Electronic Supplementary Information (ESI)

Construction of a series of coordination polymers based on 1,4-naphthalenedicarboxylic and flexible dipyridyl ligands

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Table S1. Selected Bond Lengths (Å) and Angles (°) for 1-6

		Compound **1**	
Ag(1)-N(2A)	2.215(2)	Ag(1)-N(1)	2.227(3)
N(2A)-Ag(1)-N(1)	160.63(10)		
		Compound **2**	
Ag(1)-N(1)	2.1526(17)	Ag(1)-N(2A)	2.1616(18)
N(1)-Ag(1)-N(2A)	168.16(7)		
		Compound **3**	
Cd(1)-O(4A)	2.1880(19)	Cd(1)-O(1)	2.2905(19)
Cd(1)-O(3B)	2.320(2)	Cd(1)-N(1)	2.341(2)
Cd(1)-O(1C)	2.486(2)	Cd(1)-O(2)	2.544(2)
O(4A)-Cd(1)-O(1)	176.08(7)	O(4A)-Cd(1)-O(3B)	83.15(9)
O(1)-Cd(1)-O(3B)	98.36(8)	O(4A)-Cd(1)-N(1)	85.12(8)
O(1)-Cd(1)-N(1)	92.33(8)	O(3B)-Cd(1)-N(1)	158.85(8)
O(4A)-Cd(1)-O(1C)	102.18(8)	O(1)-Cd(1)-O(1C)	74.53(7)
O(3B)-Cd(1)-O(1C)	81.94(7)	N(1)-Cd(1)-O(1C)	83.42(8)
O(4A)-Cd(1)-O(2)	129.97(7)	O(1)-Cd(1)-O(2)	53.94(7)
O(3B)-Cd(1)-O(2)	78.87(8)	N(1)-Cd(1)-O(2)	121.92(8)
O(1C)-Cd(1)-O(2)	120.63(6)		
		Compound **4**	
Cd(1)-O(4A)	2.217(2)	Cd(1)-O(3B)	2.260(2)
Cd(1)-N(1)	2.305(2)	Cd(1)-O(1C)	2.319(2)
Cd(1)-O(2)	2.355(2)	Cd(1)-O(1)	2.497(2)
O(4A)-Cd(1)-O(3B)	82.40(9)	O(4A)-Cd(1)-N(1)	84.66(9)
O(3B)-Cd(1)-N(1)	165.59(9)	O(4)-Cd(1)-O(1C)	109.18(9)

O(3B)-Cd(1)-O(1C)	81.90(9)	N(1)-Cd(1)-O(1C)	96.46(9)
O(4A)-Cd(1)-O(2)	133.46(9)	O(3B)-Cd(1)-O(2)	87.13(10)
N(1)-Cd(1)-O(2)	106.46(10)	O(1C)-Cd(1)-O(2)	114.00(8)
O(4A)-Cd(1)-O(1)	171.06(8)	O(3B)-Cd(1)-O(1)	104.98(8)
N(1)-Cd(1)-O(1)	87.41(8)	O(1C)-Cd(1)-O(1)	67.62(9)
O(2)-Cd(1)-O(1)	53.18(8)		

Compound **5**

Zn(1)-O(2A)	2.025(5)	Zn(1)-O(2B)	2.025(5)
Zn(1)-N(1)	2.027(5)	Zn(1)-O(1)	2.057(5)
Zn(1)-O(1C)	2.057(5)		
O(2A)-Zn(1)-O(2B)	93.4(4)	O(2A)-Zn(1)-N(1)	104.01(19)
O(2B)-Zn(1)-N(1)	104.01(19)	O(2A)-Zn(1)-O(1)	158.6(2)
O(2B)-Zn(1)-O(1)	84.7(3)	N(1)-Zn(1)-O(1)	97.12(17)
O(2A)-Zn(1)-O(1C)	84.7(3)	O(2B)-Zn(1)-O(1C)	158.6(2)
N(1)-Zn(1)-O(1C)	97.12(17)	O(1)-Zn(1)-O(1C)	89.3(3)

