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Supplementary Material

Assembly, Structure and Properties of Six Coordination Polymers Based on 1,3,5-Tri-4-pyridyl-1,2-ethenylbenzene

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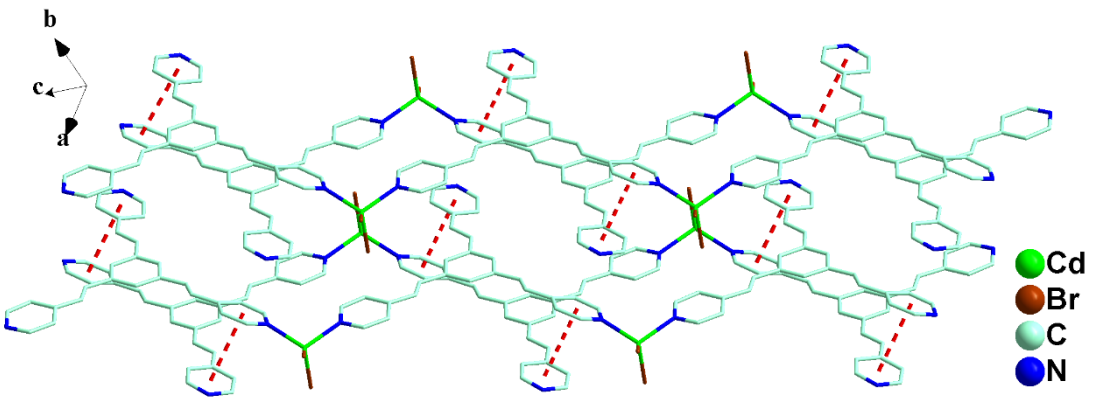

Fig. S1. View of the 3D supramolecular structure of **1**. All red dotted lines in **1** represent π–π interactions.

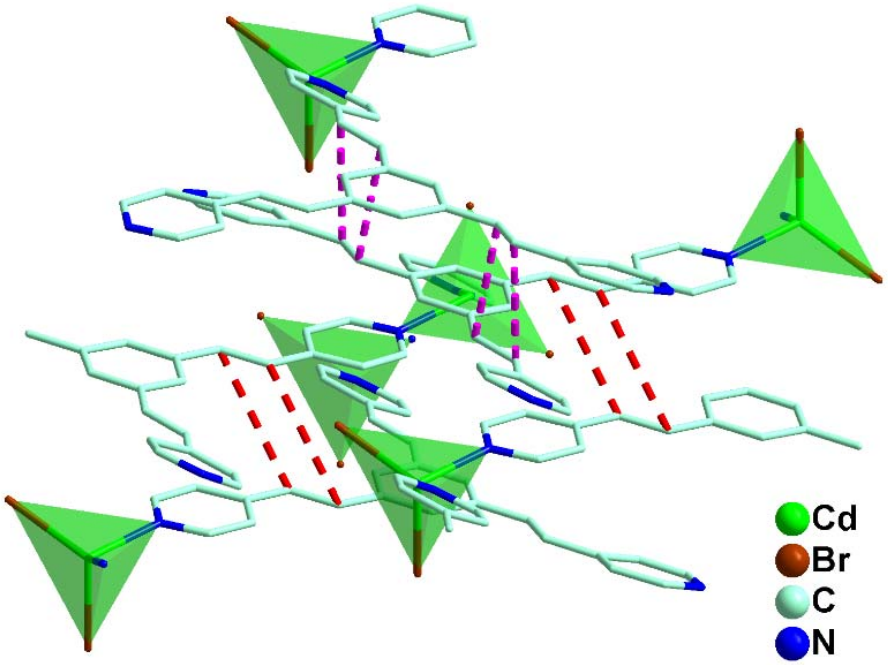

Fig. S2. View of two different alignments of olefinic bonds in **1**. The red dotted lines represent the parallel alignment while the pink dotted lines represent the anti-parallel arrangement.

