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PROCEEDINGS



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Structural and Morphological features of ZnO/NiO nanocomposites via microwave-assisted precipitation process

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Abstract

In this work, semiconductor metal oxide i.e. ZnO/NiO nanocomposites were synthesized by microwave-assisted precipitation process. The structural, morphological and optical properties of the prepared ZnO/NiO samples are subjected to various characterization studies such as powder XRD, FTIR, SEM, TEM, UV and PL analysis. The powder XRD patterns showed the mixed crystalline phase structure i.e. hexagonal structure of ZnO and the cubic structure of NiO were developed. The nanostructured ZnO/NiO spheres-like morphology is observed from the SEM and TEM analysis with average crystallite size range of 25-30 nm. The photocatalytic activities of the ZnO/NiO nanocomposites showed the effective photodegradation of Orange G dye, which confirms the effective semiconductor metal oxide photocatalyst.

Keywords: Metal oxide; Nanocomposites, Microwave-assisted precipitation process; Photocatalytic activities