

How to apply to our department

Department of
Biotechnology
Graduate School of
Engineering
Osaka University

Guidance for Master
and PhD courses

Step 1

Check requirements on our website



Step 2

Contact to our Department Office by email

The office will arrange;
Communication with Professors
If necessary, short exams by email

Contact
address

biotech_info@bio.eng.osaka-u.ac.jp

Step 3

Send your application form to
our office by the deadlines

2020 Fall entrance: 2020 July 17 (PhD)

2021 Spring entrance: 2020 July 17 and October 30 (Master and PhD)

Please check our website!!

Step 4

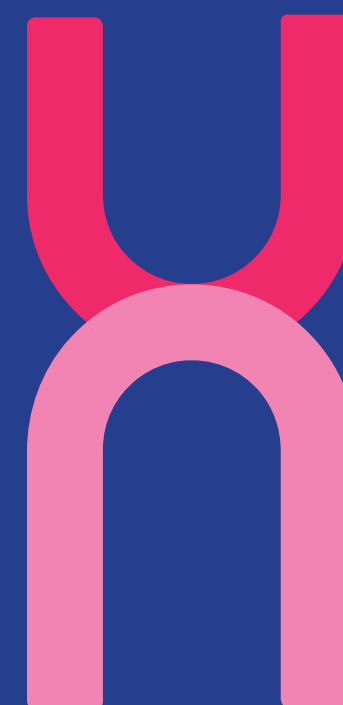
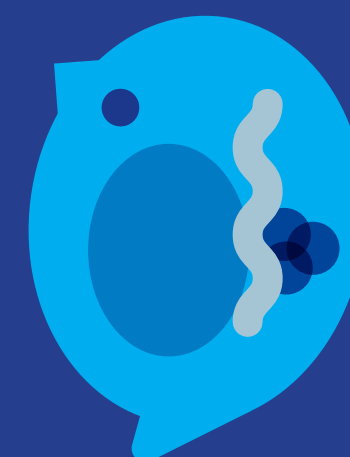
Final result will be sent after
web/email interviews

Department of Biotechnology office

2-1 Yamadaoka, Suita, Osaka 565-0871, JAPAN

Tel: +81-6-6879-7449; Fax: +81-6-6879-7448

jimu@bio.eng.osaka-u.ac.jp



Join our department to be an International Global Leader in Biotechnology!!

Three types of researchers are necessary for the successful applications of basic researches to industry and society.

1. **Creators who generate one from zero.**
2. **Developers who grow one up to hundred.**
3. **Keepers who maintain hundred continuously.**

We offer varieties of education and practices for students to become well trained international global leaders as Creators, Developer, and/or Keepers.

Research area includes, brewery, fermentation, microbiology, plants, regenerative medicine, food, and biopharmaceuticals. Intensive collaborations with industrial field have been carried out and developed.

You can study Biotechnology for Industry in well designed and organized environments, including state-of-the-art instruments.



Studying animal cells for efficient expression of biopharmaceuticals



Automation system for iPS production



Since 1896

Our department has history of more than 120 years since 1896, starting from brewery, through fermentation reaching to biotechnology. We are proud of leading researches on Biotechnology well connected to manufacturing.

The first Dean Dr. Tsuboi

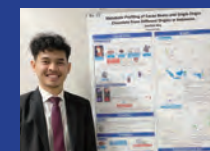
Education focusing on Biotechnology Unique programs

Besides education and research related to Biotechnology, we are conducting joint-project with industry as well as human resource exchange, facilitating contribution to achieve sustainable development goals (SDGs). Classes and official presentations are all conducted in English. We also conduct industry-internship on campus. You will grow up as a researcher with global and industrial perspective through our program.

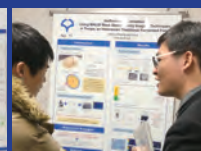
Lectures

 Molecular Biotechnology	 Bioresource Engineering	 Molecular Genetics	 Microbiology Advance	 Bio-environmental Science	 Cell Manufacturing
 Molecular Microbiology	 Dynamic Cell Biology	 Cell Technology Advance	 Bioprocess Engineering	 Nanobiotechnology	 Biotechnology Advance

Presentations and experiments



Mid-term presentation



Extensive discussion



Advanced analysis



Genome edited potatoes

Representative contents in Master and PhD courses

Apr./Oct. Master course 2 yrs

Research for Master's Thesis
Basic Courses
Project-Based Training
Japanese Language
Safety of Engineering, and more

Apr./Oct. PhD course 3 yrs

Research for PhD Thesis
Internship on Campus
Writing Journal Papers
Japanese Language
Presentation in International Conferences, and more

Industry-internship on campus

You can study at University-Company Research Alliance Laboratories and learn practical Engineering.



