Application of Temperature-Controlled Chiral Hybrid Structures Constructed From Copper(II)-Monosubstituted Keggin Polyoxoanions and Copper(II)-Organoamine Complexes in Enantioselective Sensing of Tartaric Acid

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1. Crystal Structures
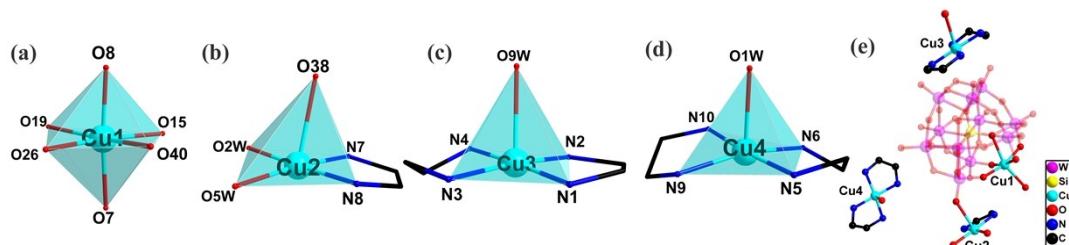
Fig. S1 (a-d) The coordination mode of Cu1, Cu 2, Cu 3, Cu4. (e) The ball-and-stick representation of **L-1**. For clarity, H atoms and water molecules are omitted.
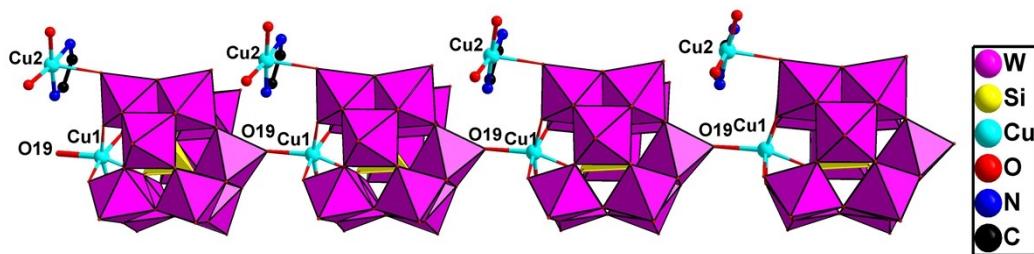

Fig. S2 Ball-stick and polyhedron view of the 1D leftt-handed chain in **L-1.**
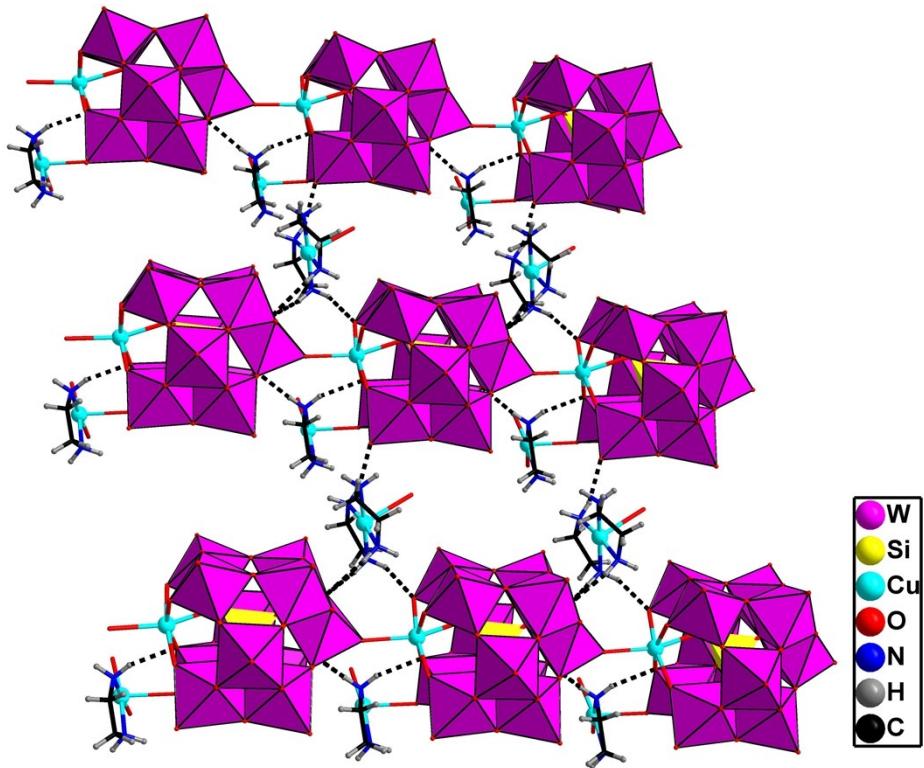
**Fig. S3** View of 2D supramolecular chiral sheet in **L-1**, showing the hydrogen-bonding interactions (N-H···O) between the terminal oxygen atoms of polyoxoanions and organic molecules.
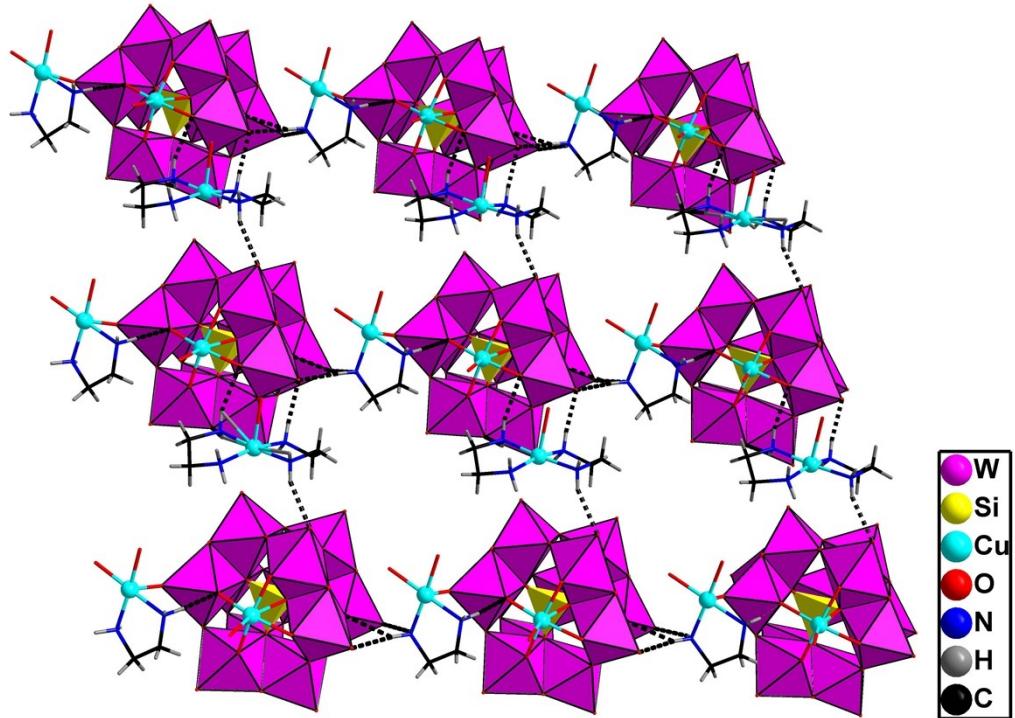

