Supplementary Materials:

Reactions of Cadmium(II) Halides and Di-2-pyridyl Ketone Oxime: One-dimensional Coordination Polymers

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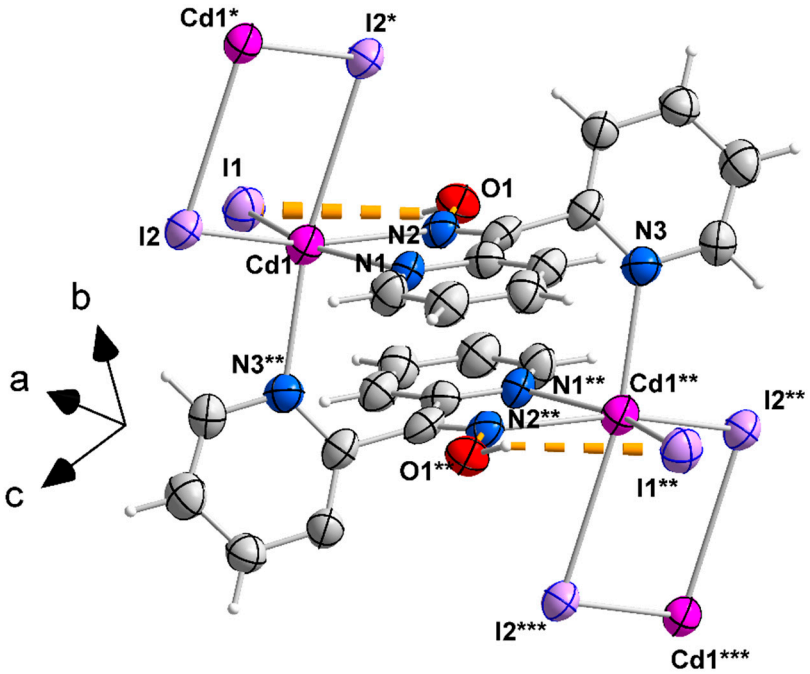


Figure S1. Complete coordination spheres of two neighboring Cd^{II} centers (Cd1, Cd1**) in one zigzag chain of complex **3**. The symmetry codes are the same with those mentioned for compound **2** in Figure 2b.

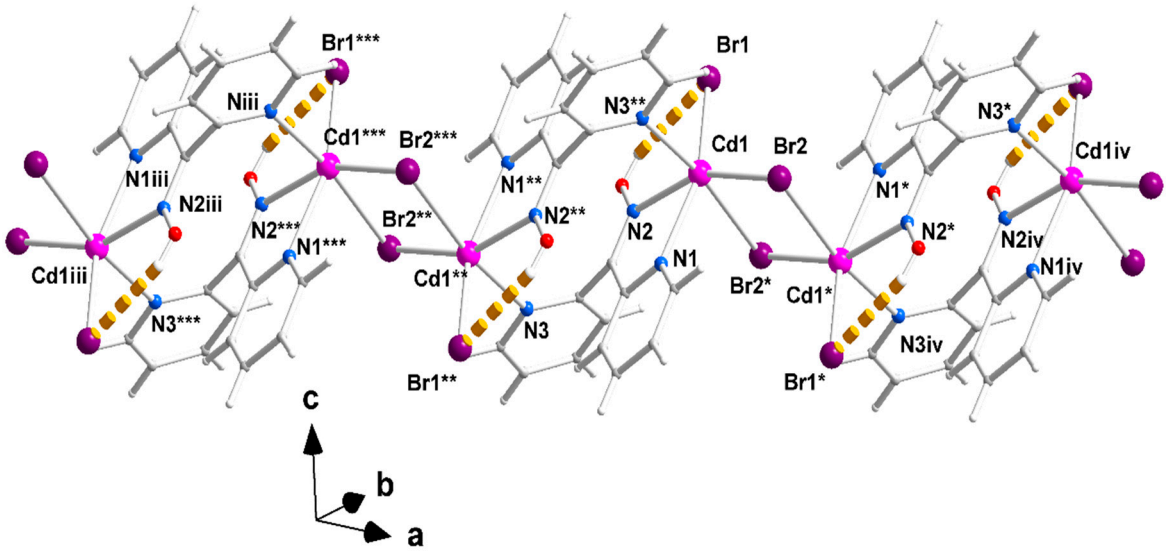


Figure S2. A portion of one zigzag chain (developed along the [1, 1, 0] crystallographic direction) of complex **2**. The thick dashed orange lines represent intrachain O_{oxime}-H···$Br_{terminal}$ H bonds. The symmetry codes (*), (**) and (***) are the same with those described in Figure 2b, and the additional codes are: (iii) 0.5-*x*, 0.5-*y*, 1-*z* and (iv) 0.5+*x*, 0.5+*y*, *z*.

