# Fall Semester 2021 Admission

# Application Guidelines

# Special Entrance Examination for Recommended International Students

## 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 (**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 administrate entrance examinations (to receive applications, to deliver examination admission slip, and to operate 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 ordinances after a fixed period of custody.

## 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 student life on campus.

《Sharing of Personal Information and its purpose》

Administrative numbers, names, address, phone number, dates of birth, assigned graduate school, major, and course for verifying the payment of the enrollment and registration fees to the above affiliated organ.

## 4. Disclosure of Personal Information to Third Parties

The Graduate School will not share Personal Information with third parties without consent of the applicant, except when compelled by laws and ordinances.

## 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 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 Entrance Examination Center.

Graduate School Admissions Division
Kansai University Entrance Examination 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 2021 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 2020, 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 4 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 9 disciplines including 4 under Engineering Science Major (Mathematics, Pure and Applied Physics, Mechanical Engineering, and Electrical, Electronic and Information Engineering), 3 under Environmental and Urban Engineering Major (Architecture, Civil, Environmental and Applied System Engineering, and Chemical, Energy and Environmental Engineering), and 2 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 9 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 1 principal advisor and 2 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 2 years (4 semesters), during which time they must earn at least 30 credits of subjects (including 8 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 8 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 3 years (6 semesters), although that period may be shortened.

## 3. Admission Policy

**Master's Degree Program**

The Graduate School of Science and Engineering (Master's Degree Program) widely accepts through a variety of entrance examinations those who have the following knowledge and skills, abilities of thinking, judgement, and expression, and proactive attitudes as the graduate school students according to the Diploma Policy and Curriculum Policy of the Graduate School:

1. To have the expertise of their specialized fields on the foundation of the basic academic abilities of science and engineering in the undergraduate courses.
2. To be able to think autonomously from a global perspective, to smoothly communicate with others, and to contribute to society with their capabilities of "Think and Act" on the foundation of their learning results at the undergraduate courses.
3. To have strong willingness to study proactively their specialized academic fields.

**Ph.D. Degree Program**

The Graduate School of Science and Engineering (Ph.D. Degree Program) widely accepts through a variety of entrance examinations those who have the following knowledge and skills, abilities of thinking, judgement, and expression, and proactive attitudes as the graduate school students according to the Diploma Policy and the Curriculum Policy of the Graduate School:

1. To have the expertise of their specialized fields during their undergraduate courses and master's degree programs.
2. To be able to think autonomously from a global perspective, to smoothly communicate with others, and to contribute to society with their capabilities of "Think and Act" based on results of learning during their undergraduate courses and master's degree programs.
3. To have strong willingness to study proactively their specialized academic fields.

## 4. Admitting Program, Major and Discipline

| Program | Major | Discipline |
|---|---|---|
| Master's Degree | 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 | 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 Degree Program and Ph.D. Degree Program, recruiting few people at each of the disciplines.

## 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 1 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 earned 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 (kugrd-exam@ml.kandai.jp):

(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 2021 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.

**Application Process**

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

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

**[1. Submit the Application Documents]**

Applicants should submit their application documents to the university from which they have graduated or are expected to graduate by Thursday, April 15, 2021 (All of the application 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 Thursday, April 22, 2021. (All of the application documents must be received by the deadline.)

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

Submission Address:
3-3-35, Yamate-cho Suita-shi, Osaka, 564-8680, JAPAN
Kansai University Graduate School Admissions Division
Tel: +81-6-6368-1407
E-mail: kugrd-exam@ml.kandai.jp

Please inform the tracking number to the Graduate School Admissions Division via E-mail.

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 13, 2021

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

## [2. Pay the Application Fee]

(1) Application Fee

Applicants must pay the application fee of ￥35,000 during the designated period. The application fee is not refundable for any reasons.

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 7 days of the deadline for the payment.

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

(2) Payment Period

Thursday, May 20, to Thursday, June 3, 2021

(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 will be successful with completing 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 (Form 1)【①】 | Use the form designated by the University and write in English. |
| Statement of Reason for Applying (Form 2)【②】 | Use the form designated by the University and write in English. |
| Original transcript from previously attended university (graduate school)【③】※ | Submit original transcripts.<br>If you cannot submit original transcripts, please submit transcripts that have been notarized by an embassy or other government institutions. |
| Original certificate of (expected) graduation or completion from previously attended university (graduate school)【④】※ | Both of the entrance and (expected) graduation / completion dates must be listed.<br>If the above information is listed on the Application Document ③, this certificate does not need to be submitted.<br>Submit an original certificate of (expected) graduation / completion.<br>If you cannot submit an original certificate, please submit a certificate of (expected) graduation / completion that has been notarized by an embassy or other government institutions. |
| Research Plan in English【⑤】 | Submit 1 original and 3 copies.<br>Applicants to the Master Degree Program:<br>About 1,000 words in length.<br>Applicants to the Ph.D Degree Program:<br>About 2,000 words in length. |
| Letter of Recommendation in English【⑧】 | The letter must 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 3 months to each of the Application Form (Form 1) and to the Statement of Reason for Applying (Form 2) in English. Your photographs should not be retouched or edited.<br>(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.<br>If the master's thesis is written in a language other than English, submit an English version. |
| Outline of master's thesis in English【⑦】 | 1 original and 3 copies.<br>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.<br>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 in English【⑦】 | 1 original and 3 copies.<br>About 2,000 words in length. |

※Certificates written in English are available. If the certificate is written in a language other than English, please submit an English translation certified by an embassy or other government institutions.

## 9. 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 2021 Academic Year" (pages 15 to 41).

(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.

## 10. Screening Method

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

## 11. Announcement of the Screening Results

Your results of success or failure will be sent to the applicant by International Express Service (DHL) on the following date:

Friday, July 16, 2021

## 12. School Fees and Other Fees

Refer to "School Fees and Other Fees for 2021 Academic Year" (page 9) below.

## 13. 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.

＊Please complete the payment as soon as possible since it takes days to deposit into the bank account.

### (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 2021. Pay tuition and other fees and submit the required documents in accordance with the instructions on the Enrollment Procedure Guide (II) that you will 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 Monday, August 23, 2021

・If your address changed after you passed the entrance examination

| | |
|---|---|
| Enrollment Step I-(1)<br>(Payment of Admission Fee <Enrollment and Registration Fees>) | Friday, July 16, to Friday, July 30, 2021 |
| Enrollment Step I-(2) (Payment of Tuition and Other Fees)<br>Enrollment Step II (Submission of Documents) | Monday, August 23, to Tuesday, September 7, 2021 |

### ＊Requests to Withdraw

Enrollees who request to withdraw by Monday, September 20, 2021, 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 Monday, September 20, 2021.

(For specific steps, see the Enrollment Procedure Guide (II) which you will receive.)

## 14. 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】 www.kansai-u.ac.jp/Gr_sch/international/index_en.html#a_visa

# School Fees and Other Fees for 2021 Academic Year

## Master's Degree Program

(in Yen)

| Fee | | 2021 Academic Year | 2022 Academic Year | | 2023 Academic Year and after |
|---|---|---|---|---|---|
| | | First Semester | 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

(in Yen)

| Fee | | 2021 Academic Year | 2022 Academic Year | | 2023 Academic Year | | 2024 Academic Year and after |
|---|---|---|---|---|---|---|---|
| | | First Semester | 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 a Kansai University Graduate School, and undergraduates at the University who satisfy the requirements described by Paragraph 1-11 of Article 46 Paragraph of the Graduate School Rules (that is, the successful examinees of Academic Acceralation Entrance Examination) are not required to pay the Admission Fee 〈Admission Registration Fee〉 when continuing their studies at one of the Graduate Schools.
2. Graduates of the Kansai University Japanese Language and Culture Program Preparatory Course (*Ryugakusei-Bekka*) who continue their studies at one of the University's faculties or Graduate Schools are eligible to receive a 50% discount on the Admission Fee 〈Admission Registration Fee〉. The same applies to students without finishing the program of the Course.
3. The University collects ¥30,000 on behalf of the Alumni Association : ¥10,000 at the time of enrollment and then ¥20,000 at the following academic year (For students entering at the Fall Semester, the University collects a total of ¥30,000 on behalf of the Alumni Association by collecting ¥10,000 at the Spring Semester in the academic year following the year of enrollment and then ¥20,000 at the next Spring Semester).
   The dues are not collected from students who have already paid as graduates of the University or any of the Graduate Schools (including the successful examinees of Academic Acceleration Entrance Examination) according to the requirements described by Paragraph 1-11 of Article 46 Paragraph of the Graduate School Rules.

## Scholarship Information

2021 Academic Year: Scholarship Types and Overview
The following list of scholarships is for the enrollees of the 2021 Spring Semester.

※The criteria of selection vary by each Graduate School.
For more information, contact the scholarship coordinator offices of each campus or the Division of International Affairs on the end of this section.

※Same students cannot take both the Scholarships of ①～⑤ and the Scholarships of Ⓐ and Ⓑ.

### ① Japan Student Services Organization Scholarship for Graduate School Students

**Loan Type** ※ Application-based

#### Eligibility

■Graduate school students either for Master's Degree Program or Ph.D. Degree Program who will enroll in Kansai University at 2021 academic year

(Note 1) The scholarship is for those who have excellent academic and personality, and need this scholarship to continue their research in graduate school. However, international students are not eligible for the scholarship.

(Note 2) There is not always a recruitment for students enrolling in Kansai University at fall semester. Please contact us before applying.

#### Scholarship Type and Loan Amount

■The First Scholarship (Interest-free)

| Degree Program | Monthly Loan Amount (yen) |
|---|---|
| Master's Degree Program | Applicants can select from 50,000／88,000 |
| Ph.D. Degree Program | Applicants can select 80,000／122,000 |

■The Second Scholarship (Interest-bearing)

| Degree Program | Monthly Loan Amount (yen) |
|---|---|
| Master's Degree Program | Applicants can select from 50,000／80,000／100,000／130,000／150,000 |
| Ph.D. Degree Program | |

#### Duration of Loan

■From the spring semester or the fall semester of the 2021 academic year to the end of usual study term.

#### Past Records of Scholarships of Award Type for Graduate School Students (all graduate schools and all grades in 2020 academic year)

■About 40% of all graduate school students have received the award type of scholarships.

### ② Kansai University Graduate School Scholarship of Special Award type

**Award type** ※Notification-based
(The university will notify the adoption of the scholarshipto the eligible students before enrolling.)

#### Eligibility

■Graduate school students to enroll to Master's Degree and Ph.D. Degree Programs in the 2021 academic year with excellent entrance examination results.

#### Varieties of Entrance Examination

■Eligible students will be selected regarolless of the type of entrance examinations both of Master's Degree and Ph.D. Degree Programs after all entrance examinations were held.
However for Master's Degree Programs, the types of entrance examinations of the Graduate Schools of Law, Business and Commerce, Science and Engineering, Foreign Language Education Research, and the Ph.D of Disaster Management Program for the Graduate School of Societal Safety Science are as follows.

