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Supplementary Material (ESI)

Diverse topologies of six coordination polymers constructed from a tri(4-imidazolylphenyl)amine ligand and different carboxylates

Hua Wu,[a,b] Jian-Fang Ma,*[a] Ying-Ying Liu,[a] Jin Yang,*[a] and Hai-Yan Liu[a]

[a] *Key Lab of Polyoxometalate Science, Department of Chemistry, Northeast Normal University, Changchun 130024, People's Republic of China*

[b] *Heilongjiang Agricultural College of Vocational Technology, Jiamusi, 154007, People's Republic of China*

* Correspondence authors

E-mail: jianfangma@yahoo.com.cn (J.-F. Ma)

Fax: +86-431-85098620 (J.-F. Ma)

E-mail: yangjinnenu@yahoo.com.cn (J. Yang)

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Table S1. Selected bond lengths [Å] and angles [deg] for **1**-6. [a]

		Compound **1**	
Zn(1)-O(3)	1.9650(19)	Zn(1)-O(2)#2	2.018(2)
Zn(1)-N(3)	1.987(3)	Zn(1)-N(5)#1	2.006(3)
O(3)-Zn(1)-N(3)	114.41(10)	O(3)-Zn(1)-N(5)#1	109.43(10)
N(3)-Zn(1)-N(5)#1	119.85(11)	O(3)-Zn(1)-O(2)#2	98.85(8)
N(3)-Zn(1)-O(2)#2	108.21(10)	N(5)#1-Zn(1)-O(2)#2	103.32(10)
		Compound **2**	
Zn(1)-O(7)#1	1.901(6)	Zn(1)-O(1)	1.934(6)
Zn(1)-N(3)	2.027(6)	Zn(1)-N(5)#2	2.059(6)
Zn(2)-O(7)	1.951(5)	Zn(2)-O(3)#3	1.965(5)
Zn(2)-O(5)	2.026(5)	Zn(2)-N(7)#4	2.025(7)
O(7)#1-Zn(1)-O(1)	113.2(2)	O(7)#1-Zn(1)-N(3)	110.2(3)
O(1)-Zn(1)-N(3)	115.7(3)	O(7)#1-Zn(1)-N(5)#2	104.8(3)
O(1)-Zn(1)-N(5)#2	112.8(3)	N(3)-Zn(1)-N(5)#2	98.8(2)
O(7)-Zn(2)-O(3)#3	112.1(2)	O(7)-Zn(2)-N(7)#4	114.1(3)
O(3)#3-Zn(2)-N(7)#4	110.6(2)	O(7)-Zn(2)-O(5)	103.2(3)
O(3)#3-Zn(2)-O(5)	119.1(3)	N(7)#4-Zn(2)-O(5)	96.8(2)
		Compound **3**	
Zn(1)-O(5)	1.964(2)	Zn(1)-O(4)#1	1.976(2)
Zn(1)-O(1)	2.022(2)	Zn(1)-N(7)#2	2.013(2)
Zn(2)-O(7)	1.889(2)	Zn(2)-N(2)	1.964(2)
Zn(2)-O(2)	1.981(2)	Zn(2)-N(5)#3	2.022(2)
O(5)-Zn(1)-O(4)#1	105.71(9)	O(5)-Zn(1)-N(7)#2	137.51(11)
O(4)#1-Zn(1)-N(7)#2	96.81(10)	O(5)-Zn(1)-O(1)	96.30(9)
O(4)#1-Zn(1)-O(1)	127.26(10)	N(7)#2-Zn(1)-O(1)	97.99(9)
O(7)-Zn(2)-N(2)	117.29(10)	O(7)-Zn(2)-O(2)	127.16(10)
N(2)-Zn(2)-O(2)	98.58(10)	O(7)-Zn(2)-N(5)#3	93.37(10)
N(2)-Zn(2)-N(5)#3	123.35(11)	O(2)-Zn(2)-N(5)#3	97.84(10)
		Compound **4**	
Mn(1)-O(4)	2.1065(16)	Mn(1)-O(3)#1	2.126(2)
Mn(1)-O(2)#2	2.2402(15)	Mn(1)-N(7)#3	2.243(2)
Mn(1)-N(3)	2.256(2)	Mn(1)-O(1)#2	2.3530(18)
O(4)-Mn(1)-O(3)#1	111.45(7)	O(4)-Mn(1)-O(2)#2	149.33(7)
O(3)#1-Mn(1)-O(2)#2	98.78(7)	O(4)-Mn(1)-N(7)#3	99.04(8)
O(3)#1-Mn(1)-N(7)#3	91.34(8)	O(2)#2-Mn(1)-N(7)#3	84.88(7)
O(4)-Mn(1)-N(3)	89.61(8)	O(3)#1-Mn(1)-N(3)	86.43(8)
O(2)#2-Mn(1)-N(3)	87.13(7)	N(7)#3-Mn(1)-N(3)	171.29(8)
O(4)-Mn(1)-O(1)#2	91.89(7)	O(3)#1-Mn(1)-O(1)#2	155.91(6)
O(2)#2-Mn(1)-O(1)#2	57.53(6)	N(7)#3-Mn(1)-O(1)#2	90.75(8)
N(3)-Mn(1)-O(1)#2	87.90(8)		
		Compound **5**	