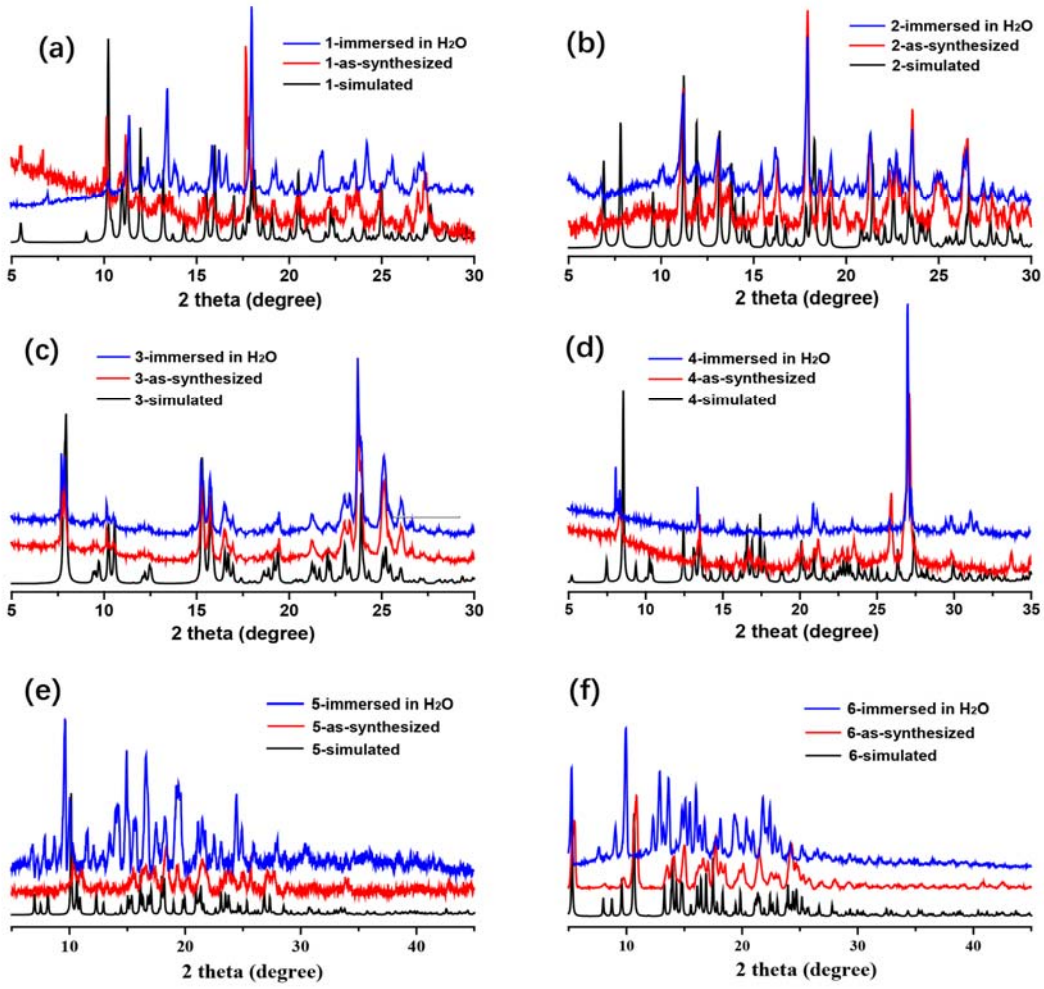

Fig. S3. (a) PXRD patterns of **1** (from single crystal data: black; as-synthesized: red; immersed in H_2O: blue). (b) PXRD patterns of **2** (from single crystal data: black; as-synthesized: red; immersed in H_2O: blue). (c) PXRD patterns of **3** (from single crystal data: black; as-synthesized: red; immersed in H_2O: blue). (d) PXRD patterns of **4** (from single crystal data: black; as-synthesized: red; immersed in H_2O: blue). (e) PXRD patterns of **5** (from single crystal data: black; as-synthesized: red; immersed in H_2O: blue). (f) PXRD patterns of **6** (from single crystal data: black; as-synthesized: red; immersed in H_2O: blue).