Fig. S4 View of 3D supramolecular chiral framework in **L-1**, showing the hydrogen-

bonding interactions (N-H···O) between the terminal oxygen atoms of polyoxoanions and organic molecules.

2. IR
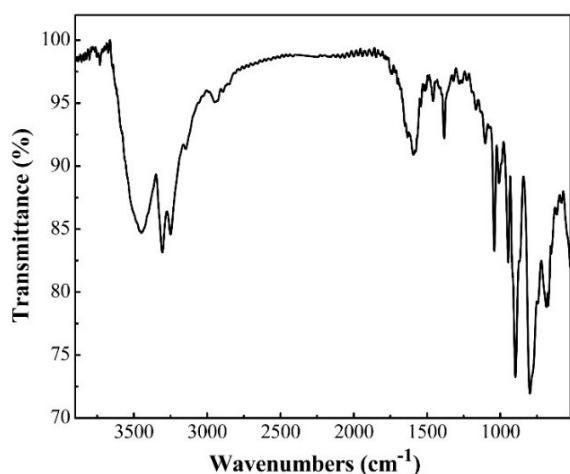
Fig. S5 The IR spectrum of compound **1.**
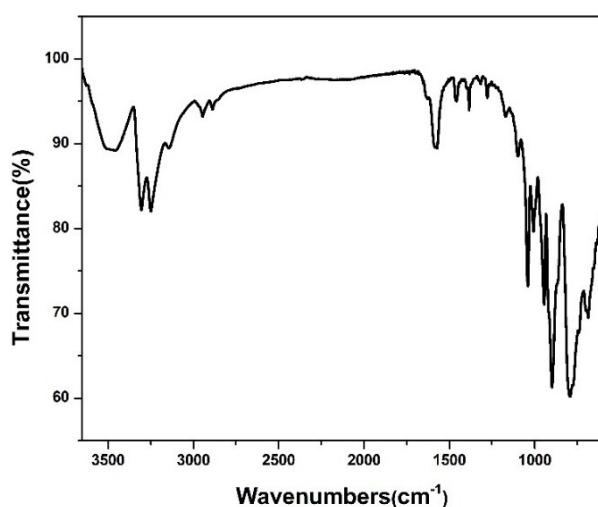
Fig. S6 The IR spectrum of compound **2**.