Double degree program

You can acquire master degrees from both Osaka University and a foreign University simultaneously.



10 Laboratories connecting Biotechnology to Industry and Society

Laboratory of Cell Technology

Professor, Dr. Muranaka Toshiya
Associate Prof., Dr. Seki Hikaru
Assistant Prof., Dr. Yasumoto Shuhei



We are working on plant biotechnology to utilize cellular function and genetic resources of plants for social and industrial activities. Our discovery will contribute to promote health, increase in food production and environmental conservation.

Laboratory of Bioresource Engineering

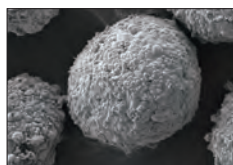
Professor, Dr. Fukusaki Eiichiro
Associate Prof., Dr. Shimma Shuichi
Assistant Prof., Dr. Putri Sastia



We research "measurement," "observation," and "utilization" of organisms using various analytical methods. Since the subjects of our research are diverse, including food, medicine, plants, and microorganisms, students can study various research fields after joining the laboratory.

Laboratory of BioProcess Systems Engineering

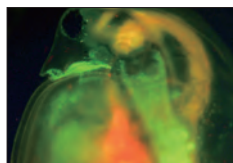
Professor, Dr. Kino-oka Masahiro
Associate Prof., Dr. Kim Mee-Hae
Assistant Prof., Dr. Horiguchi Ikki



We investigate biological phenomena and reaction fields of stem cells and tissues, including iPS cells, and are building technologies that utilize the ability of cells. In particular, we aim to contribute to regenerative medicine by establishing cell manufacturing technologies.

Laboratory of Bioenvironmental Science

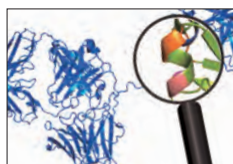
Professor, Dr. Watanabe Hajime
Associate Prof., Dr. Matsuura Tomoaki
Assistant Prof., Dr. Kato Yasuhiko



A small crustacean, *Daphnia magna*, is an ideal model organism to monitor environmental changes. Our major subjects are understanding of its sensing mechanism and development of new biosensors using genome editing and advanced molecular biology.

Laboratory of Macromolecular Biotechnology

Professor, Dr. Uchiyama Susumu
Associate Prof., Dr. Sugiyama Minetaka
Assistant Prof., Dr. Torisu Tetsuo



We are working on extensive biophysical and biochemical characterizations of proteins and protein complexes in foods and biopharmaceuticals, aiming at higher quality and safety. Researches on yeast biotechnology is also performed in our laboratory.

Laboratory of Biochemical Engineering

Professor, Dr. Omasa Takeshi
Assoc. Professor, Dr. Koga Yuichi
Assistant Prof., Dr. Yamano Noriko



Biochemical engineers are required to possess an integrated knowledge of governing biological properties and principles of chemical engineering methodology and strategy. Current topics are mammalian and microbial cell and cell culture engineering.

Laboratory of Applied Microbiology

Professor, Dr. Fujiyama Kazuhito
Associate Prof. (Lecturer), Dr. Misaki Ryo
Assistant Prof., Dr. Kajiura Hiroyuki



We challenge to produce human-friendly biopharmaceutical proteins such as antibodies, enzymes, vaccines, etc. using animal cells, plants, silk worms, and microbes as micro-factories with glyco-engineering

Laboratory of Molecular Microbiology

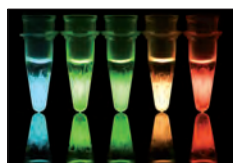
Professor, Dr. Honda Kohsuke
Associate Prof., Dr. Kitani Shigeru
Assistant Prof., Dr. Okano Kenji



We are working on the identification and characterization of biomolecules underlying the unique physiology of microorganisms, and their application to the development of industrially useful technologies.

Laboratory of Photonic Biotechnology

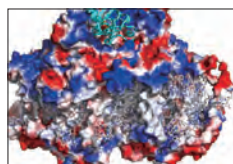
Professor, Dr. Nagai Takeharu
Associate Prof., Dr. Matsuda Tomoki
Assistant Prof., Dr. Hattori Mitsuru
Assistant Prof., Dr. Osabe Kenji



Fluorescent and bioluminescent proteins are used for imaging and measurement. We use these technologies to understand biological phenomena, and to develop autoluminescent plants to solve energy problems.