Graduate School of Law (Master's Degree Program): All entrance examinations except an entrance examination called International Students Special Entrance Examnation by African Bussiness Education Initiative for Youth.

Graduate School of Business and Commerce (Master's Degree Program): Five-year Consistent Education Program Entrance Examination (October Examination), Internal Promotion Examination (October Examination and February Examination).

Graduate School of Science and Engineering (Master's Degree Program): Internal Promotion Examination (June Examination), General Entrance Examination (August Examination), and Internal Promotion Examination for Students of Early Graduation.

Graduate School of Foreign Language Education and Research (Master's Degree Program): For all types of entrance examinations except Aston University DD program of General Entrance Examination.

Graduate School of Societal Safety Science (Ph.D. Degree Program: Ph.D. of Disaster Management Program): International Students Entrance Examination (English Course PDM) (February Examination and June Examination).

### Awards Amount

| Degree Program | Graduate School | Yearly Awards Amount (yen) |
|---|---|---|
| Master's Degree Program | Law, Letters, Economics, Business and Commerce, Sociology, Psychology (Psychology Major), East Asian Cultures, Governance, Health and Well-being | 500,000 |
| | Informatics, Societal Safety Sciences | 600,000 |
| | Science and Engineering | 750,000 |
| | Foreign Language Education and Research | 550,000 |
| | Psychology (Psychology Clinical Major) | 650,000 |
| Ph.D. Degree Program | Every Graduate School | 500,000 |

※As for Master's Degree Program, awards amount differs for the students of Three-year Course and One-year Course. Contact scholarship coordinator offices for details.

### Duration of Award

■From the spring semester or the fall semester of the 2021 academic year to the end of usual study term.
(Whether to award again at the next academic year or not will be judged from the achievement per 2 semesters. The Duration of Award may be shortened depend on the result).

## ③ Kansai University Graduate School Scholarship (awarded for persons with excellent grades in the Graduate School) (to currently enrolled students)

**Award type** ※Application-based

### Eligibility

■Graduate students with excellent grades who are in difficulty to continue to study for economic reasons.
If you are hired and meet the requirements for the benefits of the "Kansai University Graduate School Scholarship of Pre-arrival Award Type for Internal Promotion Examination (April 2020 Application)", you cannot apply for this scholarship.

### Awards Amount

■See the figure below.

### Duration of Award

■for one year (You can apply next year again.)

## ④ Kansai University Educational Assistance Fund Scholarship

**Award type** ※Application-based

### Eligibility

■Graduate students with excellent grades who are in difficulty to continue to study for economic reasons.
If you are hired and meet the requirements for the benefits of the "Kansai University Graduate School Scholarship of Pre-arrival Award Type for Internal Promotion Examination (April 2020 Application)", you cannot apply for this scholarship.

### Awards Amount

■See the figure below.

### Duration of Award

■for one year（You can apply next year again.）

## ⑤ Kansai University Mature Students Scholarship (awarded for excellent working adult graduate students)

**Award type** ※Application-based

### Eligibility

■Working adult graduate 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

≪Awards Amount for ③, ④ and ⑤ scholarships in common≫

| Degree Program | Graduate School | Yearly Awards Amount (yen) |
|---|---|---|
| Master's Degree Program | Law, Letters, Economics, Business and Commerce, Sociology,Psychology（Psychology Major）, East Asian Cultures, Governance,Health and Well-being | 250,000 |
| | Informatics, Societal Safety Sciences | 300,000 |
| | Science and Engineering | 375,000 |
| | Foreign Language Education and Research | 275,000 |
| | Psychology（Psychology Clinical Major） | 325,000 |
| Ph.D. Degree Program | Every Graduate School | 250,000 |

※As for Master's Degree Program, awards amount differs for the students of Three-year Course and One-year Course. Contact scholarship coordinator offices for details.

**Senriyama Campus (Student Services Bureau, Scholarship and Financial Assistance Group)**
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)

**Takatsuki Campus (Takatsuki Campus Office)**
2-1-1 Ryozenji-cho, Takatsuki 569-1095
Phone: 072-690-2163 (direct)
Hours: 9:00 am to 5:00 pm (except Saturdays, Sundays, public holidays, and university holidays)

**Takatsuki Muse Campus (Muse Office)**
7-1 Hakubai-cho, Takatsuki 569-1098
Phone: 072-684-4000 (operator)
Hours: 9:00 am to 5:00 pm (except Saturdays, Sundays, public holidays, and university holidays)

**Sakai Campus (Sakai Campus Office)**
1-11-1 Kaorigaoka-cho, Sakai-ku, Sakai 590-8515
Phone: 072-229-5022 (operator)
Hours: 9:00 am to 5:00 pm (except Saturdays, Sundays, public holidays, and university holidays)

## Ⓐ Scholarship for Privately-funded International Students (For Freshman) | Award type

※ Notification-based (Graduate School of Economics and Graduate School of Business and Commerce are Application-based)
(The university will notify the adoption of the scholarship to the eligible students before enrolling.)

### Eligibility

■Graduate School Students who will enroll in Kansai University in 2021 academic year with excellent grades and are in difficulty to continue to study for financial reasons. (International students who obtain the resident status of "Student").

※For Master's Degree Program, at the Graduate School of Economics and the Graduate School of Business and Commerce, there are additional requirements regarding linguistic ability.
And at the Graduate School of Sociology, Examination for Japanese University Admission for International Students (EJU) should be submitted for certificate of Japanese language ability is necessary as application document.

※For Ph.D. Degree Program, all enrollees will receive the scholarship generally.

### Awards Amount

■See the figure below

### Duration of Award

■For one year

※For Ph.D. Degree Program, enrollees will continue to be awarded one year later generally.

ⒶThe academic results criteria, the number of students to be granted and the amount of the Scholarship for Privately-funded International Students are different from graduate schools.For details, please check the Website of the Division of International Affairs at:
www.kansai-u.ac.jp/Kokusai/from/support.php

## Ⓑ Scholarship for Privately-funded International Students (For 2nd year students and above) | Award type

※Application-based

### Eligibility

■Graduate School Students who are in the second year and above with excellent grades and are in difficulty to continue to study for financial reasons. (International students who obtain the resident status of "Student").

※For Ph.D. Degree Program, all enrollees will receive the scholarship generally.

### Awards Amount

■See the figure below

### Duration of Award

■For Master's Degree Program: for one year

■For Ph.D. Degree Program: continue to the end of usual study term (application is necessary per year)

### Awards Amount

≪Ⓐ and Ⓑ Common to Privately-funded International Students Scholarships≫

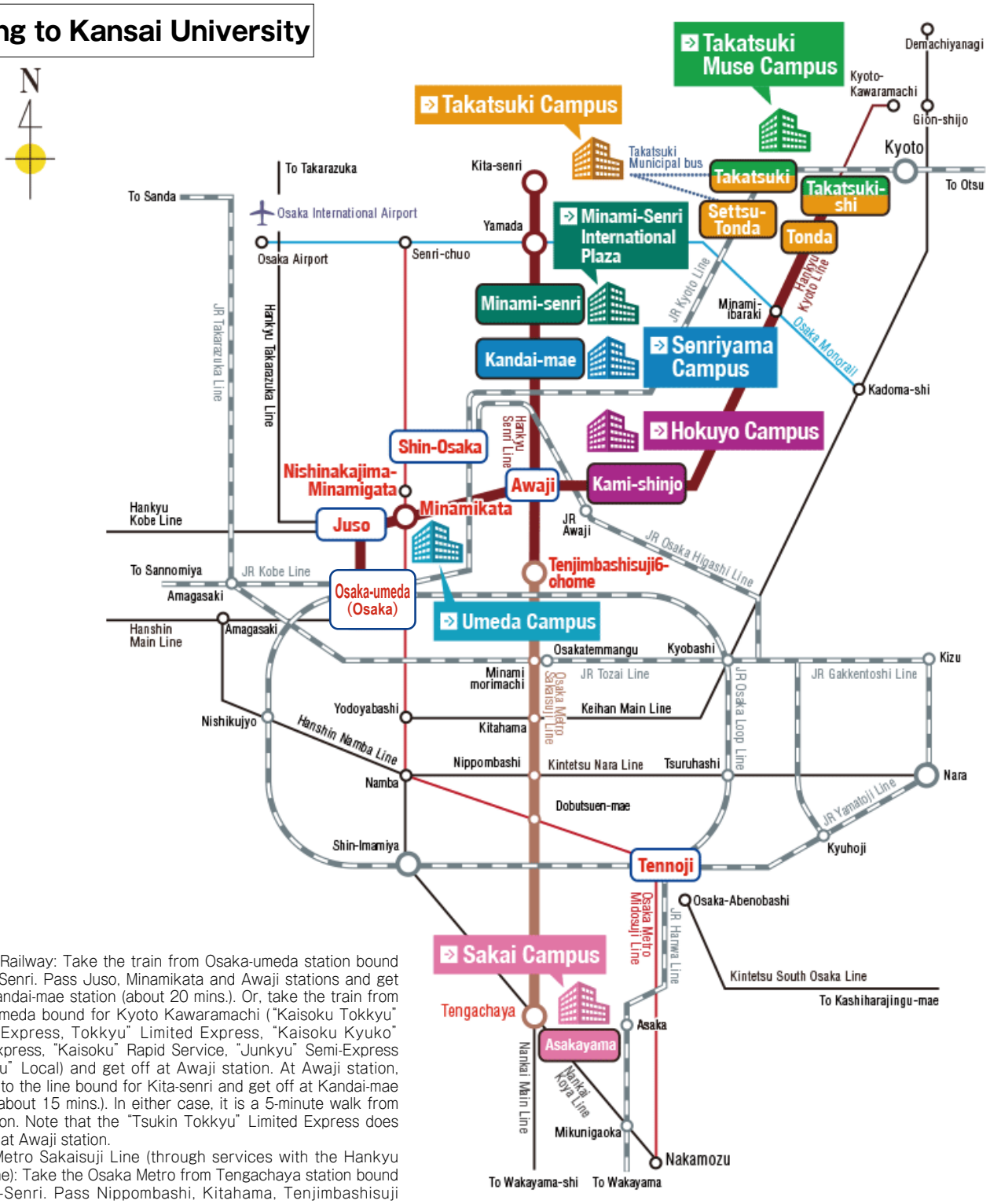
| Degree Program | Graduate School | Yearly Awards Amount (yen) |
|---|---|---|
| Master's Degree Program | All of the Graduate Schools | different from graduate schools※ |
| Ph.D. Degree Program | Law, Letters, Economics, Business and Commerce, Sociology, Foreign Language Education and Research ,Psychology, East Asian Cultures,Governance, Health and Well-being | 350,000 |
| | Informatics, Science and Engineering, Societal Safety Sciences | 400,000 |

※For details such as the amount of the scholarships, the academic results criteria and so on, please check the Website of the Division of International Affairs.

