

Energy Conversion System

2 units (selection)

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Target To understand principle of energy conversion and to consider improvement of energy conversion technologies on the point of saving energy consumption and decreasing environmental damages

Outline Lecture on principle of energy conversion and its application, and on combustion mechanism and technologies of reducing toxic emissions of combustion engines as examples of energy conversion systems. This subject is concerned with industry.

Style Lecture

Keyword *energy conversion, environmental protection, combustion, energy resources, toxic emissions*

Requirement None

Notice None

Goal To understand principle of energy conversion, environmental effect of energy conversion and present technologies of energy conversion, and to recognize the importance of improvement of energy conversion technologies against environmental protection

Schedule

1. Present energy problem
2. Combustion chemistry 1
3. Combustion chemistry 2
4. Thermal and fluid dynamics in combustion phenomena 1
5. Thermal and fluid dynamics in combustion phenomena 2
6. Premixed combustion 1
7. Premixed combustion 2
8. Non-premixed combustion 1
9. Non-premixed combustion 2
10. Spray combustion 1
11. Spray combustion 2
12. Toxic emissions by combustion 1
13. Toxic emissions by combustion 2
14. Energy saving technologies (Present technologies)
15. Energy saving technologies (Future technologies)

Evaluation Criteria Appraise the understanding of the content of the lecture by

setting some reports

Textbook Takashi Niioka, "Fundamentals of Combustion Phenomena"

Reference None

Webpage <http://www.eco.tokushima-u.ac.jp/w3/miwa/index.html>

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216569>

Student Any students other than Ecosystem Engineering can attend this lecture.

Contact

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Note Need to submit some reports