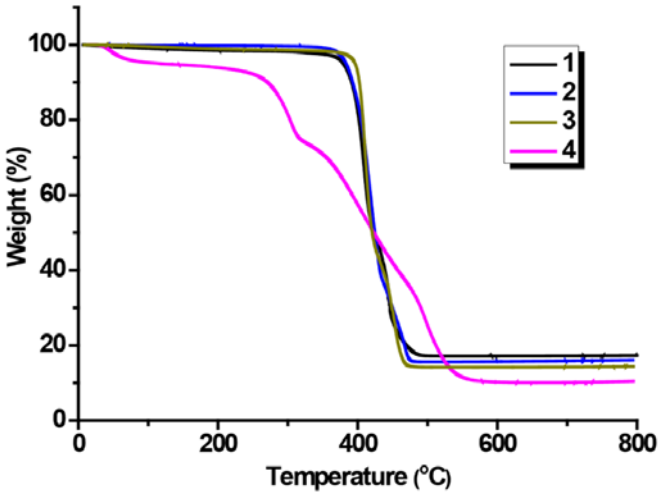

Fig. S4. Thermogravimetric analysis (TGA) curves for **1**—**4**.

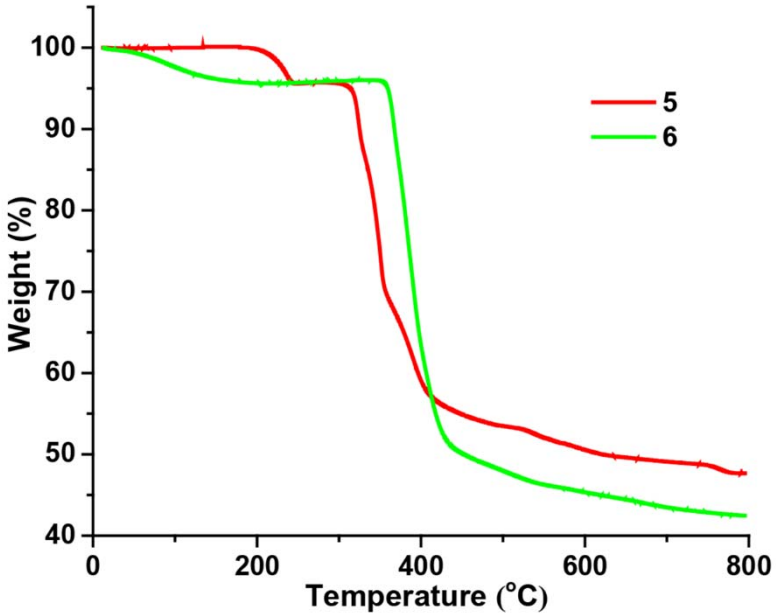

Fig. S5. Thermogravimetric analysis (TGA) curves for **5** and **6**.

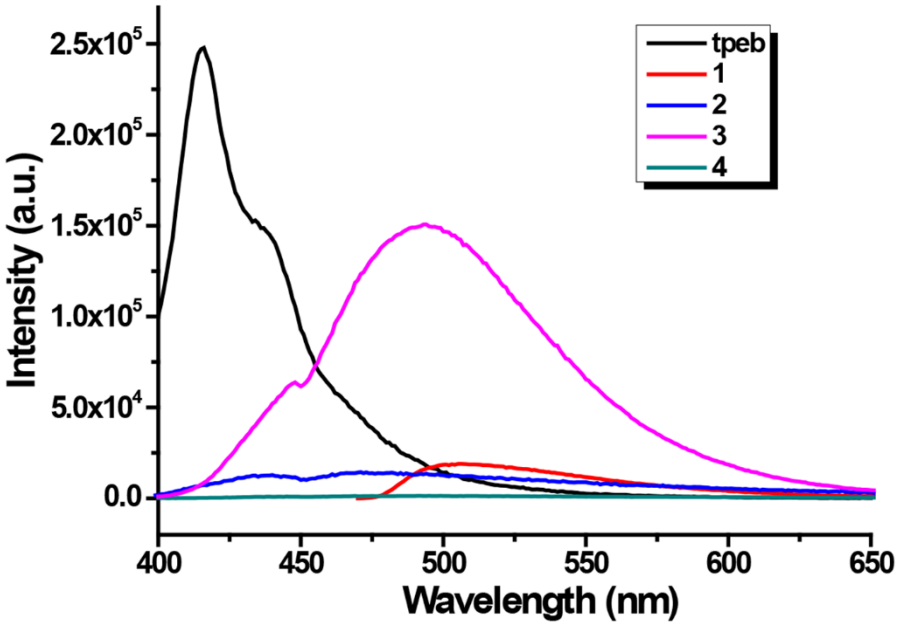

Fig. S6. The emission spectra of **1**−**4** and tpeb ligand in the solid state at ambient temperature.