In addition, the Division of International Affairs deals with variety of scholarships which are only for privately-funded international students, such as the scholarships provided by external foundations. For complete information, please check the Website of the Division of International Affairs at:
www.kansai-u.ac.jp/Kokusai/from/support.php

**Division of International Affairs**
3-3-35 Yamate-cho, Suita, Osaka 564-8680
TEL:06-6368-1121 (operator)
Hours: 9:00 am to 5:00 pm (except Saturdays, Sundays, public holidays,and university holidays)

# Getting to Kansai University




○ Hankyu Railway: Take the train from Osaka-umeda station bound for Kita-Senri. Pass Juso, Minamikata and Awaji stations and get off at Kandai-mae station (about 20 mins.). Or, take the train from Osaka-umeda bound for Kyoto Kawaramachi ("Kaisoku Tokkyu" Limited Express, Tokkyu" Limited Express, "Kaisoku Kyuko" Rapid Express, "Kaisoku" Rapid Service, "Junkyu" Semi-Express or "Futsu" Local) and get off at Awaji station. At Awaji station, transfer to the line bound for Kita-senri and get off at Kandai-mae station (about 15 mins.). In either case, it is a 5-minute walk from the station. Note that the "Tsukin Tokkyu" Limited Express does not stop at Awaji station.

○ Osaka Metro Sakaisuji Line (through services with the Hankyu Senri Line): Take the Osaka Metro from Tengachaya station bound for Kita-Senri. Pass Nippombashi, Kitahama, Tenjimbashisuji 6-chome (Tenroku) and Awaji stations and get off at Kandai-mae station (about 40-45 mins.). Walk about 5 mins.

○ JR Shinkansen: Take the train from Shin-Osaka station bound for Nakamozu on the Subway Midosuji Line and get off at Nishinakajima-Minamigata station. Transfer at the Hankyu Railway Minamikata station to the train bound for Kita-senri. Pass Awaji station and get off at Kandai-mae station (about 30 mins.). Walk about 5 mins.

○ From Osaka International Airport (Itami Airport): From Osaka Airport station, take the Osaka Monorail bound for Kadoma-shi. Pass Hotarugaike and Senri-chuo stations and get off at Yamada station. Transfer at the Hankyu Railway Yamada station to the train bound for Tengachaya or Umeda and get off at Kandai-mae station (about 30 mins.). it is a 5-minute walk from the station.

(Note) When asking directions for taking an entrance examination at the Kansai University Senriyama Campus or giving your destination to a taxi driver, clearly state that you are going to "Senriyama no Kansai Daigaku." Kansai University has multiple campuses (Senriyama, Takatsuki, Takatsuki Muse and Sakai). Also, a simple "Kandai" may be mistaken for "Handai" -the shortened name for Osaka University in Suita and the neighboring Toyonaka. Arriving at the wrong location may prevent you from taking the examination.

# List of Academic Advisors of Graduate School of Science and Engineering

# for 2021 Academic Year

## Pure and Applied Physics

| Research Field | Academic Advisors List | | |
|---|---|---|---|
| Physics | ITANO Tomoaki<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①Coherent structure and sustenance mechanism in wall-bounded turbulence<br>②Understanding of physical mechanisms in a variety of fluid phenomena<br>**Key Words**<br>Fluid Physics, Coherent Structure, Channel Flow, Numerical Simulation, Turbulence Structure of Wall- Bounded Channel Flow, Osmotic Flow<br>**Applications**<br>Controll of Turbulence for Resistance Reduction, Interdisciplinary and Educational Studies in Fluid Dynamics<br>**E-mail:** itano@kansai-u.ac.jp |
| | ITOH Hiroyoshi<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①Magnetic nano-structure (spintronics)<br>②Mesoscopic system<br>③Superconductivity<br>④Strongly correlated electronics<br>⑤Device design using computational simulation<br>**Key Words**<br>Spintronics, Magnetism, Superconductivity, Mesoscopic System, Theoretical Solid State Physics, Computational Material Science, Device Design<br>**Applications**<br>Magnetic Recording (HDD Head, MRAM, Magnetic Race Track Memory), Spin Circuit (Spin-MOSFET, Quantum Computer), New Functional Device<br>**E-mail:** hitoh@kansai-u.ac.jp |
| | ITO Makoto<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①a cluster structures in nuclei<br>②Transmutation of nuclear waste<br>**Key Words**<br>Finite Quantum Many-body Systems, Microscopic Cluster Model, Wave Packet Simulations, Radioactive Isotopes, Breakup Reactions, Nuclear Fusion, Quantum Tunneling, Nucleo-synthesis, Nuclear Reactor<br>**Applications**<br>Nuclear Data, Nuclear Energy, Transmutation of Nuclear Waste, Radiation Therapy<br>**E-mail:** itomk@kansai-u.ac.jp |
| | SUGIHARA-SEKI Masako<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①Micro-rheological study on blood blow<br>②Fluid dynamical study of particle motion and deformation in channel flows<br>③Model studies of microvessel permeability<br>④Sports fluid mechanics<br>**Key Words**<br>Blood flow, Blood Cells, Micro-biorheology, Deformation, Platelet Aggregation, Fluid Dynamical Interaction, Microchannel Flow, Permeability<br>**Applications**<br>Biological Flow, Physiological Flow, Microfluidics, Suspension Flow, Blood Cell Substitutes, Microdevices<br>**E-mail:** sekim@kansai-u.ac.jp |
| | WADA Takahiro<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①Synthesis of super-heavy elements, fluctuationdissipation dynamics of fusion and fission reaction of heavy nuclei<br>②Mathematical model for biological effects of radiation<br>**Key Words**<br>Microscopic Theory of Quantum Many-body System, Semi-classical Approach to Quantum Physics, Brownian Motion, Stochastic Differential Equation, Long-Term Exposure to Low Dose Rate Radiation, Transmutation of Nuclear Waste<br>**Applications**<br>New Type of Nuclear Reactor, Accelerator Driven Nuclear Transmutation, Stochastic Process in Biotic System<br>**E-mail:** wadataka@kansai-u.ac.jp |

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|---|---|---|---|
| **Applied Physics** | ASAKAWA Makoto<br><br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①The terahertz radiation sources based on the electron beam<br>②The radiation process of the ultra-short electron bunch<br>**Key Words**<br>Photon Radiation, Terahertz Wave, Free-Electron Laser, Electron Accelerator, Photocathode, Femto-second Laser, Plasma Physics<br>**Applications**<br>Terahertz Time-Domain Spectroscopy, Non Destructive Inspection Using Infrared/ Terahertz/ Microwave Radiation, Bio-sensing With Far-infrared, Molecule Decomposition Using Infrared<br>**E-mail:** asakawa@kansai-u.ac.jp |
| | INADA Mitsuru<br><br>**Ph.D. Program** | Professor<br>Doctor of Materials Science<br>Department of Pure and Applied Physics<br>Faculty of Engineering Science | **Research Topics**<br>①Optical properties of nanostructure materials<br>②Electronic transport in quantum dot systems<br>**Key Words**<br>Nanostructure, Nanotechnology, Nanofabrication, Many-body Effect<br>**Applications**<br>Quantum Information Devices, Biosensors, Photovoltaic Devices<br>**E-mail:** inada@kansai-u.ac.jp |

## Mechanical Engineering

| Research Field | Academic Advisors List | | |
|---|---|---|---|
| **Nanophysics and Nanomaterials Engineering** | SHINGUBARA Shoso<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Mechanical Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Fabrication and functionalization of various ferromagnetic and semiconductor nanowires using porous alumina template<br>②Nano memory devices such as ReRAM and neuromorphic device<br>③Fabrication and reliability study of through-Si Via of 3-dimensional LSIs<br>④Electroless and Electro-plating of metal interconnections<br>**Key Words**<br>Nanotechnology, Selforganization, Spitronics, Quantum Size Effect Devices, MEMS, Sensor, Plating, Reliability, Electromigration, Nanowire<br>**Applications**<br>Magnetic Recording, 3-D LSI, Nano-Bio Sensor, Solar Cell, Jisso Technology, Nonvoratile memory<br>**E-mail:** shingu@kansai-u.ac.jp |
| **Materials Engineering** | SAITOH Ken-ichi<br>**Ph.D. Program** | Professor<br>Ph. D. in Engineering<br>Department of Mechanical Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Microscopic evaluation of strength and function of materials by molecular dynamics<br>②Numerical simulation and experiment of shape memory effect in nano-sized materials<br>③Development of computational mechanics<br>**Key Words**<br>Computational Mechanics, Molecular Dynamics, NEMS, Particle Methods, Interface, Atomic Cluster, Shape Memory Alloys, Strength and Mechanical Properties<br>**Applications**<br>Evaluation of Materials, New Materials, Metals, Plastics, Information Technology, Micromechatronics, Biological System, Plastic Working, Stable Structures<br>**E-mail:** saitou@kansai-u.ac.jp |
| **Tribology and Micromechatronics for Information Equipment** | TAGAWA Norio<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Mechanical Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Nano-tribology and Nano-mechatronics of information storage devices and systems<br>②Micro-electoro-mechanical systems (MEMS) and Nano-electro-mechanical systems (NEMS)<br>③Triblogy, design, and dynamics of mechanical systems<br>**Key Words**<br>Nano-technology in Mechanical Engineering, Tribology, Mechanics, Dynamics, HDD, Head Disk Interface, Lubricant, DLC, Ultra-thin Films<br>**Applications**<br>Information and Precision Equipments, Hard Disk Drives, Optical Storage, Probe Storage Devices, Printer, High Speed Positioning Systems<br>**E-mail:** tagawa@kansai-u.ac.jp |
| **Measurement Systems** | TAKATA Keiji<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Mechanical Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Development and application of novel measurement techniques using scanning probe microscopy<br>②Scanning tunneling microscope with an ultrasonic detector to observe nonconductive material<br>③Novel method, strain imaging, for imaging ferroelectric and ferromagnetic properties with high resolution<br>④Strain imaging of Li-ion batteries<br>⑤Photo-induced strain imaging for high-resolution imaging of band-gap eneigil<br>**Key Words**<br>Scanning Probe Microscopy, Strain Imaging, Piezoelectric Properties, Lead Zirconate Titanate, Magnetic Properties, Magnetostriction<br>**Applications**<br>Hard Disk Drives, Li-ion Batteries<br>**E-mail:** takatak@kansai-u.ac.jp |

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|---|---|---|---|
| **Ergonomics and Biomedical Engineering** | KOTANI Kentaro<br><br>**Ph.D. Program** | Professor<br>Ph. D.<br>Department of Mechanical Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Neurophysiological characteristics of tactile perception<br>②Industrial and medical applications of eye movement characteristics.<br>**Key Words**<br>Tactile Perception, Saccadic Eye Movement, Magnetoencephalography, Mechanoreceptors, Human-Computer Interaction, Input Device<br>**Applications**<br>Design of Input Device, Virtual Reality, Tactile Display, Medical Screening Device, Usability Evaluation, Ergonomics of Human Work, Work Physiology<br>**E-mail:** kotani@kansai-u.ac.jp |

