

**Characterization, adsorption properties, metal ion-exchange and
crystal-to-crystal transformation of $\text{Cd}_3[(\text{Cd}_4\text{Cl})_3(\text{BTT})_8(\text{H}_2\text{O})_{12}]_2$
framework, where $\text{BTT}^{3-} = 1,3,5\text{-benzenetristetrazolate}$**

Ju-Hsiou Liao^{*a}, Wan-Ting Chen^a, Cherng-Shiaw Tsai^a, Chih-Chieh Wang^b

*Department of Chemistry and Biochemistry, National Chung Cheng University
168 University Road, Min-Hsiung, Chia-Yi, Taiwan, and Department of Chemistry,
Soochow University, 70 Linhsi Road, Shihlin, Taipei, Taiwan*

Supporting Information

Contents

- Fig. S1** (a) Simulated powder X-ray diffraction pattern (in red) of **1**, based on single-crystal data. (b) Experimental powder X-ray diffraction pattern of the as-synthesized product (in blue).
- Fig. S2** Experimental X-ray powder diffraction patterns of (a) **1**, (b) **2** and (c) **3**.
- Fig. S3** Thermogravimetric analysis of **1**.
- Fig. S4** (a) Experimental powder X-ray diffraction pattern (in black) of as-synthesized **1**. (b) Experimental powder X-ray diffraction pattern (in red) of **1** annealed at 150°C.
- Fig. S5** (a) Infrared spectrum of as-synthesized **1**. (b) Infrared spectrum of **1** annealed at 150°C. DMF solvent molecules are not completely removed.
- Table S1** The results of ICP-MS for the ion-exchanged products

