

Supporting Information File

Syntheses, structures, and properties of multidimensional lithium coordination polymers based on aliphatic carboxylic acids

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Figure S1. Powder XRD patterns of **1**.

Figure S2. Powder XRD patterns of **2**.

Figure S3. Powder XRD patterns of **3**.

Figure S4. Varied temperature powder X-ray patterns of compound **2**.

Figure S5. FT-IR spectra of **1–3**.

Figure S6. The diagrams of H-bonding interactions of **2**.

Figure S7. The diagrams of H-bonding interactions of **3**.

Figure S8. Cyclic voltammogram of ligands in 1M LiPF₆ EC/DMC (1:1 V/V), which was recorded in three cycles at a scanning rate of 1 mVs⁻¹.

Figure S9. Scanning electron micrographs for **1-3**.

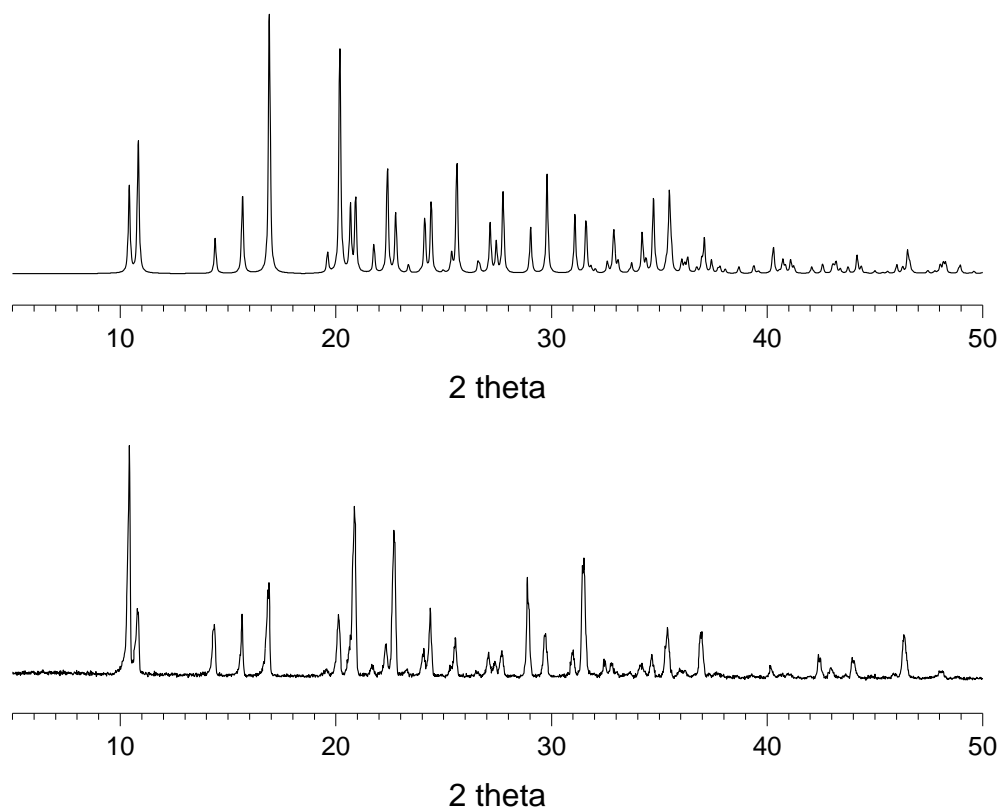


Figure S1. Powder XRD patterns of **1** (calculated, top; measured, bottom).