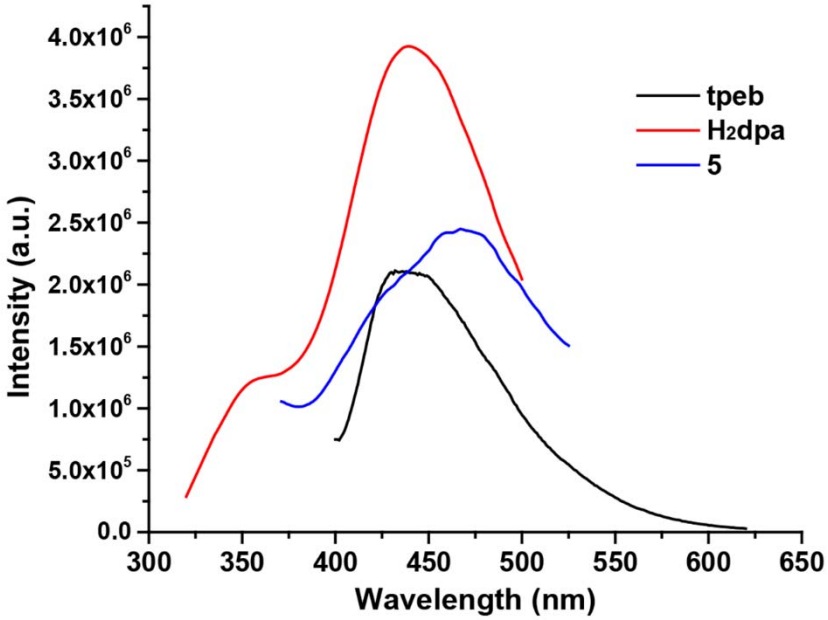

Fig. S7. The emission spectra of **5**, tpeb and H_2dpa ligands in the solid state at ambient temperature.

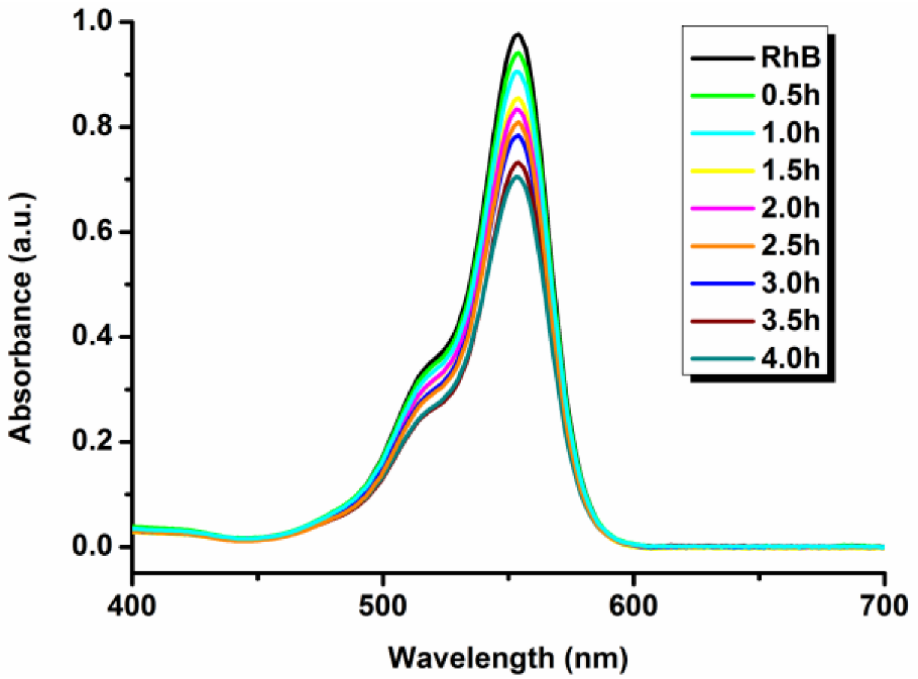

Fig. S8. UV-vis spectra of the RhB solutions under UV light irradiation without any catalysts with a time interval of 0.5 h.

