

Syllabus

Energy Storage Technology

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	Position	Associate Professor			Major	Energy Materials Science & Engineering
	Group	Energy Systems Research				

1. Course Description

Introduces principles and mathematical models of electrochemical energy conversion and storage. Students study equivalent circuits, thermodynamics, reaction kinetics. In addition, this course includes applications to batteries, fuel cells, supercapacitors, and electrokinetics, especially focused on Li ion battery

2. Teaching Methods

강의 (ppt + 판서)중심으로 진행 될 예정이며, 매 수업 전 담당 교수가 제공하는 강의 자료를 토대로 할 예정임.

The lecture will be proceeded based on power point materials and hand writing. The ppt file will be uploaded before the class.

3. Evaluation

Attendance 10%
Mid-term exam 40%
Final-report 50%

4. TextBooks

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5. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Introduction, equivalent circuit models 1		
2	equivalent circuit models 2		
3	Thermodynamics 1		
4	Thermodynamics 2		
5	Thermodynamics 3		
6	Reaction Kinetics 1		
7	Reaction Kinetics 2		
8	Reaction Kinetics 3		
9	Mid-Term exam		
10	Introduction to Li ion battery		
11	Cathode		
12	Anode		
13	Electrolyte		
14	Li-S battery		
15	Li-Air battery		
16	Final exam		

6. Others

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