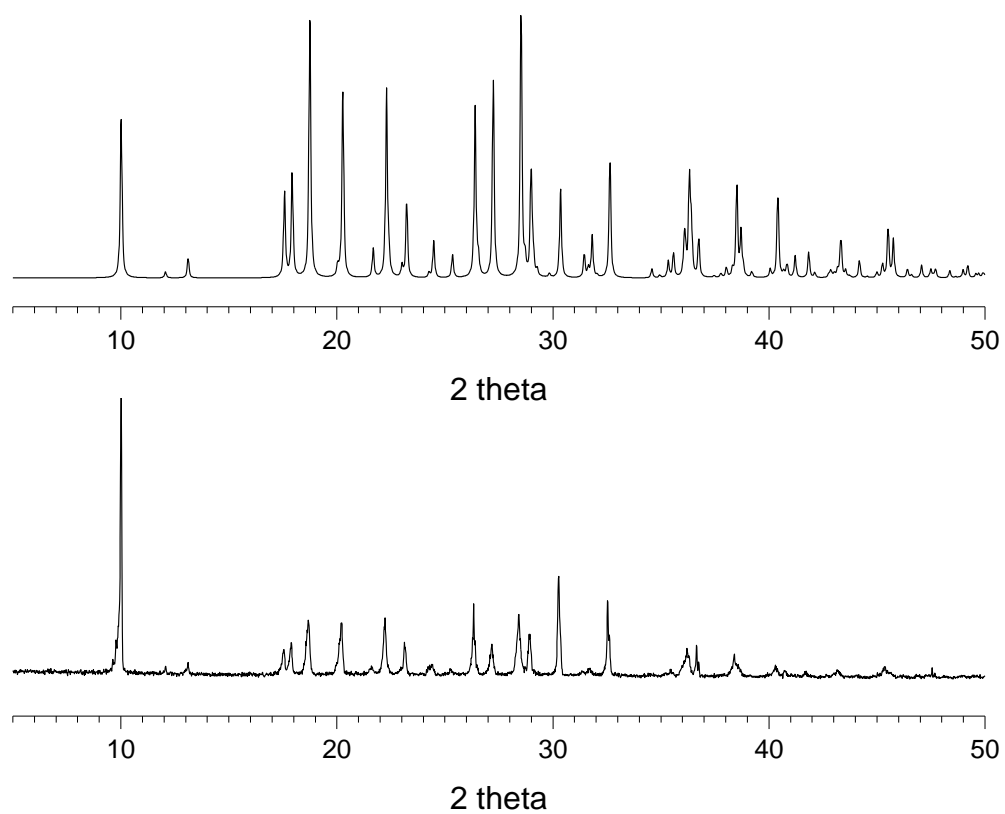


Figure S2. Powder XRD patterns of **2** (calculated, top; measured, bottom).

