**Nanocomposite thin films of metal oxides: Elaboration and characterization**

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**Abstract**

In this study, ZnO/CuO nanostructured thin films with number of layers are 8 layers (ZnO-CuO-ZnO-CuO ....) were synthesized on glass substrates by the sol–gel spin coating technique. Zinc acetate dihydrate, Copper chloride dihydrate, ethanol and monoethanolamine (MEA) were used as precursor, solvent and stabilizer, respectively. Structural, optical and luminescence properties of the ZnO/CuO nanostructured thin films were investigated by XRD, UV-Vis spectrometry and PL spectroscopy techniques. X-ray diffraction shows, the high crystallinity of nanocomposite films with preferential orientation and crystallite size is 20 nm. Photoluminescence of films showed emissions in the ultraviolet (UV) and several visible emissions such as violet, blue, green, yellow and red correspond to near-edge band (NBE) of ZnO and CuO and the different defects in both oxides. A sharp absorption edge has been observed for nanocomposite films in the region between 350 and 400 nm. This attributed to the absorption of light by nanocomposites oxides thin films. Elaborated of high quality of ZnO/CuO nanostructures thin films can be used in several applications such as: solar cells and photocatalysis.

**Keywords:**  Sol gel-Spin Coating method; ZnO/CuO Thin films Structural properties; Optical properties