# EPR STUDY OF THE TWO-DIMENSIONAL QUANTUM MAGNET $Cu(en)(H_2O)_2SO_4$

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9.7 cm

Electron paramagnetic resonance (EPR) spectra of $Cu(en)(H_2O)_2SO_4$ (CUEN)(en = ethylendiamine) single crystals were measured in the X-band range at temperatures 4 K and 300 K in magnetic fields up to 0.5 T. The angular dependence of the g-factor and EPR linewidths were studied. The analysis of the g-factor confirmed, that coordinating ligands around the Cu(II) ion form a distorted octahedron elongated along the local $z$ axis and the distortion is maintained down to low temperatures. The increase of the linewidth observed at low temperatures can be ascribed to the onset of short-range magnetic correlations previously observed in specific heat studies [1]. The reduction of the period in the angular dependence of the linewidth observed at 4 K cannot be explained by the existence of two crystallographic non-equivalent Cu(II) positions. The analysis of the angular dependence of the linewidth suggests the potential occurence of Dzyaloshinski-Moriya interaction and anisotropic exchange coupling in CUEN.

[1] M. Kajňaková et al., Phys. Rev. B 71, (2005) 014435.

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