Syllabus

Nano-Materials

Prof.	Name	In Sun Cho	Sub.	Student	Department	Energy Systems Research
	Position	Associate Professor			Major	Energy Systems Research
	Group	Energy Systems Research				

1. Course Description

This course is designed to introduce important concepts and fundamental properties of nanomaterials and will provide basic knowledge on the synthesis, properties and applications of nanostructured materials. This course will cover the introduction to nanomaterials (nanocrystals, nanowires, nanotubes, nano thin films, and porous nanostructures), and typical synthetic methods, structural/physical characterizations, and device applications of special nanomaterials.

2. Teaching Methods

The format and structure of this course will consist of lectures delivered over power point hand-outs and streaming video. All students should give an oral presentation about their own topic related to nanomaterials and provide a well-written English paper after reviewing around 5 scientific papers.

3. Evaluation

A. Attendance : 20%
B. Oral presentation : 30%
C. Term Paper : 20%
D. Final exam. : 30%

4. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
주교재	Nanostructures & Nanomaterials (2nd edition)	Guozhong Cao	World Scientific	2011
참고자료	나노재료	김기범	번한서적	2012

Syllabus

5. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Introduction to Nanomaterials	Lecture	
2	Physical Chemistry of Solid Surfaces	Lecture	
3	0-D Nanocrystals (I)	Lecture	
4	0-D Nanocrystals (II)	Lecture	
5	1-D Nanostructures (I) (Nanowires, Nanotubes)	Lecture	
6	1-D Nanostructures (II) (Nanowires, Nanotubes)	Lecture	
7	2-D Nanostructures (I)	Lecture	
8	2-D Nanostructures (II)	Lecture	
9	Porous Nanostructures	Lecture	
10	Structural Characterization of Nanomaterials	Lecture	
11	Applications of Nanomaterials	Lecture	
12	Oral presentation(I)	Presentation	
13	Oral presentation(II)	Presentation	
14	Oral presentation(III)	Presentation	
15	Oral presentation(IV)	Presentation	
16	Writing Final term-paper	Paper review	

6. Others