Synthesis, spectroscopic characterization, single crystal X-ray structure and packing analyses of [Cu(*temed*)(p-nitro-cinnamate)$_2$] and [Cu(*temed)*(p-methoxy-cinnamate)$_2$]

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Two new copper(II) complexes; [Cu(*temed*)(p-nitro-cinnamate)$_2$] (**1**), [Cu(*temed*)(p-methoxy-cinnamate)$_2$] (**2**), where *temed*=N,N,N′,N'-tetramethylethylenediamine, have been synthesized by reacting appropriate starting materials using methanol-water (4:1 v/v) as solvent at room temperature. Both newly synthesized copper(II) cinnamate complexes have been characterized on the basis of elemental analyses, spectroscopic techniques (FT-IR, UV–visible, EPR) and single crystal X-ray structure determination. X-ray structure determination of both complexes revealed the existence of neutral structure of both complexes. *p*-Nitrocinnamate and p-methoxycinnamte exhibited similar (asymmetric chelating) coordination mode of carboxylate ligand towards copper(II) metal centre. Various non-covalent intermolecular interactions such as C-H···O have also been observed that play an important role in crystal lattice stabilization of complexes **1** and **2.** The EPR spectroscopy on the basis of axial symmetry of g tensor components suggested tetragonally elongated octahedral geometry of the complexes which is consistent with X-ray structure determination.

Słowa kluczowe

cinnamate, spectroscopy, single crystal X-ray, temed

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