Materials Chemistry Frontiers

Explore frontier of materials chemistry through molecular/atomic level design of new materials utilizing advanced knowledge in the field of chemistry

■ Overview:

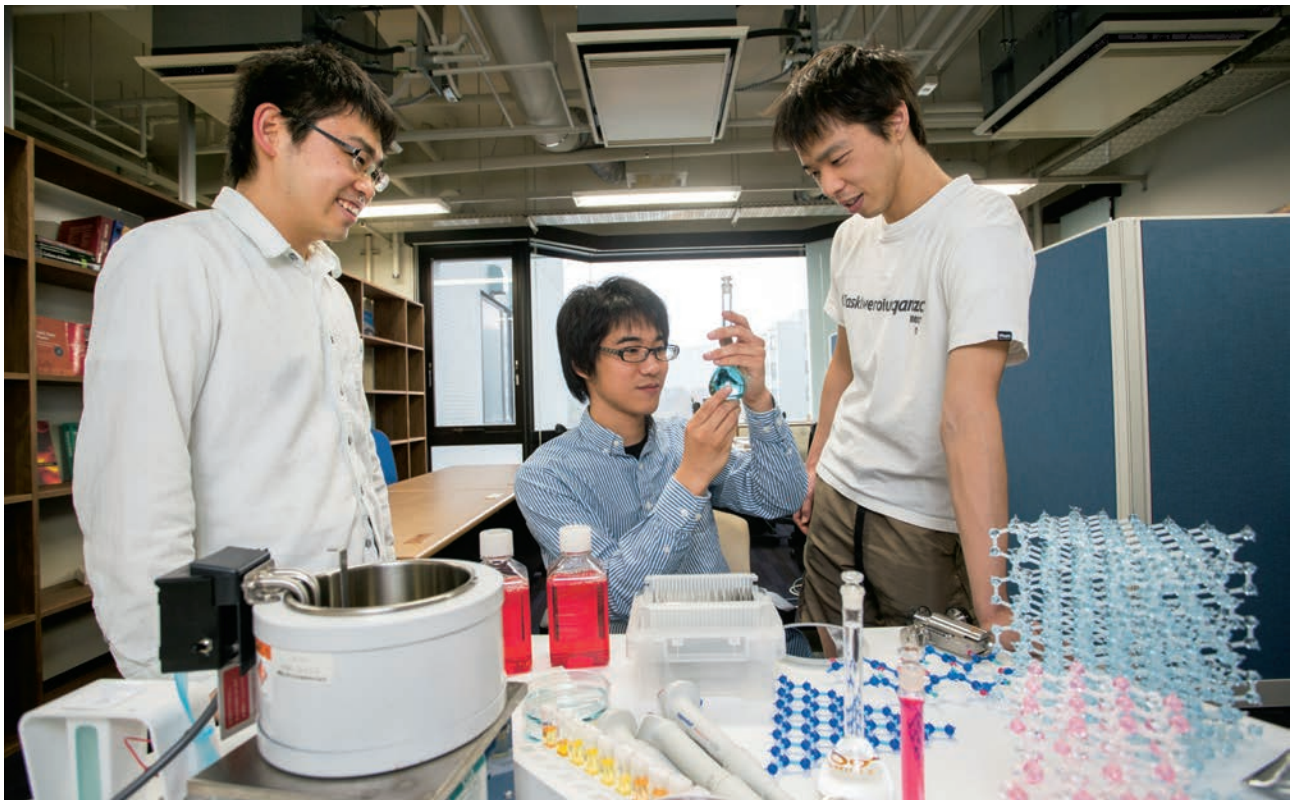
This area focuses on the design of novel functional and high-performance materials through basic and applied chemistry with the aid of advanced characterization facilities. We contribute to society by proposing innovative chemical products and fabrication processes to industries, which needs for the enriched sustainable society. Moreover, we aim to foster future researchers and technical experts who have the ability to develop new materials on the basis of design at the atomic and molecular levels with advanced knowledge of chemistry to explore frontiers of materials chemistry.

■ Keywords:

Nanomaterials Chemistry, Polymer Chemistry, Green Chemistry, Catalytic ChemistryEnergy, Related Materials, Eco-friendly Materials, Biomaterials, Materials Informatics, Nano Machine, High-Speed AFM Imaging, Rheology

■ Education policy:

We aim for students to equip not only the skill of advanced characterization for composition and structure of materials but also the ability to design basic structure of materials with new functions. On the basis of high level knowledge, students are expected to engage in creative academic research activities to explore frontiers of materials chemistry. In addition, we aim to nurture students to understand the technology and materials which are required in industries and contribute to society by the technology development and creation of new materials from the perspective of chemistry.



Materials Chemistry Frontiers

Professor	MATSUMI Noriyoshi	From Heteroatom Chemistry to Future Energy
Professor	MATSUMURA Kazuaki	Functional polymeric biomaterials for controlling the functions of living systems
Professor	TANIIKE Toshiaki	Advanced Material Design based on Synergetic Exploration, Learning, and Prediction
Professor	YAMAGUCHI Masayuki	Design of High-Performance Polymer Materials by Rheological Approach
Associate Professor	MIYAKO Eijiro	Creation of Game-Changing-Technology by Functional Materials and Bioengineering
Associate Professor	NAGAO Yuki	Nanoprotonics : Design of Materials Interface by Highly-Proton Conductive Organized Polymers
Associate Professor	NISHIMURA Shun	Development of new solid catalyst process Challenge the issues on energy & resources!
Associate Professor	SHINOHARA Ken-ichi	Polymer Molecular Motor: Unidirectional Processive Walk along a Chiral Helical Chain
Senior Lecturer	BADAM Rajashekar	Nano Materials-building blocks for the sustainable energy