

A Dinuclear Copper(II) Complex Based On the Bisoxime Ligand 5,5'-Dimethoxy-2,2'-[(ethylene)dioxybis(nitrilomethylidyne)]diphenol: Synthesis, Crystal Structure and Spectral Properties

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Z. Naturforsch. **2012**, *67b*, 17 – 22; received January 1, 2012

A dinuclear Cu(II) complex, $[\text{Cu}_2(\text{L}^2)_2]$ ($\text{H}_2\text{L}^2 = 4\text{-methoxysalicylaldehyde } O\text{-}(2\text{-hydroxyethyl})\text{-oxime}$), has been synthesized through the complexation of Cu(II) acetate monohydrate with the ligand H_2L^1 ($\text{H}_2\text{L}^1 = 5,5'\text{-dimethoxy-2,2'-}[(\text{ethylene})\text{dioxybis}(\text{nitrilomethylidyne})]\text{diphenol}$), and characterized by elemental analyses, IR, UV/Vis and emission spectra. The crystal structure of the Cu(II) complex has been determined by single-crystal X-ray diffraction. The catalysis by Cu(II) ions results in the unexpected cleavage of the N–O bonds in the ligand H_2L^1 , giving a novel dialkoxo-bridged dinuclear Cu(II) complex possessing a Cu–O–Cu–O four-membered ring core instead of the expected salen-type bisoxime Cu–N₂O₂ complex.

Key words: Bisoxime Ligand, Cu(II) Complex, Synthesis, Crystal Structure