

Study of anisotropic magnetic properties of LiTmF₄ in (001) plane by enhanced ¹⁶⁹Tm NMR and magnetization measurements

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Abstract

The angle dependences of magnetization and hyperfine-enhanced ¹⁶⁹Tm NMR in concentrated Van Vleck paramagnet LiTmF₄ have been studied at temperature 4.2 K. NMR has been observed at frequencies 372.7 MHz at 15 kOe and 653 MHz at 25 kOe. The magnetization of LiTmF₄ single crystal was measured at magnetic fields up to 55 kOe. The NMR spectra as well as magnetization were substantially anisotropic. Experimental dependences are in good agreement with calculated ones obtained with taking into account the influence of magnetostriction on crystall field. © 2006 IOP Publishing Ltd.

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