Poster Presentation

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Study of a 2D coordination polymer of Zn(II) with 5-aminoisophtalic as ligand.

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The design, synthesis and characterization of infinite one-, two- and three dimensional coordination polymers have attracted increasing attention in chemistry and material science research due to their potential applications as drug deliver, magnetic and optical sensors [1]. In particular, a series metal-organic frameworks MOFs - (a coordination polymer subclass) with different topological nets such as honey-comb, brick wall, ladder, herringbone, diamondoid and rectangular grids have been comprehensively discussed by Yaghi, Kitagawa and their co-workers [2] and it was observed that the type of metal ion and organic bridge ligand determines the dimensionality and the topology of the network. In this work we report a new 2D coordination polymer obtained by from ZnSO4.7H2O and 5-aminoisophtalic acid (5AIF), using the base diffusion method (DMSO as solvent). The crystal structure was determined from single crystal X-ray diffraction data collect in a Gemini-Oxford diffractometer. The Zn atom is tetrahedrally coordinated with two oxygen and one nitrogen from three different 5AIF molecules and one oxygen from DMSO molecules. The molecular packing indicates the formation of a 2D parallel to (010) forming hydrophilic cavities along [001]. The 2D network is stabilized by intermolecular hydrogen bonds involving the donor hydroxyl group (O3-H3) and the acceptor nitrogen atom (N1). The geometrical features of this new 2D coordination polymer were are all in agreement with similar fragments deposited in CSD [3].

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