Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

For

Structural and Functional Studies on coordination polymers based on 5-*tert*-butylisophthalic acid and *N,N'*-bis-(4-pyridylmethyl) piperazine†

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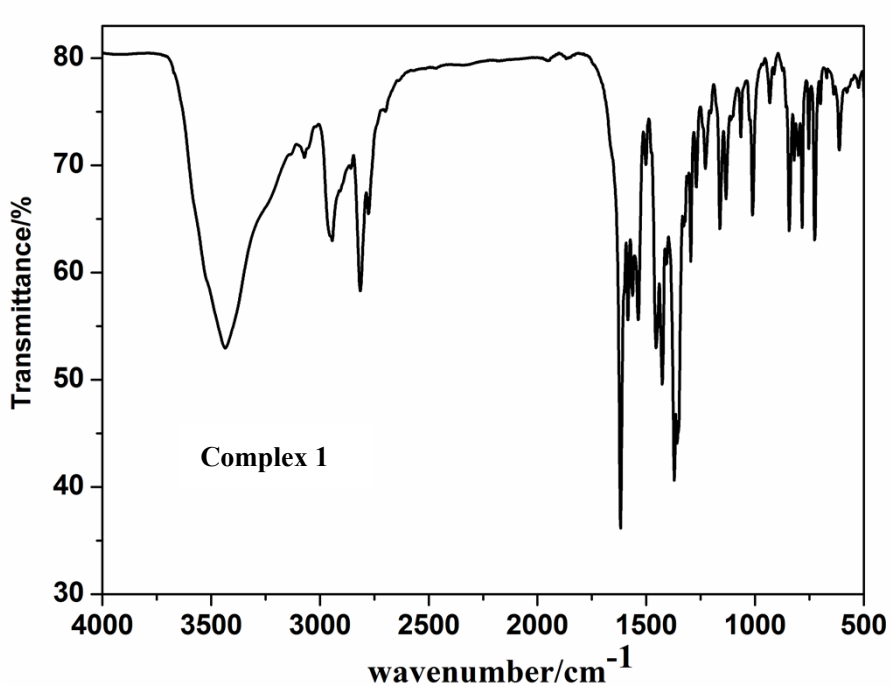
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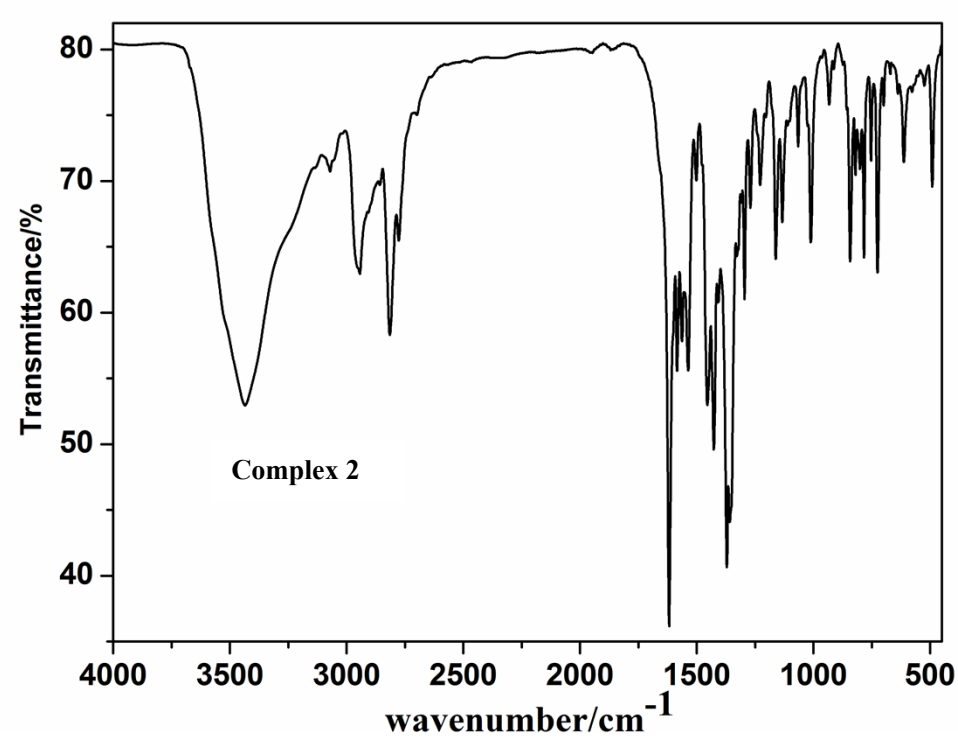
wavenumber/cm-1
Complex 1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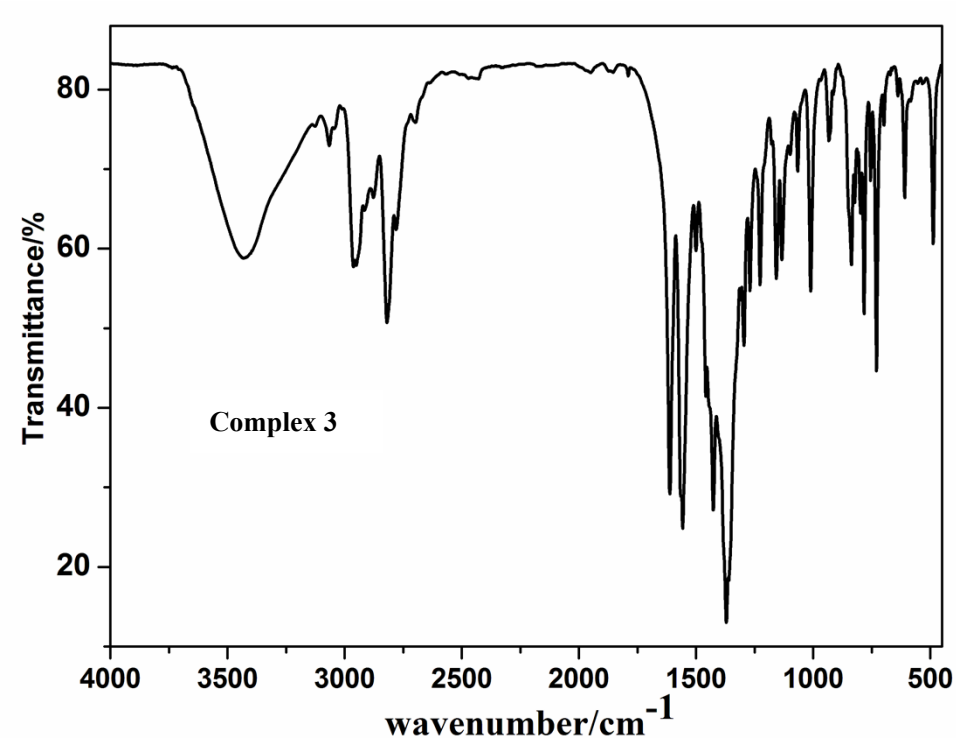


