

**Electronic Supplementary Information (ESI) for
A new Cd₄-2,4-pyridinedicarboxylate layered coordination polymer consisting of
intralayer cavities and reversible network self-adaptation upon
dehydration/moisture-absorption**

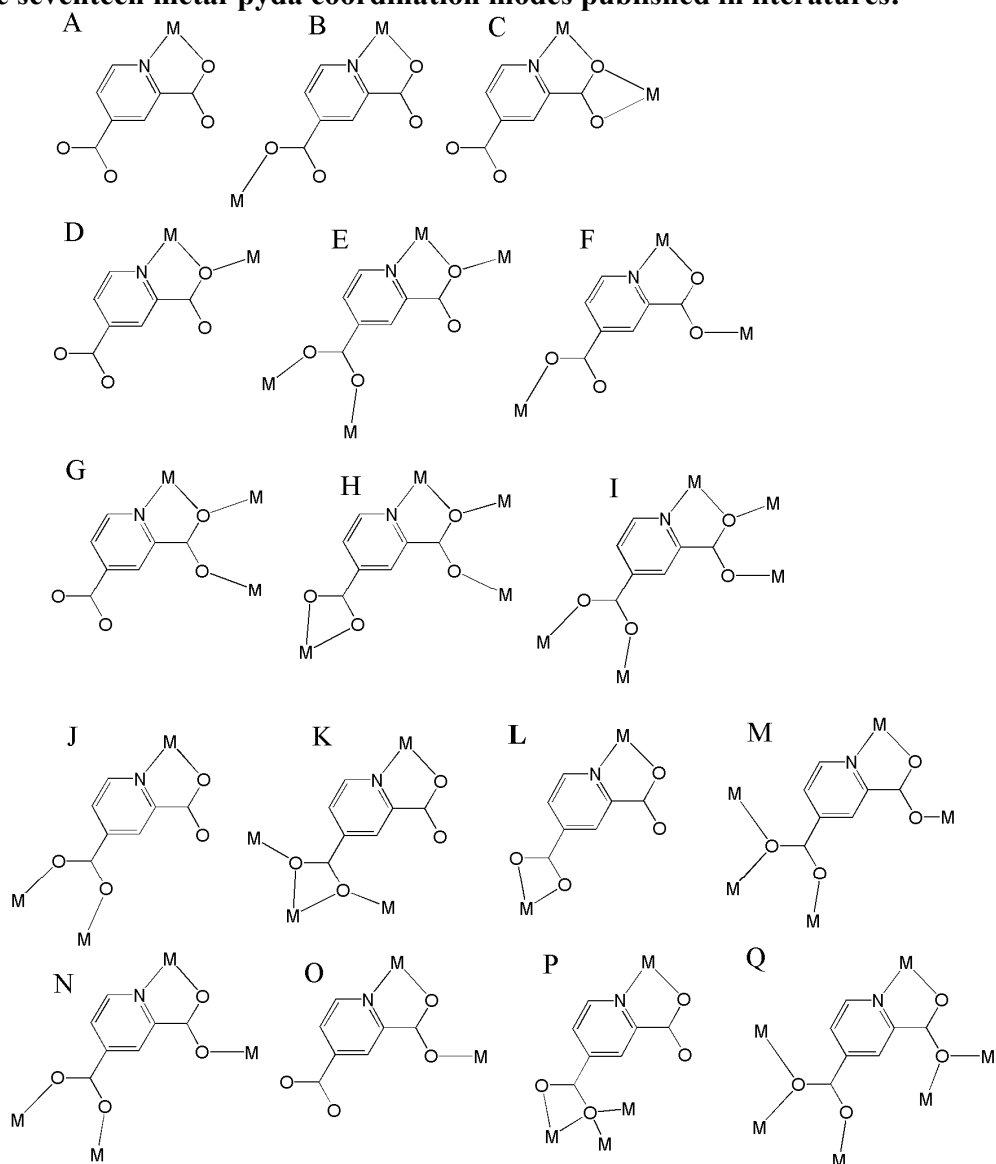
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A. the seventeen metal-pyda coordination modes published in literatures:



B. Two new metal-pyda coordination modes found in FJU-3:

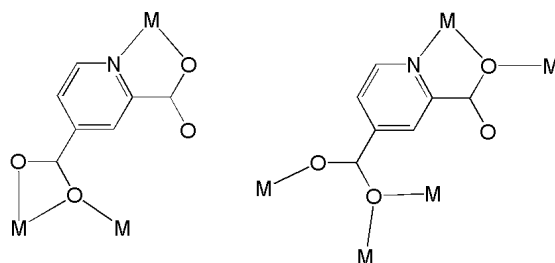


Fig. S1 The metal-pyda coordination modes published in literatures and found in **FJU-3**.

