iron, steel, aluminum alloy, copper alloy, and zinc alloy. ③Design for fire refining ④Thermal spray (Adhesion mechanism, Blasting) **Key Words** Castings, Full Mold Process, Investment Casting, Cast Iron, Steel, Bronze, Alloy Design, Fire Refining, Thermal Spray, Wetting at High Temperature Melt **Application** Castings, Thermal Spraying, Vehicle, Plumbing Products, Rail, Ship, Aircraft, Industrial Machine, Production of Metallic Material
	MORISHIGE Taiki **Master's Program**	Associate Professor Ph.D. Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Strengthening of aluminum alloys for structural applications. ②Corrosion control and protection of magnesium alloys ③Microstructural optimization of light metal alloys **Key Words** Aluminum alloys, Magnesium alloys, Light metals, Microstructure, Strengthening, Alloying element, Corrosion, Severe Plastic Deformation, Grain refinement **Application** Structural materials, Automotive and aerospace industries
Metallic and Inorganic Materials Properties	ARACHI Yoshinori **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Crystal structure and physical properties of inorganic materials for rechargeable batteries. ②Electronic structure of transition metal oxides. **Key Words** Ionic Conductor, Li-ion Secondary Battery, Solid Oxide Fuel Cells, Layered Compounds, Stabilized Zirconia, Crystal Structure Analysis, X-ray Absorption Spectroscopy, Ab-initio Electronic Structure Calculation **Application** Processing of Ceramics, Battery, Sensor
	KOZUKA Hiromitsu **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Science on the sol-gel coating technique for fabricating ceramic, glass and organic-inorganic hybrid thin films ②Modification of the sol-gel coating technique for improving the properties of thin film products and enhancing the reality in processing **Key Words** Ceramics, Glasses, Organic-Inorganic Hybrid Materials, Coating, Thin Films, Sol-Gel Method **Application** Reflective and Anti-Reflective Coatings, Photonic Devices, Electoronic Devices, Dielectric Devices, Photocatalysts
	TAKESHITA Hiroyuki T. **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of new hydrogen storage materials ②Analysis of phase transition and crystal structure ③Evaluation of electronic structure of materials ④Thermodynamic and kinetic analyses of gas-solid reaction **Key Words** Hydrogen, Hydrogen Storage Materials, Intermetallic Compound, Phase Diagram, X-ray Diffraction, Rietveld Analysis, Density Functional Theory **Application** Automobiles, Energy and Environment, Battery, Heat Pump, Refrigeration, Sensor, Purification and Separation of Gas, Catalyst, Nuclear Power

Metallic and Inorganic Materials Properties	HARUNA Takumi **Master's Program** **Ph.D.Program**	Professor Ph. D. Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of the metallic materials exhibiting high corrosion resistance ②Development of evaluation techniques for susceptibility to corrosion of metals ③Development of intelligent metal surfaces **Key Words** Stainless Steels, Carbon Steels, Ti Alloys, Al Alloys, Corrosion, Environment-assisted Cracking, Hydrogen Embrittlement, Electrochemistry, Surface Modification **Application** Chemical and Petroleum Industry, Automobile Industry, Medical Industry, Nuclear and the Other Power Industry, Electric and IT Industry
	KONDO Ryota **Master's Program**	Associate Professor Doctor of Philosophy Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Hydrogen storage materials ②Catalyst for hydrogenation ③Energy storage system **Key Words** Hydrogen storage materials, Phase control, Surface modification, Microstructure analysis, X-ray diffraction, Transmission electron microscopy, Scanning electron microscopy **Application** Renewable energy, Battery, Automobile, Sensor, Gas purification or separation
Inorganic and Physical Chemistry	AOTA Hiroyuki **Master's Program** **Ph.D.Program**	Professor Doctor of Science Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Artificial photosynthesis ②Molecular wire **Key Words** Photosynthesis, Molecular Wire, Pi-conjugated Polymer **Application** Solar Cell, Molecular Computer, Semiconductor
	ISHIKAWA Masashi **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Advanced materials for electrochemical supercapacitors ②Advanced materials for rechargeable lithium batteries ③Physical chemistry and kinetics of electrode reactions **Key Words** Supercapacitor, Electric Double Layer Capacitor, Rechargeable Lithium Battery, Ionic Liquid, Nanomaterial, Carbon Nanotube, Electrolyte, Anode, Cathode **Application** Electric Vehicle, Hybrid Electric Vehicle, Power Supply, Grid System, Battery, Renewable Energy, Nanoscience
	KAWASAKI Hideya **Master's Program** **Ph.D.Program**	Professor Doctor of Science Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Metal nanoparticles: synthesis, characterization, and applications ②Self-assembly of amphipathic substances ③Nanomaterials for mass spectrometry **Key Words** Colloid and Interface Science, Metal Nanoparticles, Nanostrucutured Surfaces, Surfactant Self-assembly, Bioanalysis Chip, Mass Spectrometry **Application** Catalysis, Emulsification, Coating Material, Cosmetic Product, Luminescence Material, Electrical Conducting Material, Battery Material, Simple Examination Kit

