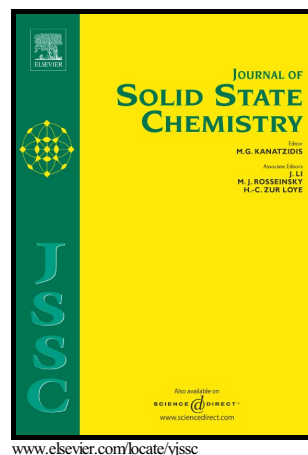


MoO₃@SiO₂ nanoreactors: synthesis with a thermal decomposition strategy and catalysis on alkenes epoxidation

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MoO₃@SiO₂ nanoreactors: synthesis with a thermal decomposition strategy and catalysis on alkenes epoxidation

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ABSTRACT:

A general thermal decomposition strategy is reported to fabricate MoO₃@SiO₂ nanoreactors, with a mesoporous silica shell and embedded MoO₃ nanoparticles. The novel preparation procedure involves mixing certain mass ratio of (NH₄)₆Mo₇O₂₄·4H₂O (AMM) and hollow mesoporous silica spheres (HMSS) by grinding, fusion and thermal decomposition of (NH₄)₆Mo₇O₂₄·4H₂O under calcination and removing the residual via filtration. The as-prepared MoO₃@SiO₂ nanoreactors were characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), thermogravimetric analysis (TGA), N₂ adsorption/desorption and X-ray photoelectron spectra (XPS). The nanoreactors were

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