

عنوان مقاله:

Fe₃O₄@silica sulfuric acid nanoparticles as a potent and recyclable solid acid catalyst for the synthesis of indole derivatives

محل انتشار:

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نویسندگان:

Alireza Khorshidi - *Department of Chemistry, Faculty of Sciences, University of Guilan, P.O. Box: ۴۱۳۳۵-۱۹۱۴, Rasht, Iran*

Shahab Shariati - *Department of Chemistry, Faculty of Sciences, Rasht Branch, Islamic Azad University, Rasht, Iran*

Masoumeh Aboutalebi - *Department of Chemistry, Faculty of Sciences, University of Guilan, P.O. Box: ۴۱۳۳۵-۱۹۱۴, Rasht, Iran*

Neda Mardazad - *Department of Chemistry, Faculty of Sciences, University of Guilan, P.O. Box: ۴۱۳۳۵-۱۹۱۴, Rasht, Iran*

خلاصه مقاله:

Fe₃O₄ magnetic nanoparticles were synthesized by co-precipitation of Fe²⁺ and Fe³⁺ in aqueous NaOH. Then silica was coated on the obtained nanoparticles and the whole composite was functionalized with chlorosulfonic acid in CH₂Cl₂. The obtained nanocomposite (Fe₃O₄@SiO₂-SO₃H) was characterized by FT-IR, VSM and XRD techniques and was used as an efficient catalyst in condensation reaction of indoles and aldehydes, and excellent yields of the desired products were obtained. The catalyst was recycled and used for successive runs with no considerable loss of activity. The indole products in their conjugated form were capable of selective sensing of CN⁻ anion in solution.

کلمات کلیدی:

Nanoparticle, heterogeneous, catalyst, bis(indolyl)methane

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