

of the synthesis of organo-alkaline earth metals compounds is their tendency to form insoluble due on one hand to their low metal oxidation state (II) which only allows two anionic ligands, and on the other hand, their large ionic radii which demand a high coordination number. A parry to prevent a high degree of oligomerization is the use of neutral Lewis-coordinating ligands such as monodentate THF or multidentate polyether ligands which avoid any further "metal-metal contacts" via bridging ligands, saturating the metal cation. However, the chemistry of such metal halide or pseudo-halide adducts with neutral Lewis-coordinating ligands (usually non-polar aprotic solvents) is still not systematically studied. In this context, we have synthesized and characterized some new molecular compounds using polydentate neutral Lewis-coordinating ligands such as DME ($\text{CH}_3\text{OC}_2\text{H}_4\text{OCH}_3$), diglyme ($\text{CH}_3(\text{OC}_2\text{H}_4)_2\text{OCH}_3$) and triglyme ($\text{CH}_3(\text{OC}_2\text{H}_4)_3\text{OCH}_3$) in order to, in a fundamental way, know and understand better the chemistry of d-block metal halides in aprotic solvents. Secondly, we were interested in the study of the influence of the size of the ligand on the coordination sphere of the metal cation using monodentate (THF), bidentate (DME), tridentate (diglyme) and finally tetradentate (triglyme) O-donor ligands.

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Keywords: polyether coordination chemistry; single-crystal structure determination; transition-metal compounds

FA4-MS02-P08

Design, Synthesis, Structural and Magnetic Properties of Pillared MN(II) Ethylmalonate Complexes. Mariadel Déniz^a, Jorge Pasán^a, Oscar Fabelo^a, Laura Cañadillas-Delgado^a, Ana Belén Lago^a, Catalina Ruiz-Pérez^a. ^a*Laboratorio de Rayos X y Materiales Moleculares, Departamento de Física Fundamental II, Facultad de Física, Universidad de La Laguna, Tenerife, Spain.*

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Metal-organic frameworks (MOF) have been studied in recent years due to their potential applications in a wide variety of research fields, such as magnetism, molecule adsorption, catalysis, etc [1]. The rational design of these coordination polymers can provide of efficient synthesis. The flexibility of polycarboxylic acids is well known for the diversity of their connecting modes that lead from discrete entities to 3D networks [2]. Moreover, rigid rod-like spacer molecules like 4,4'-bipyridyl (4,4'-bpy) or 1,2-bis(4-pyridyl)ethylene (bpe) can be used for the construction of controlled structures [3], in particular, as pillars to connect 2D networks leading to 3D complexes [4].

We present the synthesis and structural properties of a novel 1D Mn(II)-based coordination framework as well as 3D complexes built up by the connection of Mn(II)-

ethylmalonate layers through rigid rod-like bridging molecules such as bpe or 4,4'-bpy (Fig. 1). The layer separation can be controlled by the length of the organic spacer.

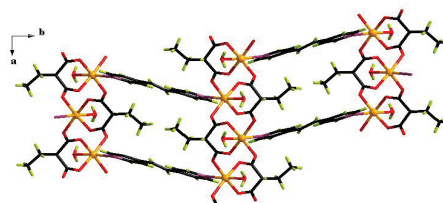


Figure 1.

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FA4-MS02-P09

Crystal Structure of New 1D Polymer $\{[\text{Cd}(\text{NioxH}_2)(\text{SO}_4)(\text{Bpy})](\text{NioxH}_2)(\text{H}_2\text{O})_3\}_n$. Lilia Croitor^a, Eduard B. Coropceanu^b, Yurii M. Chumakov^a, Marina S. Fonari^a. ^a*Institute of Applied Physics, Academy of Sciences of R. Moldova, Academy str., 5, MD2028, Chisinau, Moldova.* ^b*Institute of Chemistry, Academy of Sciences of R. Moldova, Academy str., 3, MD2028, Chisinau, Moldova.*

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The recent surge of research activity in the area of coordination polymers has been motivated by the ability of metal-ligand coordination in providing a facile approach to the controlled assembly of one-, two-, and three-dimensional extended solids. Incorporation of active groups into coordination polymers presents an excellent opportunity for the construction of functional materials with interesting properties [1]. We have favored the strategy of 'metal dioxime building block' for the construction of new generation of coordination polymers. Interaction in the system $\text{CdSO}_4 + \text{NioxH}_2 + \text{bpy}$ in the molar ratio 1:2:2 resulted in 1D polymer of the composition $\{[\text{Cd}(\text{NioxH}_2)(\text{SO}_4)(\text{bpy})](\text{NioxH}_2)(\text{H}_2\text{O})_3\}_n$, where 4,4'-bipyridine = bpy, 1,2-cyclohexanedionedioxime = NioxH₂. It crystallizes in the triclinic space group P-1 with $a = 10.144(2)$, $b = 11.814(2)$, $c = 12.423(3)\text{Å}$, $\alpha = 108.23(3)$, $\beta = 93.23(3)$, $\gamma = 90.65(3)^\circ$ and $Z = 2$. The X-ray diffraction shows that each Cd(II) ion binds one two-coordinate NioxH₂ molecule, two two-coordinate sulfato-anions as basal ligands and two bpy molecules as axial ligands with the formation of a square bipyramidal N₄O₂-coordination core. In common with the sulfate anions NioxH₂ formulate the robust extended binuclear metal platform. The key finding of this study is a definite availability of a metal dioxime building block for the construction of a new generation of coordination polymers.

This work was supported by the grant 09.819.05.04A (CSSDT).