Functional Materials

2 units (selection)

Tomoki Yabutani · Associate Professor / Chemical Process Engineering, Chemical Science and Technology, Earth and Life Environmental Engineering
Keiji Minagawa · Associate Professor / Synthetic and Polymer Chemistry, Chemical Science and Technology, Earth and Life Environmental Engineering
Mikito Yasuzawa · Associate Professor / Physicochermistry and Material Science, Chemical Science and Technology, Earth and Life Environmental Engineering

Target〉 To understand functions and applications of various functional materials.

Outline〉 This class introduces various materials based on functional polymers. The mechanism and design of physical and chemical functions of polymer materials are introduced in detail. Furthermore, this class involves a lecture for preparaetion and characterization of materials with electrochemical devices.

Style〉 Portfolio

Keyword〉 ***functional material, functional polymer, sensor material, soft matter, biocompatible material***

Goal〉

1. To understand properties and applications of various functional materials.
2. To understand mechanisms of functions and application method of material design.

Schedule〉

1. Introduction to Functional Materials
2. Functional Polymers as Sensor Materials
3. Preparation of Various Sensors
4. Analysis of Sensor Properties
5. Evaluation of Sensor Properties
6. Characteristics and Preparation of Soft Matter
7. Properties of Polymer Solution
8. Thermosensitive Polymer Materials
9. Rheology of Soft Matter
10. Rheological Function of Materials
11. Design and Synthesis of Biocompatible Materials
12. Evaluation of Biocompatible Materials and its Application
13. Design and Synthesis of Electroconductive Polymers
14. Evaluation of Electroconductive Polymers and its Application
15. Surface Functional Modification
16. まとめ

Evaluation Criteria〉 The No. 1 and No. 2 objectives of this class mentioned above are related with the lecture No. 1-15 and No. 6-10, respectively. The final grades will be determined numerically by averaging your scores with homework and reports . The score will be described as 100-points scale. You will be passed for this class if you get over 60 point.

Contents〉 http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216618

Contact〉

⇒ Yabutani (G605, +81-88-656-7413, yabutani@chem.tokushima-u.ac.jp) Mail
⇒ Minagawa (G612, +81-88-656-9153, minagawa@chem.tokushima-u.ac.jp) Mail
⇒ Yasuzawa (G512, +81-88-656-7421, mik@chem.tokushima-u.ac.jp) Mail
(Office Hour: 月曜日 16:30~ 17:30)