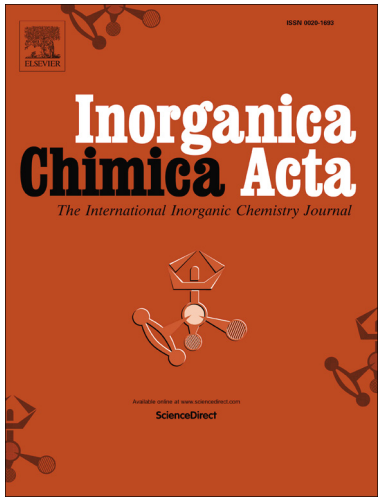

Research paper

New lanthanide 2D coordination polymers constructed from a flexible ether-bridged tricarboxylate block: Synthesis, structures and luminescence sensing

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New lanthanide 2D coordination polymers constructed from a flexible ether-bridged tricarboxylate block: Synthesis, structures and luminescence sensing

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Abstract

Three new 2D lanthanide-organic networks, $\{[Sm_2(\mu_4\text{-cpta})(\mu_5\text{-cpta})(H_2O)_3]\cdot 3H_2O\}_n$ (**1**) and $[Ln(\mu_3\text{-cpta})(phen)(H_2O)_2]_n$ (Ln = Tb (**2**) and Sm (**3**)), were successfully synthesized via hydrothermal reactions using $Ln(NO_3)_3\cdot 6H_2O$, a flexible ether-bridged tricarboxylic acid H_3cpta (2-(2-carboxyphenoxy)terephthalic acid) as a principal building block, and phen (1,10-phenanthroline) as an optional supporting ligand. All products were obtained as air and thermally stable microcrystalline solids and fully characterized by standard solid-state techniques, including elemental analysis, TGA, IR spectroscopy, powder and single-crystal X-ray diffraction. Compound **1** possesses an intricate 2D layer structure with the **4,5L51** topology, which is driven by the μ_4- and