## Electrical, Electronic and Information Engineering

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

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|---|---|---|---|
| **Materials and Devices for Electronics and Optics** | KITAMURA Toshiaki<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Investigation of the Auditory System and the Device Application<br>②Metamaterial<br>③Phononic crystal<br>④Microwave Devices<br>⑤Optical devices<br>**Key Words**<br>Auditory System, Metamaterial, Phononic Crystal, Microwave Device, Optical Device, Antenna<br>**Applications**<br>Bioengineering, Wireless Communication, Optical Communication<br>**E-mail:** kita@kansai-u.ac.jp |
| | TAJITSU Yoshiro<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Ph. D<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Electroactive Polymer<br>②Smart sensor & Actuator<br>③Dielectrics<br>④Piezoelectrics<br>⑤Wearable device<br>**Key Words**<br>Piezoelectricity, Photoelasticity, Dielectrics, Ferroelectricty, Polymer, Sensing, Actuating, AFM Optical Activity, Biodegradablity, Electrets, Chirality<br>**Applications**<br>Eco-cable, Optical Film for LCD, Touch Panel Transparency Speaker, Optical Modulator, Soft Sensor Galvanic Tweezers, Ultrasonic Motor<br>**URL:** http://www2.ipcku.kansai-u.ac.jp/~tajitsu/ |
| | SAIKI Taku<br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Development of high-power and high-efficient solar-pumped solid-state lasers<br>②Development of new laser materials<br>③Production of renewable energy using metalic nanoparticles based on laser ablation<br>**Key Words**<br>Solar Light, Ceramics, Laser, Metal Nanoparticle, Renewable Energy<br>**Applications**<br>Electric Power Generation, Hydrogen Production and Storing, New Material Production, Laser Energy Transmission<br>**E-mail:** tsaiki@kansai-u.ac.jp |
| | SATO Shingo<br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Device and process simulation<br>②TEG development for device analysis<br>③Theory and modeling on semiconductor physics<br>**Key Words**<br>Scaling, MOSFET, SOI structure, LSI design, TEG development, quantum effect, device simulation<br>**Applications**<br>Electronic devices, VLSI, electronic measurement<br>**E-mail:** satos@kansai-u.ac.jp |
| **Information and Communication Engineering** | YAMAMOTO Miki<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①New Generation Networks(Future Internet)<br>②Content Delivery<br>**Key Words**<br>New Generation Internet, Content Delivery, Traffic Control, Congestion Control, Wired and Wireless Internet Design<br>**Applications**<br>Future Internet, Content Delivery, Traffic Control, Network Performance Evaluation<br>**E-mail:** yama-m@kansai-u.ac.jp |

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|---|---|---|---|
| **Information and Communication Engineering** | YOMO Hiroyuki<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Ph. D. (Osaka University, 2002)<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Wireless network control for mobile communications network<br>②Advanced radio resource management with intelligent wireless access<br>③Cross-layer protocol design for wireless network<br>**Key Words**<br>Wireless Network, Mobile Communications, Mesh Network, Cognitive Radio, Protocol Design, Radio Resource Management, Energy-Efficient Protocol Design<br>**Applications**<br>Wireless System Design<br>**E-mail:** yomo@kansai-u.ac.jp |
| | HIRATA Kouji<br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Future networking<br>②All-optical networking<br>③Network optimization<br>**Key Words**<br>Information network, All-optical network, Future Internet, Green ICT<br>**Applications**<br>Network design, the Internet<br>**E-mail:** hirata@kansai-u.ac.jp |
| | WADA Tomotaka<br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Inter-vehicle communications for next generation Intelligent Transport Systems<br>②Fast localization of passive RFID tags<br>③Emergency Rescue Evacuation Support System<br>**Key Words**<br>Wireless Communications, Mobile Communications, Intelligent Transport Systems, Road-to-Vehicle Communications, Ubiquitous Computing<br>**Applications**<br>Wireless Communication System, Traffic Information System, Vehicular Collision Avoidance Support System, Autonomous Mobile Robot, Emergency Rescue Evacuation Support System<br>**E-mail:** wadat@kansai-u.ac.jp |
| **System Informatics** | HIKAWA Hiroomi<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Hardware neural network<br>②Pattern classifier<br>③Frequency synthesizer<br>**Key Words**<br>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<br>**Applications**<br>Information System, Signal Processing System, Communication System<br>**E-mail:** hikawa@kansai-u.ac.jp |
| | MAEDA Yutaka<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①FPGA or analog implementations of artificial neural networks<br>②Applications of simultaneous perturbation optimization method<br>③Robot control via visual information<br>④Digital watermarking<br>**Key Words**<br>Computational Intelligence, Simultaneous Perturbation Method, Neural Networks, FPGA, Robot, Control<br>**Applications**<br>Visual Feedback Robot Control System, Simultaneous Perturbation Swarm Intelligence and Its Hardware Implementation, Adaptive Control Using Simultaneous Perturbation Method<br>**E-mail:** maedayut@kansai-u.ac.jp |

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|---|---|---|---|
| **System Informatics** | MIYOSHI Seiji<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Analysis of online learning and associative memory model<br>②Statistical image processing<br>**Key Words**<br>Statistical Mechanical Analysis of Information Processing, Statistical Learning Theory, Associative Memory Model, Replica Method, Signal Processing, Image Processing<br>**Applications**<br>Pattern Recognition, Signal Processing, Image Processing<br>**E-mail:** miyoshi@kansai-u.ac.jp |
| | ITO Hidetaka<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Numerical analysis of nonlinear and dynamical systems<br>②Design of nonlinear dynamics and dynamics-based computing<br>**Key Words**<br>Ordinary/Delay/Partial Differential Equations, Coupled Dynamical Systems, Numerical Schemes, Optimization, Intelligent Computing, Image Processing<br>**Applications**<br>Numerical Analysis Software, Pattern Generators, Multimedia and Interactive Computer Software, Functional Devices<br>**E-mail:** h.ito@kansai-u.ac.jp |
| **Media Processing** | KAJIKAWA Yoshinobu<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Audio and Electroacoustics (Analysis and Design for Micro Speakers and Microphones)<br>②Signal Processing for Audio and Acoustic Systems (Active Noise Control, Parametric Loudspeakers)<br>③Machine Learning for Acoustic Systems and Information (Biometrics Authentication Using Acoustic Information by Deep Learning)<br>**Key Words**<br>Signal Processing, Active Noise Control, Active Sound Control, Digital Audio, Parametric Loudspeakers, Micro Speakers, Micro Microphones, 3D Audio, Biometrics Authentication, Artificial Intelligence, Deep Learning, Machine Learning<br>**Applications**<br>Transportations, Factory and Plants, Smartphones, Medical Equipment, Audio and Acoustic Systems, Security, IoT<br>**E-mail:** kaji@kansai-u.ac.jp |
| | MATSUSHIMA Kyoji<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Creation of 3D images by computer holography<br>②Capture of high-definition wave-field<br>③Simulation in wave-optics<br>**Key Words**<br>3D Imaging, Computer Holography, Digital Holography, Diffractive Optical Element, Wave Field, Wave Optics<br>**Applications**<br>3D Imaging, Display Device, Optical Device, Optical Measurement, Optical Simulation<br>**E-mail:** matsu@kansai-u.ac.jp |
| | MUNEYASU Mitsuji<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Moving image processing and its applications<br>②Data embedding and extraction for printed and projected images and its applications<br>③Medical image processing<br>④Noise reduction for images<br>⑤Machine learning for image processing<br>**Key Words**<br>Intelligent Image Processing, Object Finding, Object Tracking, Nonlinear Image Filtering, Digital Watermarking, Image Retrieval, Deep Learning<br>**Applications**<br>Surveillance System, Security System, Image Restoration, Advertisement, Augmented Reality, Traceability, Automatic Diagnosis for Medical Image<br>**E-mail:** muneyasu@kansai-u.ac.jp |

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| **Intelligent Software Engineering** | EBARA Hiroyuki<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Algorithm for Combinatorial Optimization Problem<br>②Network Simulation for Ad-hac Network<br>③Web Application for Laboratory<br>**Key Words**<br>Combinatorial Optimization, Deep Learning, Network Simulation, Ad-hac Network, Web Application<br>**Applications**<br>Computer, Software, Internet, Web, Algorithm<br>**E-mail:** ebara@kansai-u.ac.jp |
| | KOJIRI Tomoko<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Verbalization Support System for Tacit Knowledge<br>②Logical Thinking Support System<br>③Environment Design for Intelligent Activity<br>**Key Words**<br>Education/Learning Support, Intelligent Tutoring System, Skill Learning Support, Idea Creation Support, Navigation, Meta-learning Support, Visualization, Communication Interface, CSCL, CSCW<br>**Applications**<br>Education/Learning Support System, Intelligent Activity Support System, e-Learning, Groupware, User Interface Design<br>**E-mail:** kojiri@kansai-u.ac.jp |
| | TOKUMARU Masataka<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor (Engineering)<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Human interface for interactive evolutionary computation<br>②Robot model in a group with human participants<br>③Affective information retrieval system<br>**Key Words**<br>Kansei Information Processing, Partner Robot, Emotion Model, Human Computer Interaction, Evolutionary Computation, Data Mining<br>**Applications**<br>Soft Computing, Product Design Support system, communication Robot, Heathcare Management system<br>**E-mail:** toku@kansai-u.ac.jp |
| | HANADA Yoshiko<br><br>**Master's Program** | Associate Professor<br>Ph. D. in Engineering<br>Department of Electrical, Electronic and Information Engineering<br>Faculty of Engineering Science | **Research Topics**<br>①Combinatorial optimization and its applications<br>②Multiobjective optimization<br>**Key Words**<br>Optimization, Evolutionary Computation, Genetic Algorithm, Combinatorial Problem, Heuristics, Intelligent Processing, Learning<br>**Applications**<br>Design Optimization, Intelligent Processing<br>**E-mail:** hanada@kansai-u.ac.jp |