Organic Chemistry	OBORA Yasushi **Master's Program** **Ph.D.Program**	Professor Ph. D. Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of new homogeneous catalysis and organometallic chemistry ②Development of new synthetic organic reactions using transition-metal catalysts. **Key Words** Homogeneous Catalyst, Synthetic Chemistry, Organic Transformation, Transition-metal, Ligand Modification, Organometallic Chemistry **Application** Industrial-scale Organic Synthesis from Mass Feedstock, Selective and Active Catalysis in Organic Synthesis
	SAKAGUCHI Satoshi **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Ligand design for asymmetric organic transformations ②Development of a new transition metal-catalyzed organic reaction **Key Words** Synthetic Organic Chemistry, Asymmetric Catalytic Reaction, N-Heterocyclic Carbene, Ligand Design, Catalyst, Enantioselective Organic Transformation, Organometallics, Transition Metals, Organocatalysis **Application** Chemical Industry, Pharmaceutical Chemistry, Material Science, Organic Chemistry, Medical Chemistry
	NISHIYAMA Yutaka **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of new synthetic and catalytic reactions ②Development of new organic functional materials including heteroatom **Key Words** Carbon Monoxide, Carbonylation, Reduction, Sulfur, Selenium, Heteroatom Compounds, Lanthanoid Compounds, Transition Metal Compounds, Organic Functional Materials **Application** Organosynthetic Reactions
Polymer Chemistry	KUDO Hiroto **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Synthesis of cage-molecule by dynamic covalent chemistry mechanism ②Synthesis of cyclic polymers by ring-expansion polymerization ③Development of next-generation resist materials ④Development of high or low-refractive index materials ⑤Development of UV or thermal curing materials **Key Words** Dynamic covalent chemistry, polymer synthesis, cyclic polymer, refractive-index, curing material, resist **Application** Resist material, UV curing material, thermal curing material, high or low refractive index material
	SANDA Fumio **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ① Development of transition metal catalysts, and the application to conjugated polymer synthesis ② Design and synthesis of optically active polymers ③ Synthesis of stimuli-responsive polymers **Key Words** Transition Metal Catalyzed Polymerization, Organometallic Complex, Living Polymerization, Conjugated Polymer, Helical Polymer, Optically Active Polymer, Stimuli-Responsive Polymer **Application** Photoelectric Materials, Chiral Separation Materials, Asymmetric Induction Catalysts, Molecular Sensor

Biomaterials **Chemistry**	IWASAKI Yasuhiko **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Synthesis and characterization of well defined bio-inspired polymers ②Surface modification of biomedical devices with biocompatible polymers **Key Words** Polymer Synthesis, Surface Modification, Biocompatibility, Bio-inspired Polymers, Biointerface, Non-fouling Surface, Biomaterials **Application** Medical Devices, Diagnostic Devices, Biosensor Applications, Cell Culture, Separation of Biosubstances Drug Delivery System
Biomaterials **Chemistry**	OHYA Yuichi **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①The synthesis of novel biodegradable polymers and their application as biomedical materials ②Design of Biodegradabe Temperature-responsive Smart Materials for Medical Application **Key Words** Biomaterials, Biodegradabe Materials, Injectable Polymer, Hydrogel Polylactide, Tissue Engineering, Drug Delivery System, Nanoparticle **Application** Medical Polymers, Regenerative Medicine, Drug Delivery System, Biodegradable Plastics, Nanotechnology
	TAMURA Hiroshi **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Development of biomaterials using natural polymers, especially chitin and chitosan ②Fabrication of natural polymers for fiber, film to develop several materials **Key Words** Natural Polymer, Polysaccharides, Chitin, Chitosan, Gelatin, Biodegradability, Anti-bacterial, Biomaterials, Fiber Spinning, Fabrication, Bacterial Cellulose, Alginate **Application** Biomaterials, Biodegradable Materials, Fiber, Cosmetics, Anti-bacterial Materials, Functional Foods, Packaging Materials
	HIRANO Yoshiaki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Peptide based biomaterials for tissue engineering ②Structure-activity relationships of bioactive peptides. ③Conformation analysis of proline containing periodic peptide. **Key Words** Biomaterial, Tissue Engineering, Cell Scaffold, Amino Acid, Peptide, Protein, Secondary Structure, β-sheet Peptide, Extracellular Matrix, Self-assembly, Biosensor **Application** Biomaterials, Tissue Engineering & Regenerative Medicine, Healthcare Chip
	FURUIKE Tetsuya **Master's Program** **Ph.D.Program**	Professor Doctor of Environmental Earth Science Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Synthesis of glycocluster compounds from unused resource. ②Synthesis of carbohydrates based on sustainable chemistry. **Key Words** Oligosaccharide, Bioactive Sugar, Glycodendrimer, Glycocluster Compound, Nanomaterial, Ionic Liquid, Environmental Material, Sustainable Chemistry **Application** Glycodrug, Biodegradable Material, Environmental- Conscious Synthetic Process, Biomedical Material, Environmental Depuration

