Supporting Information

Bis(pyridyl) ancillary ligands modulated uninodal 4-, 5- and 6-connected Cd(II) coordination polymers based on 3,4-thiophenedicarboxylate linker

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Tables S1 Selected Bond Distances (Å) and Angles (deg) for Complexes **1**−**3**[a]

Compound **1**[a]

Cd(1)−O(1)	2.2946(17)	Cd(1)−O(3)	2.4095(16)	Cd(1)−O(4)#1	2.3634(15)
Cd(1)−O(5)#1	2.4474(18)	Cd(1)−N(1)	2.3627(19)	Cd(1)−N(2)	2.2980(18)
O(1)−Cd(1) −N(2)	122.45(6)	O(1)−Cd(1)−N(1)	105.48(7)	N(2)−Cd(1)−N(1)	91.42(7)
O(1)−Cd(1)−O(4)#1	94.59(6)	N(2)−Cd(1)−O(4)#1	139.61(6)	N(1)−Cd(1)−O(4)#1	93.61(6)
O(1)−Cd(1)−O(3)	81.84(6)	N(2)−Cd(1)−O(3)	81.99(6)	N(1)−Cd(1)−O(3)	172.11(6)
O(4)#1−Cd(1)−O(3)	88.67(6)	O(1)−Cd(1)−O(5)#1	147.19(6)	N(2)−Cd(1)−O(5)#1	85.95(6)
N(1)−Cd(1)−O(5)#1	88.26(7)	O(4)#1−Cd(1)−O(5)#1	54.24(5)	O(3)−Cd(1)−O(5)#1	86.94(6)

[a] Symmetry codes: #1 x,-y+1,z+1/2; #2 x,-y+1,z-1/2; #3 -x,-y+1,-z+1; #4 -x+1/2,-y+3/2,-z.

Compound **2**[b]

Cd(1)−O(1)	2.416(5)	Cd(1)−O(2)	2.438(5)	Cd(1)−O(3)#1	2.321(5)
Cd(1)−O(4)#1	2.579(5)	Cd(1)−N(1)	2.405(6)	Cd(1)−N(3)	2.358(6)
Cd(1)−N(2)#2	2.351(6)				
O(3)#1−Cd(1)−N(2)#2	92.7(2)	O(3)#1−Cd(1)−N(3)	88.23(18)	N(2)#2−Cd(1)−N(3)	173.3(2)
O(3)#1−Cd(1)−N(1)	134.80(19)	N(2)#2−Cd(1)−N(1)	89.6(2)	N(3) −Cd(1)−N(1)	85.1(2)
O(3)#1−Cd(1)−O(1)	142.2(2)	N(2)#2−Cd(1)−O(1)	96.0(2)	N(3) −Cd(1) −O(1)	87.2(2)
N(1)−Cd(1)−O(1)	82.1(2)	O(3)#1−Cd(1)−O(2)	90.18(16)	N(2)#2−Cd(1)−O(2)	86.97(18)
N(3)−Cd(1)−O(2)	99.62(19)	N(1)−Cd(1)−O(2)	135.02(18)	O(1)−Cd(1)−O(2)	53.84(18)
O(3)#1−Cd(1)−O(4)#1	52.87(17)	N(2)#2−Cd(1)−O(4)#1	85.49(19)	N(3)−Cd(1)−O(4)#1	89.85(18)
N(1)−Cd(1)−O(4)#1	82.41(19)	O(1)−Cd(1)−O(4)#1	164.38(19)	O(2)−Cd(1)−O(4)#1	141.74(16)

[b]Symmetry codes: #1 -x+1/2,y+1/2,-z+1/2; #2 x-1/2,-y+1/2,z+1/2; #3 -x+1/2,y-1/2,-z+1/2; #4 x+1/2,-y+1/2,z-1/2; #5 -x+1,-y+2,-z.

