

Abstract Submitted
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Correlation between Structural and Magnetic Properties in $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$ Single Crystals BIAO HU, Department of Physics and Astronomy, Louisiana State University, GREGORY T. MCCANDLESS, Department of Chemistry, Louisiana State University, O.V. GARLEA, Neutron Scattering Science Division, Oak Ridge National Laboratory, S. STADLER, E.W. PLUMMER, R. JIN, Department of Physics and Astronomy, Louisiana State University — We have studied the Mn-doping (x) dependence of structural and magnetic properties in $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$. The system remains tetragonal as determined by single-crystal X-ray diffraction with the lattice parameters a and c varying with x . Correspondingly, the value of Jahn-Teller distortion (Δ_{JT}) of $(\text{Ru,Mn})\text{O}_6$ octahedron decreases with increasing x with $\Delta_{JT} = 1.0$ for $x \sim 0.5$. At the same doping level, we note the sign change of Curie-Weiss temperature Θ_{CW} derived from high-temperature magnetic susceptibility. The correlation between structural and magnetic properties will be discussed.

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