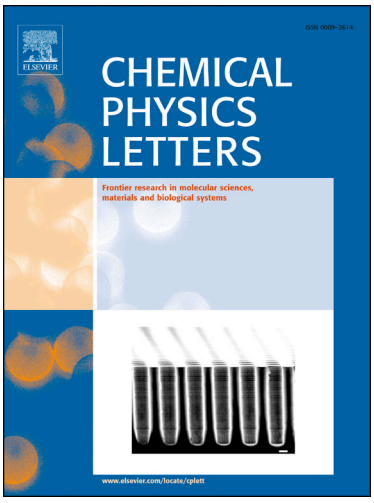

Research paper

Manganese Porphyrin immobilized on Magnetic MCM-41 nanoparticles as an efficient and reusable catalyst for alkene oxidations with sodium periodate

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Manganese Porphyrin immobilized on Magnetic MCM-41 nanoparticles as an efficient and reusable catalyst for alkene oxidations with sodium periodate

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Abstract

This study describes the immobilization of tetraphenylporphyrinatomanganese(III) chloride, (MnPor), onto imidazole functionalized MCM-41 with magnetite nanoparticle core (Fe_3O_4@MCM-41-Im). The resultant material (Fe_3O_4@MCM-41-Im@MnPor) was characterized by X-ray diffractometry (XRD), Fourier transform infra-red (FT-IR), diffuse reflectance UV–Vis spectrophotometry (DR UV-Vis), field emission scanning electron microscopy (FESEM), Inductively coupled plasma (ICP), analyzer transmission electron microscopy (TEM) and Brunauer-Emmett-Teller (BET) surface area. This new heterogenized catalyst was applied as an efficient catalyst for the epoxidation of a variety of cyclic and linear olefins with $NaIO_4$ under mild conditions. The prepared catalyst can be easily recovered through the application of an external magnet, and reused several times without any significant decrease in activity and magnetic properties.

Keywords

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