Compound **3**[c]

Cd(1)−O(1)	2.3366(17)	Cd(1)−O(1)#4	2.3366(17)	Cd(1)−O(4)#2	2.3337(17)
Cd(1)−O(4)#3	2.3337(17)	Cd(1)−N(1)	2.311(2)	Cd(1)−N(2)#1	2.285(2)
N(2)#1−Cd(1) −N(1)	180.00(6)	N(2)#1−Cd(1)−O(4)#2	93.87(5)	N(1)−Cd(1)−O(4)#2	86.13(5)
N(2)#1−Cd(1)−O(4)#3	93.87(5)	N(1)−Cd(1)−O(4)#3	86.13(5)	O(4)#2−Cd(1)−O(4)#3	172.25(11)
N(2)#1−Cd(1)−O(1)#4	84.83(5)	N(1)−Cd(1)−O(1)#4	95.17(5)	O(4)#2−Cd(1)−O(1)#4	80.89(6)
O(4)#3−Cd(1)−O(1)#4	99.82(6)	N(2)#1−Cd(1)−O(1)	84.83(5)	N(1)−Cd(1)−O(1)	95.17(5)
O(4)#2−Cd(1)−O(1)	99.82(6)	O(4)#3−Cd(1)−O(1)	80.89(6)	O(1)#4−Cd(1)−O(1)	169.65(10)

[c]Symmetry codes: #1 x-1,y-1,z; #2 -x+1/2,y-1/2,-z+1/4; #3 y-1/2,-x+1/2,z-1/4; #4 y,x,-z;#5 -y+1/2,x+1/2,z+1/4; #6 x+1,y+1,z.

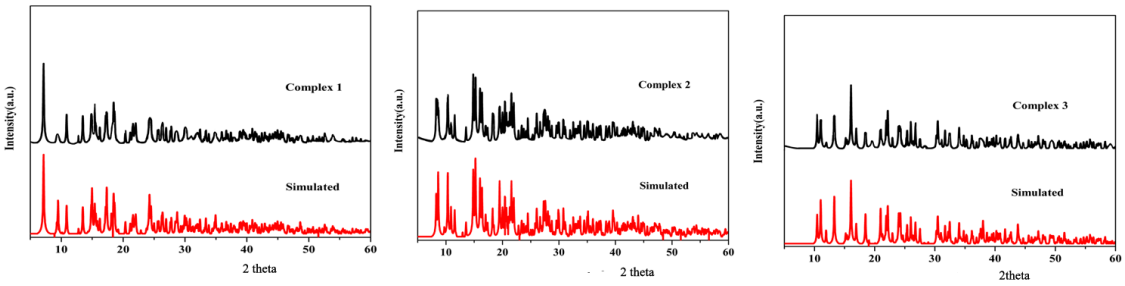

Fig. S1 PXRD patterns of **1-3** simulated from X-ray single-crystal diffraction data and experimental data.

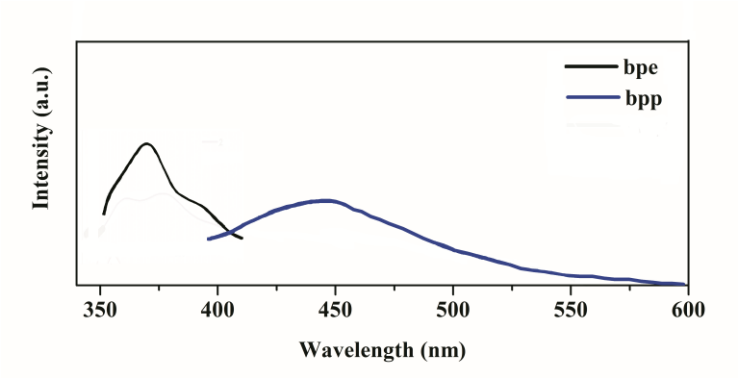

Fig.S2 Solid-state emission spectra of free bpe and bpp ligand.