Division of Environmental Design☐	Research field	Water Biotechnology and Microbiology	Lab. ID ED13
Laboratory web site	http://env.w3.kanazawa-u.ac.jp/waterbio		

Research subjects

Welcome to the water biotechnology and microbiology laboratory (water-bio lab) at Kanazawa University. The prime objective of the laboratory is to provide a safe and secure water environment worldwide through advancing water treatment technology using microbial functions. However, the majority of microbes in water treatment are composed of dark matters. Thus, it is necessary to reveal the microbial ecosystem with high accuracy analysis and measurements including phylogeny, functionality and quantity of key microbes in the water treatment. We research not only to develop the water treatment technology, but also to advance the microbial measurement technology and elucidate the microbial ecosystem in water treatment. We are desirous on producing industrially impactful results that supported by scientific evidences.

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

4-5 groups are made and each experiment is conducted with all group members. Group members discuss the experimental plans and results with professors once a week. Master course students take two seminars, laboratory seminar and intensive seminar. The first stage of the laboratory seminar is basic subject of water environment. Then, students find some references from the Journals and explain about the contents using ppt, and discuss each other. In the intensive seminar once a month, students present about their research and reserve some advices from professors. On February in first grade, first grade students have to take an examination for promotion. Professor can advise about future plan after graduation. Doctor course students also belong to each research group as a leader, and join to two seminars.

Daily life in the laboratory, etc.

Personal working desk with a personal computer is available for every student. Undergraduate and Master students in our laboratory share a laboratory room, and everyday free discussion on environment or related topics are strongly encouraged. Doctor students in the same floor share a laboratory room, and free discussion beyond research field can be encouraged. Many laboratory activities are organized like, welcome and party for new comers, farewell party. Sometimes Takoyaki party and Birthday party will be held in the laboratory.

Message or comments by the laboratory faculty staffs

We aim to supervise students as an independently thinking individual. We can support the students who hope to present a paper at an academic conference, as much as possible. We accept many foreign students belonging to Environmental Technology International Course, and Japanese students from the other universities and college in Master course. Most of the Master graduates take occupation as Environment relating companies, construction companies and local government. Some students will enter the Doctor course. International students and candidates from the industry are also accepted. After taking the doctoral degree, graduates will be postdoctoral researchers at foreign countries, research or educational staffs at higher education organization.

Recent Master theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2021.9	Pathogen Tracking in Municipal Wastewater Treatment Plant using 16S rRNA Gene-Based Quantitative Sequencing
2021.3	Effect of intracellular and extracellular accumulating substances on biochemical methane potential of activated sludge
2021.3	A challenge in synthetic standard microbes for high-throughput 16S rRNA gene amplicon sequencing by genome editing
2020.3	Microbial community analysis on the drinking water treatment system from groundwater and development of advanced analysis tools
2019.9	Dairy Wastewater Treatment by Sulfate Reduction, Denitrification/Anammox and Partial Nitrification (SRDAPN) Process
2019.9	High Solid Thermophilic Anaerobic Co-digestion of Oxidation Ditch Sludge and Rice Straw
2019.9	Development of pathogen quantification tool using 16S rRNA genes sequencing and pathogen database.
2019.9	Metagenomic Analysis of Enhanced Biological Phosphorus Removal (EBPR) Process Associated Sulfur Cycle

Recent Doctoral theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2021.3	Tofu Processing Wastewater Treatment using Anaerobic Fixed Bed Reactor with Bamboo as the

2020.9	Dissolution of finely pulverized biomass with organic acid and development of novel woody films obtained from the wood solution
2020.3	Novel wastewater treatment process based on sulfur cycle and anammox reaction
2019.9	Wastewater Treatment and Monitoring Using Bioelectrochemical System
2019.3	Effects of biological sulfur conversion on wastewater treatment
2018.3	One-stage nitritation/anammox process using a mixed sponge bed reactor and a two-inflow biofilm
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