International Journal of ChemTech Research
CODEN (USA): IJCRGG ISSN: 0974-4290
Vol.9, No.04 pp 691-698, 2016

Influence of Precursors on Structural and Optical Properties of ZnO Nanopowders Synthesized in Hydrolysis medium

A.Vanaja[1*], K.Srinivasa Rao[2]

[1]Dept of Physics, Lingaya's University, Old Faridabad-121002, India
[2]Prof. Dept of ECE, KL University, Vaddeswaram -522502, India

Abstract : ZnO Nanopowders were synthesized with different precursors NaOH and KOH respectively. Influences of precursors on structural, morphological and optical properties of nanopowders were analyzed.Crystalline structure, size and lattice strain of nanopowders characterized using X Ray Diffraction (XRD). Morphology of nanopowders confirmed from Scanning Electron Microscopy (SEM) micrographs observed at different magnifications. Presence of functional groups were further confirmed from Fourier Transform Infrared (FTIR) spectra. Optical absorption and band gap of nanopowders calculated from UV-Vis optical absorption spectra. Luminescence behavior of nanopowders confirmed from emission peaks of photoluminescence (PL) spectra. Results reveal solutes play a vital role in optimizing properties of nanopowders. Sol-gel method used for synthesizing nanopowders provides opportunity for a variety of practical applications. As synthesized nanopowders can be utilized for fabrication of optoelectronic devices LED's, solar cells and photo detectors.
Keywords : Nanopowders; Solutes; SEM; XRD; ZnO;

A.Vanaja *et al* /International Journal of ChemTech Research, 2016,9(4),pp 691-698.

*****