Biomaterials Chemistry	MIYATA Takashi **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Smart polymer gels ②Functional polymer membranes ③Bio-inspired materials ④Surface science of polymers **Key Words** Functional Polymers, Gels, Stimuli-responsive Gels, Intelligent Materials, Biomimetic Materials, Bio-inspired Materials, Surface Science **Application** Biomaterials, Sensors, Biotechnology, Nanotechnology, Environment- and Energy-related Applications
	KAKINOKI Sachiro **Master's Program**	Associate Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Artificial extracellular matrix ②Biofunctionalization of material surface ③Structural analysis of artificial peptides and proteins **Key Words** Biomaterials, Peptide and Protein Science, Genetically-engineered Protein, Tissue Engineering, Artificial Organ, Surface Modification, Bioinspired Materials **Application** Medical devices, Biomedical materials, Regenerative medicine, Cell engineering
	KAWAMURA Akifumi **Master's Program**	Associate Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Polymer Nanomaterials for Biomedical Applications ②Functional Soft Materials ③Functional Materials Using Polymer Self-assembly **Key Words** Soft Matter, Polymer Synthesis, Functional Polymers, Supramolecular Chemistry, Nanomaterials, Self-assembly, Biomaterials **Application** Biomedical Materials, Sensors, Nanotechnology, Biotechnology
Biofunctional Molecular Chemistry	KUZUYA Akinori **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Construction of nanostructures made of DNA ②Fusion of DNA and functional nanomaterial ③Single molecule imaging of bio-oriented supramolecules **Key Words** DNA, Nucleic Acids Chemistry, Nanoarrays, Nanotechnology, Nanobiotechnology, Single Molecule Sensing **Application** Sensing and Diagnostics, Electronics
	YAJIMA Tatsuo **Master's Program** **Ph.D.Program**	Professor Doctor of Science Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Studies of noncovalent interactions between molecules ②Clarification and applications of noncovalent interaction supported by metal ions ③Development of novel methods for optical resolutions using metal complexes **Key Words** Molecular Recognition, Intermolecular Interactions, Non-covalent Interactions, Metal Complexes, pH Titrations, Amino Acids, Optical Resolutions **Application** Molecular Sensors, Separation and Optical-Resolution Agents
	NAKAI Misaki **Master's Program**	Associate Professor Doctor of Science Department of Chemistry and Materials Engineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①The development of Physiologically active metal-complexes ②drug design of anti-tumor or diagnostic metal complexes **Key Words** Metal complex, DNA, Anti-tumor drug, diagnostic drug, Photodynamic therapy, hypoxia tumor **Application** Chemotherapeutic and Photochemotherapeutic Agents, Bioinorganic chemistry, Medical and Analytical Application, Physiological Activity of Metal Complexes

