

of the $[\text{Fe}(\text{CN})_6]^{3-}$ moiety bridge two Fe ions, each in the trans position, which results in a 2D hydrogen bonded structure giving a $[\text{Fe}-\text{NC}-\text{Fe}-\text{CN}-\text{Fe}]$ linkage. The Fe ion assumes an octahedral geometry, in which the equatorial sites are occupied by N_2O_2 donor atoms of the Schiff base ligand, and the two axial positions are filled by two cyanide ion of $[\text{Fe}(\text{CN})_6]^{3-}$. The magnetic measurement showed this complex to exhibit antiferromagnetic behavior.

Keywords: cyanide complexes, molecular magnets, crystal engineering

FA4-MS34-P05

Novel Chiral MOFs Constructed by both Mixed Metals and Dicarboxylate Ligands. *Zakariae Amghouz*^{a,b}, Laura Rocas^a, José R. García^a, Santiago García-Granda^a, Badredine Souhail^b, Luís Mafra^c, Fanian Shi^c, João Rocha^c, ^a*Departamentos de Química Física y Analítica y Química Orgánica e Inorgánica, Universidad de Oviedo, Spain.* ^b*Département de Chimie, Faculté des Sciences, Université Abdelmalek Essaâdi, Tétouan, Morocco.* ^c*Department of Chemistry, CICECO, University of Aveiro, Portugal.*
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Metal–Organic Frameworks (MOFs), also known as coordination polymers, materials composed of metal ions or metal clusters as nodes and multifunctional organic linkers, are currently one of the most active and attractive research fields in the materials science, owing to their wide variety of fascinating architectures and topologies, and their wide range of potential applications in gas storage and separation, catalysis, magnetism, luminescence, and so on. Those properties provide many possibilities to construct attractive multifunctional materials. The design of chiral MOFs attracts much attention recently because of their potential applications in asymmetric catalysis and chiral separation [1,2]. Nevertheless, the attempts for construction of chiral lanthanides-based MOFs are still rare [3,4] and even more challenging than those based on transition metals. Herein, we will confine ourselves to report two novel chiral Yttrium-based MOFs with fascinating architectures, as first example up to now, of chiral structure containing both mixed Y(III)-Na(I) metals and chiral flexible-achiral rigid dicarboxylate ligands, obtained as single phase under hydrothermal conditions. Their structures were solved by single crystal XRD, and characterized by ¹³C CPMAS NMR, thermal analyses (TG-MS and DSC) and X-ray thermodiffraction. The crystal structure reveals that both compounds are extended in the 2D space, the 3D stability of the frameworks is provided through strong hydrogen bond interactions, and the both compounds exhibit reversible dehydration process with different rehydration kinetic.

[1] Kesanli, B.; Lin, W. B. *Coord. Chem. Rev.* 2003, 246, 305. [2] Ma, L.; Abney, C.; Lin, W. *Chem. Soc. Rev.* 2009, 38, 1248. [3] Thushari, S.; Cha, J. A. K.; Sung, H. H. Y.; Chui, S. S. Y.; Leung, A. L. F.; Yen, Y. F.; Williams, I. D. *Chem. Commun.* 2005, 5515. [4] Tang, Y.; Tang, K. Z.; Liu, W. S.; Tan, M. Y. *Sci. China Ser. B-Chem.* 2008, 51, 614.

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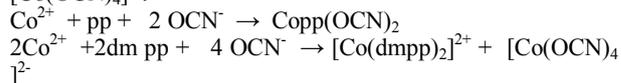
Keywords: Chiral MOFs, Hydrothermal Synthesis, Structural Determination

FA4-MS34-P06

Two New Co(II) Complexes with NNN Type Pyrazol Ligands *Orhan Atakol*^a, Sevi Öz^a, Ingrid Svoboda^b, Sefa Durmuş^c, Raif Kurtaran^d, Cengiz Arıcı^e
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Bis-2,6(Pyrazol-1-yl)pyridine and its derivatives involving alkyl groups are terpyridyl like ligands which have been known since 1990 [1]. For about last 20 years, many transition metal complexes have been prepared with this ligand [2]. It is also known for a long time that ions of azide, cyanate and thiocyanate pseudohalogenides have a tendency to form μ bridges [3]. In this study, it had been planned to prepare polynuclear Co(II) complexes next of bis-2,6(Pyrazol-1-yl)pyridine and cyanate ions. However, the result was not as expected, mononuclear Co(II) complexes were obtained instead.

In this study, Bis-2,6(Pyrazol-1-yl)pyridine (pp) and bis-2,6(3,5-dimethylpyrazol-1-yl)pyridine (dmpp) have been used to obtain, two completely different complexes. The complex synthesized with Bis-2,6(Pyrazol-1-yl)pyridine (pp) is a neutral one in which Co(II) ion is coordinated by the three nitrogens of the organic ligand and the oxygens of cyanate group. The complex synthesized with bis-2,6(3,5-dimethylpyrazol-1-yl)pyridine (dmpp) on the other hand, is an ionic complex in which the organic ligand and one Co(II) ion forms the cationic sphere and the anionic sphere is found to be $[\text{Co}(\text{OCN})_4]^{2-}$.



The crystallographic data of the complexes is given below:

$[\text{C}_{11}\text{H}_9\text{CoN}_7\text{O}_2]$, monoclinic $C_{2/c}$, $a = 14.469(2)$, $b = 9.161(1)$, $c = 12.658(1)$ Å $\beta = 122.10(1)^\circ$, $Z = 4$, $D = 1.655 \text{ Mg/m}^3$, (Data/parameters) = 1459/106, $I > 2\sigma$, $R, R_w \rightarrow 0.0371, 0.1229$, $\text{GOF} = 1.142$, $\Delta\rho_{\text{max}}, \Delta\rho_{\text{min}} \rightarrow 0.680, -0.408 \text{ e.}\text{\AA}^{-3}$, $\lambda = 0.71073$ Å.

$[\text{C}_{34}\text{H}_{34}\text{Co}_2\text{N}_{14}\text{O}_4]$, P_{bca} , $a = 16.5704(12)$, $b = 18.6340(13)$, $c = 23.5881(14)$ Å $\alpha = \beta = \gamma = 90^\circ$, $Z = 8$, $D = 1.497 \text{ Mg/m}^3$, (Data/parameters) = 6234/489, $I > 2\sigma$, $R, R_w \rightarrow 0.0509, 0.1587$, $\text{GOF} = 1.000$, $\Delta\rho_{\text{max}}, \Delta\rho_{\text{min}} \rightarrow 0.380, -0.375 \text{ e.}\text{\AA}^{-3}$, $\lambda = 0.71073$ Å.

[1] Jameson D.L., Goldsby K.A., *J. Org. Chem.* 1990, 55, 4992. [2] Atalano V.J., Kurtaran R., Heck R.A., Öhman A., Hill M.G., *Inorg. Chim. Acta* 1999, 286, 181 [3] Ribas J., Escuer A., Monfort M., Vicente R., Cortes R., Lezama L., Rojo T., *Coord. Chem. Rev.* 1999, 193-195, 1068.

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