

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

Authors : Salima Tabti, Amel Djedouani., Djouhra Aggoun, Ismail Warad

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 complex: $\text{Cu(L)}_2(\text{DMF})_2$. 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 complex 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 voltametry, X-ray, Hirschfeld surface

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