

## A NEW 2D COORDINATION POLYMER BASED ON 1,2,3-BENZENETRICARBOXYLIC ACID AND 4,4'-BIS(IMIDAZOL-1-YLMETHYL)BIPHENYL: SYNTHESIS AND CRYSTAL STRUCTURE

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**Abstract.** The solvothermal reaction of zinc (II) nitrate with 1,2,3-benzenetricarboxylic acid (1,2,3-H<sub>3</sub>BTC) and 4,4'-bis(imidazol-1-ylmethyl)biphenyl (BIBPh) produced a crystalline solid  $\{[Zn_3(BIBPh)_3(BTC)_2] \cdot H_2O\}_n$ . The product has been structurally characterised and investigated by IR and thermogravimetric methods. The polymer has a bidimensional structure and crystallizes in the  $P2_1/c$  space group of the monoclinic system with the following unit cell parameters:  $a = 14.8687(16)$ ,  $b = 36.915(4)$ ,  $c = 13.8378(16)$  (Å),  $\beta = 105.584(6)^\circ$ . The asymmetric unit of the crystal structure contains three zinc(II) ions, three BIBPh ligands and two BTC<sup>3-</sup> monodentate ligands with all three deprotonated carboxylate groups that balance the overall charge. All zinc centers have similar coordination environment: each metal ion is four coordinated exhibiting a slightly distorted tetrahedral coordination, where two positions are occupied by oxygen atoms of the carboxylic acid and the other two by nitrogen atoms of imidazole subunits.

**Keywords:** coordination polymer, X-ray diffraction, zinc, 1,2,3-benzenetricarboxylic acid, 4,4'-bis(imidazol-1-ylmethyl)biphenyl.