

2025 Fall Semester 永續奈米化學特論

Special Topics in Sustainable Nano-chemistry course syllabus

Course name:		Dept. of course		永續化學博	
(Chinese) 永續奈米化學特論		offering:			
(English)Special Topics in Sustainable Nanochemistry		Course code:		SCSC30027	
		Class Time/Room:		9:10~12:00	
Lecturers: Dr. Chun-Hong Kuo					
credit:	3.00	type:	Elective	grade:	*
Prerequisite:					
普通化學和無機化學 Passes in general chemistry and inorganic chemistry will be required in prior to taking this course.					
Course descriptions and objectives:					
Thursday 09:10~12:00					
In this course, introductions and discussions about sustainable nanochemistry will be performed based on the viewpoints of inorganic and physical chemistry. Apart from a quick review of basic skills, some unique technologies will be introduced instead by experts. Students who want to take this course are strongly suggested to have basic knowledge of general chemistry, and crystallography.					
Teaching Materials					
Handouts and research literatures will be used.					
Referred Textbooks					
“Sustainability Science and Technology: An Introduction” by Alejandro De Las Heras, CRC					
“Nanoscale Materials in Chemistry” 2nd edition by Kenneth J. Klabunde and Ryan M. Richards, Wiley, 2009					
“Nanoscale Science and Technology” by Robert W. Kelsall, Ian W. Hamley and Mark Geoghegan, Wiley, 2005.					
“Electronic Properties of Materials” 4th edition by Rolf E. Hummel, Springer, 2011.					
Syllabus					

Week	Date	Course Progress, Contents, Topics	Lecturers
1	2025-09-04(四)	Introduction to Class Contents Basic Chemistry: Atom, Molecule, and Ion	Dr. Chun-Hong Kuo
2	2025-09-11(四)	Introduction to Nanotechnology	Dr. Chun-Hong Kuo
3	2025-09-18(四)	Electron Microscope: Introduction to Structure	Dr. Chun-Hong Kuo
4	2025-09-25(四)	Electron Microscope: Introduction to Principle	Dr. Chun-Hong Kuo
5	2025-10-02(四)	Carbon Nanomaterials for Sustainable Technology	Dr. Chun-Hong Kuo
6	2025-10-09(四)	Special Topic in Cuprous Oxide	Dr. Chun-Hong Kuo
7	2025-10-16(四)	Midterm Exam	Dr. Chun-Hong Kuo
8	2025-10-23(四)	Metallic Nanocrystals I	Dr. Chun-Hong Kuo
9	2025-10-30(四)	Metallic Nanocrystals II	Dr. Chun-Hong Kuo
10	2025-11-06(四)	Surface Adsorption	Dr. Chun-Hong Kuo
11	2025-11-13(四)	Nanoarchitectonic Engineering and Temporal Probing Spectroscopy	Dr. Chun-Hong Kuo
12	2025-11-20(四)	Green Nano vs Life	Dr. Chun-Hong Kuo
13	2025-11-27(四)	Introduction to Novel Nanotechnology (Student Presentation/25 min) – A Group	Dr. Chun-Hong Kuo
14	2025-12-04(四)	Introduction to Novel Nanotechnology (Student Presentation/25 min) – B Group	Dr. Chun-Hong Kuo
15	2025-12-11(四)	Final Exam	Dr. Chun-Hong Kuo
16	2025-12-18(四)	Discussion	Dr. Chun-Hong Kuo