عنوان مقاله:

CoFe2O4@SiO2-NH2-CoIIMagnetic Nanoparticles as a Highly Efficient Nanocatalyst for the Synthesis of Spirooxindole Derivatives

محل انتشار:

بیست و ششمین سمینار شیمی آلی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Mehri Mohammadpour - *Department of Chemistry, College of Sciences, University of Birjand, P.O. BOX ۹۷۱۷۵-۶۱۵, Birjand, Iran*

Ali Allahresani - *Department of Chemistry, College of Sciences, University of Birjand, P.O. BOX ۹۷۱۷۵-۶۱۵, Birjand, Iran*

Mohammad Ali Nasseri - *Department of Chemistry, College of Sciences, University of Birjand, P.O. BOX ۹۷۱۷۵-۶۱۵, Birjand, Iran*

خلاصه مقاله:

The synthesis of oxindole derivatives as an important type of heterocyclic compounds is stilla challenge in the field of organic chemistry and industrial science. Oxindole derivatives possessgood biological and pharmaceutical activities [1]. Spirooxindoles have a wide range ofbiological activities including antiviral, anticancer, anti-inflammatory and antimicrobial activities.Therefore, the synthesis of spirooxindole derivatives is still the subject of extensive research[2]. Numerous homogeneous and heterogeneous catalysts were used for the synthesisof spirooxindole derivatives. In this study, $CoFe_2O_4$ was synthesized from $Fe(NO_3)_3$ and $Co(NO_3)_2$ in aqueous media. Core-shell nanoparticles ($CoFe_2O_4@SiO_2$) were prepared by precipitatingsilica on the surface $CoFe_2O_4$ [2]. In the following step, functionalization of$CoFe_2O_4@SiO_2$ NPs was performed by the treatment with (3chloropropyl) triethoxysilane andfurther reaction with triethylenetetramine to afford aminated $CoFe_2O_4@SiO_2$ followed byimmobilization of CoII corresponding heterogeneous magnetic nanocatalyst ($CoFe_2O_4@SiO_2$-NH2-CoIINPs). (***) The synthesis of spirooxindole derivatives was investigated in the presence of$CoFe_2O_4@SiO_2$-NH2-CoII NPs in H2O/EtOH (1:1) at reflux conditions and the results shownthat the corresponding products were synthesized in excellent yields.

کلمات کلیدی:

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