

## A NOVEL 2D ZINC(II) COORDINATION POLYMER BASED ON 2,2'-BIPYRIDINE-4,4'-DICARBOXYLIC ACID: SYNTHESIS, CRYSTAL STRUCTURE AND PHOTOLUMINESCENCE PROPERTY

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**Abstract.** Two-dimensional Zn(II) coordination polymer  $\{[\text{Zn}(\text{bpdc})(\text{H}_2\text{O})]\cdot\text{dmf}\cdot\text{H}_2\text{O}\}_n$  (**1**), where  $\text{H}_2\text{bpdc}$ = 2,2'-bipyridine-4,4'-dicarboxylic acid and  $\text{dmf}$ = *N,N*-dimethylformamide, was obtained by hydrothermal synthesis and characterized by IR spectrum and single-crystal X-ray diffraction. The Zn(II) ion is coordinated in a distorted square pyramidal  $\text{N}_2\text{O}_3$  environment by two N-atoms from one  $\text{bpdc}^{2-}$  ligand, two carboxylate oxygen atoms from another two  $\text{bpdc}^{2-}$  ligands and one water molecule. The crystal lattice of **1** hosts the  $\text{dmf}$  and water solvent molecules via  $\text{O}-\text{H}\cdots\text{O}$  hydrogen bonds with crystal components. The new material reveals blue-orange luminescence upon excitation with ultraviolet light.

**Keywords:** zinc, 2,2'-bipyridine-4,4'-dicarboxylic acid, X-ray, luminescence.

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