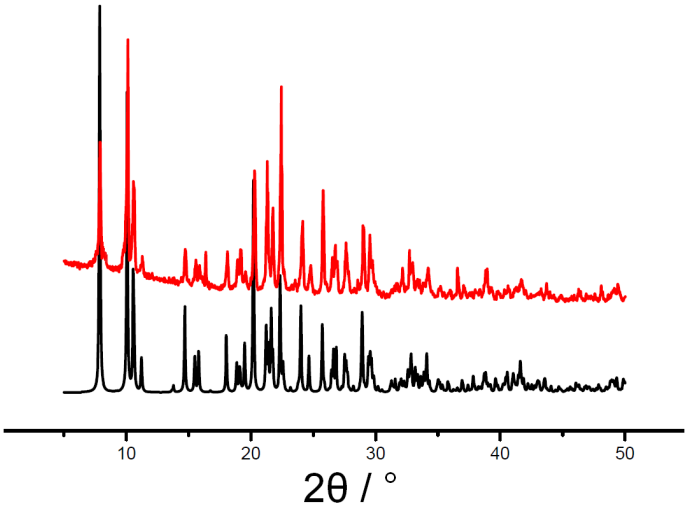
Compound **6**

Co(1)-O(6)	2.0077(17)	Co(1)-O(9)	2.0164(16)
Co(1)-O(3A)	2.0348(17)	Co(1)-O(1)	2.0855(16)
Co(1)-N(1)	2.194(2)	Co(2)-O(2)	2.0489(16)
Co(2)-O(8B)	2.0976(16)	Co(2)-N(2C)	2.115(2)
Co(2)-O(5)	2.1172(17)	Co(2)-O(9)	2.1532(15)
Co(2)-O(4D)	2.2055(18)		
O(6)-Co(1)-O(9)	102.30(7)	O(6)-Co(1)-O(3A)	102.13(7)
O(9)-Co(1)-O(3A)	154.80(7)	O(6)-Co(1)-O(1)	93.31(7)
O(9)-Co(1)-O(1)	92.78(7)	O(3A)-Co(1)-O(1)	91.89(7)
O(6)-Co(1)-N(1)	89.59(8)	O(9)-Co(1)-N(1)	90.17(7)
O(3A)-Co(1)-N(1)	83.92(8)	O(1)-Co(1)-N(1)	175.33(7)
O(2)-Co(2)-O(8B)	172.50(7)	O(2)-Co(2)-N(2C)	87.08(7)
O(8B)-Co(2)-N(2C)	90.12(7)	O(2)-Co(2)-O(5)	85.56(7)

O(8B)-Co(2)-O(5)	87.69(7)	N(2C)-Co(2)-O(5)	93.91(7)
O(2)-Co(2)-O(9)	96.58(6)	O(8B)-Co(2)-O(9)	87.10(6)
N(2C)-Co(2)-O(9)	171.83(7)	O(5)-Co(2)-O(9)	93.66(6)
O(2)-Co(2)-O(4D)	84.70(7)	O(8B)-Co(2)-O(4D)	102.36(7)
N(2C)-Co(2)-O(4D)	92.02(7)	O(5)-Co(2)-O(4D)	168.33(6)
O(9)-Co(2)-O(4D)	81.09(6)		

Symmetry codes: for **1**: (A) *x*, *y* - 1, *z* - 1; for **2**: (B) *x* + 1, - *y* + 1/2, *z* + 1/2; for **3**: (A) *x* - 1/2, *y* - 1/2, *z*; (B) - *x* - 1/2, *y* - 1/2, - *z* + 1/2; (C) - *x* - 1, - *y*, - *z*; for **4**: (A) *x* - 1/2, *y* - 1/2, *z*; (B) - *x* + 5/2, *y* - 1/2, - *z* + 3/2; (C) - *x* + 2, - *y* - 1, - *z* + 1; for **5**: (A) - *x*, - *y* + 1, - *z* + 1; (B) *x*, - *y* + 1, - *z* + 1; (C) - *x*, *y*, *z*; for **6**: (A) *x* - 1/2, - *y* + 1/2, - *z*; (B) – *x*, *y* + 1/2, - *z* + 1/2; (C) *x* + 1, *y*, *z*; (D) – *x* + 1/2, *y* + 1/2, *z*.

