

Study of thin Films of Nickel Oxide (NiO) Deposited by the Spray Pyrolysis Method

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Abstract: Abstract: In this work, thin films of nickel oxide (NiO) were deposited by a simple and inexpensive technique, which is spray pyrolysis on ordinary glass substrates heated to a fixed temperature of 500 °C, from a solution containing nickel nitrate hexahydrate as a precursor dissolved in distilled water with different values of concentrations. The NiO thin films obtained were characterized to determine the structure with X-ray diffraction technique (XRD), the absorption domain (UV-Visible Spectroscopy), and the surface morphology (SEM). The X-ray diffraction patterns confirm the presence of NiO phase with preferential orientation along the (111) direction. The optical gap for nickel oxide calculated with a concentration of 0.1 M from the measurement of optical absorption is 3.6 eV, which is quite comparable to the value of the ratio.

Keywords : NiO, Thin films, Spray pyrolysis