Fig. S1

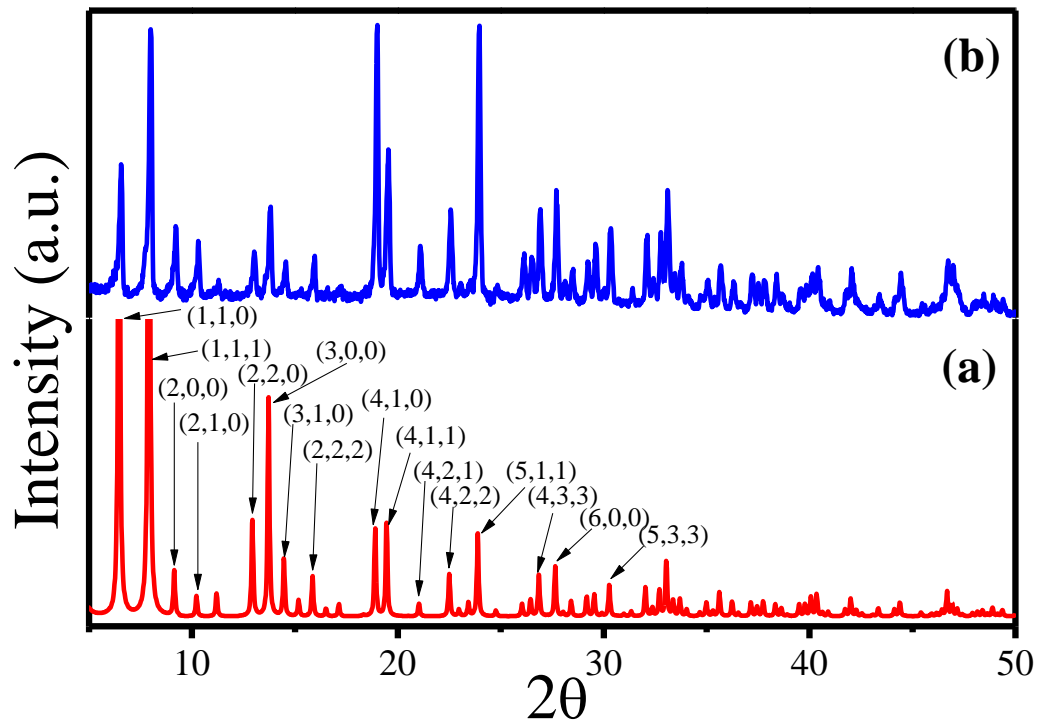


Fig. S2

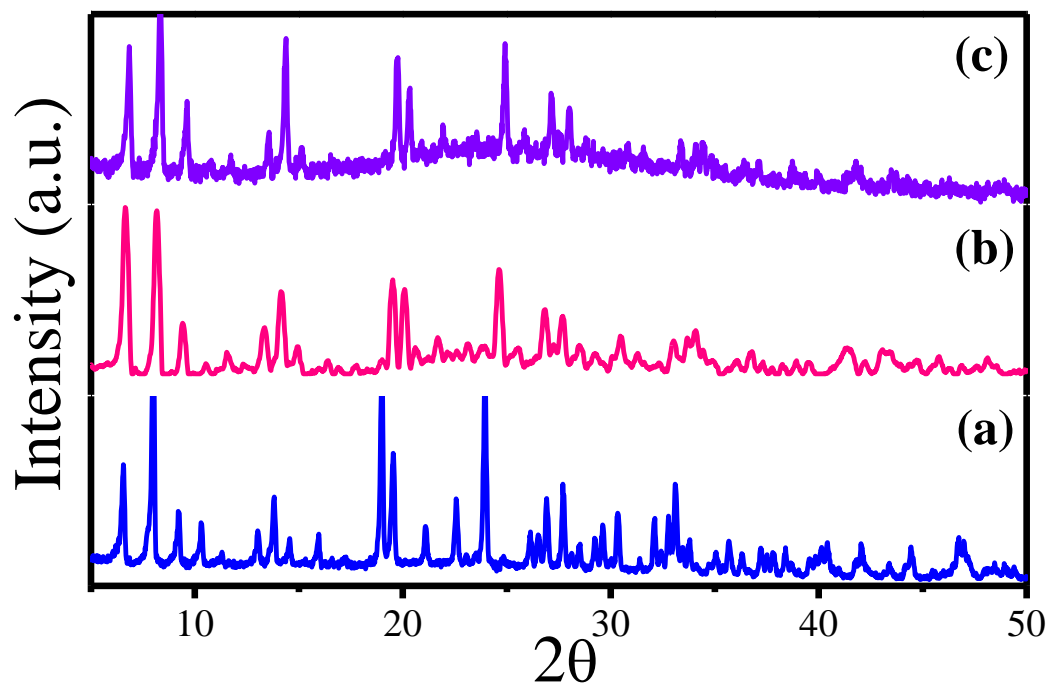


Fig. S3

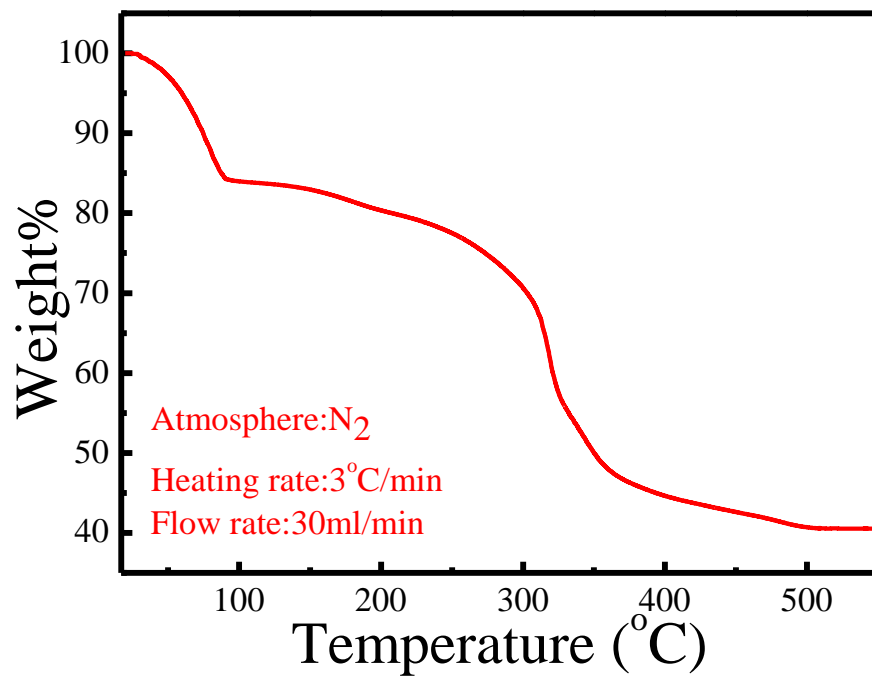


Fig. S4

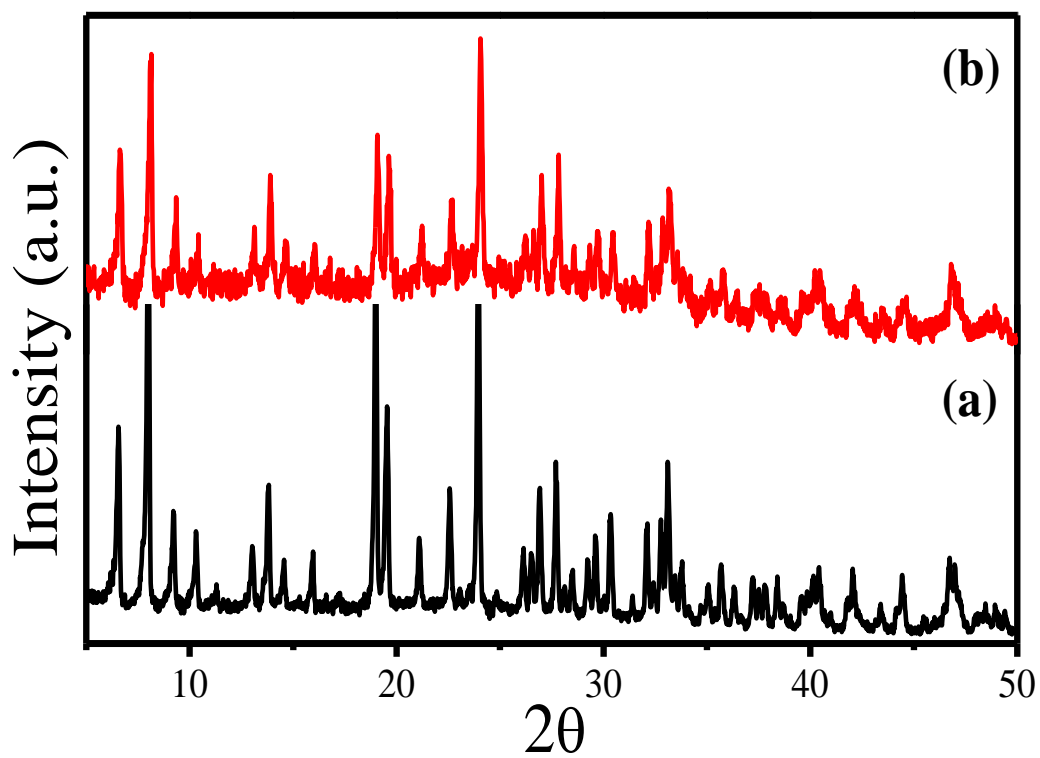