3. TG
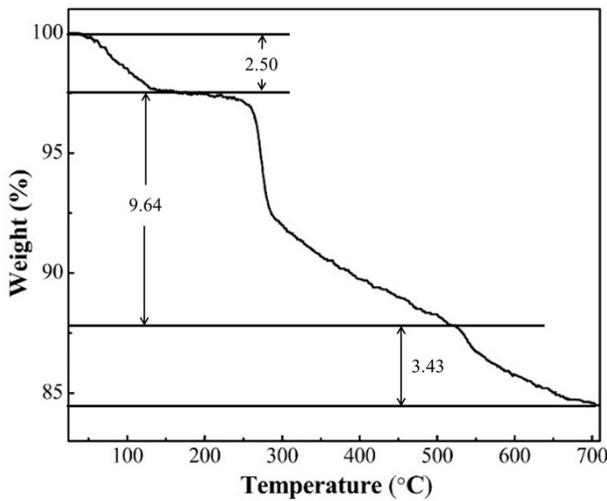
Fig. S7 TGA curve of compound **1**.
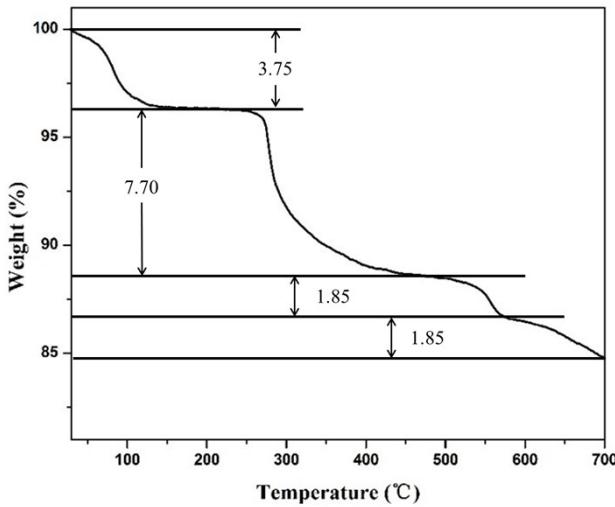
Fig. S8 TGA curve of compound **2**.

TG analysis. The TG curve of compound **1** is shown in Fig, S7. The first weight loss 2.50 % (calc. 2.65 %) occurred in the range of 25 – 170 °C is associated with the remove of 5 lattice H_2O. In the range of 170 – 520 °C, 4 organic ligands ethylenediamine and 4 coordinated H_2O are decomposed with the loss of 9.64 % (calc. 9.20 %). In the range of 520 – 700 °C, the weight loss 3.43 % is attributed to the loss of 1 organic ligand ethylenediamine and the thermal decomposition of the main structure.

Thermal analysis of **2** can be viewed in Fig S8. The first weight loss 3.75 % (calc. 3.67 %) occurred in the range of 25 – 230 °C indicates the release of 2.5 lattice H_2O,

1 coordinated H_2O and 1 organic ligand ethylenediamine. In the range of 230 – 480 °C, 4 organic ligands ethylenediamine are decomposed with the loss of 7.70 % (calc. 7.16 %). In the range of 480 – 570 °C, 1 organic ligands ethylenediamine is decomposed with the loss of 1.85 % (calc. 1.79 %). In the range of 570 – 700 °C, the weight loss 1.85 % is attributed to the thermal decomposition of the main structure. Assuming that the difference corresponds to the moist crystals exposed to air.

4. XRD
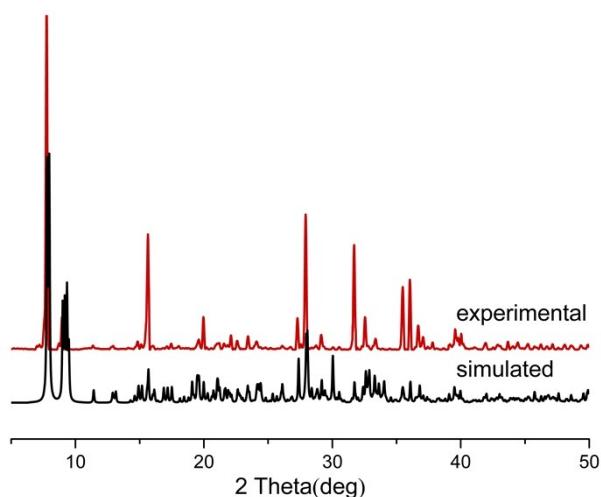
Fig. S9 The XRD patterns of compound **1** under different conditions, Simulated (black), experimental (red).
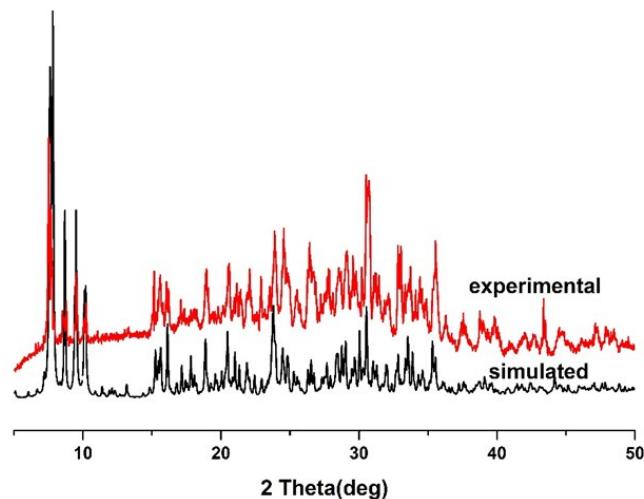
Fig. S10 The XRD patterns of compound **2** under different conditions, Simulated (black), experimental (red).