## Civil, Environmental and Applied Systems Engineering

| Research Field | Academic Advisors List | | |
|---|---|---|---|
| **Environmental Engineering** | ISHIGAKI Taisuke<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Urban environment, Flood disaster and its recent and traditional counter measures<br>②Urban flood and evacuation – its mechanism and disaster prevention, disaster mitigation<br>**Key Words**<br>Flood Disaster, River Hydraulics, Turbulence Structure of Open Channel Flow, Hydraulic Modeling, Flow Visualization and Flow Measurement<br>**Applications**<br>Hydraulics for Disaster Prevention, Natural Disaster Science, Hydraulics, River Engineering, Applied Fluid Dynamics, Historical Studies in Civil Engineering<br>**E-mail:** ishigaki@kansai-u.ac.jp |
| | KUSUMI Harushige<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Safety analysis of ground slope and tunnelling by numerical method<br>②Monitoring method of aging slope using geophysical prospecting by self organizing map<br>③Establishing ground water management system using seepage analysis<br>**Key Words**<br>Slope, Tunnelling, Distinct Element Method, Ground Water, Numerical Method, Geophysical Prospecting, Monitoring, Aging Slope<br>**Applications**<br>Monitoring Method of Ground Movement, Management of Ground Water, Slope Engineering, Development of Slope Stability Method, Prevention of Ground Water Pollution<br>**E-mail:** kusumi@kansai-u.ac.jp |
| | TOBITA Tetsuo<br>**Ph.D. Program** | Professor<br>Ph.D.<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Combined failure mechanisms of geotechnical structure<br>②Centrifuge modeling on geotechnical problems<br>③Application of the generalized scaling law to saturated ground<br>④Stability of natural slopes during earthquakes<br>**Key Words**<br>Disaster Prevention in geotechnics, Liquefaction, Slope stability, Dynamic soil-structure interaction, Centrifuge modeling, Laboratory testing for soil, Constitutive equations, Finite element method, Finite difference method, Seismic site response analysis<br>**Applications**<br>Urban disaster prevention, geology, Geotechnical earthquake engineering, Foundation engineering, Theory of plasticity<br>**E-mail:** tobita@kansai-u.ac.jp |
| **Design and Construction** | SAKANO Masahiro<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Fatigue and corrosion problems in steel bridges<br>②Retrofit and rehabilitation of existing bridges.<br>**Key Words**<br>Steel Structures, Bridge, Fatigue, Corrosion, Crack, Design, Retrofit, Rehabilitation, Health Monitoring, Inspection, Diagnosis<br>**Applications**<br>Design, Inspection, Diagnosis, Retrofit, Rehabilitation, and Monitoring of Steel, Composite, and Hybrid Structures<br>**E-mail:** peg03032@kansai-u.ac.jp |

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| **Design and Construction** | TSURUTA Hiroaki<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Effective utilization of industrial wastes for concrete<br>②Durability in concrete structures<br>③Effects of aggregate quality on mechanical properties in concrete<br>④Estimation of semi-self compacting concrete<br>**Key Words**<br>Aggregate Quality, Concrete, Strength, Young's Modulus, Shrinkage, Effective Use of Waste, Durability, Surface Protection, Maintenance<br>**Applications**<br>Estimation of Performance in Concrete, Effective Use of Natural Resources, Keeping a Long Service Life in Concrete Structures, Building a Sustainable Society<br>**E-mail:** tsurutah@kansai-u.ac.jp |
| **Planning and Management** | AKIYAMA Takamasa<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Urban Transport Planning and Traffic Engineering with Soft Computing Techniques<br>②Urban and Regional Planning in terms of wellness and Low Carbon Environment<br>**Key Words**<br>Traffic Engineering, Urban Planning, Traffic Simulation, Fuzzy Logic, Soundscape Design, Traffic Safety Analysis, Travel Behaviour Analysis, Low Carbon Society<br>**Applications**<br>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<br>**E-mail:** akiyama@kansai-u.ac.jp |
| | KITAZUME Keiichi<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Meso- and microscopic land-use model using Geographic Information System(GIS)<br>②Assessment and management of Infrastructure Projects and PPP<br>③Urban Revitalization and community regeneration<br>**Key Words**<br>Cost Benefit Analysis, Land-use Model, Micro Simulation, Hedonic Approach, GIS, Generational Accounting, Management Accounting<br>**Applications**<br>Urban Planning, City Planning, Urban Revitalization, Public Private Partnership, Asset Management, Risk Analysis<br>**E-mail:** kitazume@kansai-u.ac.jp |
| | YUN Yeboon<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Multi-Objective Optimization and its Applications<br>②Machine Learning & Artifical Intelligence<br>③Data Analysis and its Applications<br>**Key Words**<br>Optimization, Data Mining, Artificial Intelligence, Machine Learning<br>**Applications**<br>Optimal Design, Optimal Control, Predictive Control, Development of Systems on Disaster Prevention and Measures<br>**E-mail:** yeboon@kansai-u.ac.jp |

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| **Applied Systems Engineering** | KANEKIYO Hiroaki<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Practical applications of stochastic systems and stochastic differential equations<br>②System reliability analysis<br>③Risk analysis<br>④Development of fast simulation schemes for reliability-risk analyses<br>**Key Words**<br>Stochastic differential equation, Reliability engineering, Risk analysis, Monte Carlo method<br>**Applications**<br>Safety assessment of structural systems, Optimal maintenance for social infrastructures, Risk assessment applicable for various fields<br>**E-mail:** hiro.t.k@kansai-u.ac.jp |
| | KUBOTA Satoshi<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>Information management system for civil infrastructures, Advanced research of GIS and geospatial information, Application system of threedimensional CAD, GIS, and CG<br>**Key Words**<br>Civil Infrastructure, Geospatial Information, GIS, Product Data Model, 3D-CAD, 3D Spatial and Temporal Information<br>**Applications**<br>Civil Infrastructure, Maintenance of Civil Infrastructure, Survey Fields, Smart City, Smart Infrastructure<br>**E-mail:** skubota@kansai-u.ac.jp |
| | TAKIZAWA Yasuhisa<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Wireless Networks<br>②Ubiquitous Computing<br>③Mobile Computing<br>④Network Dynamics<br>**Key Words**<br>Wireless Ad-hoc Networks, Wireless Sensor Actuator Networks, Self Organizing Networks, Distributed System, Internet of Things, Swarm Intelligence<br>**Applications**<br>Smart City, Environment Monitoring Systems, Emergency Systems, Energy on Demand, Smart Grid Systems<br>**E-mail:** takizawa@kansai-u.ac.jp |
| | YASUMURO Yoshihiro<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Civil, Environmental and Applied Systems Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①3 dimensional measurement and modeling - scanning scheme and adaptive data processing for scalable 3D modeling -<br>②Human-friendly system - easy-to-understand and interactive human-machine interface -<br>**Key Words**<br>Computer Vision, Computer Graphics, 3D visualization, 3D Modeling, Augmented and/or Mixed Reality, physic-based simulation, Human Interface<br>**Applications**<br>Supporting and Assistive System for Medical, Productive, Archaeological and Constructive Fields, Visual Simulation for Designing and Planning<br>**E-mail:** yasumuro@kansai-u.ac.jp |

## Chemical, Energy and Environmental Engineering

| Research Field | Academic Advisors List | | |
|---|---|---|---|
| Energy Engineering | IKENAGA Naoki<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Hydrogen production from some kinds of hydrocarbons and bio fuels<br>②Production of meso-porous materials<br>③Purification of environmental pollutants<br>**Key Words**<br>Partial Oxidation, Steam Reforming, F-T Synthesis, Oxidative Dehydrogenation, Meso-porous Material, Bio Diesel Fuel, Carbon Nanotube, Chlorofluorocarbon<br>**Applications**<br>Hydrogen Production, Bio Diesel Fuel Production, Carbon Nanotube Production, Chlorofluorocarbon Detoxification Techniques<br>**E-mail:** ikenaga@kansai-u.ac.jp |
| | NAKAGAWA Kiyoharu<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Diamond surface chemistry<br>②Marimo nano carbon<br>③$Li^+$ and post $Li^+$ battery<br>④Fuel cells<br>⑤Water treatment<br>**Key Words**<br>Diamond, Carbon Nanotube, Fuel cells, Capacitor, Lithium-ion rechargeable battery, water treatment<br>**Applications**<br>Fuel Cell, Electric Double-layer Capacitor, Catalyst Material, $Li^+$ battery<br>**E-mail:** kiyoharu@kansai-u.ac.jp |
| | MIYAKE Takanori<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Hydrothermal synthesis of zeolites for environmental remediation<br>②Partial oxidation to produce petro-chemicals, total oxidation of organic compounds and hydrogenation of esters to produce alcohols with catalysts<br>③Separation of xylenes with MOFs<br>**Key Words**<br>Hydrothermal Synthesis, Manganese Oxide, Catalyst, Oxidation, Hydrogenation, Bio-ethanol, Micro-porous, Meso-porous, Volatile Organic Compound, Ion Exchange, Adsorption, Metal-Organic Framework<br>**Applications**<br>Petrochemical, Environmental Remediation, Fuel Cell, Biomass Conversion, Catalysis<br>**E-mail:** tmiyake@kansai-u.ac.jp |
| | MURAYAMA Norihiro<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Preparation of functional inorganic materials using industrial wastes such as coal fly ash, incineration ash, aluminum dross, steel slag<br>②Removal of toxic materials with ion exchangers and adsorbents synthesized from wastes and by-product<br>**Key Words**<br>Zeolite, Layered Double Hydroxide, Hydrotalcite-like Compounds, $AlPO_4$-n, Functional Inorganic Materials, Ion Exchanger, Adsorbent, Porous Materials<br>**Applications**<br>Recycling and Effective Use of Industrial Wastes and By-product, Waste Water Treatment, Gas Adsorption, Removal and Fixation of Toxic Materials, Recovery of Valuables<br>**E-mail:** murayama@kansai-u.ac.jp |

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| **Energy Engineering** | SANO Makoto<br><br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Development of functional inorganic and inorganic-organic hybrid materials and their applications<br>②Development of Environmental conservation technologies<br>③Development of Resource-Recycling Technologies<br>**Key Words**<br>Functional Materials, MOF, Catalyst, Environmental conservation, Extraction, Resource-Recycling<br>**Applications**<br>Environmental conservation, Biomass Application, Resource-Recycling, Fuel Cells<br>**E-mail:** msano@kansai-u.ac.jp |
| **Environmental Chemistry** | OKADA Yoshiki<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Measurement and synthesis of gas-born nanoparticles<br>②Reaction control in microreactors<br>③Water purification using microbubbles<br>**Key Words**<br>Nanoparticles in Gas Phase, Size Classification, Measurement of Chemical Compositions of Nanoparticles, Production of Non-aggregated Nanoparticles, Microreactors, Water Purification, Microbubbles<br>**Applications**<br>Environmental Engineering, Particle Production, Chemical Reactor Engineering<br>**E-mail:** yokada@kansai-u.ac.jp |
| | TANAKA Shunsuke<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Synthesis of ordered nanoporous materials<br>②Application of nanoporous materials to separation, catalysis, and devices<br>**Key Words**<br>Self-Assembly of Nanoporous Materials, Morphology Control, Structural Analysis, Nanoporous Thin Films, Monodisperse Spherical Particles, Zeolite, Metal-Organic Frameworks, Molecular Sieving<br>**Applications**<br>Membrane Separation, Pervaporation, Devices for Energy Applications, Low-k, Fuel Cell, Electric Double Layer Capacitor, Photocatalyst<br>**E-mail:** shun_tnk@kansai-u.ac.jp |
| | HAYASHI Jun'ichi<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Production of Porous Material (Activated Carbon, Carbon Molecular Sieve) from Waste Material<br>②Carbonization of Biomass and Waste Material<br>③Biomass Gasification<br>④Production of Porous Material by Sol-gel Method<br>**Key Words**<br>Activated Carbon, Carbon Molecular Sieve, Porous Material, Biomass, Adsorption, Carbonization, Gasification, Sol-gel, Recycle<br>**Applications**<br>Separation Process, Purification Process, Gas Storage, Water Treatment, Recycle or Reuse of Waste Material, Carbon Material<br>**E-mail:** hayashi7@kansai-u.ac.jp |