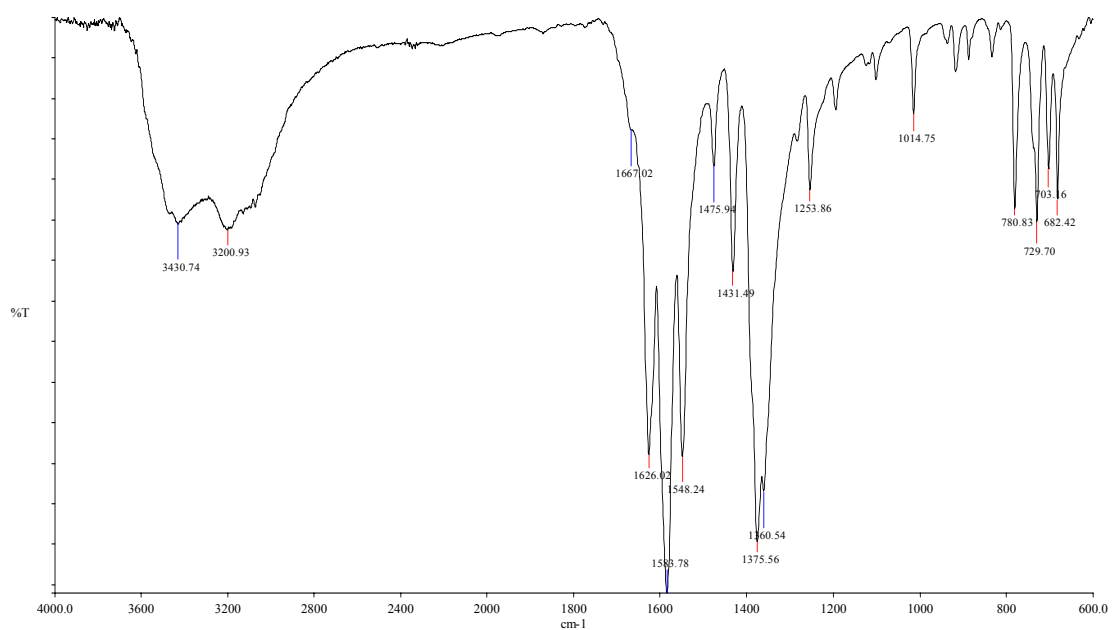


Fig. S2 The infrared spectrum (ATR-IR) of **FJU-3**.

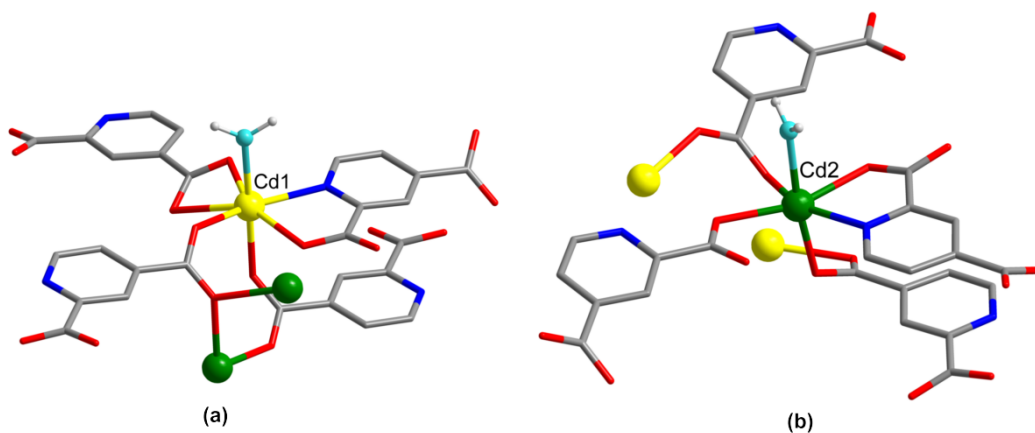


Fig. S3 The coordination environments of *hepta*- and *hexa*-coordinated cadmium centers in **FJU-3**: (a) *hepta*-coordinated Cd1; (b) *hexa*-coordinated Cd2. Both types of cadmium centers are coordinated by one water molecule and four pyda ligands: three pyda ligands coordinated to the cadmium center in *cis*-positions with respect to the coordinated water molecule, and one pyda ligand coordinated to cadmium center in *trans*-position with respect to the coordinated water molecule. (Key: Cd1, yellow sphere; Cd2, green sphere).

