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ROLE OF RF MAGNETRON SPUTTERING POWERONOPTICAL AND ELECTRICAL PROPERTIES OF ITO FILMS ON SODA-LIME GLASS SUBSTRATES

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ABSTRACT- The optical and electrical properties of indium tin oxide (ITO) thin films grown on soda-lime glass substrates using a radio frequency (RF) magnetron sputtering technique were studied as a function of the sputtering RF power. Fixed 100nm thickness of ITO films were deposited on the soda-lime glass substrates at 300°C, using RF powers ranging between 50 to 150W. The optical and electrical properties of the sputtered ITO films were characterized by Ultraviolet–Visible Spectroscopy (UV-Vis), Hall Effect Measurement and Atomic Force Microscope (AFM). Varying the substrate RF sputtering power affected surface roughness, resistivity and transmittance values.

Keywords: indium tin oxide, sputtering power, transmittance, resistivity.