

Copper Complexes Derivative of Chalcone: Synthesis, Characterization, Electrochemical Properties and XRD/Hirschfeld Surface

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Abstract : The reaction of copper (II) with 4-hydroxy-3-[(2E)-3-(1H-indol-3-yl)prop-2-enoyl]-6-methyl-2H-pyran-2-one (HL) lead to a new complexes: $\text{Cu(L)}_2(\text{DMF})_2$. The crystal structure of the $\text{Cu(L)}_2(\text{DMF})_2$ complex have been determined by X-ray diffraction methods. The Cu(II) lying on an inversion centre is coordinated to six oxygen atoms forming an octahedral elongated. Additionally, the electrochemical behavior of the metal complexes was investigated by cyclic voltammetry at a glassy carbon electrode (GC) in CH_3CN solution, showing the quasi-reversible redox process ascribed to the reduction of the MII/MI couple. The X-ray single crystal structure data of the complex was matched excellently with the optimized monomer structure of the desired compound; Hirschfeld surface analysis supported the packed crystal lattice 3D network intermolecular forces.

Keywords : chalcones, cyclic voltammetry, X-ray, Hirschfeld surface

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