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Effect of Sn Doping on the Electrical Properties of as Prepared and annealed ZnO thin films Prepared by Reactive Evaporation

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Layers of transparent and conductive Sn-doped Zinc oxide (ZnO) have been prepared by reactive evaporation on glass substrates. The deposition has been done at various doping levels ranging from 1% to 8%. Annealing of samples was done using Rapid Thermal Processing (RTP). In this work, Nabertherm Programmable Furnace system was used and annealing done at 300°C for one hour. Electrical characterization has been done for both prepared and annealed samples using four point probe configuration at room temperature (25°C) to obtain the sheet resistance. The sheet resistance for tin doped zinc oxide reduced with increase in tin doping to a minimum of 11.92Ωcm at 4% tin doping for as prepared samples and 11.89Ωcm for annealed samples.