Abstract Submitted
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Systematic study of the effect of growth conditions on the composition, structure and properties of Sr_2FeMoO_6 films grown via pulsed laser deposition[1] TRICIA MEYER, REBECCA RICCIARDO, PATRICK WOODWARD, THOMAS LEMBERGER, The Ohio State University — Perfect Sr_2FeMoO_6 is thought to be a 100% spin polarized half metallic ferrimagnet (HMF). This feature coupled with its Curie temperature (420 K) well above room temperature, make it an attractive material for spintronic applications. Thin films of Sr_2FeMoO_6 have been grown by pulsed laser deposition (PLD) and their properties characterized using X-ray diffraction, Rutherford Backscattering, transmission electron microscopy, atomic force microscopy and SQUID magnetometry. Films have been grown at substrate temperatures ranging from 800-850 $^\circ$C and pressures ranging from 30-150 mTorr in both inert (Ar) and reducing (Ar+H_2) atmospheres. The role of substrate lattice match has also been explored. As will be shown in this presentation the phase purity, stoichiometry, Fe/Mo order and magnetic properties are sensitive to all of these variables.

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