

Chemistry and Technology for Recovery of Marine Resources

2 units (selection)

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Target This class describes the recovery of valuable elements in seawater that have not been utilized.

Outline This class describes the advanced technology of recovery of valuable elements such as uranium and lithium in seawater and the remained subjects for practical use.

Style Lecture

Keyword *seawater, rare resources, recovery, uranium, lithium, adsorption, ion exchange, chelation*

Goal understanding of the technology of recovery of valuable resources from seawater

Schedule

1. Importance of recovery of valuable resources from seawater
2. Inorganic resources in seawater
3. Recovery methods of valuable resources in seawater 1
4. Recovery methods of valuable resources in seawater 2
5. Adsorption method 1
6. Adsorption method 2
7. Development of adsorbents 1: ion-exchangers
8. Development of adsorbents 2: ion-exchangers
9. Development of adsorbents 3: chelating resins
10. Development of adsorbents 4: chelating resins
11. Mechanism of ion-exchange of lithium ions
12. Recovery process of lithium from seawater
13. Mechanism of uptake of uranium
14. Recovery process of uranium
15. Recovery costs of uranium and lithium
16. Perspective of recovery of uranium and lithium from seawater

Evaluation Criteria Evaluation of the degree of understanding by report of some essential subjects

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216679>

Student Able to be taken by student of other department and faculty

Contact

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