

## Crystal structure, GTA/DTA and fluorescence properties of ( $\mu_2$ -chloro)- $\mu$ oxalato-K<sub>4</sub>O<sub>1</sub>, O<sub>2</sub>: O<sub>1</sub> ', O<sub>2</sub>' - ( $\mu_1$ -1-dioxane)- (2,2 ', 6', 2 ''-terpyridine)-tetra copper (II)



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### Abstract

Our research is focused on a tridentate heterocyclic molecule, derived from pyridine: 2, 2 ' : 6', 2 '' - terpyridine, in which we were able to isolate a new organometallic-fluorophore by incorporating Cu(II) transition metal. The structural study of ( $\mu_2$ -chloro) -  $\mu$  oxalato-K<sub>4</sub>O<sub>1</sub>, O<sub>2</sub>: O<sub>1</sub> ', O<sub>2</sub>' - ( $\mu_1$ -1-dioxane) - (2,2 ', 6', 2 ''-terpyridine)-tetra copper (II) has shown that the tetramer crystallizes in the P 2<sub>1</sub> / n space group of the monoclinic system and that the four CuII metal ions are pentacoordinated, with a square-based pyramidal geometry. The crystalline structure is built on  $\pi$ - $\pi$  interactions and weak hydrogen bonds of the CH ... Cl and CH ... O types, thus generating queues that extend along the two crystallographic axes and to build a three-dimensional structure. The deviation from the mean plane of terpyridine molecules in the complex tpy1 (N1-C5-C6-N2C10-C11-N3) and tpy2 (N4-C20-C21-N5-C25-C26-N6) is 0.0166 and 0.0171Å respectively, the dihedral angle between these two planes is 5.99 (7) °. The promising results obtained with the ligand 2,2 ' : 6', 2 ''-terpyridine, should allow to open the way for a rich chemistry towards the synthesis of heteroleptic complexes in which all ligands coordinated to the metal are not identical to form a supramolecular network.

### Biography

Ouahida zeghouan a member of the Industrial Biotechnology Division, leader of the team named: Development and characterization of biomolecules and Head of the EXTERNAL RELATIONS department since January 2013 In Biotechnology research center, Ms. Ouahida Zeghouan, has followed a brilliant academic career in chemistry. In 2007, she received her first degree in crystallographic chemistry at Mentouri University in Constantine. Subsequently, Ms. Zeghouan had her Magister in Crystallographic Chemistry in 2010, and her doctoral diplomat on the topic: "Synthesis, Characterization and Properties of New Multifunctional Hybrid Materials Incorporating Coordination Complexes" in 2017. O. Zeghouan was awarded a permanent researcher position in 2012 at the Biotechnology Research Center. She puts her crystallography skills at the service of the proteomic platform. Ms. Zeghouan has 11 publications, one book.

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