عنوان مقاله:

Synthesis and Characterization of Fe3O4@C-SO3H as a highly efficient Nano-Catalyst for the preparation of 2/-aminobenzothiazolomethylnaphthols and 1-amidoalkyl-2-naphthols

محل انتشار:

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خلاصه مقاله:

The enhanced activity of heterogeneous (Fe3O4@C-SO3H) ascribed to the high stability of its acid sites, high density, carbon sheets hydrophobic property, and existence of –SO3H and –COOH groups in its molecular structure [1-5]. A stable core-shell structured magnetic solid acid catalyst Fe3O4@C-SO3H, was prepared from Starch, concentrated sulfuric acid and modified magnetic particles of Fe3O4, which was used as the core. The effects of the carbonization and sulfonation processes on the activity of the catalysts were investigated. The result showed that preparation conditions had great influence on the quantity of the acidic groups (sulfonic, carboxyl, and hydroxyi groups) and the stability of magnetic catalysts. Then we used the magnetically Fe3O4@Sta–SO3H catalyst as a heterogeneous catalyst for the preparation of 2/-aminobenzothiazolomethylnaphthols and 1- amidoalkyl-2-naphthols via the one-pot three-component reaction of aldehyde, β naphthol and 2-aminobenzothiazole, acetamide or benzamide (Scheme).To our delight, the reaction was efficiently catalyzed by 0.03 g of Fe3O4@Sta–SO3H at 80 0C under Solvent-free conditions, to give full conversion and high yield. It is clear from the result that the aromatic aldehydes bearing electron-withdrawing and electron-donating groups performed equally well in this reaction and give excellent yield of .the products within 2–8 h

کلمات کلیدی: