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# Electron paramagnetic resonance studies of GdMnO 3 single crystal and thin film deposited onto a LaAlO 3 substrate

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## Abstract

Electronic paramagnetic resonance (EPR) spectra of a GdMnO 3 single crystal and GdMnO 3/LaAlO 3 thin film have been measured at X- and Q-band frequencies in the temperature range from 4. 2 to 300 K. It is found that the EPR spectrum of a GdMnO 3 single crystal consists of only one broad exchange-narrowed line. Unusual magnetism is observed at the interface between the GdMnO 3 thin film and LaAlO 3 substrate, where it is possible to see the fine structure of the EPR spectrum for a Gd 3+ ion. The parameters characterizing the fine structure related to the Gd 3+ ion in the GdMnO 3 film deposited onto the LaAlO 3 substrate are determined. © 2012 Pleiades Publishing, Ltd.

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