

Effect of Complexing Agents on Structural, Morphological, and Optical Properties of Chemically Deposited ZnO Thin Films

© A. Raidou

Materials and Subatomic Physics Laboratory, Department of Physics, Faculty of Sciences, Ibn Tofail University,
B.P 133, 14000 Kénitra, Morocco

E-mail: abderrahim.raidou@uit.ac.ma

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Two ZnO thin films have been chemically elaborated on glass substrates by successive ionic layer adsorption and reaction method using two different complexing agents, ammonia and ammonium hydroxide. X-ray diffraction study confirmed the hexagonal wurtzite structure for both films that are polycrystalline with preferential direction (002). Scanning electron microscopy showed an agglomeration of small grains throughout the substrate surfaces, with morphological changes and the existence of an uncovered part of substrates. The film prepared using NH_4OH showed a higher transmittance. The optical band gap values for the films are close to 3.36 and 3.33 eV, respectively.

Keywords: thin films, ZnO, complexing agents, SILAR method, semiconductors.

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