

Supporting Information

Thermal- and light-induced switchable one-dimensional rare looped-like spin crossover coordination polymer

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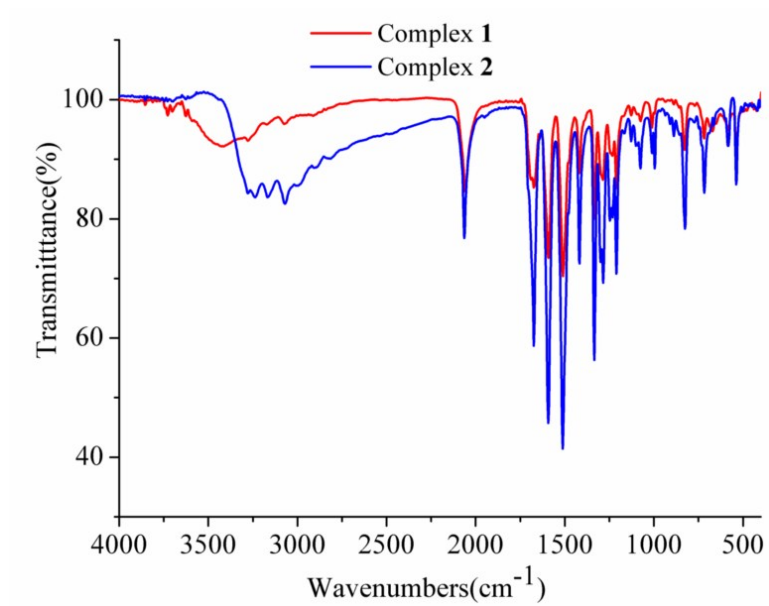
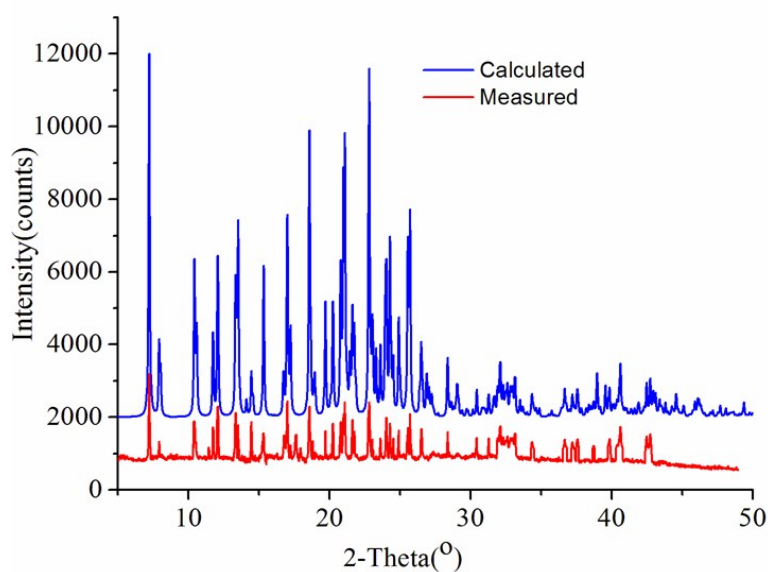


Figure S1. The IR spectra for the complexes **1** and **2**.

Table S1. Selected bond lengths (Å) and angles (°) for complex **1**.

1	
Fe(1)-N(1)	2.121(6)
Fe(1)-N(2)	2.234(5)
Fe(1)-N(1)#2	2.121(6)
Fe(1)-N(2)#2	2.234(5)
Fe(1)-N(5)#2	2.207(5)
Fe(1)-N(5)#1	2.207(5)
N(1)-Fe(1)-N(5) #2	93.4(2)
N(1)#2-Fe(1)-N(5)#2	89.7(2)
N(1)-Fe(1)-N(5)#1	89.7(2)
N(1)#2-Fe(1)-N(5)#1	93.4(2)
N(5)#2-Fe(1)-N(5)#1	89.6(2)
N(2)-Fe(1)-N(2)#2	89.3(2)
N(1)-Fe(1)-N(2)#2	87.16(19)
N(1)#2-Fe(1)-N(2)#2	89.7(2)
N(5)#2-Fe(1)-N(2)#2	90.63(17)
N(1)-Fe(1)-N(2)	89.7(2)
N(1)-Fe(1)-N(2)#2	87.16(19)
N(5)-Fe(1)-N(2)#1	90.63(17)

Symmetrycodes: #1 -x, y, -z+1/2; #2x+1/2, y+1/2, z; #3 -x, -y, -z.

