

2019 Fall, 4582-608 (WCU Program)
Electrochemical Energy Engineering, 전기화학에너지공학

LECTURER: Professor Yung-Eun Sung (성영은)
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OUTLINE

This class deals with electrochemical principles for the electrochemical technologies and energy devices and systems. This course is followed by “Advanced Electrochemistry” in last semester. However, students who did not attend the course in last semester can take this course. After reviewing the basics of electrochemistry, this course will be continued.

TEXTBOOKS

Allen J. Bard, Larry R. Faulkner, *Electrochemical Methods*, Wiley, 2001. (ch. 11 – 18)

REFERENCES

Heith B. Oldham, Jan C. Myland, Allan M. Bond, *Electrochemical Science & Technology: Fundamentals & Applications*, Wiley, 2013. (e-book, SNU Library)
오승모, 전기화학(3 판), 자유아카데미, 2019.

SCHEDULES

Basic concept of electrochemistry (week 1)
Electronic and ionic conductivity (week 2)
Potentials and thermodynamics (week 3)
Electrode processes (week 4)
Electrode processes 2 (week 5)
Electrochemical methods (week 6)
Bulk electrolysis (ch.11) (week 7,8)
Double layer structure and adsorption (ch. 13) (week 9, 10)
Electroactive layers and modified electrodes (ch. 14) (week 11)
Scanning probe techniques (ch. 16) (week 12)
Spectroelectrochemistry 1 (ch. 17A) (week 13)
Spectroelectrochemistry 2 (ch. 17B) (week 14)
Photoelectrochemistry (ch. 18) (week15, 16)

GRADING (B⁺ & above ~ 80%, B⁰ & below ~ 20%)

Midterm Exam 40%, Final Exam 40%, Homeworks & Attendance 20 %

LECTURE ROOM & TIME: Rm #302-508, 11:00-12:15 Mon. & Wed.

OFFICE HOUR: Rm #302-729, 13:00-16:00 Mon. & Wed.

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