5. Nonlinear Optical properties
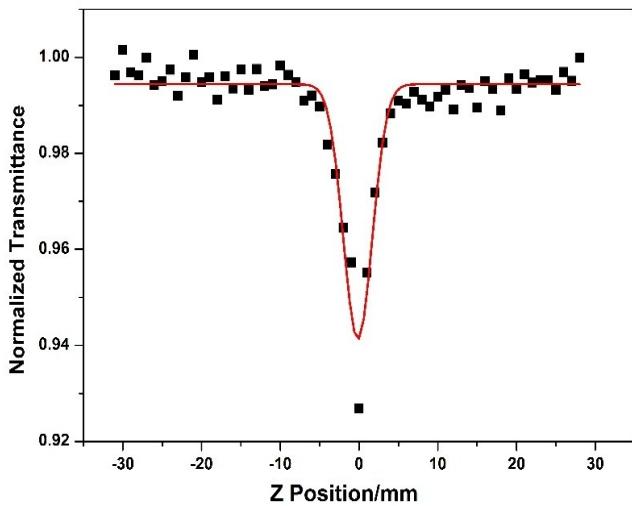
Fig S11 The open aperture Z-scan data of **D-1**. The dots are the experimental data and the solid curve represents the theoretical data, which is modified by the equations (1), (2), (3).
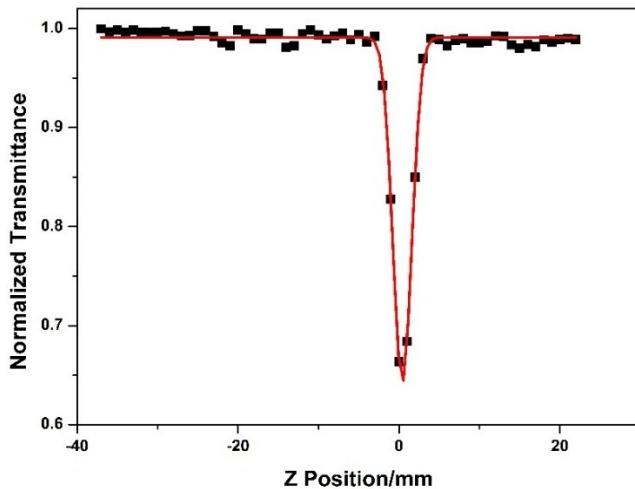
Fig S12. The Z-scan data for **L-1** in water, obtained under an open aperture configuration.

Nonlinear Optical Measurement. Third-order NLO properties of **D-1** and **L-1** are investigated by the open-aperture Z-scan in dimethyl formamide at a concentration of 1.0×10^{-3} mol/L for **D-1** (1.0×10^{-3} mol/L for **L-1**). Chameleon II femtosecond laser pulse and Ti : 95 sapphire systems (740 nm, 80 Hz, 140 fs) were applied to measure third-order nonlinear optics (NLO) properties. Two-photon absorption (TPA) values of **D-1** and **L-1** were measured by the open-aperture Z-scan technique.[1] The nonlinear

absorption coefficient β and the molecular 2PA cross section σ can be determined by equations (1), (2), (3)[2]:

$$T(z,s = 1) = \sum_{m=0}^{\infty} \frac{[-q_0(z)]^m}{(m+1)^{3/2}} \quad for \, |q_0| < 1 \quad (1)$$

$$q_0(z) = \frac{\beta I_0 L_{eff}}{1 + x^2} \quad (2)$$

Where $x = z/z_0$, $z_0 = \pi \omega_0^2/\lambda$ is the diffraction length of the beam, where ω_0 is the spot size at the focus, λ is the wavelength of the beam, and z is the sample position.

I_0 is the input intensity at the focus $z = 0$ and equals the input energy divided by $\pi \omega_0^2$,

$L_{eff} = (1 - e^{-\alpha L})/\alpha$ is the effective length, in which α is the linear absorption coefficient and L is the sample length. By using the above equations, we obtain the nonlinear absorption coefficient β. Furthermore, the molecular 2PA cross section σ can be determined by the following relationship:

$$\sigma = h \upsilon \beta / N_A d \times 10^{-3} \quad (3)$$

Here, h is the Planck's constant, υ is the frequency of input intensity, N_A is the Avogadro's constant, and d is the concentration of the compound.

Table S1. Bond valence sum for compound **D-1** and **L-1**.

compound **D-1**	calculated	compound **L-1**	calculated
Cu_1	1.997	Cu_1	1.960
Cu_2	1.759	Cu_2	1.738
Cu_3	1.957	Cu_3	1.980
Cu_4	1.770	Cu_4	1.907

Table S2. Selected Bond Distances (Å) and angles (°) for compound **D-1**.

Cu(1)-O(7)	1.95(2)	Cu(3)-N(2)	1.95(4)
Cu(1)-O(15)	1.97(2)	Cu(3)-N(1)	1.96(3)

