

## Single crystal to single crystal transformations in Co(II) dynamic framework

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Metal-organic frameworks (MOFs) are an emerging class of crystalline materials made by connecting a metal ion or cluster to polytypic organic linkers. They have a wide range of potential applications in gas storage, catalysis, drug delivery, sensing, separation, and magnetism [1, 2]. Single crystal to single crystal (SC-SC) transformation is a phenomenon where significant changes in the crystal structure occur in the solid state without destroying the integrity of the crystal such that it can still be analyzed by means of X-ray diffraction. Single crystal transformations are important for the development of new and technologically useful materials including devices and sensors.

Recently, we synthesized the MOF  $\{[\text{Co}(\text{34pba})_2(\text{OH}_2)](\text{DMF})_{0.5}(\text{H}_2\text{O})\}_n$  (**A**), (DMF= N,N-dimethylformamide, 34pba= 3-(Pyridine-4-yl) benzoic acid) with water and DMA using solvothermal method. X-ray analysis revealed that **A** crystallises in the Triclinic, system with space group of *P*-1. Further studies revealed that **A** is a dynamic material which can be used for sensing [3].

In this work, we present the solid state studies in **A** and DMF using solvothermal methods. They were fully characterized using X-ray diffraction methods, infrared spectroscopy, elemental analysis and thermal methods.

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