Life Science and Biotechnology

Research field	Academic Advisors list		
Life and Pharmaceutical Science	OIKAWA Tadao **Master's Program** **Ph.D.Program**	Professor Doctor of Agriculture, Kyoto University Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Isolation and characterization of novel enzymes from microorganisms ②Enzymological and microbial production of industrially useful compounds and D-amino acids ③Analysis and function of D-amino acids in foods **Key Words** D-Amino Acid, Novel Enzyme, Stereospecific Synthesis, Biocatalyst, Screening of Novel Microorganisms, Fermentative Food, Cold-active Enzymes **Applications** Production of Food Additive, Functional Food, Medicine, Agricultural Chemicals, and Biopolymer; Food Process; Biomass; Biosensor **E-mail:** oikawa@kansai-u.ac.jp
	SHIMOKE Koji **Master's Program** **Ph.D.Program**	Professor Doctor of Science Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Basic therapeutic research based on molecular and cellular biology about neurodegenerative disorders ②Epigenetic regulation during neuronal differentiation ③Molecular mechanism on building neuronal networks **Key Words** Apoptosis, ER Stress, Alzheimer's Disease, Parkinson's Disease, PC12 Cells, Cerebral Cortical Neuron, Neurotrophic Factors, Signal Transduction **Applications** Development of Medicine for Neurodegenerative Diseases, Discovery of Target Molecules for Cognitive or Personality Disorder **E-mail:** shimoke@kansai-u.ac.jp
	NAGAOKA Yasuo **Master's Program** **Ph.D.Program**	Professor Ph. D. Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Explorative study of bioactive compounds ②Synthesis of functional molecules ③Pharmaceutical engineering **Key Words** Drug Discovery, Natural Products, Molecular Target Drugs, Gene Delivery, Polyphenol, Histone Deacetylase Inhibitor **Applications** Pharmaceuticals, Cosmetics, Dietary Supplements **E-mail:** ynagaoka@kansai-u.ac.jp
	SUMIYOSHI Takaaki **Master's Program**	Associate Professor Ph. D. Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Drug discovery of bioactive compounds ②Discovery of natural products ③Construction of chemical library ④Identification of molecular mechanism of bioactive compounds **Key Words** Medicinal Chemistry, Protein-Protein Interaction, Macrocycles, Epigenetics, Chemical Library, Natural Products, Neurodegenerative disease, Anticancer Drug, Drug Delivery to Brain **Applications** Pharmaceuticals, Drug Discovery **E-mail:** t-sumiyo@kansai-u.ac.jp
	YASUHARA Hiroki **Master's Program**	Associate Professor Ph. D. (Science) Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Cell plate formation in higher plant cells －Mechanisms of the centrifugal development of the phragmoplast－ ②The role of microtubule associated proteins in cell division and cell elongation **Key Words** Plant Cytokinesis, Phragmoplast, Cell Plate, Microtubules, Actin Filaments, Cytoskeleton, XMAP215, TMBP200, Kinesin Related Proteins **Applications** Breeding of Plants **E-mail:** yasuhara@kansai-u.ac.jp

Life and Pharmaceutical Science	YAMANAKA Kazuya **Master's Program**	Associate Professor Ph. D. Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Genomics-guided Discovery of Biosynthetic Genes for Novel Bioactive Molecules ②Biosynthetic Studies for Structurally Unique Microbial Bioactive Molecules ③Development of a Genetic Platform for Efficient Production of Bioactive Molecules **Key Words** Genome-mining, Natural product, Biosynthesis, Microbial genetics, Actinobacteria, microbial production, fermentation **Applications** Pharmaceutical and Agricultural drugs, Food preservatives, Cosmetics, Biopolymers, Chemicals **E-mail:** kazuyay@kansai-u.ac.jp
Microbiology and Environmental Science	IWAKI Hiroaki **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Analysis and development of bacterial metabolic activities for xenobiotics and its application for bioremediation of environmental pollution ②Ecological study of xenobiotics degrading bacteria in soil and marine environments **Key Words** Biodegradation, Bioconversion, Nitroaromatics, Marine Bacteria, Baeyer-Villiger monooxygenase **Applications** Bioremediation of Xenobiotics, Bioconversion of Xenobiotics-related Compunds to Useful Chemicals, Wastewater Treatment **E-mail:** iwaki@kansai-u.ac.jp
	KATAKURA Yoshio **Master's Program** **Ph.D.Program**	Professor Doctor of Agriculture Department of Life Science and Bioengineering Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Ethanol production by consolidated continuous solid state fermentation ②Delignification of biomass by a bacterium ③Symbiosis of lactic acid bacterium and yeast ④Adhesion of lactic acid bacteria to carbohydrate **Key Words** Bioethanol, Solid state Fermentation, Yeast, Lactic acid Bacteria, Symbiosis, Probiotics, Engineering ethics **Applications** Entire Design of Bioethanol Production, Adhesion of Lactic Acid Bacteria to Carbohydrate **E-mail:** katakura@kansai-u.ac.jp
	HASEGAWA Yoshie **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Biodegradation of environmental pollutants ②Application of Baeyer-Villiger monooxygenase to organic synthesis **Key Words** Biodegradation, Biocatalysis, Biotransformation, Environmental pollutants, Cycloparaffin, Nitroaromatic Compounds, Baeyer-Villiger Monooxygenase **Applications** Treatment of Wastewater, Green Chemistry, Genetic Improvement of Strains or Biocatalysts, Bioremediation **E-mail:** yoshie@kansai-u.ac.jp

