

Abstract Submitted
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Atomic resolution STM study of Perovskite Manganite Thin Films KENJI FUCHIGAMI, University of Tennessee, ORNL and IHI Co. Ltd., Japan, ZHENG GAI, ORNL, T. ZAC WARD, University of Tennessee and ORNL, LIFENG YIN, ORNL, E. WARD PLUMMER, University of Tennessee and ORNL, JIAN SHEN, ORNL and University of Tennessee — The perovskite manganites have attracted huge interest due to their intriguing electronic inhomogeneous nature which is believed to be responsible for colossal magnetoresistance. Scanning tunneling microscope (STM) is one of the most promising techniques for studying such electronic inhomogeneity in real space. In order to investigate electronic property at the surface of non-layered perovskite manganite, we have synthesized single crystal $\text{La}_{5/8}\text{Ca}_{3/8}\text{MnO}_3$ (LCMO) thin film by laser MBE technique. In-situ thin film growth enables us to obtain atomically resolved STM image which has c - 2×2 superlattice unit cell. In this talk, we will discuss the electronic properties as well as lattice structures of the LCMO surfaces. This research is sponsored by the Laboratory Directed Research and Development Program of Oak Ridge National Laboratory (ORNL), managed by UT-Battelle, LLC for the US Department of Energy under Contract No. DEAC05-00OR22725.

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