



### 新型介孔分子筛Cu/MCM-41的合成和表征及其催化氧化性能研究

徐勇华<sup>1,2</sup>, 李晚谊<sup>3</sup>, 王剑飞<sup>2</sup>, 王家强<sup>2</sup>, 杨亚玲<sup>1</sup>

1. 昆明理工大学 生物与化学工程学院 云南 昆明 650224;
2. 云南大学 应用化学系 教育部自然资源药物化学重点实验室 云南 昆明 650091;
3. 云南省农科院 药用植物研究所 云南 昆明 650223

### Synthesis and characterization of mesoporous Cu/MCM-41 and its catalytic activity to phenol

XU Yong-hua<sup>1,2</sup>, LI Wan-yi<sup>3</sup>, WANG Jian-fei<sup>2</sup>, WANG Jia-qiang<sup>2</sup>, YANG Ya-lin<sup>1</sup>

1. Faculty of Biology and Chemical Engineering, Kunming University of Science and Technology, Kunming 650224, China;
2. Department of Applied Chemistry, Key Laboratory of Medicinal Chemistry for Natural Resource, Ministry of Education, Yunnan University, Kunming 650091, China;
3. Medical Plant Institute, Yunnan Academy of Agricultural Sciences, Kunming 650223, China

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摘要 以十六烷基三甲基溴化铵为模板剂,正硅酸乙酯为硅源,硝酸铜为无机源,用水热法合成了新型介孔分子筛Cu/MCM-41.用N<sub>2</sub>吸附/脱附,XRD,FI-IR和UV-Vis对合成材料进行了表征,结果表明合成的介孔Cu/MCM-41具有六方孔道,且Cu离子已高度分散于硅的分子骨架中,并呈四配位键合.讨论了Cu/MCM-41氧化苯酚制备对苯醌的催化活性.

关键词: Cu/MCM-41 选择性氧化 苯酚 对苯醌

Abstract: Copper doped MCM-41(Cu/MCM-41) was synthesized by using cetyltrimethylammonium bromide as a template,copper nitrate as copper precursor,and ethyl silicate as the silica source via hydro thermal method.Cu/MCM-41 was characterized by XRD,N<sub>2</sub> physisorption,UV-Vis,X-ray diffraction and FT-IR.The results indicated that material has uniform hexagonal channels and copper ion highly disperses into silicon framework of the MCM-41 with tetradentation.The catalytic activity of Cu/MCM-41 was studied by oxidation of phenol to benzoquinone.

Key words: Cu/MCM-41 selective oxidation phenol benzoquinone

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电话：0871-5033829(传真) 5031498 5031662 E-mail: yndxxb@ynu.edu.cn yndxxb@163.com