

Chem 561/Chem465 Polymer Chemistry I: Polymer Synthesis

Fall Term 05-06; Thursday 6-9:00 pm; Curtis 341

Department of Chemistry, Drexel University

INSTRUCTOR: Dr. Yen Wei, *Herman B. Wagner Professor of Chemistry*, Tel. 895-2650; Fax 895-1265;

E-mail: weiyen@drexel.edu; Office: Rm 12-211; Website: www.chemistry.drexel.edu

Pre-requisite: Minimum 1 term of college organic chemistry

Wk#	Date	Topic	Reading*	Homework*
1	9/29/05	Scope of Polymer Chemistry	O:1; A:1	O:1-1,2,3,7,8,9,10; A:1-2,4
2	10/6	Step Polymerization	O:2-1,8,12,14 to 17; A:2	O:2-3,6,14,16to18; A:2-2 to 5
3	10/13/05	Class cancelled. Prof. Wei gives Keynote talk in National Polymer Conference in China.		
4	10/20	Stereochemistry of Polymers	O:8-1,2a; A:4	O:8-1,5
		Free-Radical Polymerization	O:3-1,2,3a,4 to 7; A:3	A:3-1,2,4,5,7,8
5	10/27	Free-Radical Polymerization	O:3-14 to 16; A:5	O:3-1,2,3,4,13
		Process Conditions & Emulsion Polymerization	O:3-13,4-1	O:4-1,2,3
6	11/3/05	Special office hours: 4:30-6:00 pm Midterm Exam 1.5 h		
7	11/10	Cationic Polymerization	O:5-1,2abci; A:4	
		Anionic Polymerization	O:5-3ab,4,5,6,7; A:4	O:5-1,8,9,13; A:4-1,2,6,7
8	11/17	Group-Transfer Polymerization	O:5-3c; A:4; <i>J. Am. Chem. Soc.</i> 105 , 5706 (1983)	
		Stereochemistry of Polymerization	O:8-2b,3	
9	12/1	Coordination Polymerization	O:8-4ab,5 to 15; A:4	O:8-2,5,7
		Metathesis Polymerization	<i>Sci.</i> 243 , 907 (1989)	
		Chain Copolymerization	O:6-1,6,7,8	O:6-1,14
		<i>Thanksgiving Relaxation Reading:</i>		
		Non-Classical Chain Polymerization	O:2-14bj, <i>J. Chem. Educ.</i> 78 (4), 551-553, 2001.	
		Overview of Living Polymerizations	<i>Sci.</i> 251 , 887 (1991)	
		Molecular Designs (e.g Dendrimers)	<i>C&EN</i> Sept. 22, 1997 issue	
10	12/8	Ring-Opening Polymerization	O:7-1 to 10; A:6	O:7-1,2,3,4,7,9,11; A:6-1,2,3,5,8,9
		Reactions of Polymers	O:9; A:7	O:9-1,2,3,4,7,10,11; A:7-3,4
11	12/15/05	Term Exam (Special office hours: 4:30-6:00 pm)		

* *These assignments may change in the lectures. TBA= To Be Assigned.*

Note: Unless otherwise specified in class, skip all the sections on kinetics and thermodynamics, which will be included in Chem 562 & 466. Homework will be collected one week from the date of assignment.

Quality of homework will affect the final grade.

Grades: A ≥ 85 ; B 75-84; C 65-74; D 55-64; F < 55 on the basis of ≥ 100 total points.

CONSULTING TEXTBOOKS

	<u>Author</u>	<u>Title</u>	<u>Publishers</u>
A:	Allcock/Lampe/Mark	Contemporary Polymer Chemistry, 3rd Ed	Prentice-Hall, 2003
O:	G. Odian	Principles of Polymerization, 4th Ed	Wiley, New York, 2004

Warning: The lecture notes are extremely important!