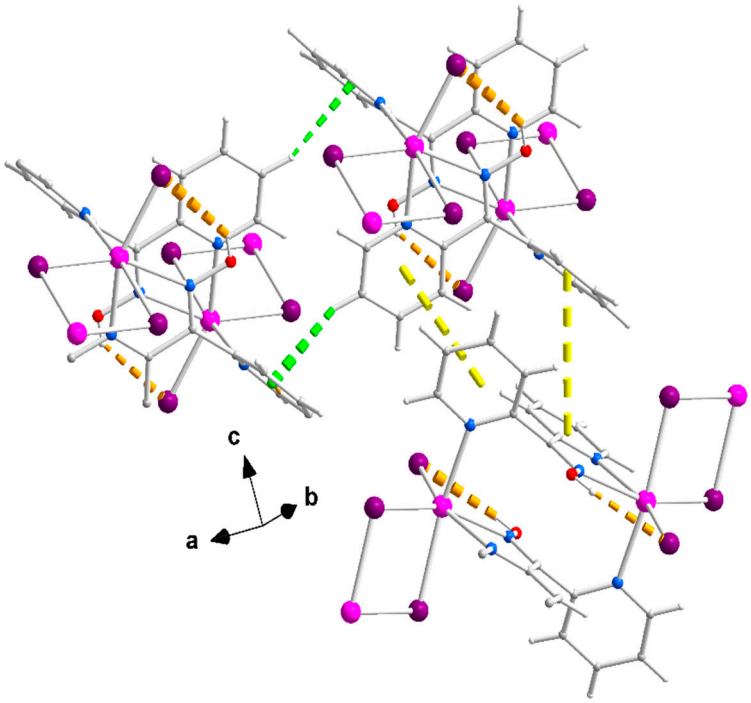


Figure S3. Interactions between neighboring chains in the crystal structure of compound **2**. The thick dashed light green and yellow lines indicate C2-H2···Cg1 (C-H···π) and π-π interactions, respectively; for details, see text. The thick dashed orange lines represent intrachain O_{oxime}-H···$Br_{terminal}$ H bonds (also see Figures 2b and 4).

