

Zn(II) and Cd(II) halide coordination polymers supported by bis-pyridyl-bis-amide: structural diversity and structural transformation

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Keywords: Coordination polymer; Inorganic chemistry; Hydrothermal Synthesis

Reaction of metal halide with *N,N'*-bis(3-pyridylmethyl)oxalamide (**L**¹) afforded {[ZnI₂(**L**¹)]·2DMF}_n, **1**, [ZnI₂(**L**¹)]_n, **2**, 1D-[CdBr₂(**L**¹)₂]_n, **3**, 2D-[CdBr₂(**L**¹)₂]_n, **4**, and [Cd₂Br₂(ox)(**L**¹)₂]_n (ox²⁻ = oxalate), **5**, which have been structurally characterized by using single-crystal X-ray diffraction. Complexes **1** and **2** form a pair of supramolecular isomers, giving a 1D concavo-convex chain and a 1D zigzag chain, respectively and complexes **3** and **4** are another pair of supramolecular isomers, adopting a 1D looped-chain and a 2D layer with the (4⁴·6²)-**sql** topology, respectively. Complex **5** is a 3D framework with the (6⁶)-**dia** topology. Moreover, complexes **1** and **2** display irreversible structural transformation upon solvent removal, whereas temperature-dependent structural transformations from **3** to **4**, **3** to **5** and **4** to **5** are observed.

