## Influence of Thickness on Electrical and Structural Properties of Zinc Oxide (ZnO) Thin Films Prepared by RF Sputtering Technique

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Abstract : Zinc oxide (ZnO) thin films were prepared on corning (7059) glass substrates at a thickness of 75.5 and 130.5 nm by RF sputtering technique. The deposition was carried out at room temperature after which the samples were annealed in open air at 150°C. The electrical and structural properties of these films were studied. The electrical properties of the films were monitored by four-point probe method while the structural properties were studied by X-ray diffraction (XRD). It was found that the electrical resistance of the films decreases with increase in the thickness of the films. The XRD analysis of the films showed that the films have a peak located at  $34.31^{\circ}-34.35^{\circ}$  with hkl (002). Other parameters calculated include the stress ( $\sigma$ ) and the grain size (D).

Keywords : electrical properties, film thickness, structural properties, zinc oxide

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