

研究简报

非水介质中合成介孔分子筛MCM-41

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摘要 首次采用十六烷基三甲基溴化铵为模板剂、正硅酸乙酯为硅源, 分别使用无机和有机弱碱, 溶剂热晶化法在非水甘油介质中合成了介孔分子筛MCM-41, 通过XRD, N₂吸附-脱附, TG-DTG, IR, SEM等测试手段对样品进行了表征分析, 结果表明在甘油体系中得到的样品具有优良的孔结构性质. 相比于氢氧化钠, 以有机弱碱(无水乙二胺、三乙胺)作为碱源, 可以得到有序性更好、结晶度高的样品, 样品具有较窄的孔径分布.

关键词 [介孔分子筛](#) [非水介质](#) [合成](#) [MCM-41](#)

分类号

Synthesis of Mesoporous Molecular Sieve MCM-41 in Nonaqueous Medium

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Abstract A new approach for the synthesis of mesoporous molecular sieve was reported. Using tetraethyl orthosilicate (TEOS) as silica sources, and cetyltriethylammonium bromide as templating agent, the mesoporous silica MCM-41 could be easily synthesized in glycerol medium in the presence of different organic amine by solvothermal synthesis process. The attained samples were characterized by XRD, N₂ ad-sorption-desorption, TG-DTG and FT-IR. The experimental results show that the samples synthesized by organic amine, such as ethylenediamine and triethylamine have high-order and narrow pore diameter distribution in comparison with those obtained with inorganic alkali of sodium hydroxide.

Key words [mesoporous molecular sieve](#) [nonaqueous medium](#) [synthesis](#) [MCM-41](#)

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