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| **Environmental Chemistry** | YAMAMOTO Hideki<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Application of Hansen Solubility Paramater<br>②Distillation separation of acid(HF, $HNO_3$ and HCl) from etching waste in semiconductor manufacturing process<br>③Development of compact sized falling needle rheometer(FNR) for measurement of human blood viscosity<br>④Estimation of solubility parameter(SP value) for materials and their application for evaluation<br>**Key Words**<br>Regeneration, Recycle, Distillation, Global Warming Gas, Acid Waste, Phase Equilibrium, Flow Properties, Rheometer, Blood Viscosity, Solubility Parameter<br>**Applications**<br>Proposition of Novel and Regenerative Chemical Production System for Environmental Protection<br>Development of Recycling and Recovery System for Valuable Materials from Industrial Wastes<br>**E-mail:** yhideki@kansai-u.ac.jp |
| | ARAKI Sadao<br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Development of inorganic membranes for gas separation, pervaporation and nanofiltration<br>②Process design for reaction and separation using membrane reactors<br>③Hydrogen production from water, biogas and natural gas<br>**Key Words**<br>Membrane Separation, Gas Separation, Pervaporation, Ion-electron Mixed Conductor, Membrane Reactor, Hydrogen, Water Splitting, Biomass, Sol-gel, Reforming reaction<br>**Applications**<br>Membranes and Adsorbents for Gas Separation and water Treatment, Membrane Separation and Purification Processes, Hydrogen Production<br>**E-mail:** araki_sa@kansai-u.ac.jp |
| | KINOSHITA Takuya<br>**Master's Program** | Associate Professor<br>Department of Chemical, Energy and Environmental Engineering<br>Faculty of Environmental and Urban Engineering | **Research Topics**<br>①Synthesis of Functional Fine Particles<br>②Fine Particle Materials for Solid Oxide Fuel Cell<br>③Magnetic Fine Particle Materials for Hyperthermia Therapy<br>**Key Words**<br>Fine Particles, Nanoparticles, Metal, Metal Oxide, Porous, Magnetism, Surface Modification, Adsorption, Aerosol, Spray Pyrolysis<br>**Applications**<br>Synthesis of Fine Particles, Fuel Cell, Magnetic Materials, Biomedical Materials<br>**E-mail:** t_kino@kansai-u.ac.jp |

## Chemistry and Materials Engineering

| Research Field | Academic Advisors List | | |
|---|---|---|---|
| **Metallic Materials Design** | IKEDA Masahiko<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of cost affordable titanium alloys for health-care and medical applications<br>②Development of Tin, Sn alloys for Lead, Pb free solder<br>**Key Words**<br>Titanium Alloys, Tin Alloys, Ubiquitous Metallic Elements, Low Cost and Price, Aging Behavior, Phase Transformation, Mechanical Properties<br>**Applications**<br>Health-care Applications (e.g. Wheel-chair), Medical Applications, Sport Goods, Automobile<br>**E-mail:** hikoik@kansai-u.ac.jp |
| | UEDA Masato<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Low temperature synthesis of inorganic films.<br>②Control of bioactivity in metallic and inorganic materials.<br>③Photochemical reaction in nano-ordered structure and improvement of light energy conversion efficiency.<br>**Key Words**<br>Ceramics, Composites, Surface Modification, Morphological Control, Hydrothermal Synthesis, Phase Transformation, Electron Microscope, EBSP<br>**Applications**<br>Biomaterials, Biomedical Applications, Solar Cells, Photocatalysts, Photoelectrode, Sensors<br>**E-mail:** m-ueda@kansai-u.ac.jp |
| **Metallic Materials Proccessing** | TAKENAKA Toshihide<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①innovative production process of rare-metals<br>②progressive recycling process of rare-metals<br>③chemical phenomena in high temperature medium<br>④improvement of lifetime of rare-metals<br>**Key Words**<br>Rare-metal, Titanium, Magnesium, Lithium, Calcium, Nuclear Waste, Refining, Recycle, Energy Reduction, Molten Salt, High-temperature Chemistry<br>**Applications**<br>Metal Production, Metal Recycling<br>**E-mail:** ttakenak@kansai-u.ac.jp |
| | NISHIMOTO Akio<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Ph. D.<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Surface modification of metallic materials<br>②Preparation of functional materials by spark plasma sintering<br>③Metallographic investigation on bonding of dissimilar materials<br>**Key Words**<br>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<br>**Applications**<br>Materials Science and Engineering, Automotive Parts, Nuclear Industry, Hard Coating Parts, Industrial Parts<br>**E-mail:** akionisi@kansai-u.ac.jp |
| | HOSHIYAMA Yasuhiro<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of Rapidly Solidified Composite Deposits<br>②Development of Low Environmental Load Type Casting<br>③Surface Modification of Metallic Materials<br>**Key Words**<br>Plasma Spraying, Casting, Plasma Nitriding, Rapid Solidification, Composite Deposit, Frozen Mold, Full Mold, Precipitate, Stainless Steel, Cast Iron<br>**Applications**<br>Automobile Parts, Industrial Machine Parts, Machine Tools<br>**E-mail:** hosiyama@kansai-u.ac.jp |

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| **Metallic Materials Proccessing** | MARUYAMA Toru<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Philosophy<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Castings (Full mold process, Investment casting)<br>②Alloy design of cast iron, steel, aluminum alloy, copper alloy, and zinc alloy.<br>③Design for fire refining<br>④Thermal spray (Adhesion mechanism, Blasting)<br>**Key Words**<br>Castings, Full Mold Process, Investment Casting, Cast Iron, Steel, Bronze, Alloy Design, Fire Refining, Thermal Spray, Wetting at High Temperature Melt<br>**Applications**<br>Castings, Thermal Spraying, Vehicle, Plumbing Products, Rail, Ship, Aircraft, Industrial Machine, Production of Metallic Material<br>**E-mail:** tmaru@kansai-u.ac.jp |
| | MORISHIGE Taiki<br><br>**Master's Program** | Associate Professor<br>Ph.D. in Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Grain refinement processings of light metal alloys<br>②Friction stir welding of dissimilar metals and alloys<br>③Development of corrosion resistance of Mg alloys<br>④Refining process of Mg alloys<br>**Key Words**<br>Aluminum alloys, Magnesium alloys, Microstructure, Friction stir welding, Friction stir processing, Severe plastic deformation, Thermomechanical processing, Recycling process<br>**Applications**<br>Structural materials for transportation industries<br>**E-mail:** tmorishi@kansai-u.ac.jp |
| **Metallic Inorganic Materials Properties** | ARACHI Yoshinori<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Crystal structure and physical properties of inorganic materials for rechargeable batteries.<br>②Electronic structure of transition metal oxides.<br>**Key Words**<br>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<br>**Applications**<br>Processing of Ceramics, Battery, Sensor<br>**E-mail:** arachi@kansai-u.ac.jp |
| | KOZUKA Hiromitsu<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Science on the sol-gel coating technique for fabricating ceramic, glass and organic-inorganic hybrid thin films<br>②Modification of the sol-gel coating technique for improving the properties of thin film products and enhancing the reality in processing<br>**Key Words**<br>Ceramics, Glasses, Organic-Inorganic Hybrid Materials, Coating, Thin Films, Sol-Gel Method<br>**Applications**<br>Ferroelectrics, Dielectrics, Reflective and Anti- Reflective Coatings, Wear-Resistant and Anti- Scratching Coatings, Photoelectrodes for Wet-Type Solar Cells, Photonic Device<br>**E-mail:** kozuka@kansai-u.ac.jp |
| | TAKESHITA Hiroyuki T.<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of new hydrogen storage materials<br>②Analysis of phase transition and crystal structure<br>③Evaluation of electronic structure of materials<br>④Thermodynamic and kinetic analyses of gas-solid reaction<br>**Key Words**<br>Hydrogen, Hydrogen Storage Materials, Intermetallic Compound, Phase Diagram, X-ray Diffraction, Rietveld Analysis, Density Functional Theory<br>**Applications**<br>Automobiles, Energy and Environment, Battery, Heat Pump, Refrigeration, Sensor, Purification and Separation of Gas, Catalyst, Nuclear Power<br>**E-mail:** h-take@kansai-u.ac.jp |

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| **Metallic Inorganic Materials Properties** | HARUNA Takumi<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Ph. D.<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of the metallic materials exhibiting high corrosion resistance<br>②Development of evaluation techniques for susceptibility to corrosion of metals<br>③Development of intelligent metal surfaces<br>**Key Words**<br>Stainless Steels, Carbon Steels, Ti Alloys, Al Alloys, Corrosion, Environment-assisted Cracking, Hydrogen Embrittlement, Electrochemistry, Surface Modification<br>**Applications**<br>Chemical and Petroleum Industry, Automobile Industry, Medical Industry, Nuclear and the Other Power Industry, Electric and IT Industry<br>**E-mail:** haruna@kansai-u.ac.jp |
| | UCHIYAMA Hiroaki<br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Science on the self-organization and self-assembly for fabricating nanostructured ceramic materials<br>②Science on the growth of inorganic crystals in solutions for morphological control of ceramic materials<br>**Key Words**<br>Ceramics, Functional Metal Oxides, Nanostructured Materials, Solution Process, Patterning, Sol-Gel Method, Crystal Growth<br>**Applications**<br>Photoelectrodes for Wet-Type Solar Cells, Photonic Devices, Electrodes for Batteries<br>**E-mail:** h_uchi@kansai-u.ac.jp |
| | KONDO Ryota<br>**Master's Program** | Associate Professor<br>Doctor of Philosophy<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Metal based hydrogen storage materials<br>②Materials for medium scale hydrogen storage<br>③Hydrogen related devices<br>**Key Words**<br>Hydrogen, Magnesium, Titanium, Catalysts<br>**Applications**<br>Hydrogen storage materials, Selective hydrogen separator, Hydrogen sensor, actuator, motor<br>**E-mail:** rkondo@kansai-u.ac.jp |
| **Inorganic and Physical Chemistry** | AOTA Hiroyuki<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Artificial photosynthesis<br>②Molecular wire<br>**Key Words**<br>Photosynthesis, Molecular Wire, Pi-conjugated Polymer<br>**Applications**<br>Solar Cell, Molecular Computer, Semiconductor<br>**E-mail:** aota@kansai-u.ac.jp |
| | ISHIKAWA Masashi<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Advanced materials for electrochemical supercapacitors<br>②Advanced materials for rechargeable lithium batteries<br>③Physical chemistry and kinetics of electrode reactions<br>**Key Words**<br>Supercapacitor, Electric Double Layer Capacitor, Rechargeable Lithium Battery, Ionic Liquid, Nanomaterial, Carbon Nanotube, Electrolyte, Anode, Cathode<br>**Applications**<br>Electric Vehicle, Hybrid Electric Vehicle, Power Supply, Aerospace, Battery, Renewable Energy, Satellite<br>**E-mail:** masaishi@kansai-u.ac.jp |