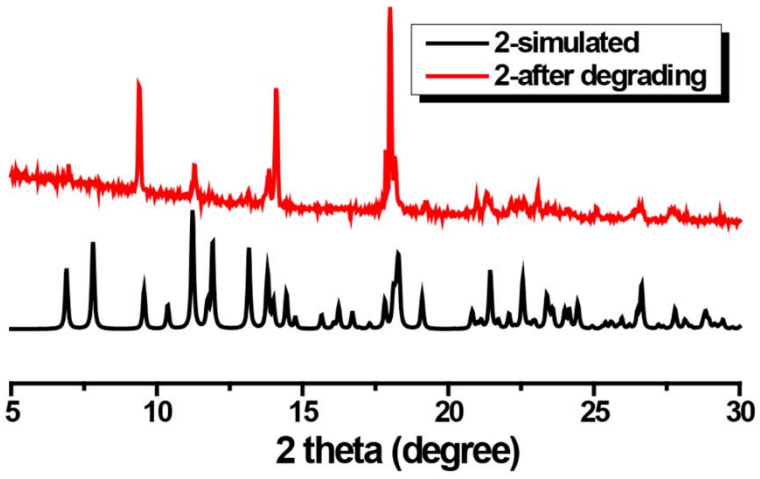

Fig. S9. PXRD patterns of **2** (from single crystal data: black; after degradation: red).