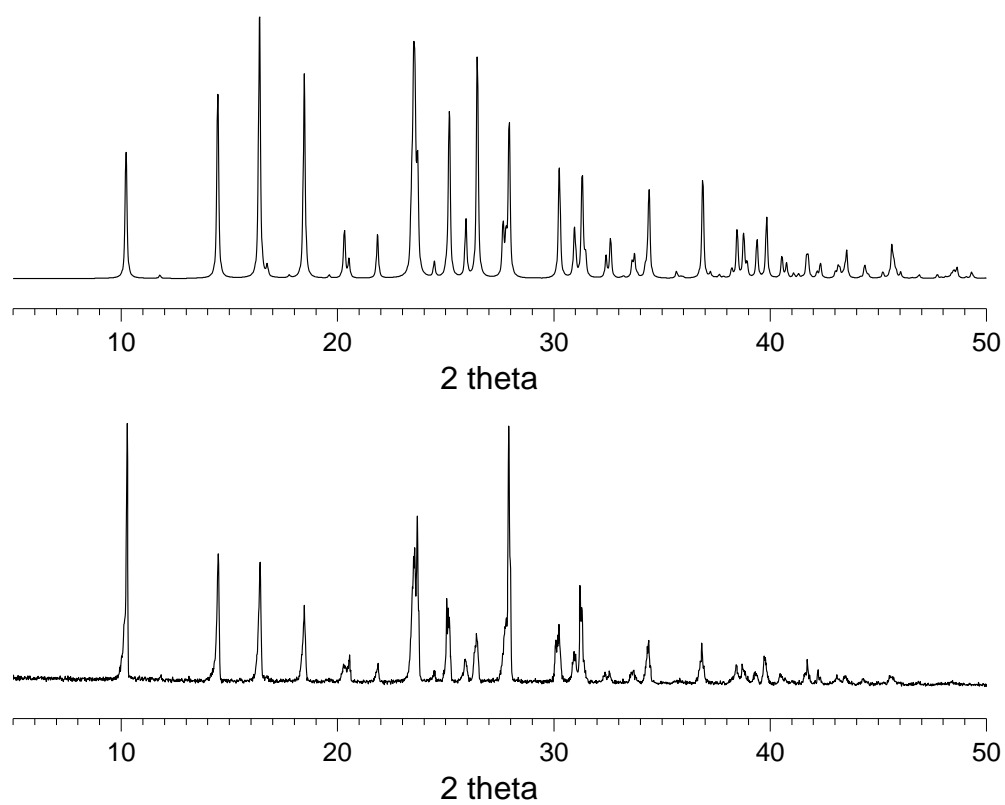


Figure S3. Powder XRD patterns of **3** (calculated, top; measured, bottom).

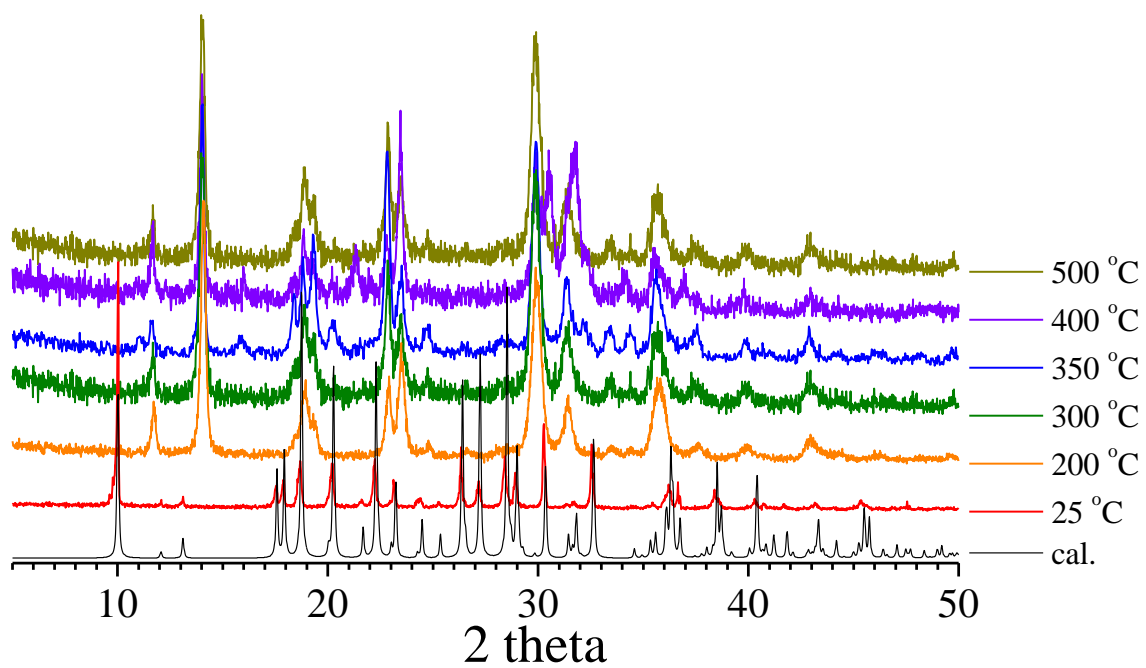
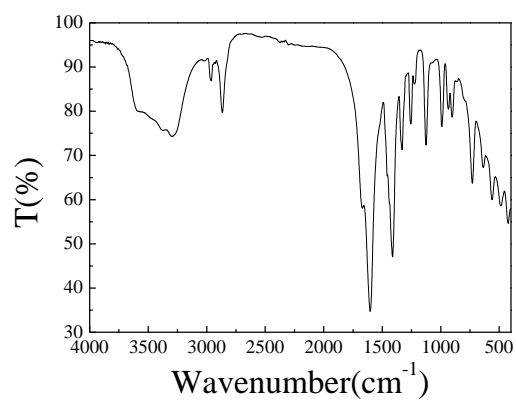
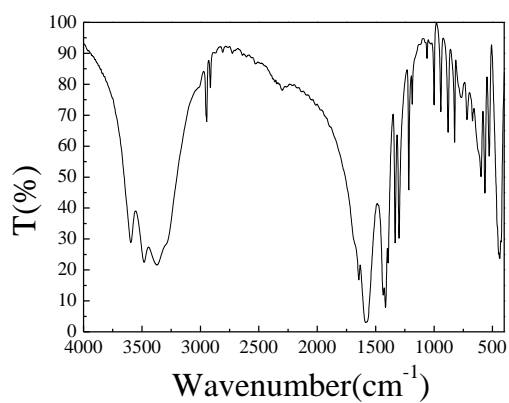