Fig. S5

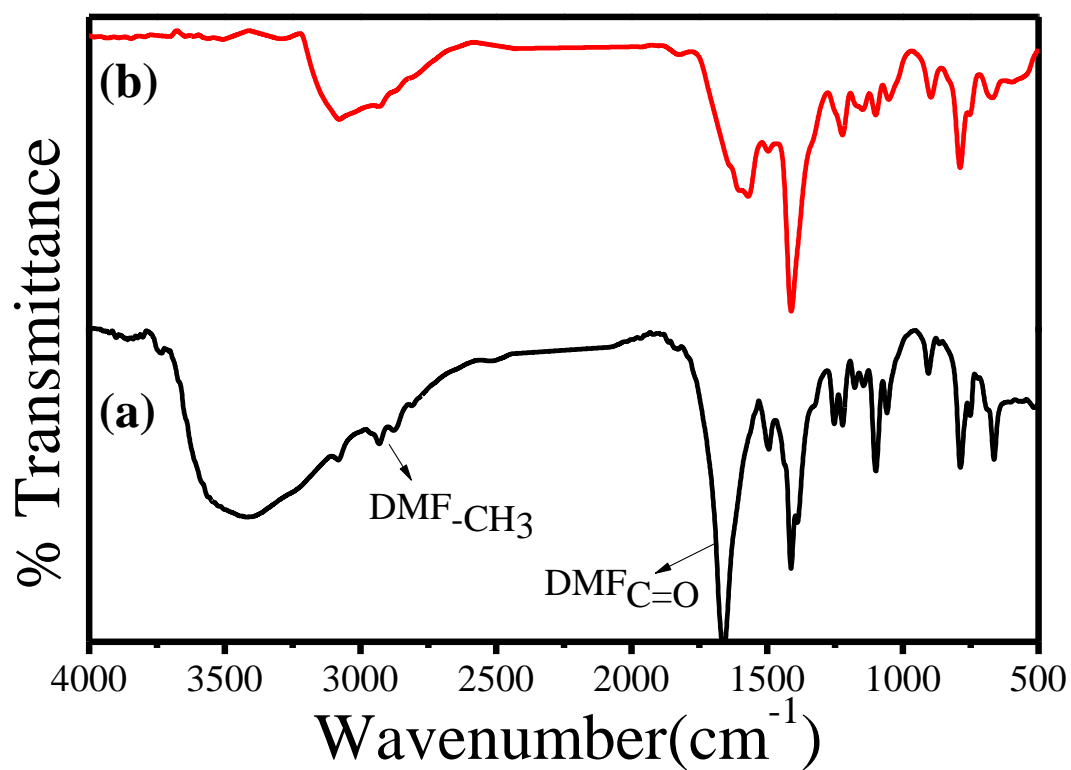


Table S1

The results of ICP-MS for the ion-exchanged products

Sample\M ²⁺	Co ²⁺ (ppm)	Ni ²⁺ (ppm)	Cd ²⁺ (ppm)
2	364	NA	0.86
3	NA	314	1.75