Division of Environmental Design	Research field	Materials	Lab. ID ED02
Laboratory web site	https://materialslab-k.jimdofree.com/		

Research subjects

There are three faculty members in the lab.
These days, sustainability is the most common and important keyword in the field of concrete engineering. Development of sustainable concrete is addressed from the standpoint of maintenance engineering for deteriorated concrete structures.
Fundamental materials science of concrete is also an important research topic. Evolution of microstructure in concrete is investigated based on microscopic examination combined with spatial statistics. Mechanical properties and durability issues of concrete are interpreted based on geometrical characteristics of the microstructure.
Some research topic consists of Challange for Design Code and Application of New Materials, therefore the mechanical properties of concrete or concrete members will be investigated in the lab..

In a word, the motto of the whole activity is from basic science to in-situ technology. Google us. You'll easily find our international activity.

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

Basically, research topics for the higher degrees are given by the supervisor. The students are required to do experiments and the other lab works, following the directions. The lab has many pieces of advanced equipment. At first, they have to learn how to use and operate testing apparatus. They must know safety is the first priority in the lab. Analyzing the test and experimental results, and discussing them with the supervisor, they are trained to write research papers with high quality for academic conferences and journals. It is common that a student attends some conferences to present their papers a couple of times a year.

Daily life in the laboratory, etc.

As mentioned above, they have to do various experiments in addition to course works. They are also expected to work as a leader who instructs undergraduate students on the research. In some cases, they go out for investigating old concrete structures and field tests. The research topics are often joint projects with the industry. To proceed the project works smoothly, the students are sometimes requested to attend important meetings with the industry as a young researcher. To prepare presentation files and meeting materials in advance is also important works of the student. We are sure that these things are good training for getting jobs in the industry or having job interviews.

Message or comments by the laboratory faculty staffs

All the research activities in the lab are based on experiments done by accurate measurements and deep insight about their results. We expect you to take part in the experiments and field investigations actively. Enjoy the process to complete a good thesis. When you stand at a starting point, you will see a long way to go before you to finish your thesis. However, once you have started, we are sure you can see many fruitful and impressive things along the course as long as you are interested in advanced research works. You will probably find a clear trail which is painted until the goal by your supervisor. When you see other runners running ahead, maybe you want to catch up with them? OK, we always run with you and put you ahead of the preceding runners by magic hands.
Come over here. We are waiting for you at the starting line. The entrance of the stadium is open 24/7 for those who are interested in working at the cutting edge of concrete materials and structure and "Japanese culture."

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

year.month	Thesis title (including English translation of Japanese thesis title)
2021.3	Study on the Environmental Monitoring for Proper Maintenance of Concrete Structures with Mortar Sensor
2021.3	Study on Surface Impregnation Method Using Both Lithium Nitrite and Silane Type Materials
2021.3	Evaluation of multi-scale spatial structure in concrete using point process statistics
2021.3	Study on the Environmental Monitoring for Proper Maintenance of Concrete Structures with Mortar Sensor
2021.3	Study on Surface Impregnation Method Using Both Lithium Nitrite and Silane Type Materials
2021.3	Evaluation of multi-scale spatial structure in concrete using point process statistics
2021.3	Study on the Environmental Monitoring for Proper Maintenance of Concrete Structures with Mortar Sensor
2021.3	Study on Surface Impregnation Method Using Both Lithium Nitrite and Silane Type Materials
2021.3	Evaluation of multi-scale spatial structure in concrete using point process statistics

2020.3	Evaluation of multi-scale spatial structure of concrete using point process statistics
2020.3	Study on Surface Impregnation Method Using Both Lithium Nitrite and Silane Type Materials

Recent Doctoral theses in these 3 years (+ more if appropriate)	
year.month	Thesis title (including English translation of Japanese thesis title)
2019.9	Comparison of air void parameters in concrete evaluated by spatial point process and linear traverse methods
2019.3	A Basic study on the applicability of petrographic diagnosis to elucidating the mechanisms of concrete deterioration
2019.3	Evaluation and countermeasure effectiveness of concrete structures deteriorated by alkali-silica reaction and de-icing salts

Laboratory mail address	Prof. Igarashi, S. <igarashi *at* se.kanazawa-u.ac.jp> Assoc. Prof. Kubo, Y. <ykubo *at* se.kanazawa-u.ac.jp> Assist. Prof. Yanagida, R. <yanagida *at* se.kanazawa-u.ac.jp> Lab. Tech. Yamato, H. <yamato *at* se.kanazawa-u.ac.jp>