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Managing magnetization and antiferromagnetic coupling in epitaxially grown magnetic oxide heterostructures of (Ga,Fe)2O3 and SrRuO3¹ JIHYE LEE, WILLIAM JO, Department of Physics, Ewha Womans University, CHRISTIAN MENY, FRANCOIS ROULLAND, NATHALIE VIART, Institute of Physics and Chemistry of Materials of Strasbourg — We have grown b-axis oriented epitaxial (Ga,Fe)2O3 (GFO) thin films on (111) oriented SrRuO3 (SRO) by pulsed laser deposition to know spin interaction in multilayer system. The easy axis of magnetization of the GFO is located on the plane of the thin films. On the other hand, SRO has unique anisotropic properties on various crystallographic directions in their structure. Magnetic properties of the films were measured as a function of temperature and external magnetic field by a superconducting quantum interference magnetometer. Curie temperature of SRO and GFO was measured at 150K and 370K, respectively. According to the direction of external magnetic field, the magnetic moment value of the GFO/SRO heterostructures show different behavior due to antiferromagnetic coupling.

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