

Abstract Submitted
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Effects of Post-Deposition Annealing on the Properties of Calcium Manganese Oxide Thin Films¹ NATALIE FERRONE, ADEEL CHAUDHRY, CACIE HART, BRIDGET LAWSON, DAVID HOUSTON, SAMUEL NEUBAUER, ANTHONY JOHNSON, DAVID SCHAEFER, RAJESWARI KOLAGANI, Towson University — We will present our results on the effects of post-deposition annealing on the structural and electrical properties of CaMnO_{3-d} thin films grown by Pulsed Laser deposition. The thin films are epitaxially grown on (100) LaAlO_3 which has larger in-plane lattice parameters than that of bulk CaMnO_3 , which leads to bi-axial tensile strain in the thin films. Results from our laboratory show that bi-axial tensile strain leads to low resistivity in thinner films, the resistivity increasing with increasing thickness. These results are suggestive of a coupling between strain and oxygen stoichiometry in the thin films. We have investigated the effects of post-deposition annealing in various gas ambients towards the goal of understanding the effects of relaxation and oxygen stoichiometric changes. We will present a comparison of the structural and electrical properties of as-grown and post-annealed films over a range of thicknesses.

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