南方科技大学 SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

课程详述

COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	**课程名称 Course Title**	**高分子化学实验 Polymer Chemistry Laboratory**
2.	**授课院系 Originating Department**	化学系 Department of Chemistry
3.	**课程编号 Course Code**	CH321
4.	**课程学分 Credit Value**	1
5.	**课程类别 Course Type**	专业选修课 Major Elective Courses
6.	**授课学期 Semester**	秋季 Fall
7.	**授课语言 Teaching Language**	中英双语 English & Chinese
8.	**授课教师、所属学系、联系方式（如属团队授课，请列明其他授课教师） Instructor(s), Affiliation& Contact （For team teaching, please list all instructors）**	何凤，副教授，化学系 第一科研楼 401 室 hef@sustech.edu.cn 0755-8801-8398 Feng He, Associate Professor, Chemistry Rm.401, No.1 Research Bldg. hef@sustech.edu.cn 0755-8801-8398 房芳，化学系 Fang Fang, Chemistry fangf@sustech.edu.cn 0755-8801-8738 于月娜，化学系 Yu Yuena, Chemistry yuyn@sustech.edu.cn 0755-8801-8378
9.	**实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact**	无 NA

10.	选课人数限额(可不填) Maximum Enrolment（Optional）	

11. 授课方式 Delivery Method	讲授 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other（Please specify）	总学时 Total
学时数 Credit Hours			32		32

12.	先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	高分子化学（CH315）
13.	后续课程、其它学习规划 Courses for which this course is a pre-requisite	
14.	其它要求修读本课程的学系 Cross-listing Dept.	

教学大纲及教学日历 SYLLABUS

15. **教学目标 Course Objectives**

这门课是对高分子化学和物理专业知识的巩固和拓展。这门课旨在加深学生对基础知识的理解, 培养学生综合能力；课程注重问题引导, 形式活泼，启发学生开创性思维以及对前沿问题和解决方法的了解。

This course is a reinforcement and extension of the basic understanding of polymer chemistry and polymer physics in the text book. It is devoted to fill the gap between fundamental knowledge and comprehensive experiments in scientific research in multiple disciplines. Through this course students will be exposed to key ideas in rich themes. This course is flexible, to encourage creative thinking and problem solving.

16. **预达学习成果 Learning Outcomes**

了解高分子领域核心、前沿的研究方法和基本原理。通过对研究方法的学习，加深对高分子科学，尤其是高分子物理和材料的认识和理解，能够灵活运用高分子化学和高分子物理基础知识到研究工作中去，提高学生解决高分子科学中相关问题的能力。开拓思维，培养学生独立思考，提出问题和解决问题的能力。

To teach students with a basic knowledge of properties and characterizations of polymers. To provide students with an elementary understanding of the reaction mechanisms involved in polymer synthesis and the kinetics of these reactions. To teach students how the above materials are related, the fundamentals of polymer structure/property relationships, so that they can make simple predictions for design.

17. **课程内容及教学日历 （如授课语言以英文为主，则课程内容介绍可以用英文；如团队教学或模块教学，教学日历须注明主讲人）**
Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)

绪论 实验室安全、实验内容、评分标准（2 学时）

INTRODUCTION Laboratory Safety, Experiment Contents and Scoring Criteria. (2 credit hours)

实验一：甲基丙烯酸甲酯的本体聚合（10 学时）

The polymerization of methyl methacrylate. (10 credit hours)

实验二：共轭聚合物的微波聚合反应，并用凝胶渗透色谱仪确定分子量和分子分布（10 学时）

The polymerization of adada, 5,5'-bis(trimethylstannyl)-2,2'-bithiophene under microwave irradiation. Determine the molecular weight and molecular distribution. (10 credit hours)

实验三：双酚 A 型环氧树脂的制备与固化（10 学时）

The synthesis and solidify of the epoxy 618 resin. (10 credit hours)

18. 教材及其它参考资料 Textbook and Supplementary Readings

1. 《化学综合和设计实验》 张寒琦 徐家宁 主编，高等教育出版社，2006

2. Design and Synthesis of Chlorinated Benzothiadiazole-Based Polymers for Efficient Solar Energy Conversion, Zhiming Hu, Hui Chen, Jianfei Qu, Xiaowei Zhong, Pengjie Chao, Mo Xie, Wei Lu, Anhua Liu, Leilei Tian, Yu-An Su, Wei Chen*, and Feng He*, ACS Energy Lett., 2017, 2 (4), pp 753–758.

3. 高分子物理实验，邵毓芳，嵇根定编著。南京：南京大学出版社，1998

4. 高分子物理，刘凤岐，汤心颐编著。北京：高等教育出版社，1995

5. 环氧树脂，陈平，刘胜平编著。北京：化学工业出版社，1999：1

课程评估 ASSESSMENT

19.

评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance		10		
课堂表现 Class Performance		40		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		40		
期中考试 Mid-Term Test				
期末考试				

Final Exam				
期末报告 Final Presentation		10		
其它（可根据需要改写以上评估方式） Others (The above may be modified as necessary)				

20. **记分方式 GRADING SYSTEM**

☑ A. **十三级等级制 Letter Grading**
☐ B. **二级记分制（通过/不通过） Pass/Fail Grading**

课程审批 REVIEW AND APPROVAL

21. **本课程设置已经过以下责任人/委员会审议通过**
This Course has been approved by the following person or committee of authority

化学系教学指导委员会
Teaching committee of the chemistry department