ELECTRON PARAMAGNETIC RESONANCE OF Gd^{3+} IN $TlGdSe_2$

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9.7 cm

$TlGdSe_2$ crystallizes in the rhombohedral α-$NaFeO_2$ type structure ($R\bar{3}m$). It is a NaCl-related ordered structure with the thallium and gadolinium layers separated by the anion layers. The electron paramagnetic resonance shows one asymmetric line with the temperature dependent width. The linewidth remains nearly constant when the temperature is lowered from room temperature and steep narrowing is observed below 10 K. The half-power half-width calculated assuming the purely dipolar interactions (212 mT) is bigger than the experimental one (155 mT at room temperature). The difference was ascribed to the short range exchange interactions.

13.4 cm

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