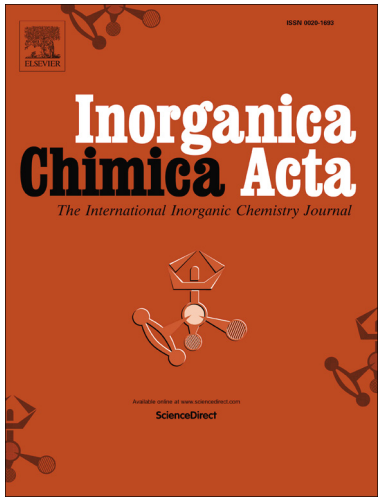

Research paper

Four coordination complexes based on two novel carboxylate-functionalized resorcin[4]arenes: structures, fluorescence and sensing of nitrobenzene and dichromate anions

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Four coordination complexes based on two novel carboxylate-functionalized resorcin[4]arenes: structures, fluorescence and sensing of nitrobenzene and dichromate anions

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ABSTRACT

Four new coordination complexes, namely, $[NH_2(CH_3)_2]_2[Cd(L1)(DMF)_2]$ (**1**), $[Zn(L1)_{0.5}(phen)]\cdot H_2O$ (**2**), $[Zn_2(L2)(Phen)_2(H_2O)_2]$ (**3**) and $[NH_2(CH_3)_2][Zn_2(L1)(Cl)(DMF)(H_2O)]\cdot 2H_2O$ (**4**) have been synthesized (H_4L1 = 2,8,14,20-tetra-phenyl-4,12,16,24-tetra-oxyallylene-6,10,18,22-tetra-carboxymethoxy -resorcin[4]arene, H_4L2 = 2,8,14,20-tetra-ethyl-6,12,18,24-tetra-oxyallylene-4,10,16, 22-carboxymethoxy-resorcin[4]arene and phen = 1,10-phenathroline). Complex **1** shows an infinite chain. Complexes **2** and **3** exhibit similar ribbon structures. The ribbons in **2** are extended by C-H$\cdots\pi$ interactions to create a supramolecular layer. While in **3**, the ribbons are further connected via H-bonds and π-π interactions to yield a supramolecular double-layer. Complex **4** reveals a 3D framework with 4-connected $(4^28^4)_2(4^27^28^2)_2$ topology. Solid state luminescent properties for all complexes were investigated. The temperature dependence fluorescence of **2** and **3** were studied.