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# Electron paramagnetic resonance of Gd3+ ions in powders of LaF3+:Gd3+ nanocrystals

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## Abstract

The observation of electron paramagnetic resonance of Gd3+ ions in nanosized powders of rare-earth fluorides LaF3:Gd3+ has been reported. The measurements have been performed on a single crystal and microand nanosized powders at room temperature. Electron paramagnetic resonance spectra and spin-Hamiltonian parameters of Gd3+ ions have been obtained. A qualitative difference of spectra in nano-and micropowders due to the increase in the spread of the crystal field parameters with the decrease in the particle size has been found. The relationship between the single-crystal domain size and the hydrothermal treatment time has been established. © Pleiades Publishing, Ltd., 2014.

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