Engineering on Circulation of Resources

2 units (selection)

Takahiro Hirotsu · Professor / Marine Environment Science and Engineering, Ecosystem Engineering, Earth and Life Environmental Engineering

Target⟩ Learning advanced technology for circulation of resouces

Outline⟩ Separation and utilization of unused inorganic resources, separation of isotopes of light elements, and design and synthesis of adsorbents for separation of isotopes.

Style⟩ Lecture

Keyword⟩ ***recovery of resources, separation of materials, separation of isotopes***

Goal⟩ understanding of an advanced technology for circulation of resources

Schedule⟩

1. What are resources?
2. Types and properties of substances
3. Separation of ions: ion-exchange method 1
4. Separation of ions: ion-exchange method 2
5. Separation of ions: ion-exchange method 3
6. Separation of ions: chelate exchange 1
7. Separation of ions: chelate exchange 2
8. Separation of ion: chelate exchange 3
9. Separation of isotopes by chemical-exchange method
10. Principle of separation of lithium-isotopes
11. Principle of separation fo boron-isotopes
12. Separation of isotopes by ion-exchange method 1
13. Separation of isotopes by ion-exchange method 2
14. Separation of isotopes by ion-exchange method 3
15. Separation of isotopes by ion-exchange method 4
16. Significance of advanced separation of substances in circulation of resources

Evaluation Criteria⟩ Discussion in the class and description of ideas in the report

Contents⟩ http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216681

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

Contact⟩

⇒ Hirotsu (National Institute of Advanced Industrial Science and Technology, +81-87-869-3562, takahiro-hirotsu@aist.go.jp) Mail