

1st Young Scientists' MSSEESA Conference on Materials Science and Solar Cell Technology

Abstract number 22

Optoelectronic Properties of Palladium Doped Tin (IV) Oxide (Pd: SnO₂) Thin Films Deposited by Spray Pyrolysis

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Palladium Doped Tin (IV) Oxide (Pd: SnO₂) thin films were deposited by Spray Pyrolysis technique using an alcoholic precursor solution consisting of Stannic chloride (SnCl₄.5H₂O) and Palladium Chloride (PdCl₂). The effect of increasing palladium concentration on optical and electrical properties was investigated. Sheet resistivity of the thin films was measured using the four point probe method and laid in the range of 0.027- 3.43 Ωcm for Pd: SnO₂ thin films with Pd content of 0 - 6.9 at% Pd prepared under optimized conditions. The optical properties were studied in the UV/VIS/NIR region. The Optical Band gap of the thin films was in the range of 3.73 - 4.11 eV.