Cu(1)-O(26)	1.99(3)	Cu(3)-N(4)	2.00(5)
Cu(1)-O(8)	2.00(3)	Cu(3)-N(3)	2.04(3)
Cu(1)-O(40) [a]	2.40(3)	Cu(4)-N(10)	2.01(3)
Cu(1)-O(19)#1[a]	2.40(2)	Cu(4)-N(6)	2.04(4)
Cu(2)-N(8)	1.98(4)	Cu(4)-N(9)	2.05(4)
Cu(2)-O(2W)	2.03(3)	Cu(4)-N(5)	2.06(3)
Cu(2)-O(5W)	2.04(4)	Cu(4)-O(1W)	2.34(3)
Cu(2)-N(7)	2.05(4)	O(19)-Cu(1)#2	2.40(2)
Cu(2)-O(38) [a]	2.44(3)		
O(7)-Cu(1)-O(15)	84.8(10)	N(8)-Cu(2)-O(38)	91.3(13)
O(7)-Cu(1)-O(26)	91.2(11)	O(2W)-Cu(2)-O(38)	91.4(13)
O(15)-Cu(1)-O(26)	166.5(11)	O(5W)-Cu(2)-O(38)	105.2(13)
O(7)-Cu(1)-O(8)	167.0(11)	N(7)-Cu(2)-O(38)	85.3(14)
O(15)-Cu(1)-O(8)	92.6(10)	N(2)-Cu(3)-N(1)	82.1(14)
O(26)-Cu(1)-O(8)	88.5(11)	N(2)-Cu(3)-N(4)	96.5(18)
O(7)-Cu(1)-O(40)	92.3(10)	N(1)-Cu(3)-N(4)	176.4(19)
O(15)-Cu(1)-O(40)	92.2(9)	N(2)-Cu(3)-N(3)	178.1(15)
O(26)-Cu(1)-O(40)	75.1(10)	N(1)-Cu(3)-N(3)	97.3(13)
O(8)-Cu(1)-O(40)	75.1(10)	N(4)-Cu(3)-N(3)	84.2(17)
O(7)-Cu(1)-O(19)#1	96.0(9)	N(10)-Cu(4)-N(6)	96.6(13)
O(15)-Cu(1)-O(19)#1	103.7(9)	N(10)-Cu(4)-N(9)	82.0(13)
O(26)-Cu(1)-O(19)#1	89.5(10)	N(6)-Cu(4)-N(9)	166.8(15)
O(8)-Cu(1)-O(19)#1	97.0(10)	N(10)-Cu(4)-N(5)	178.1(15)
O(40)-Cu(1)-O(19)#1	162.7(9)	N(6)-Cu(4)-N(5)	83.6(13)
N(8)-Cu(2)-O(2W)	175.7(18)	N(9)-Cu(4)-N(5)	98.2(14)
N(8)-Cu(2)-O(5W)	94.4(16)	N(10)-Cu(4)-O(1W)	92.6(12)
O(2W)-Cu(2)-O(5W)	81.7(17)	N(6)-Cu(4)-O(1W)	95.5(13)
N(8)-Cu(2)-N(7)	85.2(16)	N(9)-Cu(4)-O(1W)	97.6(13)
O(2W)-Cu(2)-N(7)	98.3(18)	N(5)-Cu(4)-O(1W)	85.5(13)
O(5W)-Cu(2)-N(7)	169.5(17)		

Symmetry transformations used to generate equivalent atoms: #1 x+1,y,z; #2 x-1,y,z

[a] Due to the axial extension of the Jahn-Teller effect of copper(II) ion, Cu1-O19 is considered as a usual coordination bond in this article.

Table S3. Selected Bond Distances (Å) and angles (°) for compound **L-1**.

Cu(1)-O(26)	1.95(3)	Cu(3)-N(1)	1.96(4)
Cu(1)-O(8)	1.96(3)	Cu(3)-N(4)	1.97(6)
Cu(1)-O(7)	1.97(3)	Cu(3)-N(2)	1.99(5)
Cu(1)-O(15)	1.99(3)	Cu(3)-N(3)	2.06(5)
Cu(1)-O(40) [a]	2.41(3)	Cu(4)-N(10)	1.97(5)
Cu(1)-O(19)#1[a]	2.44(3)	Cu(4)-N(5)	2.00(4)
Cu(2)-N(8)	2.00(4)	Cu(4)-N(9)	2.04(4)
Cu(2)-N(7)	2.01(4)	Cu(4)-N(6)	2.07(5)
Cu(2)-O(5W)	2.02(6)	Cu(4)-O(1W)	2.33(4)
Cu(2)-O(2W)	2.07(4)	O(19)-Cu(1)#2	2.44(3)
O(26)-Cu(1)-O(8)	86.5(13)	N(7)-Cu(2)-O(2W)	95.4(16)
O(26)-Cu(1)-O(7)	90.1(12)	O(5W)-Cu(2)-O(2W)	85(2)
O(8)-Cu(1)-O(7)	168.7(13)	N(1)-Cu(3)-N(4)	177(2)
O(26)-Cu(1)-O(15)	164.0(12)	N(1)-Cu(3)-N(2)	87.7(19)
O(8)-Cu(1)-O(15)	92.2(12)	N(4)-Cu(3)-N(2)	95(2)
O(7)-Cu(1)-O(15)	88.1(12)	N(1)-Cu(3)-N(3)	89.9(18)
O(26)-Cu(1)-O(40)	73.7(11)	N(4)-Cu(3)-N(3)	88(2)
O(8)-Cu(1)-O(40)	76.0(12)	N(2)-Cu(3)-N(3)	174.1(18)
O(7)-Cu(1)-O(40)	92.8(11)	N(10)-Cu(4)-N(5)	175(2)
O(15)-Cu(1)-O(40)	90.5(10)	N(10)-Cu(4)-N(9)	83.7(19)
O(26)-Cu(1)-O(19)#1	89.0(12)	N(5)-Cu(4)-N(9)	97.6(18)
O(8)-Cu(1)-O(19)#1	96.5(13)	N(10)-Cu(4)-N(6)	95.1(19)
O(7)-Cu(1)-O(19)#1	94.1(12)	N(5)-Cu(4)-N(6)	84.9(19)
O(15)-Cu(1)-O(19)#1	107.0(11)	N(9)-Cu(4)-N(6)	165(2)
O(40)-Cu(1)-O(19)#1	161.4(10)	N(10)-Cu(4)-O(1W)	87.4(18)
N(8)-Cu(2)-N(7)	84.5(16)	N(5)-Cu(4)-O(1W)	87.6(17)
N(8)-Cu(2)-O(5W)	96(2)	N(9)-Cu(4)-O(1W)	98.9(16)
N(7)-Cu(2)-O(5W)	173.0(19)	N(6)-Cu(4)-O(1W)	95.8(16)

