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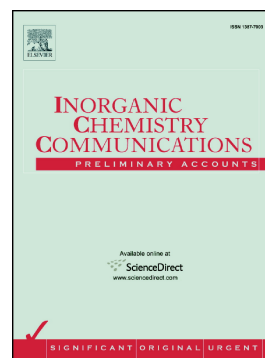
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Syntheses, structures, and magnetic properties of two MOFs based on V-shaped carboxylate and flexible spacer ligand: From binuclear Co(II) with α -Po net to trinuclear Mn(II) with $4^{16}.6^{11}.8$ topology

Jie Zhou, Xiao Wang, Tong Yan, Tao Wang, Da-Wei Wang, Jun-Ru Yang, Ming-Jin Xie, Qi-Hua Zhao*

Key Laboratory of Medicinal Chemistry for Natural Resource Education Ministry, School of Chemical Science and Technology, Yunnan University, Kunming, 650091, P. R. China

* Corresponding Author. Tel: +86 871 5032929; fax: +86 871 5032929. E-Mail: qhzhao@ynu.edu.cn

Abstract: Two mixed-ligand coordination polymers, namely, $\{[\text{Co}(\text{oba})(4\text{-bpdb})]\cdot\text{CH}_3\text{OH}\}_n$ (**1**), and $\{[\text{Mn}_3(\text{oba})_3(4\text{-bpdb})(\text{DMF})_2]\cdot 4\text{H}_2\text{O}\}_n$ (**2**) ($\text{H}_2\text{oba} = 4,4'$ -oxybis-benzoate, $4\text{-bpdb} = 1,4$ -bis(4-pyridyl)-2,3-diaza-1,3-butadiene), were synthesized under solvothermal conditions. The structure of **1** possessed a three-fold interpenetrated 3D 6-connected **pcu** topology based on dimeric $[\text{Co}_2(\text{COO})_2]^{2-}$ units. While **2** displayed a uninodal 3D 8-connected net with $4^{16}.6^{11}.8$ topology based on trinuclear $[\text{Mn}_3(\text{COO})_6]$ subunits. Magnetic analyses indicate that both two compounds show weak antiferromagnetic interactions within binuclear Co(II) and trinuclear Mn(II) units.

Keywords: Bis-pyridyl ligand; Interpenetration; Magnetic property; V-shaped carboxylate

In recent years, the construction of magnetic coordination polymers (CPs) has attracted much attention because they simultaneously display fascinating architectures and magnetic properties [1]. The magnetism of the frameworks is affected by the reciprocity between the paramagnetic nature of the spin carrier such as distorted coordination environment and single-ion anisotropy, and the superexchange interaction of the bridging magnetic bridges [2]. The self-assembly of the resultant structural frameworks can frequently be modulated by various factors, such as metal

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