Table S1. Selected bond lengths (Å) and angles (°) for **1**–**6**

1			
Cd(1)-N(1)	2.264(3)	Cd(1)-N(2)#1	2.248(3)
Cd(1)-Br(2)	2.5385(6)	Cd(1)-Br(1)	2.5396(7)
N(1)-Cd(1)-N(2) #1	107.49(12)	N(2)#1-Cd(1)-Br(2)	108.26(8)
Br(2)-Cd(1)-N(1)	110.75(9)	N(2)#1-Cd(1)-Br(1)	111.00(9)
Br(1)-Cd(1)-N(1)	100.14(10)	Br(2)-Cd(1)-Br(1)	118.56(2)
2			
Cd(1)-N(2)#1	2.266(5)	Cd(1)-N(1)	2.258(5)
Cd(1)-I(1)	2.7128(8)	Cd(1)-I(2)	2.7224(8)
N(2)#1-Cd(1)-N(1)	108.8(2)	I(1)-Cd(1)-N(1)	108.43(14)
I(1)-Cd(1)-N(2)#1	110.23(15)	I(2)-Cd(1)-N(1)	112.55(14)
I(2)-Cd(1)-N(2)#1	99.98(13)	I(1)-Cd(1)-I(2)	116.38(3)
3			
Cu(1)-N(1)	1.998(3)	Cu(1)-N(3)#1	1.981(3)
Cu(2)-N(5)#2	1.984(3)	Cu(2)-N(4)	1.974(3)
Cu(1)-I(1)	2.4927(6)	Cu(2)-I(2)	2.5650(5)
N(1)-Cu(1)-N(3)#1	117.61(12)	I(1)-Cu(1)-N(3)#1	124.89(9)
I(1)-Cu(1)-N(1)	116.09(9)	N(5)#2-Cu(2)-N(4)	130.76(12)
I(2)-Cu(2)-N(5)#2	112.27(8)	I(2)-Cu(2)-N(4)	116.75(9)
4			
Cd(1)-N(2)#2	2.362(3)	Cd(1)-N(3)#1	2.391(3)
Cd(1)-N(1)	2.417(3)	Cd(1)-O(1)	2.513(3)
I(1)-Cd(1)-N(2)#2	109.75(8)	I(1)-Cd(1)-N(3)#1	95.75(8)
N(1)-Cd(1)-O(1)	81.53(10)	N(2)#2-Cd(1)-O(2)	140.01(11)
N(3)#1-Cd(1)-O(2)	94.09(11)	N(1)-Cd(1)-O(2)	91.16(11)
N(2)#2-Cd(1)-N(1)	81.43(11)	N(3)#1-Cd(1)-N(1)	161.90(11)
N(3)#1-Cd(1)-N(2)#2	83.44(11)	O(1)-Cd(1)-O(2)	54.65(10)
I(1)-Cd(1)-O(2)	110.21(7)	I(1)-Cd(1)-O(1)	164.80(7)
I(1)-Cd(1)-N(2)#2	109.75(8)	I(1)-Cd(1)-N(3)#1	95.75(8)
N(1)-Cd(1)-O(1)	81.53(10)	N(2)#2-Cd(1)-O(2)	140.01(11)
I(1)-Cd(1)-N(1)	98.66(8)		
5			
Co(1)-O(4)#1	2.033(3)	Co(1)-N(3)#2	2.139(3)
Co(1)-N(1)	2.159(3)	Co(1)-O(1)	2.170(3)
Co(1)-N(2)#3	2.173(3)	Co(1)-O(2)	2.316(3)
O(4)#1-Co(1)-N(3)#2	88.95(11)	O(4)#1-Co(1)-N(1)	88.35(11)
N(3)#2-Co(1)-N(1)	97.80(11)	O(4)#1-Co(1)-O(1)	176.96(10)
N(3)#2-Co(1)-O(1)	91.43(11)	N(1)-Co(1)-O(1)	88.61(10)
O(4)#1-Co(1)-N(2)#3	89.22(11)	N(3)#2-Co(1)-N(2)#3	85.43(11)
N(1)-Co(1)-N(2)#3	175.93(11)	O(1)-Co(1)-N(2)#3	93.81(11)
O(4)#1-Co(1)-O(2)	121.80(10)	N(3)#2-Co(1)-O(2)	148.48(11)
N(1)-Co(1)-O(2)	90.41(10)	O(1)-Co(1)-O(2)	58.25(10)
N(2)#3-Co(1)-O(2)			

6			
Ni(1)-O(5)#1	2.022(6)	Ni(1)-N(1)	2.084(6)
Ni(1)-N(4)	2.067(8)	Ni(1)-O(1)	2.125(6)
Ni(1)-N(2)#2	2.114(7)	Ni(1)-O(2)	2.152 (6)
O(5)#2-Ni(1)-N(4)	92.8(3)	O(5)#2-Ni(1)-N(1)	99.3(3)
N(4)-Ni(1)-N(1)	89.8 (3)	O(5)#2-Ni(1)-O(1)	102.0(3)
N(4)-Ni(1)-O(1)	164.4(3)	N(1)-Ni(1)-O(1)	92.2(3)
O(5)#2-Ni(1)-N(2)#1	85.5(3)	N(4)-Ni(1)-N(2)#1	88.0(3)
N(1)-Ni(1)-N(2)#1	174.8(3)	O(1)-Ni(1)-N(2)#1	88.6(3)
O(5)#2-Ni(1)-O(2)	161.5(2)	N(4)-Ni(1)-O(2)	103.2(3)
N(1)-Ni(1)-O(2)	90.0(3)	O(1)-Ni(1)-O(2)	61.3(2)
N(2)#1-Ni(1)-O(1)	88.6 (3)		

Symmetry codes: **1**: #1: 1+x, 1+y, 1+z; **2**: #1: 1+x, 1+y, 1+z; **3**: #1: -1+x, 1+y, -1+z; #2: -2-x, 2-y, -1-z; **4**: #1: x, y, 1+z; #2: 2+x, y, -1+z; **5**: #1: -x-2, y+1/2, -z+1/2; #2: x-1, y+1, z; #3: x-1, -y+7/2, z-1/2; **6**: #1: -y-1, x-y, +z+1/3; #2: -2-x, -x+y, -z-2/3.