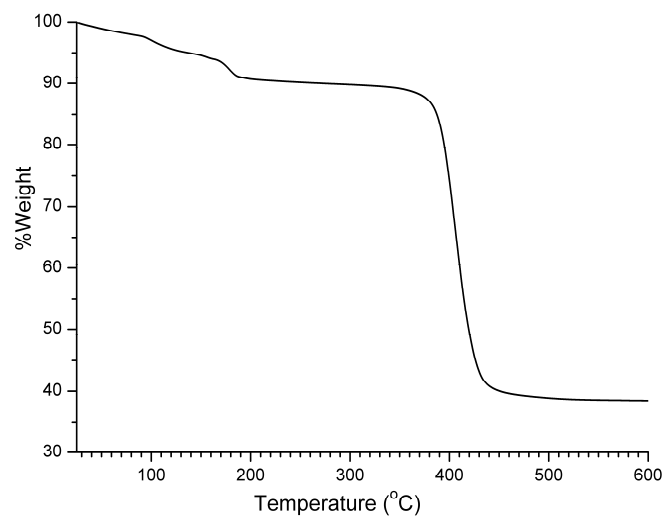


Fig. S4 The thermogravimetric analysis diagram of **FJU-3**. The weight loss of 2.83% (calcd. 2.94%) observed between 30 and 98 °C corresponds to the loss of one water molecule, and the weight loss of 6.18% (calcd. 5.88%) observed between 98 and 190 °C corresponds to the loss of two water molecules on the basis of formula $[\text{Cd}_2(\text{H}_2\text{O})_2(\text{C}_7\text{H}_3\text{O}_4\text{N})_2 \cdot \text{H}_2\text{O}]_n$.

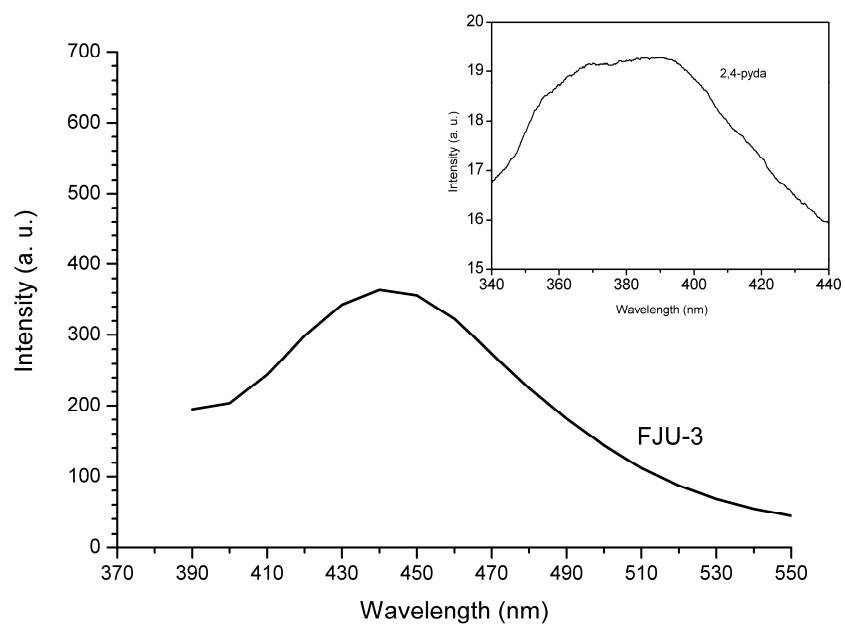


Fig. S5 Solid-state emission spectra of **FJU-3** and 2,4-pyda free ligand (inset) at room temperature ($\lambda_{\text{ex}} = 320$ nm).