N(8)-Cu(2)-O(2W)	178.3(18)		

Symmetry transformations used to generate equivalent atoms: #1 x-1,y,z; #2 x+1,y,z

Table S4. Selected Bond Distances (Å) and angles (°) for compound **2**.

Cu(1)-O(74)	1.88(2)	Cu(6)-N(11)	2.00(3)
Cu(1)-O(49)	1.938(18)	Cu(6)-N(12)	2.03(2)
Cu(1)-O(60)	1.940(17)	Cu(7)-N(16)	2.03(3)
Cu(1)-O(36)	1.955(16)	Cu(7)-N(13)	2.04(3)
Cu(1)-O(19)	1.96(2)	Cu(7)-N(15)	2.06(2)
Cu(1)-O(41)	2.390(18)	Cu(7)-N(14)	2.06(3)
Cu(2)-O(14)	1.948(19)	Cu(7)-O(2W)	2.35(2)
Cu(2)-O(23)	1.953(16)	Cu(8)-N(6)	1.99(3)
Cu(2)-O(78)#1	1.98(2)	Cu(8)-N(8)	2.01(3)
Cu(2)-O(56)	1.986(15)	Cu(8)-N(5)	2.01(3)
Cu(2)-O(57)	1.991(18)	Cu(8)-N(7)	2.04(3)
Cu(2)-O(51)	2.383(18)	Cu(8)-O(59)	2.380(19)
Cu(3)-O(20)	1.899(19)	Cu(9)-N(24)	1.96(3)
Cu(3)-O(71)	1.958(18)	Cu(9)-N(23)	1.98(3)
Cu(3)-O(32)	1.971(19)	Cu(9)-N(21)	2.01(4)
Cu(3)-O(74)	1.97(2)	Cu(9)-N(22)	2.02(2)
Cu(3)-O(77)	2.009(19)	Cu(9)-O(3W)	2.29(2)
Cu(3)-O(5)	2.344(17)	Cu(10)-N(20)	2.01(3)
Cu(4)-O(55)	1.941(19)	Cu(10)-N(19)	2.02(3)
Cu(4)-O(7)	1.947(18)	Cu(10)-N(18)	2.04(3)
Cu(4)-O(44)	1.947(19)	Cu(10)-N(17)	2.07(4)
Cu(4)-O(45)	1.970(16)	Cu(5)-N(3)	1.96(2)
Cu(4)-O(78)	2.10(2)	Cu(5)-N(4)	2.01(2)
Cu(4)-O(37)	2.403(18)	Cu(5)-N(2)	2.02(2)
Cu(6)-N(9)	2.00(3)	Cu(5)-N(1)	2.02(2)
Cu(6)-N(10)	2.00(3)	Cu(5)-O(39)	2.418(19)