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| **Inorganic and Physical Chemistry** | KAWASAKI Hideya<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Metal nanoparticles and metal nanoclusters: synthesis and characterization<br>②Nanomaterial Applications: electronics, catalysis, biomedical<br>③Nanomaterials for analytical chemistry<br>**Key Words**<br>Colloid and Interface Science, Metal Nanoparticles, Nanostrucutured Surfaces<br>**Applications**<br>Catalysis, Emulsification, Coating Material, Cosmetic Product, Luminescence Material, Electrical Conducting Material, Battery Material, Simple Examination Kit<br>**E-mail:** hkawa@kansai-u.ac.jp |
| | YAMAGATA Masaki<br>**Master's Program** | Associate Professor<br>Ph. D. in Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Extreme-environment Monitoring System<br>②Material Science in Extreme-Environment<br>③Ionic Liquids and their Functional Devices<br>**Key Words**<br>Extreme-Environment, Monitoring System, Power System, Ionic Liquid<br>**Applications**<br>Satellite, Space Science, High-durability devices<br>**E-mail:** yamagata@kansai-u.ac.jp |
| **Organic Chemistry** | UMEDA Rui<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of synthesis of novel polycyclic aromatic hydrocarbons<br>②Prediction of physical properties and design of molecules based on computational chemistry<br>**Key Words**<br>Organic Synthetic Chemistry, Structural Organic Chemistry, $\pi$-Conjugated Compounds<br>**Applications**<br>Organic Reaction, Organic Functional Materials, Organic Electronics<br>**E-mail:** umeda@kansai-u.ac.jp |
| | OBORA Yasushi<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Ph. D.<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of new homogeneous catalysis and organometallic chemistry<br>②Development of new synthetic organic reactions using transition-metal catalysts.<br>**Key Words**<br>Homogeneous Catalyst, Synthetic Chemistry, Organic Transformation, Transition-metal, Ligand Modification, Organometallic Chemistry<br>**Applications**<br>Industrial-scale Organic Synthesis from Mass Feedstock, Selective and Active Catalysis in Organic Synthesis<br>**E-mail:** obora@kansai-u.ac.jp |
| | SAKAGUCHI Satoshi<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Ligand design for asymmetric organic transformations<br>②Development of a new transition metal-catalyzed organic reaction<br>**Key Words**<br>Synthetic Organic Chemistry, Asymmetric Catalytic Reaction, N-Heterocyclic Carbene, Ligand Design, Catalyst, Enantioselective Organic Transformation, Organometallics, Transition Metals, Organocatalysis<br>**Applications**<br>Chemical Industry, Pharmaceutical Chemistry, Material Science, Organic Chemistry, Medical Chemistry<br>**E-mail:** satoshi@kansai-u.ac.jp |

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| **Organic Chemistry** | NISHIYAMA Yutaka<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of new synthetic and catalytic reactions<br>②Development of new organic functional materials including heteroatom<br>**Key Words**<br>Carbon Monoxide, Carbonylation, Reduction, Sulfur, Selenium, Heteroatom Compounds, Lanthanoid Compounds, Transition Metal Compounds, Organic Functional Materials<br>**Applications**<br>Organosynthetic Reactions<br>**E-mail:** nishiya@kansai-u.ac.jp |
| | YANO Masafumi<br>**Master's Program** | Associate Professor<br>Doctor of Science<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Material and Bioengineering | **Research Topics**<br>①Design, Synthesis and properties of redox-active organic compounds with triarylamine units<br>②Design synthesis of novel lanthanide complexes<br>**Key Words**<br>Triarylamine, Catitonradical, High-spin Molecule, Organic Synthesis, Electrochemistry, Lanthanides<br>**Applications**<br>Novel Magnet, Molecular Electronics<br>**E-mail:** myano@kansai-u.ac.jp |
| **Polymer Chemistry** | KUDO Hiroto<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Synthesis of cage-molecule by dynamic covalent chemistry mechanism<br>②Synthesis of cyclic polymers by ring-expansion polymerization<br>③Development of next-generation resist materials<br>④Development of high or low-refractive index materials<br>⑤Development of UV or thermal curing materials<br>**Key Words**<br>Dynamic covalent chemistry, polymer synthesis, cyclic polymer, refractive-index, curing material, resist<br>**Applications**<br>Resist material, UV curing material, thermal curing material, high or low refractive index material<br>**E-mail:** kudoh@kansai-u.ac.jp |
| | SANDA Fumio<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>① Development of transition metal catalysts, and the application to conjugated polymer synthesis<br>② Design and synthesis of optically active polymers<br>③ Synthesis of stimuli-responsive polymers<br>**Key Words**<br>Transition Metal Catalyzed Polymerization, Organometallic Complex, Living Polymerization, Conjugated Polymer, Helical Polymer, Optically Active Polymer, Stimuli-Responsive Polymer<br>**Applications**<br>Photoelectric Materials, Chiral Separation Materials, Asymmetric Induction Catalysts, Molecular Sensor<br>**E-mail:** sanda@kansai-u.ac.jp |
| | HARADA Miyuki<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①High thermal conductive network polymers<br>②High thermal resistance and fracture toughness epoxy network polymers<br>③High insulation resistance nano composites<br>**Key Words**<br>Thermosetting Polymers, Epoxy Resins, Liquid Crystals, Mesogenic Groups, Self-organization Polymer Nanocomposites<br>**Applications**<br>Electrical Encapsulation Materials, Adhesives, Paints<br>**E-mail:** mharada@kansai-u.ac.jp |

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| **Polymer Chemistry** | SOGAWA Hiromitsu<br><br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Design and synthesis of amino acid-based functional materials<br>②Synthesis and functionalization of supramolecular network polymers<br>**Key Words**<br>Supramolecular polymers, Self-assembly, Network Polymers, Structure Control<br>**Applications**<br>Moelcular Sensor, Stimuli-responsive Materials, Chiral Materials, Biocompatible Materials, Adhesion Materials<br>**E-mail:** sogawa@kansai-u.ac.jp |
| **Biomaterials Chemistry** | IWASAKI Yasuhiko<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Synthesis and characterization of well defined bio-inspired polymers<br>②Surface modification of biomedical devices with biocompatible polymers<br>**Key Words**<br>Polymer Synthesis, Surface Modification, Biocompatibility, Bio-inspired Polymers, Biointerface, Non-fouling Surface, Biomaterials<br>**Applications**<br>Medical Devices, Diagnostic Devices, Biosensor Applications, Cell Culture, Separation of Biosubstances Drug Delivery System<br>**E-mail:** yasu.bmt@kansai-u.ac.jp |
| | OHYA Yuichi<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①The synthesis of biodegradable smart materials and their application in biomedical fields<br>②Synthesis of biodegradable polymers for regenerative medicine and drug delivery systems<br>**Key Words**<br>Biomaterials, Biodegradable Materials, Injectable Polymer, Polylactide, Tissue Engineering, Drug Delivery System, DNA, Molecular Organization, Supramolecular Chemistry<br>**Applications**<br>Medical Polymers, Regenerative Medicine, Drug Delivery System, Biodegradable Plastics, Nanotechnology, DNA Detection System, Molecular Device<br>**E-mail:** yohya@kansai-u.ac.jp |
| | TAMURA Hiroshi<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Development of biomaterials using natural polymers, especially chitin and chitosan<br>②Fabrication of natural polymers for fiber, film to develop several materials<br>**Key Words**<br>Natural Polymer, Polysaccharides, Chitin, Chitosan, Gelatin, Biodegradability, Anti-bacterial, Biomaterials, Fiber Spinning, Fabrication, Bacterial Cellulose, Alginate<br>**Applications**<br>Biomaterials, Biodegradable Materials, Fiber, Cosmetics, Anti-bacterial Materials, Functional Foods, Packaging Materials<br>**E-mail:** tamura@kansai-u.ac.jp |
| | HIRANO Yoshiaki<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Peptide based biomaterials for tissue engineering<br>②Structure-activity relationships of bioactive peptides.<br>③Conformation analysis of proline containing periodic peptide.<br>**Key Words**<br>Biomaterial, Tissue Engineering, Cell Scaffold, Amino Acid, Peptide, Protein, Secondary Structure, $\beta$-sheet Peptide, Extracellular Matrix, Self-assembly, Biosensor<br>**Applications**<br>Biomaterials, Tissue Engineering & Regenerative Medicine<br>**E-mail:** yhirano@kansai-u.ac.jp |

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| **Biomaterials Chemistry** | FURUIKE Tetsuya<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Environmental Earth Science<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Synthesis of glycocluster compounds from unused resource.<br>②Synthesis of carbohydrates based on sustainable chemistry.<br>**Key Words**<br>Oligosaccharide, Bioactive Sugar, Glycodendrimer, Glycocluster Compound, Nanomaterial, Ionic Liquid, Environmental Material, Sustainable Chemistry<br>**Applications**<br>Glycodrug, Biodegradable Material, Environmental- Conscious Synthetic Process, Biomedical Material, Environmental Depuration<br>**E-mail:** furuike@kansai-u.ac.jp |
| | MIYATA Takashi<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Polymer Gels<br>②Biomaterials<br>③Membranes and Films<br>④Surface Science<br>⑤Bio-inspired Materials<br>**Key Words**<br>Functional Polymers, Gels, Membranes, Biomedical Polymers, Smart Polymers, Intelligent Materials, Biomimetic Materials, Nano materials, Bio-inspired Materials, Surface Science<br>**Applications**<br>Biomaterials, Sensors, Biotechnology, Nanotechnology, Environment- and Energy-related Applications<br>**E-mail:** tmiyata@kansai-u.ac.jp |
| | KAKINOKI Sachiro<br><br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Artificial extracellular matrix<br>②Biofunctionalization of material surface<br>③Structural analysis of artificial peptides and proteins<br>**Key Words**<br>Biomaterials, Peptide and Protein Science, Genetically-engineered Protein, Tissue Engineering, Artificial Organ, Surface Modification, Bioinspired Materials<br>**Applications**<br>Biomedical Materials, Sensors, Nanotechnology, Biotechnology<br>**E-mail:** sachiro@kansai-u.ac.jp |
| | KAWAMURA Akifumi<br><br>**Master's Program** | Associate Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Polymer Nanomaterials for Biomedical Applications<br>②Functional Soft Materials<br>③Functional Materials Using Polymer Self-assembly<br>**Key Words**<br>Soft Matter Polymer Synthesis, Functional Polymers, Supramolecular Chemistry, Self-assembly, Biomaterials<br>**Applications**<br>Biomedical Materials, Sensors, Nanotechnology, Biotechnology<br>**E-mail:** akifumi@kansai-u.ac.jp |
| **Biofunctional Molecular Chemistry** | ISHIDA Hitoshi<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Molecular Design and Synthesis of Peptide ORIGAMI: Novel Metal-Peptide Complexes<br>②Photocatalytic CO2 Reduction by Novel Ruthenium-Peptide Complexes<br>③Artificial Photosynthesis Developed with Molecular Catalysts<br>**Key Words**<br>Photocatalysis, CO2 Reduction, Ruthenium, Peptide ORIGAMI, Artificial Metalloenzymes, Artificial Photosynthesis<br>**Applications**<br>Photo-functional Molecules, Photocatalysts, CO2 Reduction Catalysts, Artificial Metalloenzymes, Artificial Photosynthesis<br>**E-mail:** ishida.h@kansai-u.ac.jp |