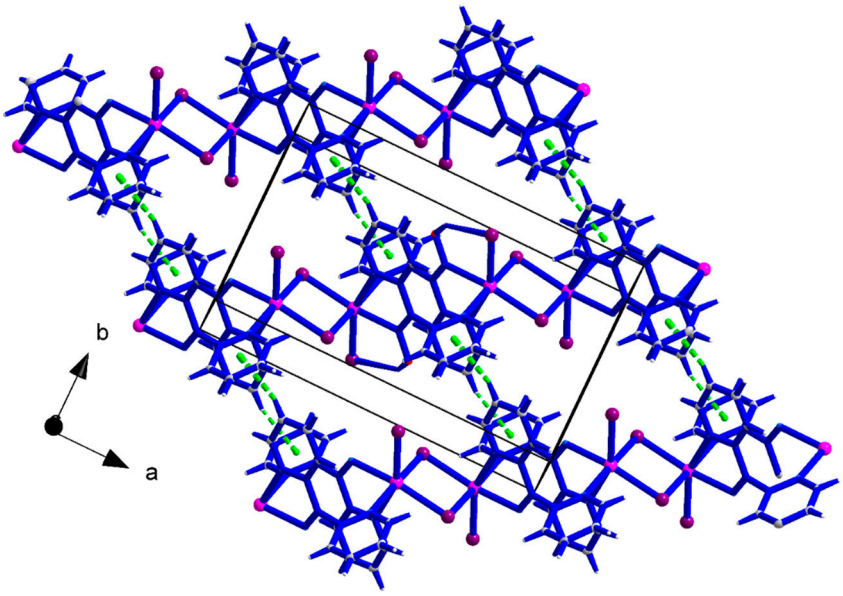
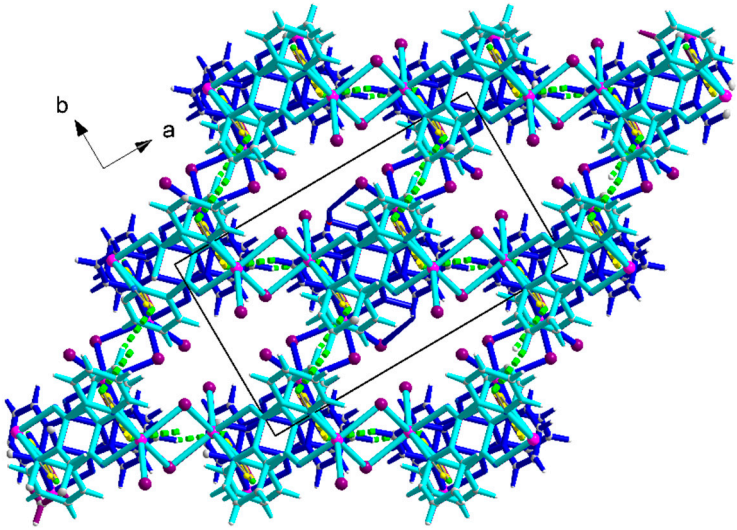
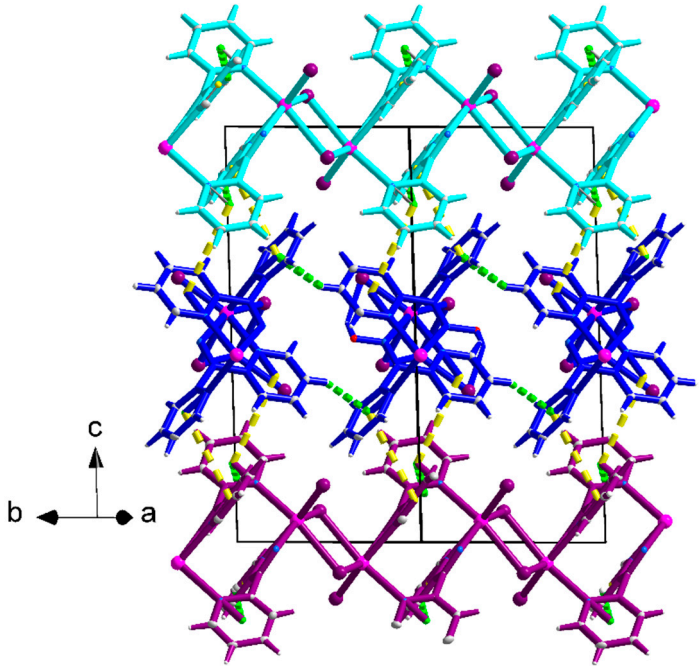


Figure S4. Layers of chains parallel to the (001) crystallographic planes in the structures of **2** and **3**. The chains are represented by thick blue solid lines and the C2-H2···Cg1 (C-H···π) interactions are indicated with thick dashed light green lines; for details, see text.



(a)



(b)

Figure S5. (a) Neighboring layers of **2** and **3** stacked along the *c* axis with a crossed-arrangement fashion relative to each other; in the top layer (cyan solid lines), the chains extend along the [-1, 1, 0] direction and in the bottom one (blue solid lines) along [1, 1, 0]. (b) Alternate stacking in **2** and **3** along the *c* axis; at the bottom (violet solid lines) and top (cyan solid lines) layers, the chains are along [-1, 1, 0] and in the middle one (blue solid lines) are along [1, 1, 0]. The thick dashed yellow and light green lines indicate C-H···π and π-π interactions; see also caption of Figure S2.