**Figure S2.** The calculated and measured pattern of PXRD for complex **1**.

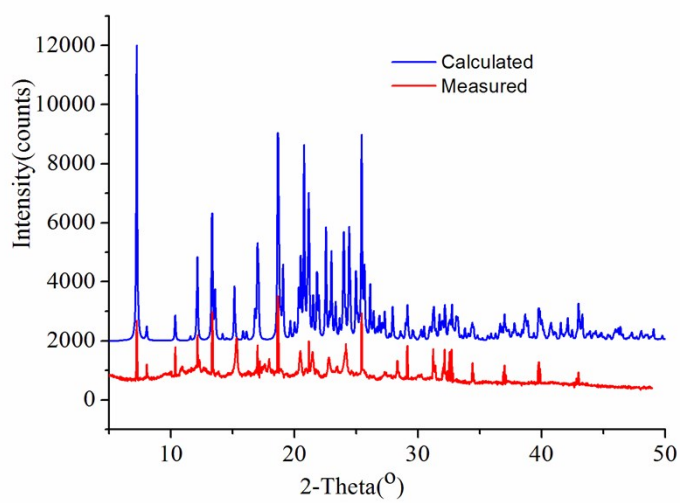


Figure S3. The calculated and measured pattern of PXRD for complex **2**.

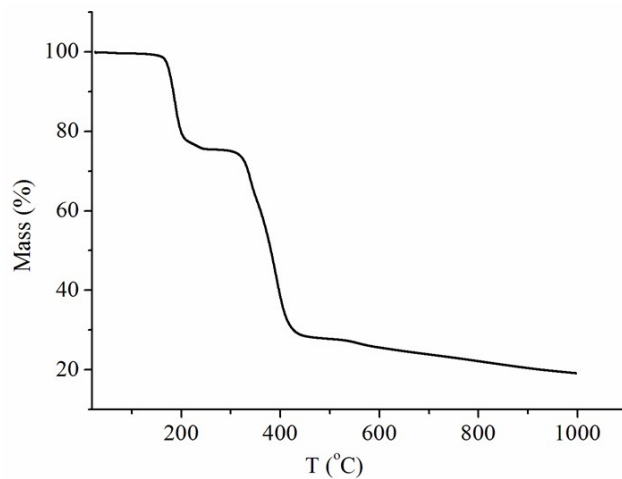
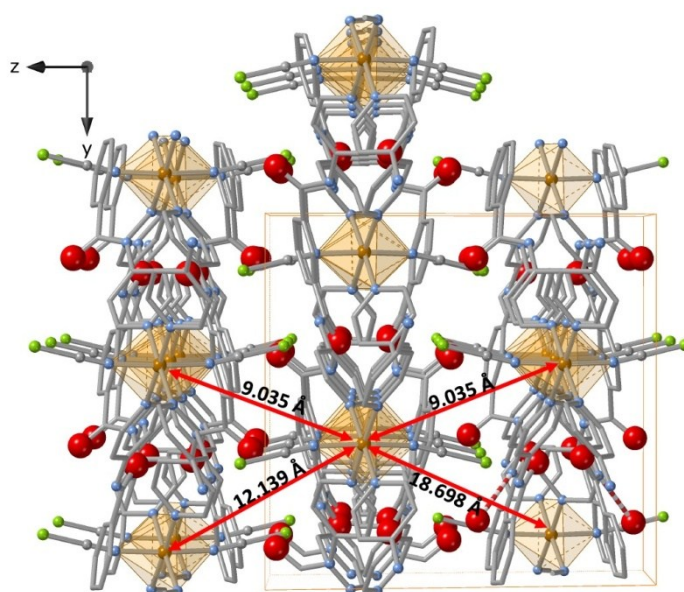


Figure S4. The TGA analysis for the complex **2**.



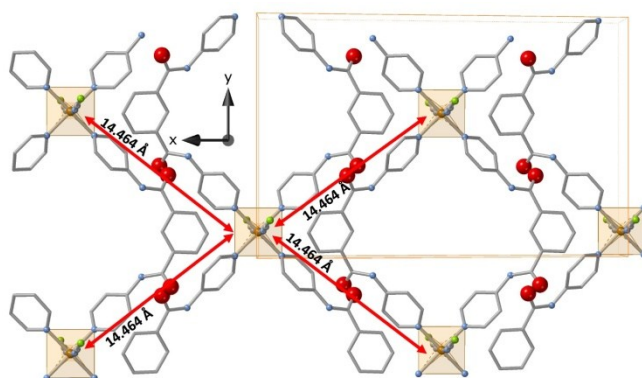


Figure S5. Perspective views of the packing of **2**, down to [100] (top) and [001] directions, displaying the shortest interchain Fe...Fe distances in the LS state.