Laboratory of Protein Crystallography

Professor, Dr. Kurisu Genji
Associate Prof., Dr. Tanaka Hideaki
Assistant Prof., Dr. Kawamoto Akihiro

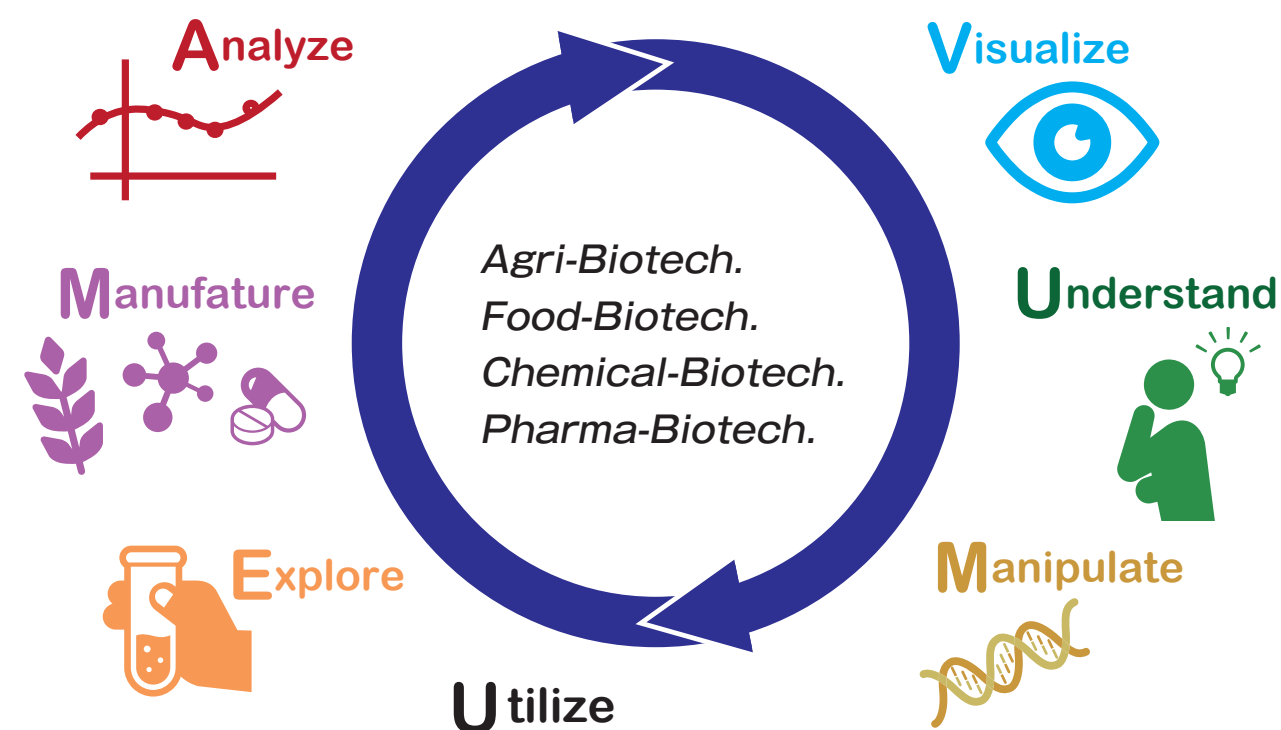


In order to understand the molecular mechanism of Photosynthesis and Microtubule-based molecular motor at the atomic level, we determine the 3D structures of membrane proteins, redox proteins and Dynein motors including their structure-guided variants.

International Research Initiative for Frontier of Industrial Biotechnology Biotechnology for better life and society

We organize the initiative, aiming at the contribution to the achievement of sustainable development goals through the cycle of biotechnology researches.

SUSTAINABLE
DEVELOPMENT
GOALS



We held regular symposium on Industrial Biotechnology



10th Symposium on Frontiers of Industrial Biotechnology



Lecture from Osaka University
Global Alumni Fellow, Dr. Konstantinov

Voice of Graduates

Ahmad Mohamad Haredy (2008-2013, from Egypt) BIKEN, JAPAN



The program provides a friendly global study environment where you can have friends from all over the world. Studying at this program taught me not only fundamentals of cutting edge technologies, but also other skills that are important in work and daily life. For example, diligence, self-motivation, target setting, how to look for and evaluate original ideas, how to simply and logically convince others with your idea. Additionally, important attitudes that I learned is that resilience and believing in oneself are the way to success in life. Studying at this program opened me the gates for a remarkable career path in Japan.

