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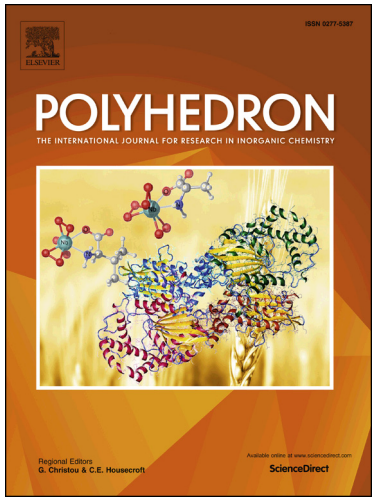

Zn-based metal – organic frameworks (MOFs) of pyridinemethanol – carboxylate conjugated ligands: Deprotonation-dependent structures and CO_2 adsorption

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Zn-based metal−organic frameworks (MOFs) of pyridinemethanol–carboxylate conjugated ligands: Deprotonation-dependent structures and CO_2 adsorption

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Keywords: metal−organic framework; rod-shaped SBU; pyridine alcohol; crystal structure; gas adsorption

ABSTRACT: Two Zn-based metal−organic frameworks (MOFs) of pyridinemethanol–carboxylate conjugated ligands, namely, $[Zn(\mathbf{L_1})]_n \cdot x$Sol (**1**, 3D) and $[Zn(\mathbf{L_2})_2]_n$ (**2**, 1D) ($H_2\mathbf{L_1}$ = 4-(6-(hydroxymethyl)pyridin-3-yl)benzoic acid; $H_2\mathbf{L_2}$ = 3-(6-(hydroxymethyl)pyridin-3-yl)benzoic acid) have been synthesized and structurally characterized. The dimensionalities of **1** and **2** are defined by the deprotonation state of the ligands. Specifically, the 3D MOF **1** features rod-shaped Zn-O/COO chain as the secondary building unit (SBU) which effectively hinder network interpenetration, whereas the 1D

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