Supporting Information

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manuscript title: A Contrivance for a Dynamic Porous Framework. Cooperative Guest Adsorption Based on Square Grids Connected by Amide-Amide Hydrogen Bonds

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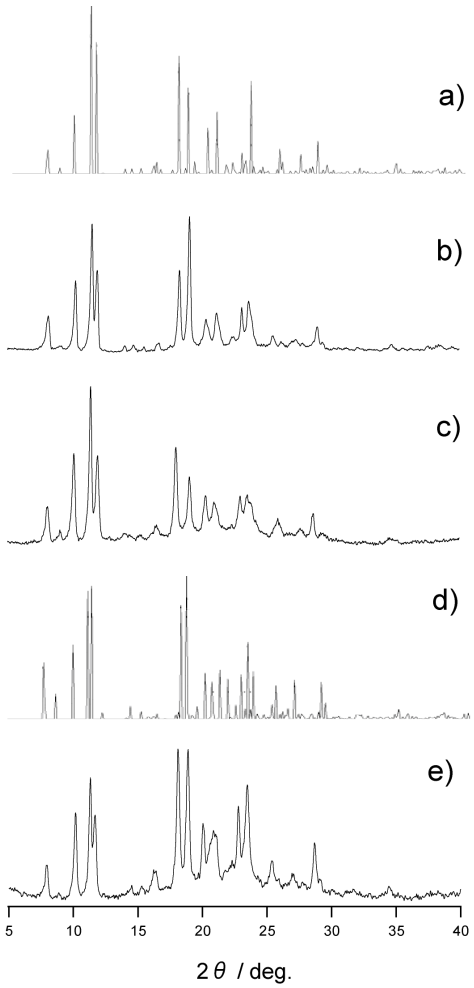

Figure S1. (a) Simulated XRPD pattern from the single crystal model of **3** ⊃ **4Me$_2$CO**. (b) As-synthesized **3** ⊃ **4Me$_2$CO**. (c) XRPD patterns at room temperature of exposing **3** to acetone for 4 days. (d) Simulated XRPD pattern from the single crystal model of **3** ⊃ **4THF**. (e) XRPD patterns at room temperature of exposing **3** to THF for 4 days.

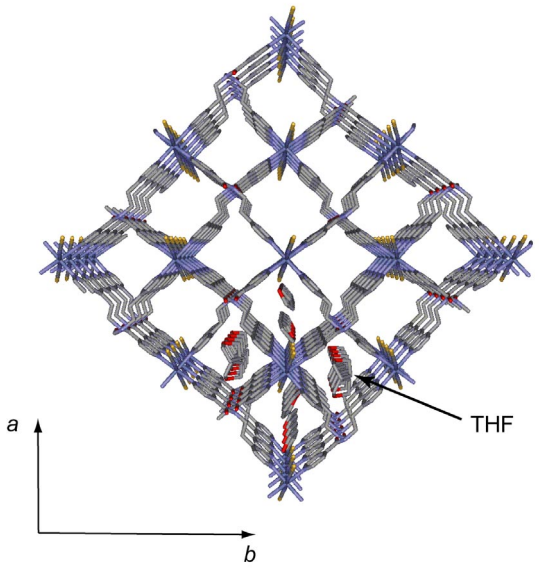

Figure S2. Crystal structure of **3 ⊃ 4THF** along the *c* axis with THF molecules.

