Division of Material Chemistry	Research field	Synthetic Polymer Chemistry	Lab. ID MC11
Laboratory web site	http://kohka.ch.t.kanazawa-u.ac.jp/lab5/lab5/home-en.html		

Research subjects

Our research subjects are classified into the following three topics.

・Development of Novel Chiral π-Conjugated (Macro)molecular Systems:

The purpose of this study is to develop novel chiral π-conjugated (macro)molecular systems, which can detect the chirality of target molecules as changes in their absorption, luminescence, visible color, or electrical properties.

・Development of Chiral Recognition Materials:

Synthetic helical polymers represent mimetically secondary structure of naturally occurring biopolymers. Moreover, these polymers show responsiveness towards different stimuli, allowing helical sense modulation (enhancement or inversion) surpassing biopolymers that cannot switch their secondary structures. In this research project, we intend to develop new functional polymers with chiral recognition ability through precise design towards the desired stimuli.

・Novel Materials Based on Helical Polymers: Development of New Polymerization Methods

Living polymerization is the best method for preparation of polymer with controlled length, structure, and stereoregularity. We intend to develop new living catalysts for conjugated polymers based on transition metal complexes. This topic allows us to build not only common polymers, but also topological polymers or highly dense covered hybrid materials, which cannot be prepared through conventional polymerization methods.

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

Master course: We organize weekly workshops where students give presentations about the latest papers reported in the distinguished English journals. We also hold the research seminar at the end of the month, in which each student presents own research progress and discusses with the other laboratory members.

Doctor course: Students select the primary staff or research group to work with, and collaborative research works are started. Doctor students are encouraged to go for outer activities, participating research workshops/meetings, international conferences, even foreign country institutes for months.

There are a couple of foreign students in our lab, and all activities or correspondences in the laboratory are done in English.

Daily life in the laboratory, etc.

Personal working desk with a personal Macintosh computer is available for every student.

All relevant students of undergraduate, Master, Doctor and post Doc researchers share the laboratory rooms, and the free discussion on functional polymers or related topics are strongly encouraged anytime.

Many laboratory activities, such as welcome party for newcomers, excursion, laboratory trip, etc., are organized.

Message or comments by the laboratory faculty staffs

Knowledge and skills related to the polymer chemistry is necessary for developing innovative materials and will be useful for any careers after graduation. Most of the Master graduates take occupation as research laboratory staffs at chemical companies, public servants, etc. All the rest will enter the Doctor course. After taking the doctoral degree, graduates will be post doc researchers at other university, research laboratory staffs at chemical companies, etc.

Laboratory mail address	Katsuhiro Maeda <maeda *at* se.kanazawa-u.ac.jp>