Division of Environmental Design	Research field	Environmental Risk Control Engineering	Lab. ID ED17
Laboratory web site	http://env.w3.kanazawa-u.ac.jp/risk/		

Research subjects

Environmental Risk Control Engineering Lab addresses various health-related water environmental problems to achieve sustainable water use. Our research topics stretch widely from the micromolecular investigation into biological and physical treatment of per/poly-fluoro alkyl substances and toxicological assessment of reclaimed water, to field surveys at the local and oversea wastewater treatment plans, rivers, lakes, groundwaters, etc. In recent years, we have a particular interest in early warnning of disease outbreak (e.g. COVID-19) based on wastewater monitoring, and introducing data science methodologies to environmental data analysis. Key words: Wastewater-Based Epidemiology, biological treatment, membrane process, unregulated chemicals, antibiotic resistant bacteria, water environment in Asia. For more details, please vist our website.

Our laboratory aims to develop your capacity as a engineer/researcher. What we expect you to develop are:
1. To find and understand reliable information/knowledge;
2. To get the required knowledge from the collected information/data based on logical thinking;
3. To propose solutions or methodology to achieve the objective, by employing full of your knowledge and the collected information/data, and vise versa;
4. To obtain grounding of an environmental engineer.

Regular meetings:
Research group meeting: biweekly
Laboratory seminar: depends on activity which changes every year
Joint seminar with water environment laboratory: twice in a month
Happy hours: occasionally (typically, once per 2-3 months)

Daily life in the laboratory, etc.

We are a multinational team from China, Vietnam, Cambodia, India, Sri Lanka, Bangladesh, Pakistan as well as Japan. Foreign students and Japanese students stay together in one office and asked to work together in research and experiments. We also have collaboration with other laboratories on water engineering and chemical engineering. Research meeting with faculty is basically held in English.

Message or comments by the laboratory faculty staffs

I encourage students to develop not only your capacity through thesis research, but also international friendship. We have experience to accept foreign students and staff from various countries like China, Cambodia, Bangladesh, Pakistan as well as Japan. We welcome foreign students with good motivation and ambitions!

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

year.month	Thesis title (including English translation of Japanese thesis title)
2022. 3	Seasonal and regional variation of pharmaceutical concentrations in wastewater and potential influencing factors
2022. 3	Metagenome-based comparison of antibiotic resistance gene profiles at wastewater treatment plants located in different countries
2021. 9	Mechanistic consideration on removal of extracellular antibiotic resistance genes in membrane bioreactor process
2021. 9	Behavior of antibiotic resistance genes in wastewater treatment processes and receiving river
2021. 9	Mixture effects of micropollutants and wastewater-derived dissolved organic matters on HepG2 cells
2020.9	Removal Mechanisms of Antibiotic Resistance Genes in Membrane Bioreactor
2020.9	Chemometric approach to investigation of cytotoxic substances originated from municipal wastewaters
2020.3	Effect of vanillin on membrane fouling mitigation in membrane bioreactor with PVDF flat-sheet membrane
2019.3	Impact of vanillin addition on membrane fouling and treatment performance in membrane bioreactor process with polyvinylidene-difluoride hollow-fiber membrane

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

year.month	Thesis title (including English translation of Japanese thesis title)
2020.3	Requirements for europium recovery from phosphor by using microalgae *Acutodesumus acuminatus*
2018.9	The Induction of Antibiotic Resistant Bacteria in the Activated Sludge Process of Wastewater Treatment Plants
2018.3	Effects of Microbial Quorum Sensing on Membrane Fouling and Characteristics of Extracellular Polymeric Substances in a Membrane Bioreactor Process
Laboratory mail address	rhonda *at* se.kanazawa-u.ac.jp, hiroeyh *at* kanazawa-u.ac.jp