

Class Syllabus

Advanced Inorganic Materials Science & Engineering

Professor	Name	Chang-Koo Kim	Subject	Main course target	Department	Department of Chemical Engineering
	Position	Professor			Major	Chemical Engineering
	Department	Department of Energy System Research				

1. Overview of the subject

The course examines electrical, optical, and mechanical properties of semiconducting materials (especially silicon), and plasma processing for etching and deposition of the semiconductors. Knowledge on basic chemical engineering courses such as physical chemistry, thermodynamics, reaction engineering, transport phenomena is strongly required because various processes for etching and deposition of thin films will be covered in chemical engineer's point of view.

2. Overview of how classes operate

Lecture and term project

3. Learning evaluation method

Mid-term	30%
Final	30%
Presentation and report	30%
Miscellaneous	10%

4. Textbooks and references

Classification	Textbook title (Website)	Author	Publisher	Publication year
Main Textbook	Lecture note			

5. Class progress plan

Week	Teaching Contents	Form of a class	Note
1	Semiconductor fundamentals	Lecture	
2	Vacuum Science and Technology	Lecture	
3	Fundamentals of Plasmas I	Lecture	
4	Fundamentals of Plasmas II	Lecture	
5	DC Glow Discharges	Lecture	
6	RF Discharges I	Lecture	
7	RF Discharges II	Lecture	
8	Mid-term		
9	Plasma Chemistry	Lecture	
10	plasma Reactors	Lecture	
11	Plasma Diagnostics	Lecture	
12	Plasma Processing I	Lecture	
13	Plasma Processing II	Lecture	
14	Research presentation	presentation	
15	Research presentation	presentation	
16	Final exam		

6. Other Notes