O(74)-Cu(1)-O(49)	100.3(8)	O(7)-Cu(4)-O(37)	73.2(6)
O(74)-Cu(1)-O(60)	99.2(8)	O(44)-Cu(4)-O(37)	73.8(7)
O(49)-Cu(1)-O(60)	89.4(7)	O(45)-Cu(4)-O(37)	88.9(6)
O(74)-Cu(1)-O(36)	99.9(8)	O(78)-Cu(4)-O(37)	168.8(7)
O(49)-Cu(1)-O(36)	159.7(7)	N(9)-Cu(6)-N(10)	83.5(11)
O(60)-Cu(1)-O(36)	89.6(7)	N(9)-Cu(6)-N(11)	173.6(11)
O(74)-Cu(1)-O(19)	98.1(8)	N(10)-Cu(6)-N(11)	95.5(11)
O(49)-Cu(1)-O(19)	84.9(8)	N(9)-Cu(6)-N(12)	97.4(10)
O(60)-Cu(1)-O(19)	162.5(7)	N(10)-Cu(6)-N(12)	168.7(10)
O(36)-Cu(1)-O(19)	90.1(8)	N(11)-Cu(6)-N(12)	84.8(10)
O(74)-Cu(1)-O(41)	169.7(8)	N(16)-Cu(7)-N(13)	173.7(12)
O(49)-Cu(1)-O(41)	87.1(7)	N(16)-Cu(7)-N(15)	82.8(11)
O(60)-Cu(1)-O(41)	73.4(6)	N(13)-Cu(7)-N(15)	97.0(11)
O(36)-Cu(1)-O(41)	73.2(6)	N(16)-Cu(7)-N(14)	94.7(12)
O(19)-Cu(1)-O(41)	89.8(7)	N(13)-Cu(7)-N(14)	84.0(11)
O(14)-Cu(2)-O(23)	85.2(7)	N(15)-Cu(7)-N(14)	165.9(12)
O(14)-Cu(2)-O(78)#1	101.7(8)	N(16)-Cu(7)-O(2W)	98.8(11)
O(23)-Cu(2)-O(78)#1	104.0(8)	N(13)-Cu(7)-O(2W)	87.5(10)
O(14)-Cu(2)-O(56)	161.1(7)	N(15)-Cu(7)-O(2W)	98.7(9)
O(23)-Cu(2)-O(56)	89.9(7)	N(14)-Cu(7)-O(2W)	95.4(10)
O(78)#1-Cu(2)-O(56)	97.2(8)	N(6)-Cu(8)-N(8)	175.1(12)
O(14)-Cu(2)-O(57)	91.9(7)	N(6)-Cu(8)-N(5)	82.5(11)
O(23)-Cu(2)-O(57)	160.1(7)	N(8)-Cu(8)-N(5)	96.0(11)
O(78)#1-Cu(2)-O(57)	95.9(8)	N(6)-Cu(8)-N(7)	97.9(10)
O(56)-Cu(2)-O(57)	86.5(7)	N(8)-Cu(8)-N(7)	83.3(9)
O(14)-Cu(2)-O(51)	87.4(7)	N(5)-Cu(8)-N(7)	175.3(12)
O(23)-Cu(2)-O(51)	86.0(6)	N(6)-Cu(8)-O(59)	84.3(9)
O(78)#1-Cu(2)-O(51)	166.9(7)	N(8)-Cu(8)-O(59)	100.1(9)
O(56)-Cu(2)-O(51)	74.0(6)	N(5)-Cu(8)-O(59)	81.5(10)
O(57)-Cu(2)-O(51)	74.2(6)	N(7)-Cu(8)-O(59)	103.2(9)

O(20)-Cu(3)-O(71)	162.9(8)	N(24)-Cu(9)-N(23)	84.4(12)
O(20)-Cu(3)-O(32)	87.2(7)	N(24)-Cu(9)-N(21)	97.8(14)
O(71)-Cu(3)-O(32)	90.8(8)	N(23)-Cu(9)-N(21)	176.4(13)
O(20)-Cu(3)-O(74)	97.2(8)	N(24)-Cu(9)-N(22)	172.0(13)
O(71)-Cu(3)-O(74)	100.0(8)	N(23)-Cu(9)-N(22)	95.8(10)
O(32)-Cu(3)-O(74)	97.2(8)	N(21)-Cu(9)-N(22)	81.6(13)
O(20)-Cu(3)-O(77)	90.4(8)	N(24)-Cu(9)-O(3W)	90.6(12)
O(71)-Cu(3)-O(77)	87.7(8)	N(23)-Cu(9)-O(3W)	90.6(11)
O(32)-Cu(3)-O(77)	166.5(8)	N(21)-Cu(9)-O(3W)	92.3(13)
O(74)-Cu(3)-O(77)	96.3(9)	N(22)-Cu(9)-O(3W)	97.4(10)
O(20)-Cu(3)-O(5)	87.2(7)	N(20)-Cu(10)-N(19)	83.0(12)
O(71)-Cu(3)-O(5)	75.8(7)	N(20)-Cu(10)-N(18)	95.3(13)
O(32)-Cu(3)-O(5)	89.8(7)	N(19)-Cu(10)-N(18)	176.3(13)
O(74)-Cu(3)-O(5)	171.9(8)	N(20)-Cu(10)-N(17)	178.2(14)
O(77)-Cu(3)-O(5)	76.8(7)	N(19)-Cu(10)-N(17)	95.3(15)
O(55)-Cu(4)-O(7)	90.5(8)	N(18)-Cu(10)-N(17)	86.4(15)
O(55)-Cu(4)-O(44)	160.7(7)	N(3)-Cu(5)-N(4)	83.1(8)
O(7)-Cu(4)-O(44)	89.5(8)	N(3)-Cu(5)-N(2)	97.4(9)
O(55)-Cu(4)-O(45)	85.0(7)	N(4)-Cu(5)-N(2)	178.0(10)
O(7)-Cu(4)-O(45)	161.8(7)	N(3)-Cu(5)-N(1)	164.9(10)
O(44)-Cu(4)-O(45)	89.0(7)	N(4)-Cu(5)-N(1)	94.9(9)
O(55)-Cu(4)-O(78)	96.4(8)	N(2)-Cu(5)-N(1)	85.2(9)
O(7)-Cu(4)-O(78)	96.3(8)	N(3)-Cu(5)-O(39)	111.3(9)
O(44)-Cu(4)-O(78)	102.7(8)	N(4)-Cu(5)-O(39)	98.4(8)
O(45)-Cu(4)-O(78)	101.7(8)	N(2)-Cu(5)-O(39)	79.6(8)
O(55)-Cu(4)-O(37)	87.7(7)	N(1)-Cu(5)-O(39)	83.8(8)

Symmetry transformations used to generate equivalent atoms: #1 x+1,-y+1/2,z+1/2; #2 x-1,-y+1/2,z-1/2

Table S5. Distances and angles [A, °] of hydrogen bonds for compound **D-1**.

