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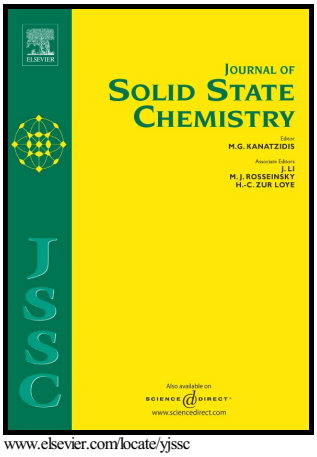

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Synthesis and characterization of ZnO incorporated magnetically recoverable KIT-6 as a novel and efficient catalyst in the preparation of symmetrical N, N'-alkylidene bisamides

Hamid Reza Saadati-Moshtaghin[a], Farrokhzad Mohammadi Zonoz[a*], Mostafa M. Amini[b]

[a]Department of Chemistry, Faculty of Science, Hakim Sabzevari University, Sabzevar, 96179-76487, Iran

[b]Department of Chemistry, Shahid Beheshti University, G.C., Tehran 1983963113, Iran

f.zonoz@hsu.ac.ir,

fzmohamadi@yahoo.com

[*]Corresponding author: Tel.: +98 51 44013060; fax: +98 51 44011161

Abstract

A novel magnetically recoverable nanocomposite consisting of the $NiFe_2O_4$ core and KIT-6 mesoporous silica shell incorporated with ZnO nanoparticles was constructed. This nanocomposite was characterized by Fourier transform infrared (FT-IR), powder X-ray diffraction (XRD), Brunauer Emmett Teller (BET), field emission scanning electron microscopy (FESEM), transmission electron microscopy (TEM) and vibrating sample magnetometry (VSM). This new nanocomposite demonstrated a catalytic performance in the synthesis of symmetrical N,N'-alkylidene bisamides at the condensation reaction under solvent-free conditions. The nanocatalyst could simply be recovered from the reaction environment by using an exterior magnet and reused five times without a remarkable losing in the catalytic property.