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# SYNTHESIS AND CRYSTAL STRUCTURE OF NEW OCTANUCLEAR COPPER(II) COMPLEX WITH BIS(5-CHLORO-2-HYDROXYBENZALDEHYDE) THIOCARBOHYDRAZONE

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The reaction of anhydrous copper(II) sulphate with 1,5-bis(5-chloro-2-hydroxybenzaldehyde) thiocarbohydrazone in dimethylformamide/ethanol (1:10), followed by re-crystallization of the product formed from DMSO, yielded the new octanuclear copper(II) complex. According to X-ray diffraction study the compound crystallizes in the triclinic space group P-1 and has the following composition $[Cu_8L_4(DMSO)_8]\cdot 8.75DMSO\cdot 2.5H_2O$.

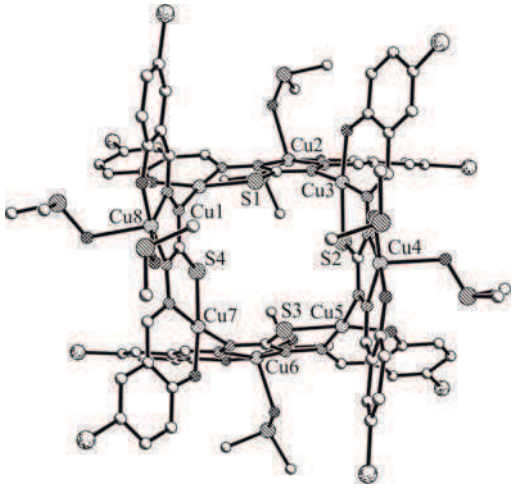



Fig.1 The structure of $Cu_8L_4(DMSO)_n$

Each thiocarbohydrazone ligand adopts the thiol *anti* configuration providing two tridentate coordination sites, one with NNO, and the other with ONS donor atoms, able to accommodate two copper(II) ions. Thus, six of the seven donor atoms of a fully deprotonated ligand $L^{4-}$ are linked with two metal ions to give a dicopper(II) unit $\{Cu_2L\}^0$. The assembly of four such units into a metallomacrocyclic array takes place by coordination of the seventh donor atom of each $\{Cu_2L\}$ unit to the copper(II) atom of the adjacent unit which resides in the ONS ligand pocket to achieve a square-planar geometry. In the resulting architecture four copper(II) atoms are four-coordinate, with two ligands $L^{4-}$ filling all four coordination positions, while the other four copper(II) centers, each accommodated in an ONN ligand pocket, require additional two DMSO molecules to complete their coordination spheres (Fig. 1).

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