

以混合中性-阳离子表面活性剂为模板合成MCM-48

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摘要 本文首次将中性和阳离子表面活性剂混和(S⁺OS⁺)形成胶束后,共同作为模板剂合成了立方相中孔分子筛,经此途径得到的中孔分子筛材料既具有MCM-48的立方结构,又能体现出更好的热稳定性。混合不同性质的表面活性剂作为模板剂,将是一种制备不同性能的中孔分子筛的有效易行的途径。

关键词 [MCM-48](#) [分子筛](#) [水热反应](#) [模板](#) [合成](#) [模板剂](#) [混合表面活性剂](#) [胶束](#) [表面活性剂](#) [十二碳化合物](#) [胺P](#)

分类号 [0648](#) [0643](#)

A mixed neutral-cationic surfactant templating pathway to cubic mesoporous molecular sieves

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Abstract A mixed neutral-cationic surfactant templating pathway is disclosed for the first time to demonstrate the easy synthesis of cubic phase MCM-48. In this approach, commercially available neutral surfactant n-dodecylamine (DDA) is selected along with cationic surfactant cetyltrimethyl-ammonium bromide (CTAB) to assemble the micelle leading to some changes on the properties of the MCM-48 thus obtained. The synthesis is conducted at a low mass fraction of mixed surfactant (4%) and a low molar ratio of total surfactants to silica (0.16). The unit cell parameter of MCM-48 is tunable in sub-angstrom precision by simply varying the amount of DDA in the mixed micelle. A more extensively cross-linked framework and therefore a higher thermal stability in our MCM-48 materials can be achieved with the introduction of DDA to the mixed surfactant micelle. Templating pathway by mixing different sorts of surfactants may provide for the facile synthesis of mesoporous molecular sieves with different properties.

Key words [MOLECULAR SIEVE](#) [HYDRO-THERMAL REACTION](#) [FORMWORK](#) [SYNTHESIS](#) [TEMPLATE AGENT](#) [MIXED SURFACTANT](#) [MICELLE](#) [SURFACTANTS](#) [C12 COMPOUNDS](#) [PROPANAMINE P](#)

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