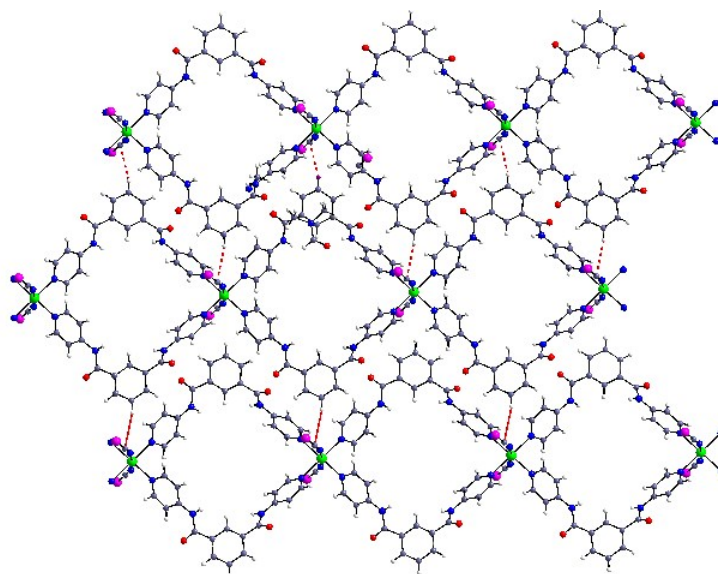


Figure S6. The cell packing diagram of the complexes **1** and **2** along *a* axial showing the intermolecular C-H...N interactions.

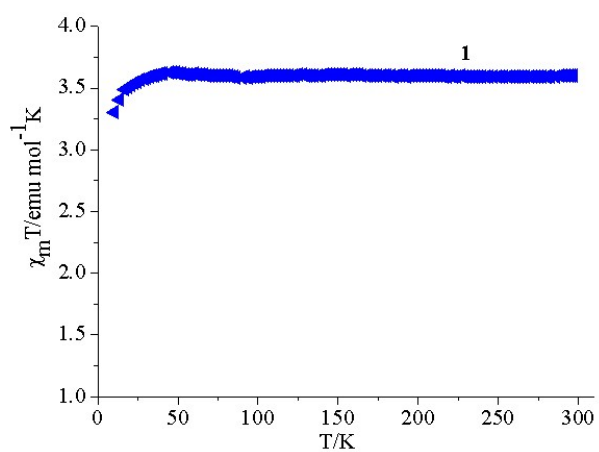


Figure S7. The magnetic property for complex **1**.

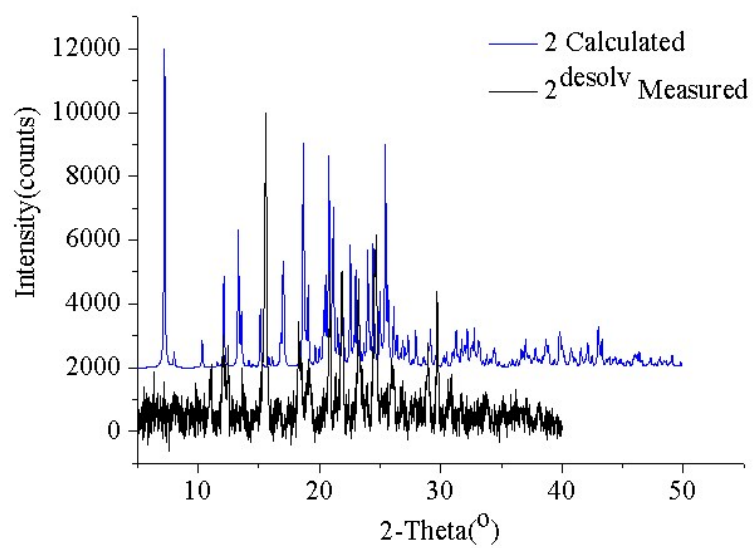


Figure S8. The calculated partner of PXRD for complex **2** and the measured partner of PXRD for desolvated complex **2**.