Low Temperature Physics 2015 vol.41 N1

Oscillation of the multiferroic/ferroelectric GdMnO3/SrTiO3 and YbMnO3/SrTiO3 interfaces in the EPR spectrum

Eremina R., Gavrilova T., Fazlizhanov I., Yatsyk I., Mamedov D., Sukhanov A., Chichkov V., Andreev N., Krug von Hidda H., Loidl A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015 AIP Publishing LLC. The electron paramagnetic resonance (EPR) method was used to study thin manganite ytterbium YbMnO3 and gadolinium GdMnO3 films, with a thickness of 100?nm, deposited on a SrTiO3 virtual ferroelectric backing (GdMnO3/SrTiO3 and YbMnO3/SrTiO3). The most interesting results are obtained in the 40-100K temperature interval for GdMnO3/SrTiO3, and 40-150K for YbMnO3/SrTiO3. In these temperature ranges, in addition to the exchange-narrowed line from all film material, absorbed power oscillations were observed in the EPR spectra, with the amplitude of the oscillations depending on both the temperature and the magnitude of the external magnetic field.

http://dx.doi.org/10.1063/1.4906316