D–H···A	d(D–H)	d(H···A)	d(D···A)	∠D–H···A
N5 -- H5C···O23	0.89	2.2	3.00(5)	149
N7 -- H7D···O36	0.89	2.17	2.99(6)	153
N8 -- H8D···O15	0.89	2.21	3.06(5)	159
N10 -- H10D···O7	0.89	2.46	3.06(4)	124
N10 -- H10D···O26	0.89	2.25	3.09(5)	158

Table S6. Distances and angles [A, °] of hydrogen bonds for compound **L-1**.

D–H···A	d(D–H)	d(H···A)	d(D···A)	∠D–H···A
N1-- H1C···O8	0.89	2.12	2.92(6)	149
N1-- H1D···O10	0.89	2.27	3.07(6)	149
N2-- H2D···O5	0.89	2.13	2.94(6)	152
N3-- H3C···O10	0.89	2.46	3.20(6)	141
N5-- H5D···O23	0.89	2.17	3.01(7)	158
N6-- H6D···O36	0.89	2	2.86(6)	163
N7-- H7C···O36	0.89	2.15	3.00(5)	160
N7-- H7C···O37	0.89	2.55	3.18(4)	128
N7-- H7D···O30	0.89	2.47	3.27(6)	149
N8-- H8C···O15	0.89	2.18	3.03(7)	161
N8-- H8D···O12	0.89	2.24	3.08(6)	155
N10-- H10C···O26	0.89	2.2	3.06(7)	162
N10-- H10D···O31	0.89	2.53	3.32(7)	149

Table S7. Distances and angles [A, °] of hydrogen bonds for compound **2**.

D–H···A	d(D–H)	d(H···A)	d(D···A)	∠D–H···A
N1 -- H1C···O21	0.89	2.26	3.07(3)	151
N2 -- H2D···O3	0.89	2.5	3.23(3)	140

N3 -- H3C⋯O3	0.89	2.5	3.17(3)	132
N3 -- H3C⋯O76	0.89	2.39	3.22(3)	154
N3 -- H3D⋯O48	0.89	2.6	3.17(3)	123
N4 -- H4C⋯O49	0.89	2.31	3.08(3)	145
N4 -- H4C⋯O74	0.89	2.5	3.21(3)	136
N4 -- H4D⋯O21	0.89	2.15	2.98(3)	154
N6 -- H6B⋯O68	0.89	2.11	2.96(3)	159
N7 -- H7C⋯O18	0.89	2.54	3.38(3)	158
N7 -- H7C⋯O68	0.89	2.48	3.18(3)	135
N7 -- H7D⋯O26	0.89	2.36	3.03(3)	132
N8 -- H8C⋯O23	0.89	2.5	3.24(3)	141
N8 -- H8D⋯O52	0.89	2.11	2.98(4)	166
N9 -- H9C⋯O22	0.89	2.47	3.30(3)	155
N9 -- H9C⋯O61	0.89	2.59	3.27(3)	134
N10 -- H10C⋯O35	0.89	2.15	2.95(3)	148
N10 -- H10D⋯O4	0.89	2.13	3.00(3)	166
N11 -- H11C⋯O77	0.89	2.34	3.17(4)	156
N11 -- H11D⋯O19	0.89	2.51	3.23(3)	139
N11 -- H11D⋯O36	0.89	2.26	3.06(3)	149
N12 -- H12C⋯O54	0.89	2.31	3.17(3)	163
N12 -- H12D⋯O8	0.89	2.08	2.87(3)	148
N13 -- H13D⋯O67	0.89	2.3	3.17(3)	166
N14 -- H14C⋯O65	0.89	2.29	3.16(4)	164
N14 -- H14D⋯O73	0.89	2.52	3.38(4)	162
N15 -- H15C⋯O76	0.89	2.38	3.24(3)	163
N15 -- H15D⋯O21	0.89	2.6	3.25(3)	131
N18 -- H18C⋯O17	0.89	2.33	3.19(4)	164
N19 -- H19C⋯O60	0.89	2.26	3.10(4)	158
N19 -- H19D⋯O32	0.89	2.42	3.24(4)	153

N20 -- H20D⋯O72	0.89	2.14	2.97(3)	156
N21 -- H21C⋯O61	0.89	2.1	2.91(4)	152
N21 -- H21D⋯O25	0.89	2.21	3.08(4)	165
N22 -- H22C⋯O33	0.89	1.94	2.82(3)	166
N22 -- H22D⋯O13	0.89	2.06	2.94(3)	170
N23 -- H23C⋯O53	0.89	2.35	3.20(3)	160
N23 -- H23D⋯O16	0.89	2.18	2.93(3)	142
N24 -- H24C⋯O61	0.89	2.33	3.18(4)	161
N24 -- H24D⋯O25	0.89	2.41	3.29(4)	170

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