INTENSITY PARAMETRISATION OF $\text{LiYF}_4/\text{Eu}^{3+}$

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As a continuation of the work on the $\text{LiYF}_4/\text{Eu}^{3+}$ single crystal ¹ the intensities of the polarized absorption transitions are quantitatively determined in the framework of the magnetic (MD) and induced electric dipole (ED) mechanisms.

In addition a complete description of the magnetic circular dichroism (MCD) is given.

Nor the calculation scheme for the MD intensities, nor the one for the corresponding MCD Faraday parameters introduce additional parameters to the set obtained by a fitting to the experimental crystal field energy levels. So these results provide a good examination to check the composition of the crystal wave functions, that depend on the B_q^k crystal field parameters and the $B_{\lambda k q}$ intensity parameters.

MCD is a good tool to improve the reliability of this set of $B_{\lambda k q}$ parameters which are crucial in the model simulation for spectra of lanthanide complexes and supramolecules in solutions, glasses and other disordered media.

Reference

1. Görller-Walrand, C.; Binnemans, K.; Fluyt, L. *J. Phys. : Condens. Matter* 5 (1993) 8359.