

Chemistry and Chemical Engineering

Course title	Course description	Instructor
有機機能化学特論 Chemistry of Functional Organic Molecules	This course teaches application, chemistry, and design of functional organic materials. The materials covered include supramolecules, biomaterials, chemicals in daily life, and so on. Some new technologies expected to be industrialized will also be introduced.	伊藤和明 Kazuaki ITO 落合文吾 Bungo OCHIAI
電気化学特論 Electrochemistry	This course teaches the fundamentals of energy conversion and storage chemistry focused on physical chemistry and electrochemistry. The lectures are especially focused on physicochemical and mathematical treatment and basics to understand the working mechanism for the students.	仁科辰夫 Tatsuo NISHINA 立花和宏 Kazuhiro TACHIBANA
分析化学特論 Analytical Chemistry	This course teaches interaction between material and material, and interaction between material and energy focusing on separation and measurement of materials. The system constructions of separation function and sensing function are discussed as an application.	遠藤昌敏 Masatoshi ENDO 伊藤智博 Tomohiro ITO
固体化学特論 Solid State Chemistry	In this course, the following scientific items are lectured; effects of structural defects and solid solutions on mechanical, electrical, and thermal properties: nucleation and growth of solids: heat-treatment of solids: X-ray diffraction and structural description of solids.	鵜沼英郎 Hidero UNUMA 松嶋雄太 Yuta MATSUSHI MA
物理化学特論 Advanced Physical Chemistry	This course lectures physical chemistry, especially superconductivity including high-Tc superconductors and organic solar cells including photocatalytic reactions. Advanced topics on related fields will also be lectured.	神戸士郎 Shiro KAMBE 吉田司 Tsukasa YOSHIDA
移動現象論 Transport Phenomena	This course covers the transport phenomena of momentum, heat, and species, emphasizing the similarity among them. Students will learn the basic equations and how to solve them for simple systems.	桑名一徳 Kazunori KUWANA

Course title	Course description	Instructor
界面物理化学特論 Advanced Interfacial Engineering	This course lectures dispersion behavior of colloidal materials. We focus the control technology with surfactant molecules and DLVO theory on aggregation phenomena. Some applications for medical, cosmetic and food products will also be introduced.	木俣光正 Mitumasa KIMATA 野々村美宗 Yoshimune NONOMURA