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## Deposition and characterisation of a Zinc Oxide thin film on p-type Silicon prepared by thermal spray pyrolysis.

Transparent conducting oxides are of great interest in recent studies. Zinc Oxide thin films with different thicknesses were synthesized using thermal spray pyrolysis on p-type Silicon as the substrate. The prepared material was then annealed at 500 °C for 60 minutes. X-ray diffraction (XRD) was used to show what the preferred crystal orientation for the sample is, the grain size, the dislocation density, the micro strain and the lattice constants. Schottky diodes were then fabricated on the material. The diodes were characterized at room temperature by the use of current-voltage (I-V) and capacitance-voltage (C-V) measurements to investigate the effects on the deposited Zinc Oxide thickness on the electrical properties of the diode. The results showed how the ideality factor, series resistance, carrier density and built in voltage changes with an increase in the Zinc Oxide layer's thickness.

**Apply to be considered for a student ; award (Yes / No)?**

No

**Level for award;(Hons, MSc, PhD, N/A)?**

N/A

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