(a)



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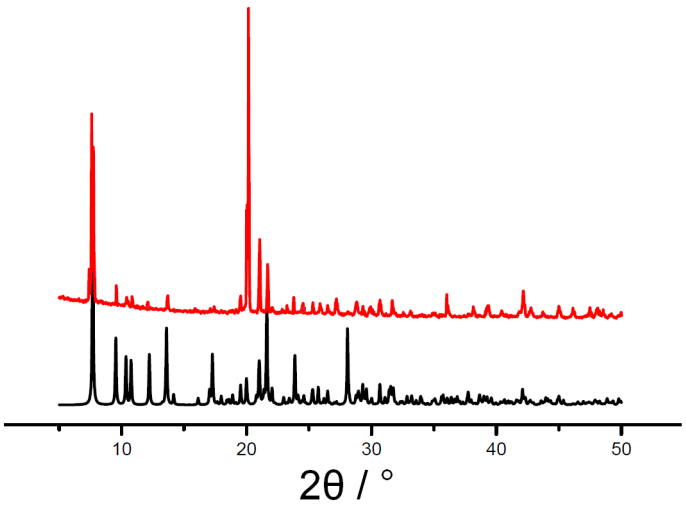

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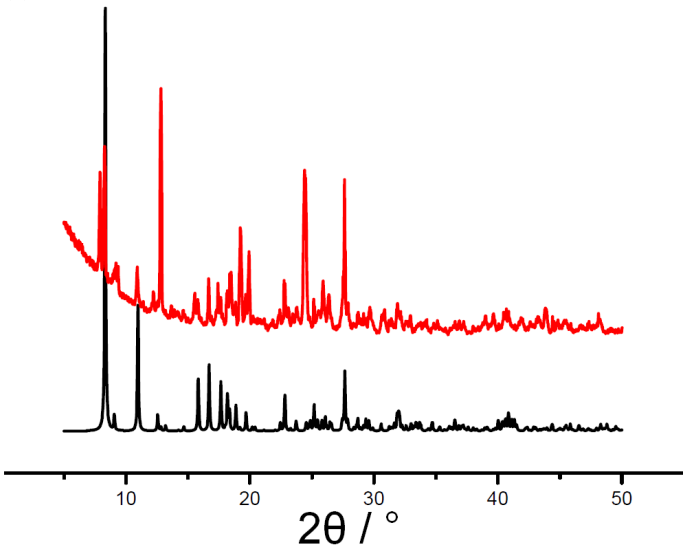
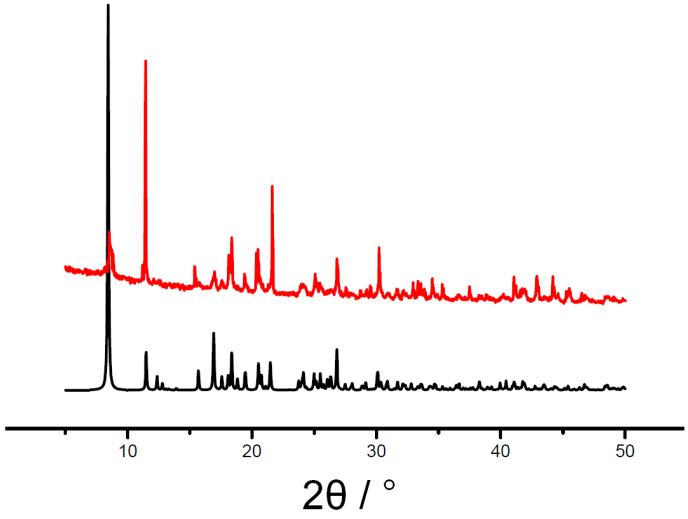
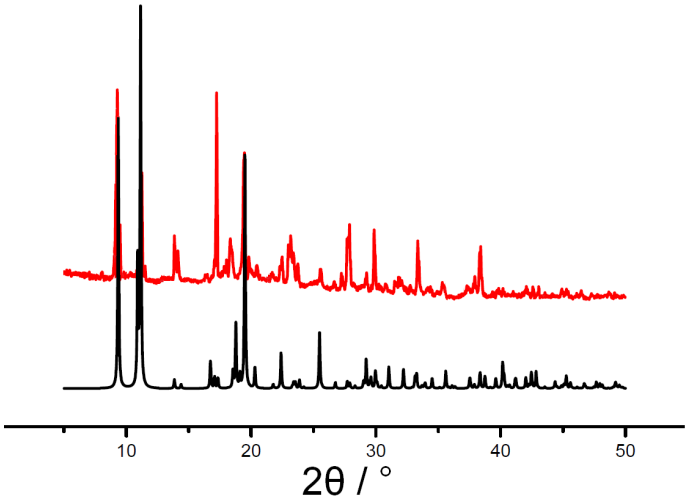