Figure S4. Varied temperature powder X-ray patterns of compound 2.

(a) Compound 1



(b) Compound 2



(c) Compound 3

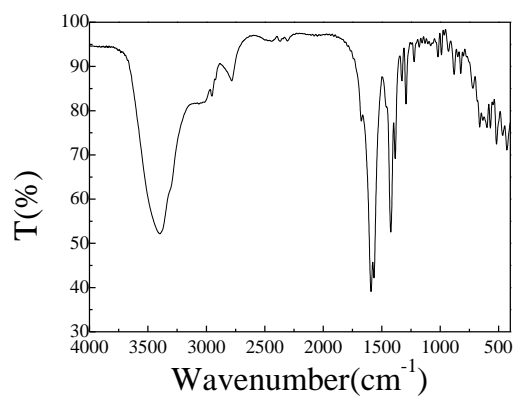


Figure S5. FT-IR spectra of 1–3.

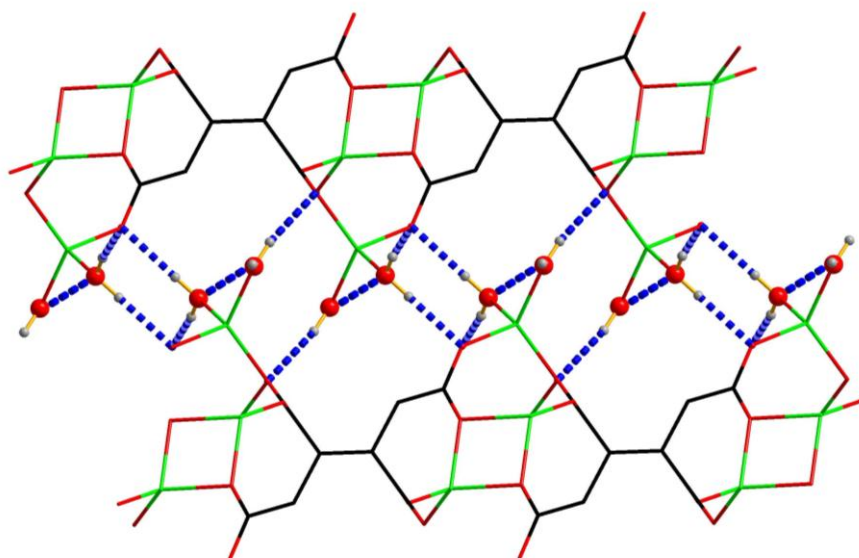


Figure S6. The diagrams of H-bonding interactions of **2**.