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Cu(1)-O(6)	1.976(3)	Cu(1)-N(3)	1.997(4)
Cu(1)-N(10)	1.998(4)	Cu(1)-N(12)#1	2.011(4)
Cu(1)-O(1W)	2.299(5)	Cu(2)-O(1)	1.983(3)
Cu(2)-N(14)#2	1.993(3)	Cu(2)-N(5)	2.003(4)
Cu(2)-N(7)#3	2.017(4)	Cu(2)-O(9)	2.316(4)
O(6)-Cu(1)-N(3)	91.62(14)	O(6)-Cu(1)-N(10)	89.03(14)
N(3)-Cu(1)-N(10)	173.91(17)	O(6)-Cu(1)-N(12)#1	170.31(17)
N(3)-Cu(1)-N(12)#1	89.16(15)	N(10)-Cu(1)-N(12)#1	89.18(15)
O(6)-Cu(1)-O(1W)	93.10(18)	N(3)-Cu(1)-O(1W)	93.63(17)
N(10)-Cu(1)-O(1W)	92.37(17)	N(12)#1-Cu(1)-O(1W)	96.48(18)
O(1)-Cu(2)-N(14)#2	86.15(14)	O(1)-Cu(2)-N(5)	91.07(13)
N(14)#2-Cu(2)-N(5)	176.16(16)	O(1)-Cu(2)-N(7)#3	169.66(16)
N(14)#2-Cu(2)-N(7)#3	90.57(15)	N(5)-Cu(2)-N(7)#3	91.71(15)
O(1)-Cu(2)-O(9)	87.33(13)	N(14)#2-Cu(2)-O(9)	90.25(15)
N(5)-Cu(2)-O(9)	92.27(15)	N(7)#3-Cu(2)-O(9)	102.50(15)
Compound **6**			
Co(1)-O(3)#1	2.079(3)	Co(1)-O(3)	2.079(3)
Co(1)-N(3)#1	2.154(5)	Co(1)-N(3)	2.154(5)
Co(1)-N(5)#2	2.168(5)	Co(1)-N(5)#3	2.168(5)
Co(2)-O(2)#4	1.980(3)	Co(2)-O(4)	1.992(5)
Co(2)-O(6)	2.015(4)	Co(2)-N(7)#5	2.065(5)
Co(2)-O(5)	2.377(5)	O(3)#1-Co(1)-O(3)	180
O(3)#1-Co(1)-N(3)#1	88.59(18)	O(3)-Co(1)-N(3)#1	91.41(18)
O(3)#1-Co(1)-N(3)	91.41(18)	O(3)-Co(1)-N(3)	88.59(18)
N(3)#1-Co(1)-N(3)	180	O(3)#1-Co(1)-N(5)#2	82.65(16)
O(3)-Co(1)-N(5)#2	97.35(16)	N(3)#1-Co(1)-N(5)#2	93.18(18)
N(3)-Co(1)-N(5)#2	86.82(18)	O(3)#1-Co(1)-N(5)#3	97.35(16)
O(3)-Co(1)-N(5)#3	82.65(16)	N(3)#1-Co(1)-N(5)#3	86.82(18)
N(3)-Co(1)-N(5)#3	93.18(18)	N(5)#2-Co(1)-N(5)#3	180
O(2)#4-Co(2)-O(4)	110.83(17)	O(2)#4-Co(2)-O(6)	142.9(2)
O(4)-Co(2)-O(6)	95.4(2)	O(2)#4-Co(2)-N(7)#5	101.67(19)
O(4)-Co(2)-N(7)#5	90.7(2)	O(6)-Co(2)-N(7)#5	103.80(19)
O(2)#4-Co(2)-O(5)	95.35(16)	O(4)-Co(2)-O(5)	153.24(15)
O(6)-Co(2)-O(5)	58.78(19)	N(7)#5-Co(2)-O(5)	89.2(2)

