

Nanocomposites and nanomaterials

Study of iron doped thin films of ZnO prepared by sol-gel spin coating method.

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In this work, undoped and iron doped, with different concentrations of dopant (Fe), ZnO thin films were synthesized on glass substrates via a sol-gel spin coating method. The X-ray diffraction results showed that all thin films crystallized under the hexagonal wurtzite structure and exhibited a preferential orientation along the c axis with the maximum crystallite size was found to be about 23 nm for the undoped thin film. UV-Vis diffuse reflectance spectra showed that Fe-doped ZnO exhibited a red-shift of the band-edge and a decrease in band gap energy, as compared to pure ZnO.

1. Premalatha A., Lakshmikanthan S., Balakrishnan S., Investigation of the structural, optical and magnetic properties of Fe doped ZnO thin films coated on glass by sol-gel spin coating method. Journal of Alloys and Compounds, Volume 695, 25 February 2017, Pages 3467-3475.