

Materials Chemistry

2 units (selection)

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Target To understand the molecular aspects of solid-state properties and/or fluid properties of materials(Uosaki). To understand the structure and electronic states of molecular crystal including metal ions(Kanezaki).

Outline 無機, 有機及び有機無機複合材料の機能設計, 合成及び物性を分子論的立場から理解する為に必要な電気化学, 量子化学, 化学熱力学, 表面化学, 固体化学及び材料化学等における最近の発展を講述する. (魚崎) 流体 (気体, 液体) の物性を, ミクロレベルで理解し, 集合系の特異な性質・機能の開発と応用について講述する. (金崎) イオン性結晶, 分子性結晶及び非晶質等における固体化学の基礎や, 材料化学の最近の展開を主として分子科学の観点から論ずる.

Style Lecture

Keyword *material development, supercritical fluids*

Fundamental Lecture “Advanced exercise on chemical science and technology”(1.0), “Advanced research on chemical science and technology”(1.0)

Relational Lecture “Advanced exercise on chemical science and technology”(0.5), “Advanced research on chemical science and technology”(1.0)

Requirement not particular needed

Goal

1. To understand the structures and properties of fluids and to develop an ability to apply supercritical fluids to environmental problems
2. ability for discussing properties of condensed phases from the aspect of molecules

Schedule

1. Structures of fluids
2. Properties of fluids
3. Physical properties of supercritical fluids (1)
4. Physical properties of supercritical fluids (2)
5. Applications of supercritical fluids
6. Nature of molecules(1)
7. Nature of molecules(2)
8. electronic states of molecules(1)

9. electronic states of molecules(2)

10. electronic states of molecules(3)

11. electronic states of molecules(4)

12. electronic states of molecules(5)

13. molecular assembly(1)

14. molecular assembly(2)

15. molecular assembly(3)

16. examination

Evaluation Criteria Evaluation is made by means of examination and presentation.

Textbook Will be introduced at the first lecture.

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216670>

Student Able to be taken by only specified class(es)

Contact

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