

عنوان مقاله:

Fabrication of Manganese Dioxide Nanoparticles in Starch and Gelatin Beds : Investigation of Photocatalytic Activity

محل انتشار:

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خلاصه مقاله:

This study utilized potassium permanganate and natural polymers starch and gelatin as stabilizing agents to the green fabrication of manganese dioxide nanoparticles MnO_2 -NPs for photocatalytic degradation of methylene blue. MnO_2 -NPs were characterized using UV-Vis spectroscopy, FT-IR, and X-ray diffraction spectroscopy, as well as Field Emission Scanning Electron Microscopy (FESEM). XRD confirmed the amorphous nature and purity of the nanoparticles. The photocatalytic activity of MnO_2 -NPs was examined by the degradation of methylene blue dye under neutral pH. Results showed ۹۵% dye degradation within ۴۵ minutes under repeat cycling, indicating the excellent photocatalytic performance. The green synthesis method and effective photocatalytic activity demonstrate of starch and gelatin-stabilized MnO_2 -NPs as sustainable photocatalysts for degradation of organic pollutants. The produced potential in the two beds with starch and gelatin was examined

کلمات کلیدی:

green fabrication, MnO_2 Nanoparticles, Photocatalytic activity, Starch, Gelatin, X-ray diffraction

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