

Advanced High Voltage Engineering

2 units (selection)

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Target) It doesn't stay in the field of electric power engineering and the knowledge of the high voltage and large-current engineering is acquired. The latest use of the high voltage and large-current technology and the application will be learned.

Outline) The high-voltage engineering the large-current engineering has supported industries and the electric energy engineering and is still developing. In this lecture, the various physical phenomena involved in high voltage and large current as well as the phenomena of discharges and the characteristics of insulators are described in detail. Moreover, it lectures on the technology of the generation and the diagnostics of the high voltage and so on including the latest technology. In its applications, the new technology and application rather than the electric power system are introduced, as pulsed power and inertia confinement fusion. The current or upcoming topics such as environmental applications and medical applications will be discussed in the class.

Style) Lecture and exercise

Keyword) *high voltage, large current, pulsed power*

Fundamental Lecture) “**High Voltage Engineering**”(1.0)

Goal)

1. To understand fundamental phenomena of the discharge and mechanisms of the insulation
2. To understand fundamental phenomena of large current

Schedule)

1. The recent trends of technologies on high voltage and large current
2. The pulsed power technologies
3. The applications of pulsed power
4. The recent trends of pulsed power technologies and their applications
5. The state-of-the-art technologies for pulsed power 1
6. The state-of-the-art technologies for pulsed power 2
7. The state-of-the-art technologies for pulsed power 3
8. The state-of-the-art technologies for pulsed power 4
9. The state-of-the-art technologies for pulsed power 5
10. The state-of-the-art technologies for pulsed power 6
11. The state-of-the-art technologies for pulsed power 7

12. The state-of-the-art technologies for pulsed power 8

13. The state-of-the-art technologies for pulsed power 9

14. The state-of-the-art technologies for pulsed power 10

15. Term-end exam

16. The exposition about the exam

Evaluation Criteria) Participation and presentation:50%; Final examination:50%

Textbook) None

Contents) <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216648>

Student) Able to be taken by student of other department

Contact)

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Note) Language in this subject may be English.