عنوان مقاله:
Synthesis of Fe2O3 nanoparticles in ionic liquids based on imidazole

محل انتشار:
دومین همایش ملی تکنولوژی های نوین در شیمی و پتروشیمی (سال: 1394)

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خلاصه مقاله:
Fe2O3 nanoparticles with various morphologies have been successfully synthesized using ionic liquid assisted reflux method. The samples are characterized by X-ray diffraction, IR spectroscopy and field emission scanning electron microscope (FE-SEM). The results indicate that the as-prepared samples are Fe2O3nanoparticles,mesoporous hollow microspheres, microcubes, and porous nanorods. The effects of the ionic liquid benzyl-methylimidazolium bromide ([bnmim][Br]) on the formation of the Fe2O3 with various morphologies have been investigated systematically. The proposed formation mechanisms have also beeninvestigated on the basis of a series of FE-SEM studies of the products obtained at different durations. Because of the unique porous structure, the potential application in water treatment of the Fe2O3 porous nanorods was investigated. This method is expected to be a useful technique for controlling the diverse shapes of crystalline inorganic materials for a variety of applications, such as sensors, gas and heavy metal ion adsorbents and catalytic fields.

کلمات کلیدی:
Green synthesis, benzyl-methylimidazolium bromide, nanoparticles