Photocatalytic Dye-Degradation and Antibacterial Activity of Undoped and Fe Doped Cd_2SnO_4 Nanoparticles towards Environmental Applications

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Abstract

The chemical precipitation approach, which uses KOH as a reducing agent, was used to synthesize the undoped and Fe-doped Cadmium stannate (Cd_2SnO_4) nanoparticles. By using X-ray diffraction (XRD) analysis, the structural characteristics of the synthesized nanoparticles were investigated. By using a field emission scanning electron microscope (FESEM), UV-Visible (UV-Vis), and Photoluminescence (PL) analysis, surface morphological and optical properties were examined. The degradation of Methylene Blue (MB) in the presence of Cd_2SnO_4 and Fe-doped Cd_2SnO_4 nanoparticles as photocatalysts has been reported for testing photocatalytic activities. Fe-doped Cd_2SnO_4 and Cd_2SnO_4 nanoparticles have been shown to

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