

Synthesis and crystal structure of a new dimeric copper (II) complex with dithiocarbazate

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Dithiocarbazates and their metal complexes have been object of many studies due their wide range of pharmaceutical applications and also because of their chemical and structural versatility.^{1,2} These Schiff bases show several coordination sites in its structure and allow the formation of a sundry types of complexes with transition metals. Based on our interest in this class of compounds, the present investigation aimed to study and structural characterization, through the technique of X-ray diffraction of single crystal, a new complex of copper (II) with 2-hydroxyacetophenone (S-benzylidithiocarbazate). Figure 1 is a representation of the structure of complex analyzed.

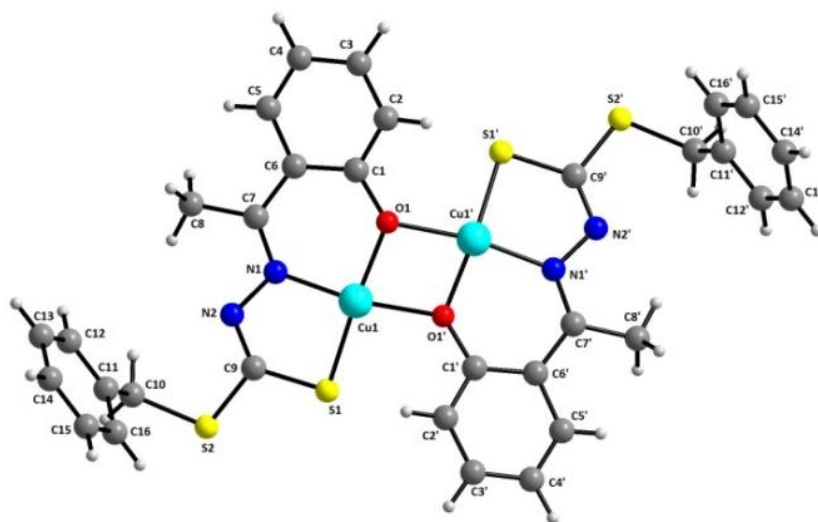


Figure 1. Graphical representation of the crystal structure of copper (II) complex synthesized.

The ligand is dianionic coordinated to the metal center in a tridentate form ONS-donor. The complex structurally characterized using single crystal X-ray diffraction studies and belongs to monoclinic crystal system having space group C2/c. In the complex, each copper(II) is found to be tetracoordinated with square planar geometry. Bond lengths and bond angles show a slight distortion of the coordination polyhedron mainly caused by the ligands rigidity. The distance between the atoms of copper (II) 2.966 (10) Å greater than the sum of the Van der Waals radii, indicates that there is no metal-metal interaction.

¹Zangrando, E.; Islam, M. T.; Islam, M. A. A.; Sheikh, M. C.; Tarafder, M. T. H.; Miyatake, R.; Zahan, R.; Hossain, M. A.; *Inorg. Chim. Acta*, **2015**, 427, 278.

²Mirza, A. H.; Ali, M. A.; Bernhardt, P. V.; Asri, I.; *Polyhedron*. **2014**, 81, 723.

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