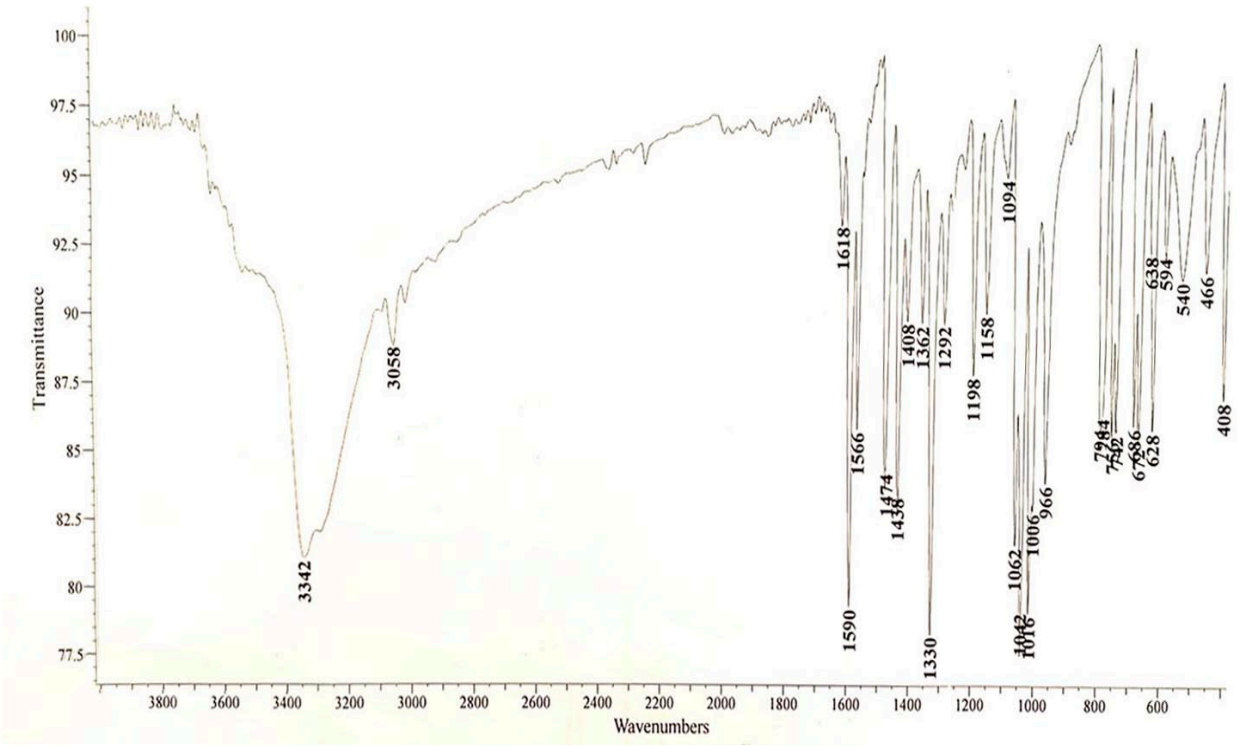


Figure S6. The IR spectrum (KBr, cm^{-1}) of the 1D polymer **2**.

