

Evaluation of transparent conducting Sn-doped In₂O₃ films using Pulsed Electron Deposition

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Abstract

Sn-doped In₂O₃ (ITO) thin films find wide applications as a material for photovoltaic devices, electrochromic windows. Optical transparency, electrical properties and surface roughness are few of the important parameters which determine the performance of the devices. The present work is an effort to grow thin ITO films on glass substrates at room temperature. The deposition technique is the pulsed electron technique.

A various sets of the ITO films were deposited by controlling the oxygen pressure in chamber during growth, which was varied from 3.1mTorr to 20mTorr. Films were characterized to investigate the structure, surface morphology, electrical, and optical properties of these films by using techniques like X-ray diffraction, atomic force microscopy, Hall measurements and spectrophotometry. The results obtained from these measurements would be presented in this poster.