**Poster**

# Synthesis and structures of dimeric and polymeric carboxylates complexes of copper (II) and cobalt (II)

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We report the synthesis of four copper(II) and cobalt complexes $Cu_2(PAA)_4(DMSO)_2$, $[Cu(PAA)_2\ (DMPA)_2N_3]n$(2), $[Cu_2(PAA)_4]n$ (3) [1] and $Co_2(PAA)_4(DMPA)_2$ [2] (PAA: phenylacetic anion, DMSO = dimethyl sulfoxide and DMAP = 4-(dimethylamino)pyridine). We characterize the compounds structurally using X-ray diffraction, thermal analysis and magnetic properties.

Structures 1 and 4 crystallizes as a centrosymmetric dinuclear complexes with an inversion center that located at the midpoint of the Cu-Cu/Co-Co atoms for each complex. The compounds 2 and 3 consists of infinite polymeric linear chain of $Cu^{2+}$ ions, linked by bridging phenylacetate groups in 3 and azide unit in 2. The $Cu^{2+}$ and $Co^{2+}$ atoms in 1, 3 and 4 bridged by four bidentate carboxylate ligands in syn-syn η1: η1: μ2 bridging modes in the basal plane. The oxygen atom from DMSO in 1 and the ring N atom of 4-(dimethylamino) pyridine unit in 4, occupies the axial position generating a distorted square-pyramidal geometry, in which the axial Cu1-ODMSO = 2.1350(13) Å and Co-N = 2.046(16) Å. Then the equatorial Cu-Ocarboxylate bonds are in the ranges 1.9685(13) Å to 1.9768(14) Å for 1, and 1.944(7) to 2.200(6) Å for complex 3. Complex 4 is antiferromagnetic, χ-1 versus temperature plot is linear and obeys the Curie-Weiss with θ = -6.18K and C= 2.101K.emu.mol$^{-1}$.

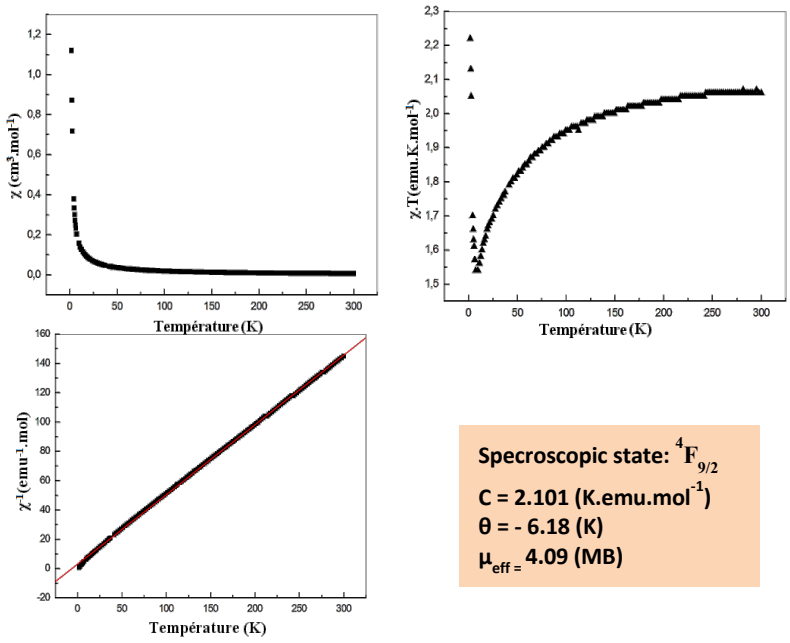


Fig 1: Plots of χ , χT and χ-1 versus temperature for complex 4.

[1] Benslimane, M., Redjel, Y. K., Daran, J. C., Merazig, H., (2013). Acta Cryst. E69, m397.

[2] Benslimane, M., Redjel, Y. K., Merazig, H., Dénès, G., (2013). Acta Cryst. E69, m517-m518.