

Abstract Submitted
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Magnetron Sputtering of Indium Oxide TEJ PANTHA, STEPHEN ARNASON, UMass Boston — We are studying the growth of Indium Oxide by Magnetron sputtering with the intent of controlling the growth condition so as to produce amorphous Indium Oxide. Amorphous Indium Oxide is of interest because it is a low carrier density system with significant disorder. Along with the inter-metallic alloys of Molybdenum and Germanium, it is one of the canonical material systems that manifest the superconductor to insulator transition. In addition, close to the superconductor to insulator transition, it shows coulomb glass behavior. This material has been grown previously by reactive ion beam sputtering of metallic Indium in an Oxygen background and thermal evaporation of Indium Oxide. We use magnetron sputtering; RF sputtering from an oxide target and reactive DC sputtering from a metallic Indium target with an oxygen Background. As a preliminary characterization we are measuring the sheet resistance of the resulting films and correlating it with growth conditions, as has been done previously for other growth techniques.

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