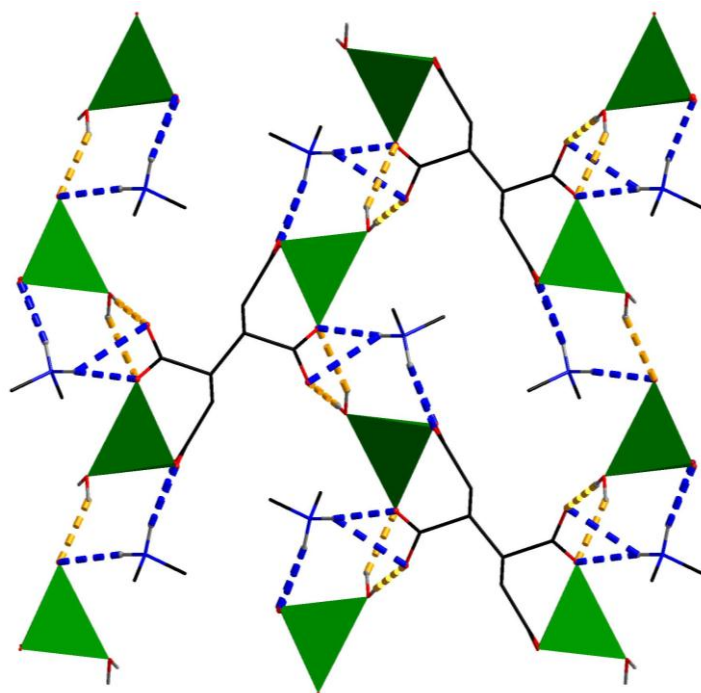


Figure S7. The diagrams of H-bonding interactions of **3**.