[a] Symmetry operations: for **1**: #1 x,-y-1/2,z+1/2; #2 x-1,y,z; for **2**: #1 x,y,z-1; #2 x,y+1,z; #3 -x+3/2,y+1/2,z+1/2; #4 x+1/2,-y+3/2,z+2. for **3**: #1 -x+2,-y-1,-z; #2 -x+2,-y+1,-z; #3 x,-y+3/2,z-1/2; for **4**: #1 -x+2,-y+1,-z+1; #2 x,y,z+1; #3 -x+2,y+1/2,-z+3/2; for **5**: #1 -x+1,-y+1,-z; #2 x-2,y-2,z; #3 -x,-y-1,-z+1; for **6**: #1 -x,-y+1,-z+2; #2 x,y,z+1; #3 -x,-y+1,-z+1; #4 -x-1,-y,-z+2; #5 -x+1,-y,-z+2.

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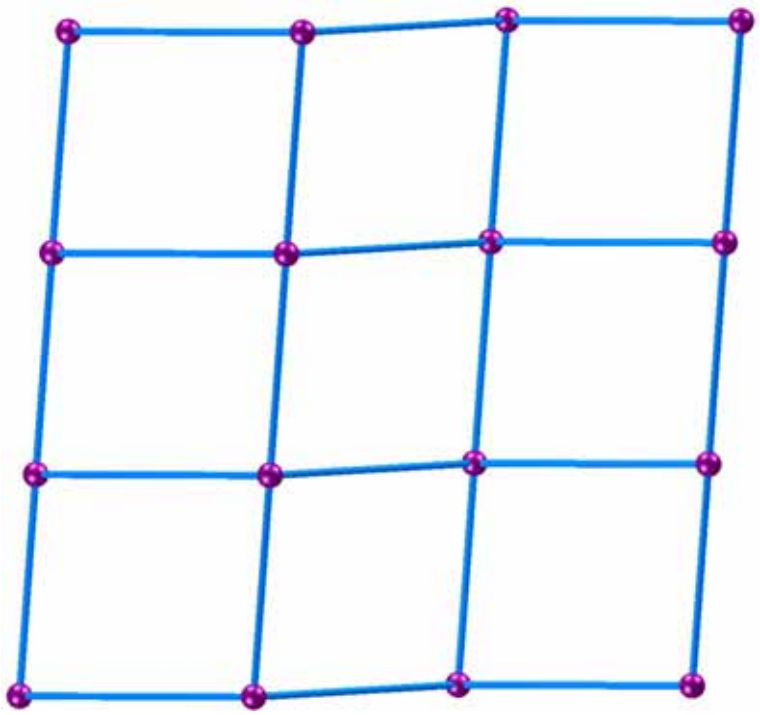
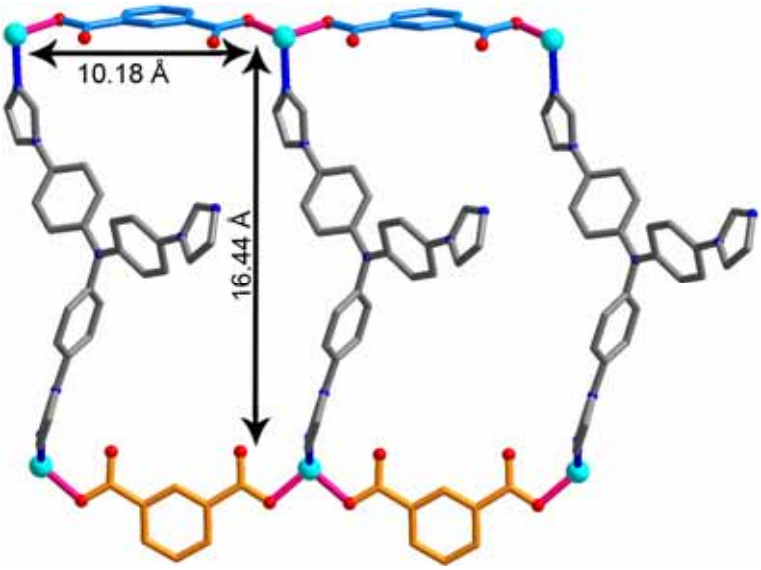


