

Magneto-Structural Correlation of New Dihalo-Bridged Copper Dimers

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Four new dihalo-bridged copper(II) dimers: $[\text{CuL}(\mu\text{-X})]_2$, where $\text{L} = \text{N}-(\text{L-alanine methyl ester})-\text{N}'-(2\text{-pyridin-2-yl)methyl)oxalamide}$ or $\text{L} = \text{N}-(\text{L-valin methyl ester})-\text{N}'-(2\text{-pyridin-2-yl)methyl)oxalamide}$ and ion $\text{X} = \text{Cl}$ or Br , have been synthesized and their crystal structures have been determined. The complexes consist of dimeric units, in which copper(II) ions are double bridged by Cl or Br ions. Single crystals and powder samples of the compounds have been investigated by X-band ESR (microwave frequency $\nu \approx 9.6$ GHz), in the wide temperature range. For crystals, beside temperature, angular dependences of g -factor and linewidths have also been studied. The obtained results will be discussed in terms of the copper ions coordination and interaction between copper ions. ESR results will be compared with the susceptibility and torque magnetometry results. The magneto-structural correlations will be established and comparison with similar compounds will be presented [1].

[1] Žilić D., Rakvin B., Milić D., Pajić D., Đilović I., Cametti M., Džolić Z., Dalton Trans. **43**, 11877, 2014.

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