Supporting Information

for

Metal-Complex Assemblies Constructed from a Flexible Hinge-Like Ligand

$\text{H}_2\text{bhnq}$: Structural Versatility and Dynamic Behavior in the Solid State

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Figure S1. TG analysis data for black powder sample of 1.
Figure S2. TG analysis data for red powder sample of 1 after being immersed.
Figure S3. Comparison of the X-ray powder diffraction patterns of 1: (a) simulated pattern obtained from the crystal structure, (b) as prepared, (c) on exposure to air, (d) after immersion in EtOH/H₂O mixture.
Figure S4. EPR spectra of red (a and c) and black (b and d) powder samples of 1 at 77 K and $\nu = 9.520$ GHz.
Figure S5. Comparison of the X-ray powder diffraction patterns of 2: (a) simulated pattern obtained from the crystal structure, (b) as prepared, (c) on exposure to air, (d) on exposure to THF vapor.
Figure S6. Comparison of the UV-vis absorption spectra of 2: (a) the red sample and (b) the black sample.
Figure S7. EPR spectra of the red (a and c) and the black (b and d) powdered samples of 2 at 77 K and $\nu = 9.109$ GHz.
Figure S8. View of the hydrogen–bonding interaction of the chains in 4.
Figure S9. (a) ORTEP drawing of an asymmetric unit of compound 9 with labeling scheme and thermal ellipsoids at the 50% probability level. Hydrogen atoms are omitted for clarity. Selected bond distances (Å) are as follows: Zn – O(1) 1.975(2), Zn – O(2) 2.214(2), Zn – O(4) 2.015(2), Zn – O(5) 2.138(2), Zn – O(7) 2.177(3), Zn – O(8) 2.081(3).
Figure S10. (a) ORTEP drawing of an asymmetric unit of compound 10 with labeling scheme and thermal ellipsoids at the 50\% probability level. Hydrogen atoms are omitted for clarity. Selected bond distances (Å) are as follows: Zn – O(1) 2.011(2), Zn – O(2) 2.190(2), Zn – O(4) 2.024(2), Zn – O(5) 2.141(3), Zn – O(7) 2.151(3), Zn – O(8) 2.093(3).
Figure S11. Simulated (a) and experimental (b) X-ray powder diffraction diagrams of 4.

Figure S12. Simulated (a) and experimental (b) X-ray powder diffraction diagrams of 5.
**Figure S13.** Simulated (a) and experimental (b) X-ray powder diffraction diagrams of 7.

**Figure S14.** Simulated (a) and experimental (b) X-ray powder diffraction diagrams of 8.
**Figure S15.** Simulated (a) and experimental (b) X-ray powder diffraction diagrams of 9.

**Figure S16.** Simulated (a) and experimental (b) X-ray powder diffraction diagrams of 10.  
* peaks of a film covering the sample.