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| **Biofunctional Molecular Chemistry** | KUZUYA Akinori<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Construction of nanostructures made of DNA<br>②Fusion of DNA and functional nanomaterial<br>③Single molecule imaging of bio-oriented supramolecules<br>**Key Words**<br>DNA, Nucleic Acids Chemistry, Nanoarrays, Nanotechnology, Nanobiotechnology, Single Molecule Sensing<br>**Applications**<br>Sensing and Diagnostics, Electronics<br>**E-mail:** kuzuya@kansai-u.ac.jp |
| | YAJIMA Tatsuo<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Science<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Studies of noncovalent interactions between molecules<br>②Clarification and applications of noncovalent interaction supported by metal ions<br>③Syntheses and preparations of optical active amino acids by optical resolutions with crystallization<br>④Development of novel methods for optical resolutions using metal complexes<br>**Key Words**<br>Molecular Recognition, Noncovalent Interaction, Optical Resolution, Asymmetric Transformation, Amino Acids, Racemization, Epimerization, Preferential Crystallization, Replacing Crystallization, Metal Complex, pH Titration, Solution Equilibrium<br>**Applications**<br>Syntheses and Preparations of Precursors for Medicines, Pesticides, Cosmetics, and Food Additives<br>**E-mail:** t.yajima@kansai-u.ac.jp |
| | NAKAI Misaki<br><br>**Master's Program** | Associate Professor<br>Doctor of Science<br>Department of Chemistry and Materials Engineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①The development of photosensitizer for pohotodynamic therapy<br>②Synthetic sugar metal complexes as therapeutic and diagnostic agents<br>**Key Words**<br>Photodynamic Therapy, Diagnostic Drug, Insulinmimetic Drug, Sugar Linked Complex<br>**Applications**<br>The Development of Medical Metal Complexes<br>**E-mail:** nakai@kansai-u.ac.jp |

## Life Science and Biotechnology

| Research Field | Academic Advisors List | | |
|---|---|---|---|
| **Life and Pharmaceutical Science** | OIKAWA Tadao<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Agriculture, Kyoto University<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Isolation and characterization of novel enzymes from microorganisms<br>②Enzymological and microbial production of industrially useful compounds and D-amino acids<br>③Analysis and function of D-amino acids in foods<br>**Key Words**<br>D-Amino Acid, Novel Enzyme, Stereospecific Synthesis, Biocatalyst, Screening of Novel Microorganisms, Fermentative Food, Cold-active Enzymes<br>**Applications**<br>Production of Food Additive, Functional Food, Medicine, Agricultural Chemicals, and Biopolymer; Food Process; Biomass; Biosensor<br>**E-mail:** oikawa@kansai-u.ac.jp |
| | NAGAOKA Yasuo<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Ph. D.<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Explorative study of bioactive compounds<br>②Synthesis of functional molecules<br>③Pharmaceutical engineering<br>**Key Words**<br>Drug Discovery, Natural Products, Molecular Target Drugs, Gene Delivery, Polyphenol, Histone Deacetylase Inhibitor<br>**Applications**<br>Pharmaceuticals, Cosmetics, Dietary Supplements<br>**E-mail:** ynagaoka@kansai-u.ac.jp |
| | SUMIYOSHI Takaaki<br><br>**Master's Program** | Associate Professor<br>Ph. D.<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Drug discovery of bioactive compounds<br>②Discovery of natural products<br>③Construction of chemical library<br>④Identification of molecular mechanism of bioactive compounds<br>**Key Words**<br>Medicinal Chemistry, Protein-Protein Interaction, Macrocycles, Epigenetics, Chemical Library, Natural Products, Neurodegenerative disease, Anticancer Drug, Drug Delivery to Brain<br>**Applications**<br>Pharmaceuticals, Drug Discovery<br>**E-mail:** t-sumiyo@kansai-u.ac.jp |
| | YASUHARA Hiroki<br><br>**Master's Program** | Associate Professor<br>Ph. D. (Science)<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Cell plate formation in higher plant cells<br>②The role of microtubule associated proteins in cell division and cell elongation<br>**Key Words**<br>Plant Cytokinesis, Phragmoplast, Cell Plate, Microtubules, Actin Filaments, Cytoskeleton, XMAP215, TMBP200, Kinesin Related Proteins<br>**Applications**<br>Breeding of Plants<br>**E-mail:** yasuhara@kansai-u.ac.jp |
| | YAMANAKA Kazuya<br><br>**Master's Program** | Associate Professor<br>Ph. D.<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Genomics-guided Discovery of Biosynthetic Genes for Novel Bioactive Molecules<br>②Biosynthetic Studies for Structurally Unique Microbial Bioactive Molecules<br>③Development of a Genetic Platform for Efficient Production of Bioactive Molecules<br>**Key Words**<br>Genome-mining, Natural product, Biosynthesis, Microbial genetics, Actinobacteria, microbial production, fermentation<br>**Applications**<br>Pharmaceutical and Agricultural drugs, Food preservatives, Cosmetics, Biopolymers, Chemicals<br>**E-mail:** kazuyay@kansai-u.ac.jp |

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| **Microbiology and Environmental Science** | IWAKI Hiroaki<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Analysis and development of bacterial metabolic activities for xenobiotics and its application for bioremediation of environmental pollution<br>②Ecological study of xenobiotics degrading bacteria in soil and marine environments<br>**Key Words**<br>Biodegradation, Bioconversion, Nitroaromatics, Marine Bacteria, Baeyer-Villiger monooxygenase<br>**Applications**<br>Bioremediation of Xenobiotics, Bioconversion of Xenobiotics-related Compunds to Useful Chemicals, Wastewater Treatment<br>**E-mail:** iwaki@kansai-u.ac.jp |
| | KATAKURA Yoshio<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Agriculture<br>Department of Life Science and Bioengineering<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Aerobic fed-batch culture of lactic acid bacteria for high cell density cultivation<br>②Interaction of lactic acid bacteria with dietary fibers and intestinal mucin<br>③Production of hyaluronic acid with high molecular size by a bacterium<br>④Production of ethanol from waste paper by consolidated continuous solid state fermentation<br>**Key Words**<br>lactic acid bacteria, fed-batch culture, hyaluronic acid, bioethanol, dietary fiber<br>**Applications**<br>Efficient production of lactic acid bacteria, hyaluronic acid, bioethanol<br>**E-mail:** katakura@kansai-u.ac.jp |
| | HASEGAWA Yoshie<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Biodegradation of environmental pollutants<br>②Application of Baeyer-Villiger monooxygenase to organic synthesis<br>**Key Words**<br>Biodegradation, Biocatalysis, Biotransformation, Environmental pollutants, Cycloparaffin, Nitroaromatic Compounds, Baeyer-Villiger Monooxygenase<br>**Applications**<br>Treatment of Wastewater, Green Chemistry, Genetic Improvement of Strains or Biocatalysts, Bioremediation<br>**E-mail:** yoshie@kansai-u.ac.jp |
| | MATSUMURA Yoshinobu<br><br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Engineering<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Bioremediation of chemical pollutants by environmental bacteria and their activities<br>②Bacterial biofilm formation and development of biofilm removal system<br>③Outbreak mechanism of stress resistant bacterial and their resistant mechanism<br>④Bioenergy production and biomass utilization<br>**Key Words**<br>Bioremediation, Chemical Pollutant, Cytochrome P450 Monooxygenase, Molecular Chaperone, Protein Stability, Biofilm, Surfactant, Reactive Oxygen Species, Disinfectant, Sterilization System, Stress Response, Genetics, Endogenous Plasmid, Biodiesel, bioenergy, biomass<br>**Applications**<br>Sewage Disposal System, Improvement of Polluted Soil, Development of Disinfectant, Food Processing, Pharmaceutical Manufacturing, Medicals, Enzymatic Industry<br>**E-mail:** ymatsu@kansai-u.ac.jp |

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| **Microbiology and Environmental Science** | YAMASAKI Shino<br>**Master's Program** | Associate Professor<br>Ph. D. in Engineering<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Analysis of functions of membrane vesicles produced from intestinal bacteria<br>②Analysis of immune regulatory functions of intestinal bacteria<br>③Understanding the interactions between intestinal bacteria and intestinal tract or dietary fiber<br>④Application of probiotics microbial components as adjuvants<br>**Key Words**<br>Intestinal bacteria, Probiotics, membrame vesicle, Gut immunity<br>**Applications**<br>Functional food, Vaccine adjuvant, Cosmetics<br>**E-mail:** shino.ya@kansai-u.ac.jp |
| **Food and Nutrition Science** | FUKUNAGA Kenji<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Fisheries Science<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①We study on the absorption, metabolism, nutrigenomics, and chemistry of marine functional compounds such as n-3 polyunsaturated fatty acid or marine organic compounds.<br>②Our research project also includes attempts to improve protein functionality, food process characteristics and biofunctions, using molecular modification.<br>**Key Words**<br>Fish Oil, n-3 Polyunsaturated Fatty Acid, Fish Protein, Fish Peptide, Marine Products, Protamine<br>**Applications**<br>Functional Foods, Utilization of Marine Bio-resources, Materials of Pharmaceutical Compounds<br>**E-mail:** fukunagk@kansai-u.ac.jp |
| | YOSHIDA Munehiro<br>**Master's Program**<br>**Ph.D. Program** | Professor<br>Doctor of Philosophy in Agriculture, Doctor of Philosophy in Medical Science<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Nutritional approach to minerals and trace elements in foods<br>②Environmental assessment of urban and rural area using community of butterflies<br>**Key Words**<br>Trace Elements, Nutrition, Food, Iron, Copper, Selenium, Zinc, Iodine, Chromium, Molybdenum, Dietary Reference Intake, Butterfly, Urban Environment<br>**Applications**<br>Nutritional Enrichment, Nutritional Supplements, Analysis of Trace Elements, Nutritional Assessment, Environmental Assessment<br>**E-mail:** hanmyou4@kansai-u.ac.jp |
| | HOSOMI Ryota<br>**Master's Program** | Assistant Professor<br>Doctor of Engineering<br>Department of Life Science and Biotechnology<br>Faculty of Chemistry, Materials and Bioengineering | **Research Topics**<br>①Influence of Superchilling (Hyo-On) Treatment on Food Components<br>②Health Promoting Effect of Novel Component Derive from Seafood<br>**Key Words**<br>Superchilling (Hyo-On), Food Preservation, Aging, Seafood, Fish Protein, Marine Phospholipid<br>**Applications**<br>Food Preservation Technology, Novel Aging Technology, Functional Food and Component<br>**E-mail:** hryotan@kansai-u.ac.jp |

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