

OPTICAL PROPERTIES OF ZnO THIN FILMS DEPOSITION BY SPRAY PYROLYSIS

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Abstract : The aim of our work presented in this paper is the development and characterization of zinc oxide thin film (ZnO), using spray pyrolysis process (simple and cheap method). Tow conditions of deposition are used: temperature of sample $T_s = 350\text{ }^{\circ}\text{C}$, the concentration of solution $[\text{Zn}^{+2}] = 0.01$ and 0.4 mol.l^{-1} . The films prepared are characterized by UV-visible to study the optical properties and the X-ray diffraction (XRD) for the structural one. The films obtained are composed of Nano-crystallites with average diameter of 18 nm. ZnO films have a transmittance over 80 % in visible range and band gap about $E_g = 3.6\text{ eV}$.

Keywords : Thin films, ZnO, characterizations, Spray Pyrolysis.