

Division of Material Chemistry	Research field	Analytical and Environmental Chemistry	Lab. ID
			MC10
Laboratory web site	http://araim.ch.t.kanazawa-u.ac.jp/		
Research subjects			
<p>1) Technology for separation of metals from waste materials and contaminated soils, including extraction of metals using chelant washing, and separation with a solid phase extraction system based on supramolecule interaction, 2) Development of remediation technology utilizing the natural cycle of trace metals, 3) Behavior of trace element in hydrosphere based on speciation analysis, 4) Microbial and chemical characteristics of bioaerosols transported in atmosphere are investigated depending on biochemical analyses and chemical analysis. Moreover the ecological impacts of aerosol depositions on natural ecosystems and human societies are evaluated using physiological experiments, model analysis, and field investigations.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>– As for foreign students, all activities or correspondences in the laboratory can be done in English. We have several foreign students every year.</p> <p>– Master course: Students belong to one research group and study on their own subject under the guidance of supervisors. The students join the meeting in the research group every week. They also present their research results at a conference.</p> <p>– Doctor course: Students are encouraged to participate international conferences, and must publish research articles in some international journals for their doctor's degree.</p>			
Daily life in the laboratory, etc.			
<ul style="list-style-type: none"> • All students have their working desk for study and lab bench for experiment in the laboratory. • Various analytical instruments and experimental installation are available. • We have many opportunities to collaborate with foreign researchers in other universities and with company researchers through joint research programs. • We've established a global educational and research environment where Japanese and foreign students are working together in the laboratory. 			
Message or comments by the laboratory faculty staffs			
<p>– Environmental Chemistry group welcomes foreign students who want to elucidate phenomena in natural cycle of trace metals and toxic metal contamination in the fields, and to improve environmental problems both on regional and global scales.</p> <p>– in Aerosol Investigation group, students will join to field survey for collecting aerosol samples and analyzed using several experimental techniques combining biochemical and chemical analysis. During the research process, they contact to several researches in a very broad spectrum of chemical and biological sciences including microbiology, agronomy, atmospheric chemistry, meteorology and modeling.</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2017.3	Development of chelant-assisted remediation for As and Pb contaminated soils		
2017.3	Analysis for iron related proteins of marine phytoplankton using LC-MS		
2016.3	Effect of the aerosol particles on chemical compounds in seawater and marine microbial communities		
2016.3	Bioavailability of colloidal Fe-humic substances in seawater		
2016.3	Multilocus sequence typing analysis using gene sequences of KOSA(Asian dust) bioaerosols		
2016.3	Separation of precious and rare metal elements with a macrocycle immobilized solid phase extraction system		
2016.3	Speciation of metal complexes with chelating agents by LC-Q-TOF-MS		
2015.3	Study on the behavior of arsenic species in natural waters using speciation analysis		
2015.3	Evaluation on bioavailability of humic substances in coastal seawater using CLE/ACSV method		
2015.3	Extraction separation of Pb in contaminated soils by wet-washing process with chelating ligands		
2015.3	Isolation of nucleic activating microorganisms relating to cloud formation and cloud chamber experiments analyzing cloud formation processes by the isolates		
2015.3	Chemical evaluations of marine microbial ecodynamics changed by the depositions of long-range transported aerosols		
2014.9	Separation of Cs using solid phase extraction based on the molecular recognition technology		
2014.3	Inhibitory effect of arsenic speciation on growth of freshwater phytoplankton		
2014.3	Behavior of metal-ion complexation of humic substances derived from lignite		

2014.3	A fluorescent-based HPLC assay using derivatization agent for the determination of iron bioavailability to red tide phytoplankton
2013.9	Chemical remediation of radioactive Cs contaminated soils
2013.3	Separation of rare metals using solid phase extraction based on the molecular recognition technology
2013.3	Recovery of phosphate from sewage burned sludge using water-soluble chelate complex reaction
2013.3	Chemical extraction of metals in waste materials using chelate washing
2013.3	Speciation analysis and bioavailability of iron species in the presence of humic substances
2013.3	Effects on phosphate on arsenic speciation in late waters
2013.3	Assessments of bacterial community structures of Asian-dust bioaerosols using the PCR-DGGE analysis targeting 16S rDNA sequences
2013.3	Chemical analyses of marine microbial ecodynamics influenced by the depositions of Asian dust aerosols
Recent Doctoral theses in these 3 years (+ more if appropriate)	
year.month	Thesis title (including English translation of Japanese thesis title)
2016.3	Development of recycling technology for industrial waste based on metal separation by chemical-assisted extraction technique
2015.9	Phylogenetic Analysis of Atmospheric Microbial Communities Transported by Asian Dust (Kosa) Events.
2013.9	MOLECULAR RESPONSES OF PHYTOPLANKTON TO IRON LIMITATION
2013.9	Trace Elements in Japanese Precious Corals as Indicators for Habitat and Growth Characteristics
2012.9	Remediation of toxic metal contaminated soil using biodegradable aminopolycarboxylate chelants
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