Abstract Submitted
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Preparation and Characterization of SnO2 thin films deposited by Chemical Bath Deposition method[1] GBADEBO T. YUSUF, ADEPOJU M. RAIMI, TIMOTHY O. FAMILUSI, Osun state Polytechnic, Iree, AYODEJI O. AWODUGBA, Department of Pure and Applied Physics, Ladoke Akintola University of Technology, Ogbomoso, HEZEKIAH O. EFUNWOLE, Department of science Laboratory Technology, Osun state Polytechnic, Iree — SnO2 thin films have been deposited onto the soda lime glass substrates by the chemical bath deposition method. The structural and optical properties of the SnO2 thin films were investigated. Tin chloride solution ($SnCl_2$) and methanol were used as starting materials at substrate temperature 300°C. The crystal structure and orientation of the SnO_2 thin films were investigated by X-ray diffraction (XRD) patterns. The average grain size of the films was calculated using the Scherer formula and was found to be 29.6 nm which increased to 30.04nm after annealing in air at 400°C. The optical absorbance and transmittance measurements were recorded by using spectrophotometer. The average transmittance of the film was around 80 % at wavelength 550 nm. The optical band gap of the thin films was determined and found to be 3.71eV. The gas sensing properties of tin oxide thin films obtained in this work could be performed for different gases like CO, CH4, H2S, H2 etc.

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