(a)



(b)

Fig. S1. (a) The puckered **sql** layer of **1**. (b) View of large windows of the puckered in **1**.

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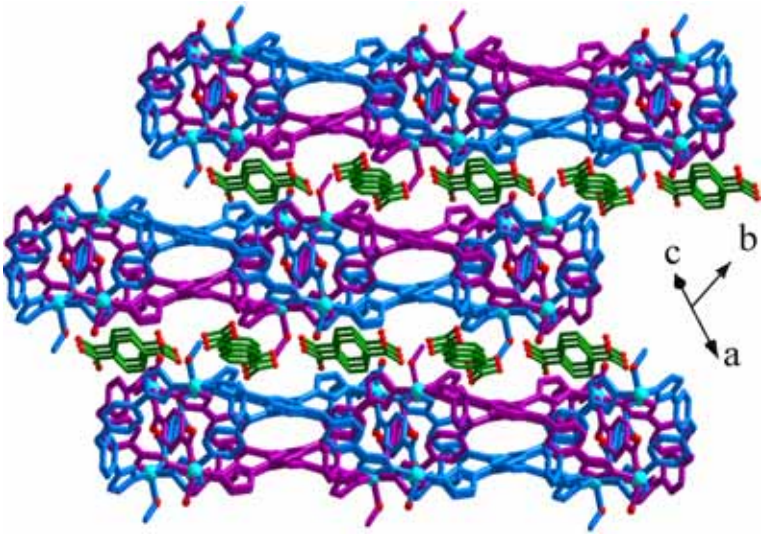

Fig. S2. The packing diagram of **5** (the uncoordinated L4 ligands are sandwiched between the layers).

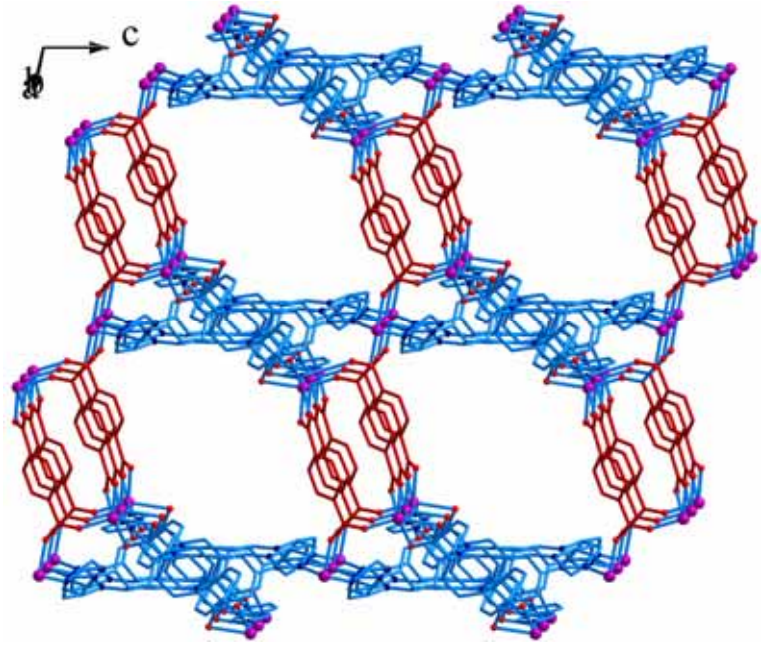

Fig. S3. The 3D self-penetrating framework of **6**.