Microbiology and Environmental Science	MATSUMURA Yoshinobu **Master's Program** **Ph.D.Program**	Professor Doctor of Engineering Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Bioremediation of chemical pollutants by environmental bacteria and their activities ②Bacterial biofilm formation and development of biofilm removal system ③Outbreak mechanism of stress resistant bacterial and their resistant mechanism **Key Words** Bioremediation, Chemical Pollutant, Cytochrome P450 Monooxygenase, Molecular Chaperone, Protein Stability, Biofilm, Surfactant, Reactive Oxygen Species, Disinfectant, Sterilization System, Stress Response, Genetics, Endogenous Plasmid **Applications** Sewage Disposal System, Improvement of Polluted Soil, Development of Disinfectant, Food Processing, Pharmaceutical Manufacturing, Medicals, Enzymatic Industry **E-mail:** ymatsu@kansai-u.ac.jp
	YAMASAKI Shino **Master's Program**	Associate Professor Ph. D. in Engineering Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Evaluation and development of probiotics based on immune response ②Bioactivity screening from natural product extracts ③Development of novel microbial culture systems and the evaluation tools **Key Words** Probiotics, Mucosal immunity, Natural product extract, Modeling, Three-dimensional culture **Applications** Functional Food, Adjuvant for Mucosal Immunity, Bioethanol Production **E-mail:** shino.ya@kansai-u.ac.jp
Food and Nutrition Science	FUKUNAGA Kenji **Master's Program** **Ph.D.Program**	Professor Doctor of Fisheries Science Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①We study on the absorption, metabolism, nutrigenomics, and chemistry of marine functional compounds such as n-3 polyunsaturated fatty acid or marine organic compounds. ②Our research project also includes attempts to improve protein functionality, food process characteristics and biofunctions, using molecular modification. **Key Words** Fish Oil, n-3 Polyunsaturated Fatty Acid, Fish Protein, Fish Peptide, Marine Products, Protamine **Applications** Functional Foods, Utilization of Marine Bio-resources, Materials of Pharmaceutical Compounds **E-mail:** fukunagk@kansai-u.ac.jp
	YOSHIDA Munehiro **Master's Program** **Ph.D.Program**	Professor Doctor of Philosophy in Agriculture, Doctor of Philosophy in Medical Science Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Nutritional approach to minerals and trace elements in foods ②Environmental assessment of urban and rural area using community of butterflies **Key Words** Trace Elements, Nutrition, Food, Iron, Copper, Selenium, Zinc, Iodine, Chromium, Molybdenum, Dietary Reference Intake, Butterfly, Urban Environment **Applications** Nutritional Enrichment, Nutritional Supplements, Analysis of Trace Elements, Nutritional Assessment, Environmental Assessment **E-mail:** hanmyou4@kansai-u.ac.jp

Food and Nutrition Science	HOSOMI Ryota **Master's Program**	Assistant Professor Doctor of Engineering Department of Life Science and Biotechnology Faculty of Chemistry, Materials and Bioengineering	**Research Topics** ①Influence of Superchilling (Hyo-On) Treatment on Food Components ②Health Promoting Effect of Novel Component Derive from Seafood **Key Words** Superchilling (Hyo-On), Food Preservation, Aging, Seafood, Fish Protein, Marine Phospholipid **Applications** Food Preservation Technology, Novel Aging Technology, Functional Food and Component **E-mail:** hryotan@kansai-u.ac.jp

Kansai University Graduate School

http://www.kansai-u.ac.jp/Gr_sch/

Senriyama Campus

Graduate School of Law　Graduate School of Letters　Graduate School of Economics
Graduate School of Business and Commerce　Graduate School of Sociology　Graduate School of Science and Engineering
Graduate School of Foreign Language Education and Research　Graduate School of Psychology
Graduate School of East Asian Cultures　Graduate School of Governance

Inquiries: Graduate School Admissions Division, Admissions Center
3-3-35 Yamate-cho, Suita, Osaka 564-8680
E-mail: kugrd-exam@ml.kandai.jp

Takatsuki Campus

Graduate School of Informatics

Inquiries: Takatsuki Office
Ryozenji-cho, Takatsuki, Osaka 569-1095
E-mail: k-soujyo@ml.kandai.jp

Takatsuki Muse Campus

Graduate School of Societal Safety Sciences

Inquiries: Muse Office
7-1 Hakubai-cho, Takatsuki, Osaka 569-1098
E-mail: safety_science@ml.kandai.jp

Sakai Campus

Graduate School of Health and Well-being

Inquiries: Sakai Campus Office
1-11-1 Kaorigaoka-cho, Sakai, Osaka 590-8515
E-mail: sakai1@ml.kandai.jp