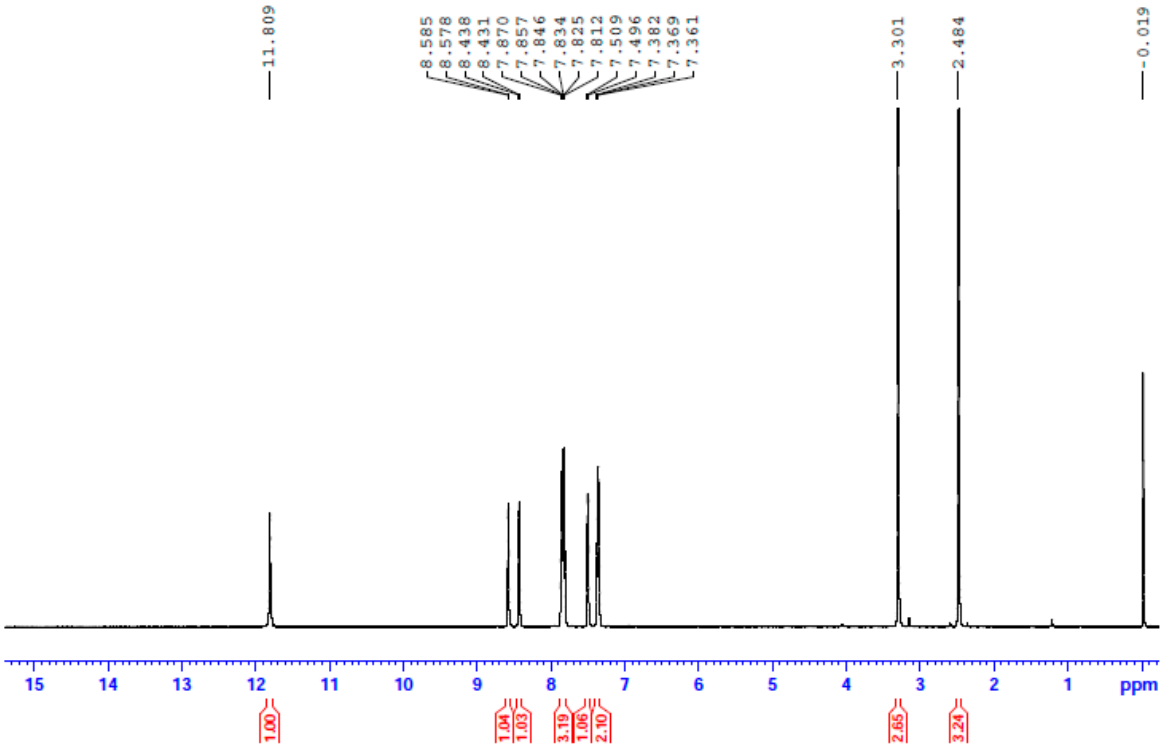


Figure S7. The ^{1}H NMR spectrum of **1**·2H_2O in d_6-DMSO. The signal at δ 2.48 ppm is due to the methyl groups of the non-deuteriated amount of the solvent, and the signal at δ 3.30 ppm to the protons of the lattice H_2O and the water content of the solvent.

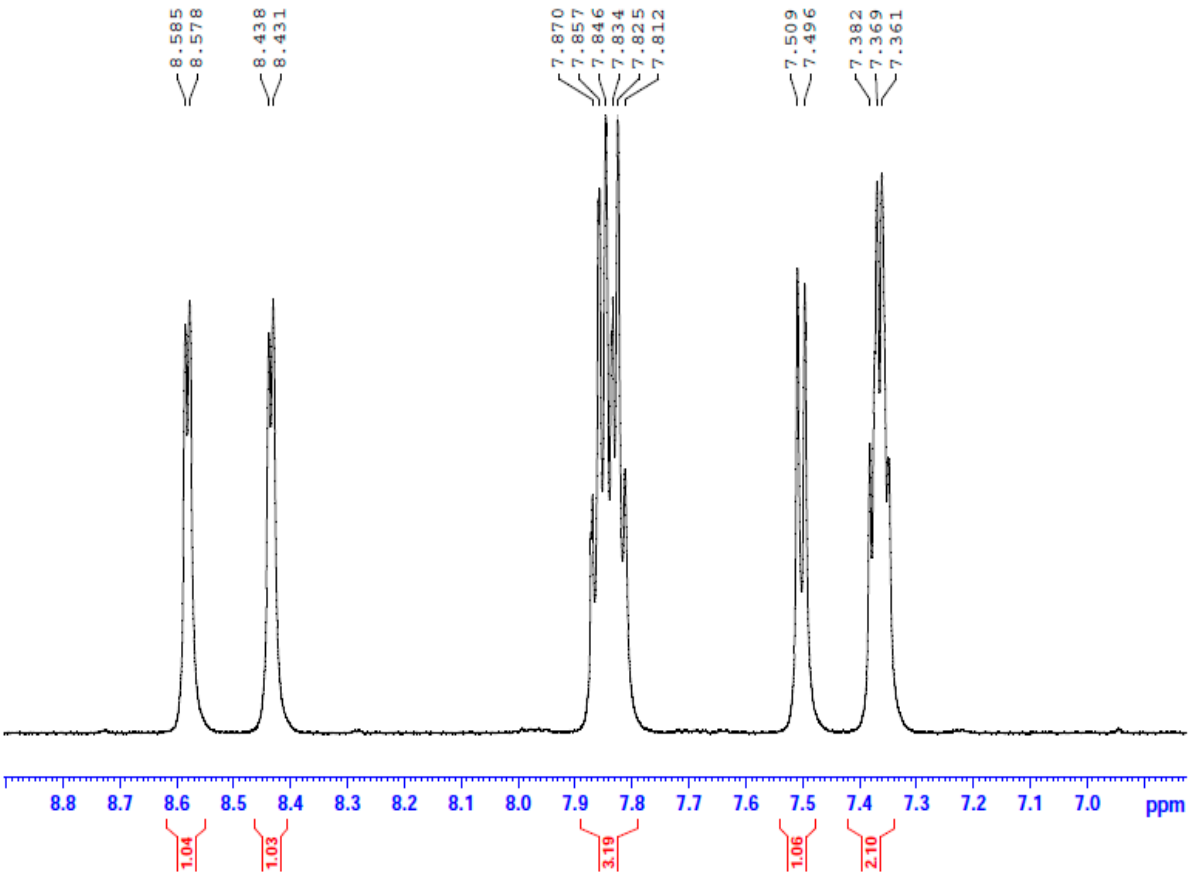


Figure S8. The ^{1}H NMR spectrum of **2** in d$_6$-DMSO in the aromatic region.