

Abstract Submitted
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Magnetic properties of LuFeO₃ thin films¹ XIAOSHAN XU², Oak Ridge National Lab, WENBIN WANG, University of Tennessee, ZHENG GAI, Oak Ridge National Lab, XUEMEI CHENG, Bryn Mawr College, LEYI ZHU, DAVID KEAVNEY, Argonne National Laboratory, PAUL SNIJDER, THOMAZ WARD, Oak Ridge National Lab, JIAN SHEN, University of Tennessee — In order to extract their intrinsic magnetic properties, we have grown LuFeO₃ thin films epitaxially on Al₂O₃ (0001), a substrate with minimum magnetic impurities, using pulsed laser deposition. The magnetization measurements reveal strong anisotropy between in-plane and out-of-plane, not only in terms of coercivity and remanence, but also obvious in the zero field cool and field cool splitting. Further experiment using X-ray magnetic linear dichroism suggest magnetic ordering higher than 290 K and a spin reorientation at lower temperature. Over all, the films appear weak-ferromagnetic.

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