

عنوان مقاله:

Photocatalytic Decolorization of methyl orange dye using Iron oxide-doped Titanium oxide nano-photocatalysts

محل انتشار:

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خلاصه مقاله:

TiO₂/Fe₃O₄ and TiO₂/Fe₂O₃ nanocomposites with various ratios were synthesized by an ultrasonic-assisted deposition-precipitation method and their UV-light decolorization of methyl orange (MO) dye was investigated. The effect of Fe₃O₄/TiO₂ and Fe₂O₃-TiO₂ nanocomposites ratio on the photocatalytic activity and magnetic property of the nanocomposites was studied by comparing their decolorization curves and magnetism in the presence of magnet, respectively. The results revealed that the decolorization efficiency of 1 wt% Fe₃O₄/TiO₂ nanocomposite reached about 40% within 60 min UV irradiation at room temperature. However, this sample showed the least magnetism. Also, the ability of synthesized nanocomposites in holding the adsorbed methyl orange dye on their surface and the effect of pH were investigated

کلمات کلیدی:

TiO₂/Fe₃O₄ and TiO₂/Fe₂O₃ nanocomposites; Ultrasonic-assisted deposition-precipitation method; Photocatalytic activity; Methyl orange

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