(d)



(e)



(f)

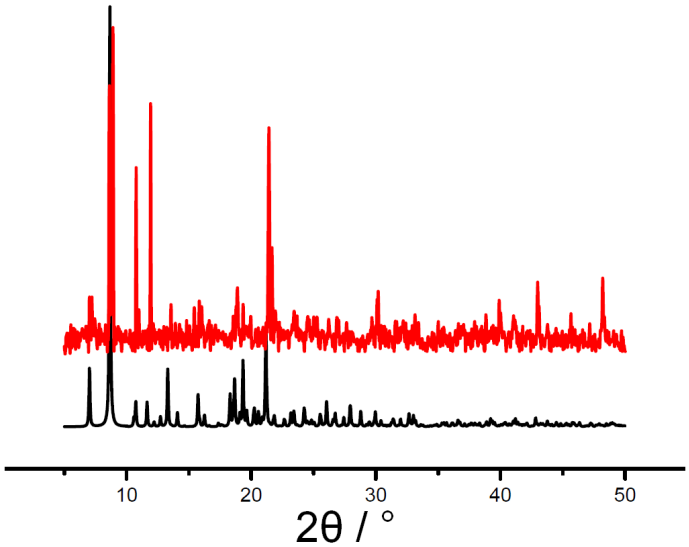


Fig. S1 Experimental (red) and simulated (black) PXRD patterns for **1** (a); **2** (b); **3** (c); **4** (d); **5**(e) and **6**(f).

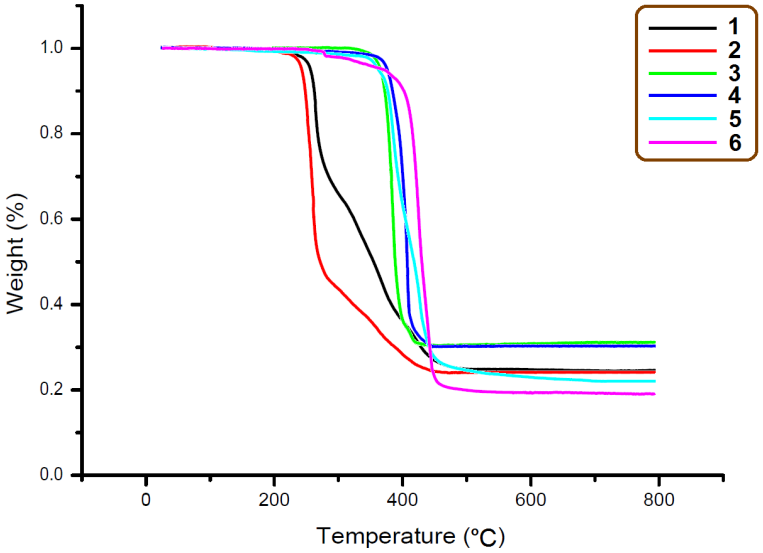


Fig. S2 The TG curves for **1-6**.