

Abstract Submitted  
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**Structural and optical properties of a transparent conductor oxide: Nb:In<sub>2</sub>O<sub>3</sub>** O. LOZANO, Department of Physics and Texas Center for Superconductivity, University of Houston, Houston, TX, P.V. CHINTA, P.V. WADEKAR, L.H. CHU, Department of Physics and Texas Center for Superconductivity, University of Houston, Houston, TX., H.W. SEO, Department of Physics, University of Arkansas, Little Rock, AK, Q.Y. CHEN, X.M. WANG, D. WIJESUNDERA, Department of Physics and Texas Center for Superconductivity, University of Houston, Houston, TX., L.W. TU, N.J. HO, Departments of Physics and Materials and Optoelectronic Engineering and Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, TW, W.K. CHU, Department of Physics and Texas Center for Superconductivity, University of Houston, Houston, TX. — Thin films of niobium-doped indium oxide, Nb:In<sub>2</sub>O<sub>3</sub>, have been deposited on YSZ(001) and MgO(111) substrates by magnetron sputtering at 450 ° C. The transparent semiconducting films obtained on YSZ(001) were epitaxial, but when deposited under the same condition on MgO(111), the film qualities worsen upon Nb doping. The structural and optical properties in relation to the Nb content and the general growth conditions were studied by Rutherford backscattering, ion channeling, optical absorption spectroscopy, x-ray diffraction, and atomic force microscopy. The magnetotransport behaviors will also be discussed.

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