

研究简报

缓冲体系中高热和水热稳定性的MCM-48介孔分子筛的合成

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摘要 利用混合阳离子-非离子表面活性剂为模板剂在缓冲体系中成功地合成出具有高热和水热稳定性的MCM-48介孔材料. 通过XRD, N₂吸附-脱附, ²⁹Si MAS NMR和 ³¹P MAS NMR等手段对样品进行了表征. 结果表明, 合成的MCM-48材料具有高的比表面积和高度有序的孔道系统. 样品在空气中于900 °C下焙烧15 h和在600 °C 100%水蒸气下处理8~10 h, 仍能保持良好的立方孔道结构, 显示很高的热稳定性和极好的水热稳定性.

关键词 [缓冲体系](#) [MCM-48](#) [混合表面活性剂](#) [介孔材料](#)

分类号

Synthesis of Highly Thermally and Hydrothermally Stable MCM-48 in Buffer Solution

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Abstract Mesoporous MCM-48 with high thermal and hydrothermal stability has been successfully synthesized in buffer solution by mixed cationic-nonionic surfactant templating pathway. The synthesized material was characterized by XRD, N₂ adsorption-desorption isotherms, ²⁹Si and ³¹P MAS NMR. The characteristic results showed that the MCM-48 material possessed high specific surface areas and well-ordered channel systems. The MCM-48 sample treated with 100% steam at 600 °C for 8~10 h or calcined in air at 900 °C for 15 h could still retain its cubic structure, indicating that the sample has high thermal and hydrothermal stability.

Key words [buffering system](#) [MCM-48](#) [mixed surfactant](#) [mesoporous material](#)

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