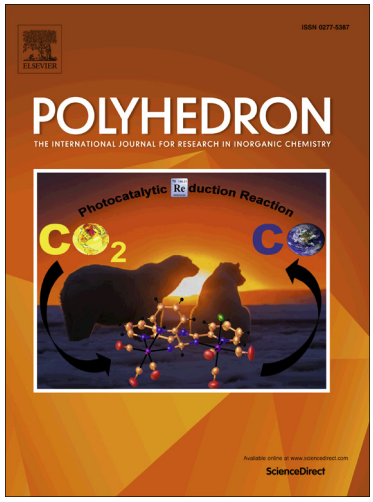

Neodymium coordination polymers with propionate, succinate and mixed succinate-oxalate ligands: synthesis, structures and spectroscopic characterization

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Neodymium coordination polymers with propionate, succinate and mixed succinate-oxalate ligands: synthesis, structures and spectroscopic characterization

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Abstract: Three neodymium (Nd) coordination polymers with propionate, succinate and mixed succinate-oxalate ligands have been synthesized and structurally characterized. $Nd_2(C_3H_5O_2)_6(H_2O)_3 \cdot 3H_2O$ (**1**) has a 1D polymeric structure built with both nine-fold and ten-fold coordinated neodymium polyhedra linked through μ_2-bridging propionate ligands. $Nd_2(C_4H_4O_4)_3(H_2O)_2$ (**2**) has a 3D polymeric structure constructed with two distinct nine-fold coordinated neodymium polyhedra linked through three types of succinate ligands, two in μ_4- and one in μ_3- coordination modes. $Nd_2(C_4H_4O_4)_2(C_2O_4)(H_2O)_4 \cdot 3H_2O$ (**3**) is built with two types of ten-fold coordinated neodymium polyhedra linked through μ_4- succinate ligands into 2D undulating layers which are further connected through μ_2- oxalate ligands forming a 3D network with channels. Their vibrational modes and thermal stabilities have been further investigated.

Key words: Neodymium, Coordination Polymer, Propionate, Succinate, Oxalate