

Abstract Submitted
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Device Properties of Manganite Perovskite Nanowires¹ BATTOKH JUGDERSUREN, SUNGMU KANG, IAN L. PEGG, JOHN PHILIP, The Catholic University of America, DEPARTMENT OF PHYSICS TEAM, VITREOUS STATE LABORATORY, THE CATHOLIC UNIVERSITY OF AMERICA TEAM — The colossal magnetoresistance (CMR) and large spin polarization of $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ (LSMO) are attractive for fabricating novel spin-based devices. But it has been reported that magnetic fields of several tesla are typically required to observe the CMR effects, limiting the material for potential applications. Few novel approaches to low-field MR effects have been reported in polycrystalline manganite-insulator composite and in trilayer epitaxial thin film systems. However, at higher temperature, the observed low-field CMR significantly decreases and make them less attractive for room temperature spintronic devices. In this work, we present that high quality LSMO nanowire devices exhibit enhanced magnetoresistance behavior under low applied magnetic field ($H=500\text{-}1000\text{G}$) at room temperature.

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