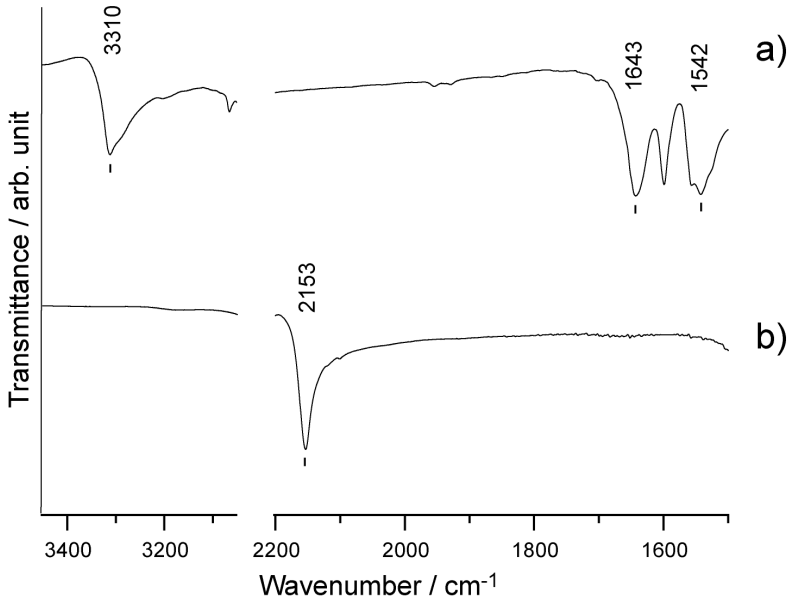

Figure S3. IR spectra in the region of 3450-3050 cm^{-1} (left) and 2200-1500 cm^{-1} (right) at room temperature of (a) 4-peia and (b) $Co(SCN)_2$.

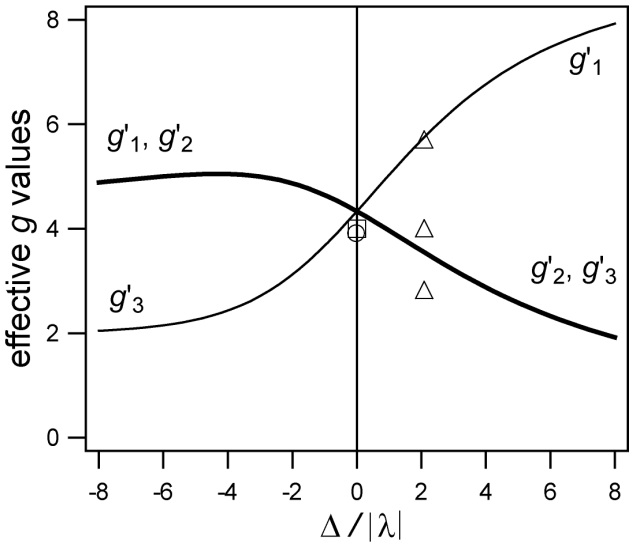

Figure S4. Effective *g* values calculated from the first-order perturbation equations are plotted versus Δ/|λ|. The solid triangles, squares, and circles represent the experimentally-obtained effective *g* values for **3** ⊃ **4Me$_2$CO**, **3** ⊃ **Me$_2$CO**, and **3**, respectively.

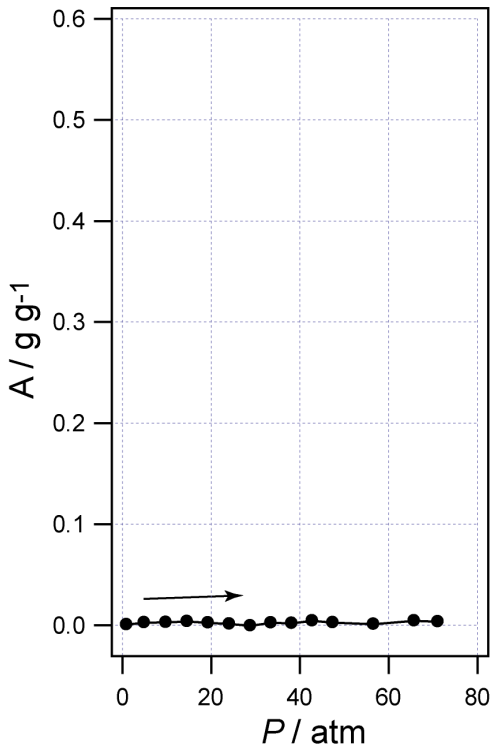

Figure S5. Isotherm for CH_4 adsorption at 298 K of **3** over the pressure range from 0.5 to 70 atom.