

عنوان مقاله:

Green synthesis of the Pd/bentonite nanocomposite using Euphorbia neriifolia L. leaf extract and evaluation of its catalytic activity

محل انتشار:

کنگره ملی شیمی و نانو شیمی از پژوهش تا توسعه ملی (سال: 1396)

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خلاصه مقاله:

A facile and one-step green process to synthesize palladium nanoparticles (Pd NPs) dispersed on bentonite is reported. In this study, for the first time, we describe the successful assembly of the Pd/ bentonite nanocomposite using Euphorbia neriifolia L. leaf extract as a reducing and stabilizing agent. The Pd/ bentonite nanocomposite showed high efficiency in the catalytic reduction of nitroarenes such as 4 -nitrophenol (4-NP) to the corresponding amine. This catalyst also could exhibited a high activity towards the reduction of organic dyes such as Congo red (CR) and Rhodamine B (RhB)) by NaBH₄ in aqueous solution with high level of reusability. The catalytic reduction reactions were monitored by employing UV-Vis spectroscopy. The structure, morphology, and physicochemical properties were characterized by various analytical techniques such as transmission electron microscopy (TEM) images, field emission scanning electron microscope (FESEM), energy-dispersive X-ray spectroscopy (EDS), Xray .diffraction analysis (XRD) and FT-IR spectroscopy

کلمات کلیدی:

Euphorbia neriifolia L., Pd/ bentonite nanocomposite; Reduction, Nitroarenes; Organic dyes

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