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NOVEL Zn(II) BINUCLEAR AND Ni(II) 1D POLYMERIC COORDINATION COMPOUNDS BASED ON DIANILINEGLYOXIME AND DICARBOXYLIC ACIDS: SYNTHESIS AND STRUCTURE

Dumitru Ureche [a*], Ion Bulhac [a], Sergiu Shova [a], Paulina Bourosh [b]

[a]*Institute of Chemistry, 3, Academiei str., Chisinau MD 2028, Republic of Moldova*
[b]*Institute of Applied Physics, 5, Academei str., Chisinau MD 2028, Republic of Moldova*
[*]*e-mail: dumitru.ureche@ichem.md; d.ureche@yahoo.com; phone: (+373 22) 739 611*

Abstract. Two coordination compounds $[Zn_2(DAnH_2)_2(1,3\text{-bdc})_2(DMSO)_4]$ (**1**) and $[Ni(DAnH_2)(1,4\text{-bdc})(DMF)_2]_n$ (**2**) were synthesized starting from dianilineglyoxime ($DAnH_2$), 1,3-benzenedicarboxylic acid (1,3-bdcH_2) and 1,4-benzenedicarboxylic acid (1,4-bdcH_2), where DMSO is dimethyl sulphoxide and DMF is dimethylformamide. The molecular and crystal structures of the compounds were studied by infrared spectroscopy and single crystal X-ray diffraction; and for the Zn(II) compound, additionally, the ^{1}H and ^{13}C NMR spectroscopy was used. The results show that **1** is a binuclear molecular complex while **2** is a unidimensional coordination polymer. In both compounds, the neutral $DAnH_2$ ligand coordinates in a bidentate-chelate mode, while dianions 1,3-bdc and 1,4-bdc coordinate as bidentate bridges. The ligands are interconnected by intramolecular O-H···O hydrogen bonds, involving the oximic groups as proton donors and the carboxylate anions as acceptors. The metal atoms in both compounds have an octahedral geometry.

Keywords: dianilineglyoxime, zinc complex, nickel unidimensional coordination polymer, benzenedicarboxylic acid, X-ray crystallography.

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