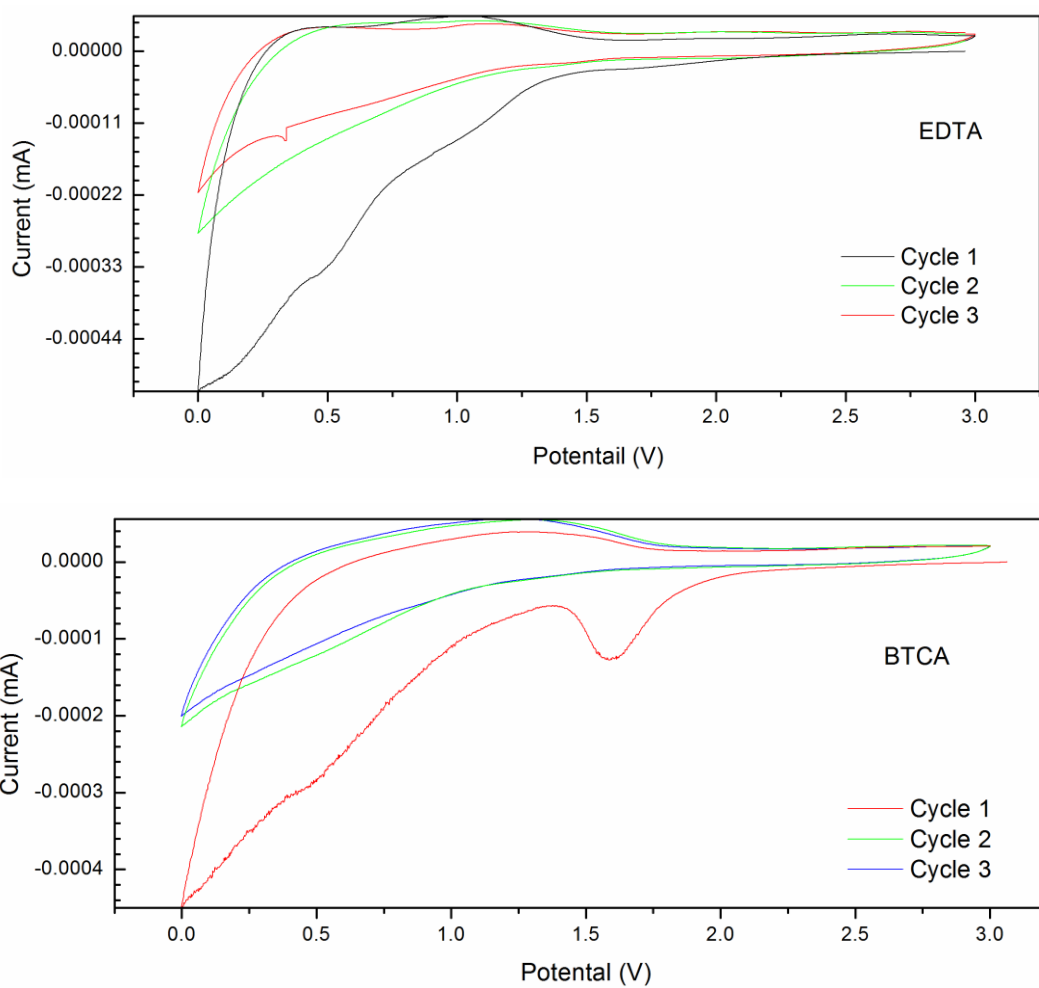
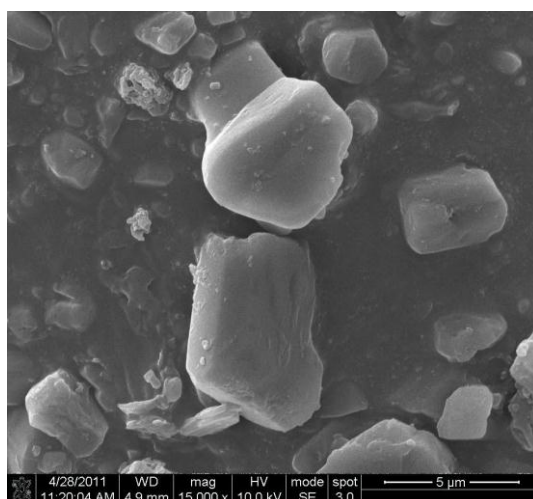
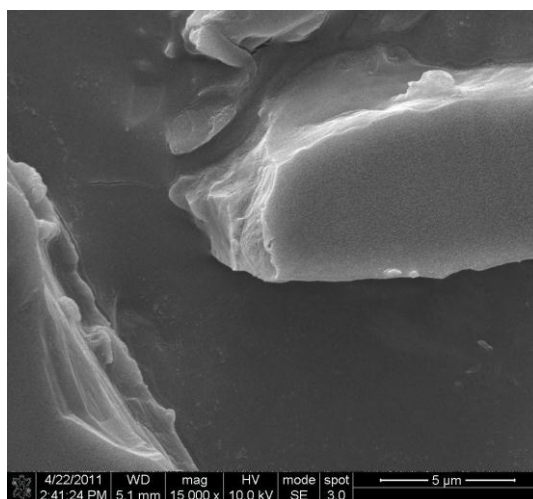


Figure S8. Cyclic voltammogram of ligands in 1M LiPF₆ EC/DMC (1:1 V/V), which was recorded in three cycles at a scanning rate of 1 mVs⁻¹.

Complex 1



Complex 2



Complex 3

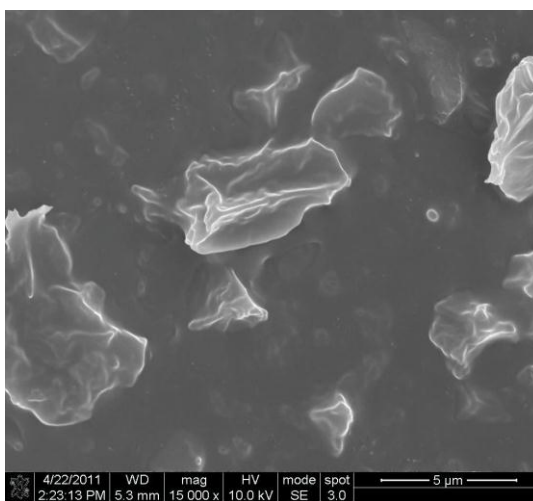


Figure S9. Scanning electron micrographs for 1-3.