Borimas Krutsakorn (2008-2013, from Thailand) PTT, THAILAND



My stay in Osaka was "The Best Experience, and The Best Opportunity" for me. Osaka University is famous for their high-level education and research. I could learn advanced skills and knowledge in the field of biotechnology. As well as research facilities, Sensei (professors) and university personnel are also excellent. My study in Osaka could be a starting point for my professional career and I could find my current job even before my graduation. I had also many wonderful experiences during my stay in Japan. Japanese people have bountiful mind and responsibility for their works. I would like to thank the MEXT scholarship and Osaka University for the wonderful experiences and opportunities.

Dian Anggraini Suroto (2013-2018, from Indonesia) Gadjah Mada University, INDONESIA



Joining the program had a tremendous impact on my life, the terrific experiences had expanded my knowledge and skills in biotechnology, given me the confidence to deal with professional prospects. This program offers various classes to strengthen students' foundation in biotechnology. Throughout the program, your science curiosities are very well supported by laboratory facilities, and you have many opportunities to build up your expertise. All those qualities are essential to thrive in scientific communities as well as your chosen career path. Equally important, you are also immensely exposed by a unique international environment intertwined with Japanese culture, which sharpens your understanding of cultural diversity which is very much needed in a global setting.

Carrier after graduation

Academia:

BIOTEC (Thailand), Gadjah Mada Univ (Indonesia), Korea Research Institute of Bioscience and Biotechnology (Korea), King Mongkut' s Institute of Technology (Thailand), Kyushu Univ (Japan), Mahidol Univ (Thailand), Nagoya Univ (Japan), National Univ of Singapore (Singapore), Osaka Univ (Japan), RIKEN (Japan), Univ of Arizona (USA), Univ of Yangon (Myanmar), Univ of Dhaka (Bangladesh), Univ of Indonesia (Indonesia), Univ of Massachusetts (USA), Univ of the Philippines Los Banos (Philippines), Vietnam National Univ -Ho Chi Minh City (Vietnam)

Industry:

Ajinomoto (Thailand), Asahi Holdings (Japan), Astellas Pharma (Japan), BIKEN (Japan), Dow Agro Sciences (Thailand), Glico Nutrition (Japan), Korea Food & Drug Administration (Korea), Merck (Thailand), Panasonic (Japan), Prima Scientific (Thailand), PTT (Thailand), Springer Japan (Japan), Sumitomo Chemical (Japan), Suntory (Japan), Takeda Pharma. (Japan), Sysmex (Japan).

FAQ

Q.Why did you choose Osaka University?

- A. I choose this program because Osaka University is one of the top-rank universities in Asia.
- A. Osaka University has a lot of collaborators from industries. Those advantages could help us to develop better knowledge regarding to our scope of study to be applied in industry.

Q.How did you choose your laboratory?

- A. Before the formal application, I sent an e-mail to a professor in the Department of Biotechnology with my research proposal, and discussed about a possible research theme for my study in Osaka.
- A. I checked the website of the English course program, learned about research topics in each laboratory, and contacted to the professor whose research seemed to match with my interest.

Q.Do you have any advice to smoothly adjust to Japan?

- A. I had a very kind tutor in my lab. He helped me with initial preparation to live in Japan, such as opening bank account, taking out student insurance, and contracting to buy new smart phone.
- A. There may be some communication barrier when you first come to Japan due to the difference of language. But, most of Japanese people will try their best to understand your inquiries. Don't be afraid to challenge yourself to live in different environment and learn different culture.

Q.How did you learn Japanese language?

- A. I learned everyday by myself at first, tried to read every Japanese word surrounding me, and improved my hearing skill by watching anime (lol).
- A. Osaka University can provide Japanese classes for foreign students and most of students take those classes. We also have Japanese language study group in our lab.
- A. I 'force' myself to talk with my lab members with my broken Japanese. They always kindly teach me how to speak Japanese better.

Q.Is it easy to find halal food at Osaka University?

- A. Yes! The student canteen provides some halal dishes. There are also praying spaces available at Osaka University and we can take our time to pray as usual.

Q.What do you do on holidays?

- A. On holidays, I visit famous cities or world heritage sites. Japan is a safe place to live and it is easy to go around by train and bus. You can easily visit many interesting places like Kyoto, Kobe, Nara, and of course Osaka. People in Kansai area are funny, friendly, and kind. Foods are also very good.

