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Ferromagnetic properties of epitaxial manganite films on $SrTiO_3$/Si heterostructures D. HUNTER, B. LASLEY, K. LORD, T.M. WILLIAMS, R.R. RAKHIMOV, A.K. PRADHAN, Center for Materials Research, Norfolk State University — We report on the growth and magnetic properties of epitaxial LSMO films on Si (100) and Si (111) substrates using $SrTiO_3$ template layer, which demonstrate magnetic and electrical properties at and above room temperature. The growth conditions were optimized by varying substrate temperature and oxygen partial pressure. The grain of 20 nm in size coalesced with increasing substrate temperature, revealing very smooth film surface. The magnetization data show magnetic transition and magnetic hysteresis at and above room room-temperature. The ferromagnetic resonance studies show anisotropic effects related to ferromagnetic properties of films. The details of the structural and magnetic properties will be presented.

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