

课程大纲

COURSE SYLLABUS

1.	课程代码/名称 Course Code/Title	CHE5035/催化不对称合成																								
2.	课程性质 Compulsory/Elective	专业课																								
3.	课程学分/学时 Course Credit/Hours	2.00/32																								
4.	授课语言 Teaching Language	中文																								
5.	授课教师 Instructor(s)	谭斌																								
6.	先修要求 Pre-requisites	有机化学 (I) (II)、现代策略合成																								
7.	教学目标 Course Objectives	不对称合成是当代有机化学研究的热点和前沿，通过本课程的学习，帮助学生了解和掌握有机化学或药物合成反应中立体化学的基本知识，进一步学习有关不对称合成反应的基本概念、不对称合成的方法学及手性药物合成的策略，并且了解近年来不对称合成的研究成就和发展前沿，为科学研究打下坚实基础。																								
8.	教学方法 Teaching Methods	本课程以基本催化不对称类型-金属催化、有机催化、酶催化为线索，分别讲解不对称合成单元反应的原理，方法和机制。结合最新文献中对相关反应的研究进展和在药物合成中的应用。使学生对不对称的发展、现状及其应用有全面的了解。另外，可以激发学生从事不对称合成的热情，为我国的新药研发贡献自己的力量。																								
9.	教学内容 Course Contents	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Section 1</td> <td>Brief introduction</td> </tr> <tr> <td>Section 2</td> <td>Aminocatalysis</td> </tr> <tr> <td>Section 3</td> <td>Hydrogen-bonding catalysis</td> </tr> <tr> <td>Section 4</td> <td>Phase transfer catalysis</td> </tr> <tr> <td>Section 5</td> <td>Nucleophilic catalysis</td> </tr> <tr> <td>Section 6</td> <td>Organocatalytic domino reactions</td> </tr> <tr> <td>Section 7</td> <td>Application in total synthesis</td> </tr> <tr> <td>Section 8</td> <td>Chiral phosphorus ligands in asymmetric catalysis</td> </tr> <tr> <td>Section 9</td> <td>Chiral oxazoline-containing ligands in asymmetric catalysis</td> </tr> <tr> <td>Section 10</td> <td>Chiral Olefin/diene ligands in asymmetric catalysis</td> </tr> <tr> <td>Section 11</td> <td>Chiral salen ligands in asymmetric catalysis</td> </tr> <tr> <td>Section 12</td> <td>Asymmetric cooperative catalysis</td> </tr> </table>	Section 1	Brief introduction	Section 2	Aminocatalysis	Section 3	Hydrogen-bonding catalysis	Section 4	Phase transfer catalysis	Section 5	Nucleophilic catalysis	Section 6	Organocatalytic domino reactions	Section 7	Application in total synthesis	Section 8	Chiral phosphorus ligands in asymmetric catalysis	Section 9	Chiral oxazoline-containing ligands in asymmetric catalysis	Section 10	Chiral Olefin/diene ligands in asymmetric catalysis	Section 11	Chiral salen ligands in asymmetric catalysis	Section 12	Asymmetric cooperative catalysis
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10.	课程考核 Course Assessment	
		①考查；②课堂表现 Class Performance : 20%；小测验 Quiz: 30%；期末报告 Final Presentation : 50%。
11.	教材及其它参考资料 Textbook and Supplementary Readings	
		Catalytic Asymmetric Synthesis, 3rd Edition, Iwao Ojima (Editor) ISBN: 978-0-470-17577-4, 2010. 林国强等编. 手性合成—不对称反应及其应用.北京: 科学出版社.2013 年第五版