Figure S1 IR spectrum of complex **1-3**.

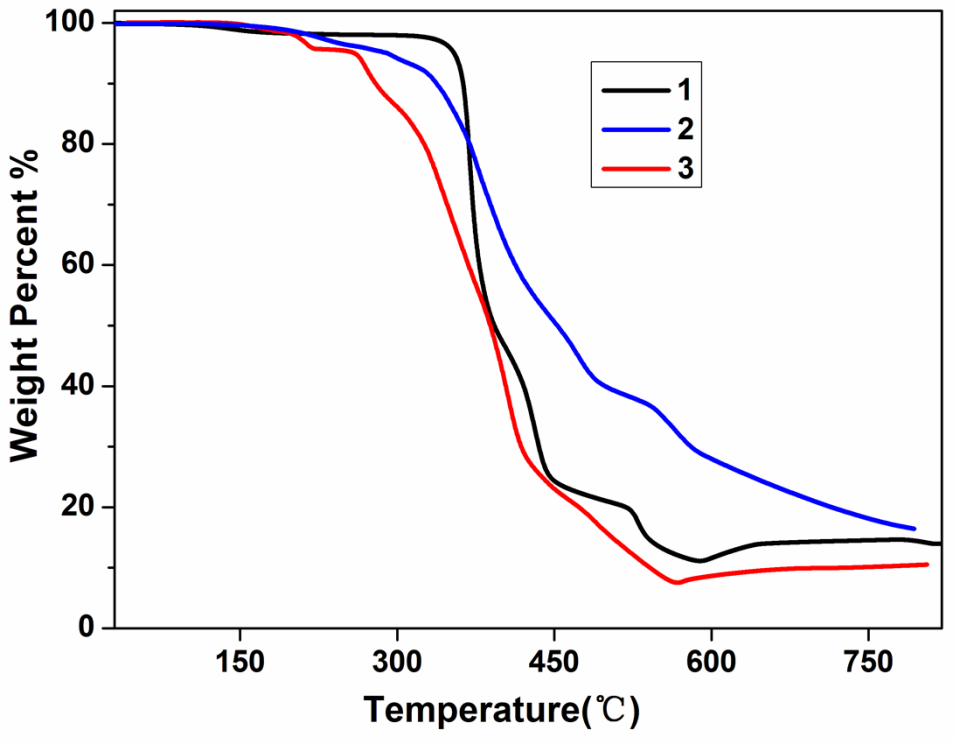
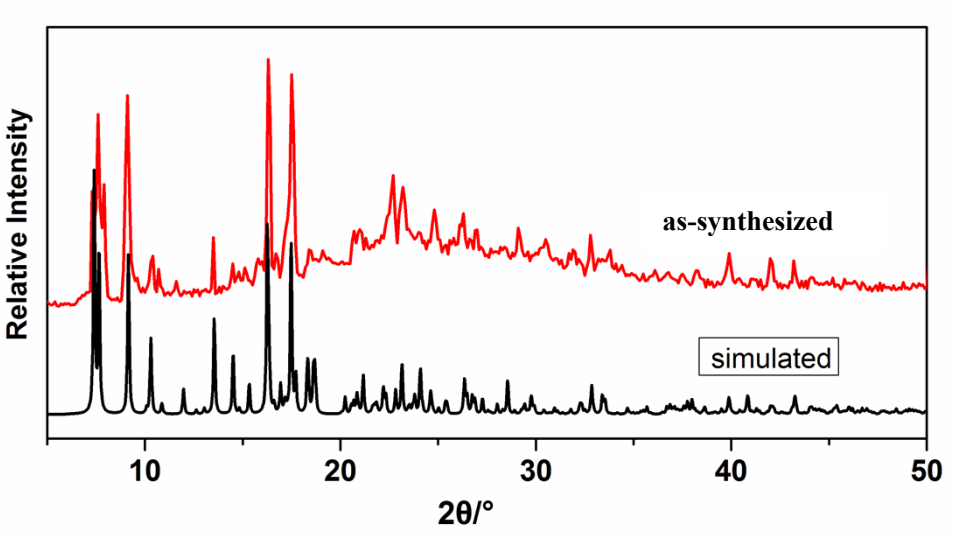
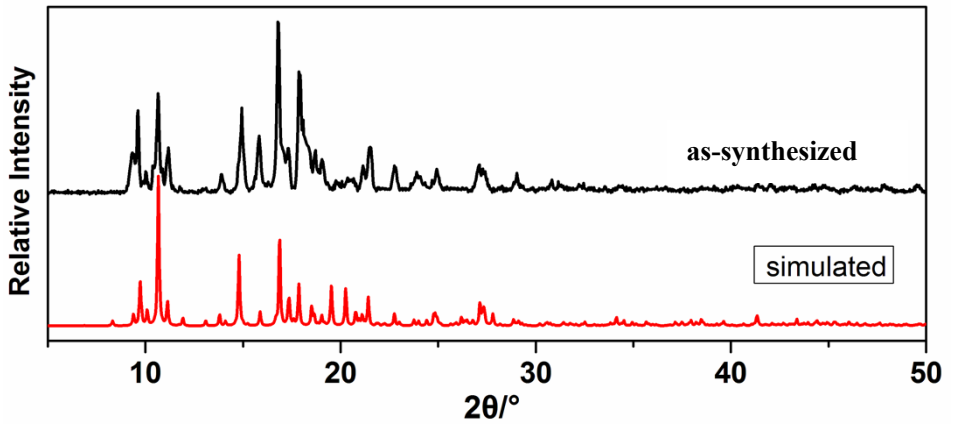


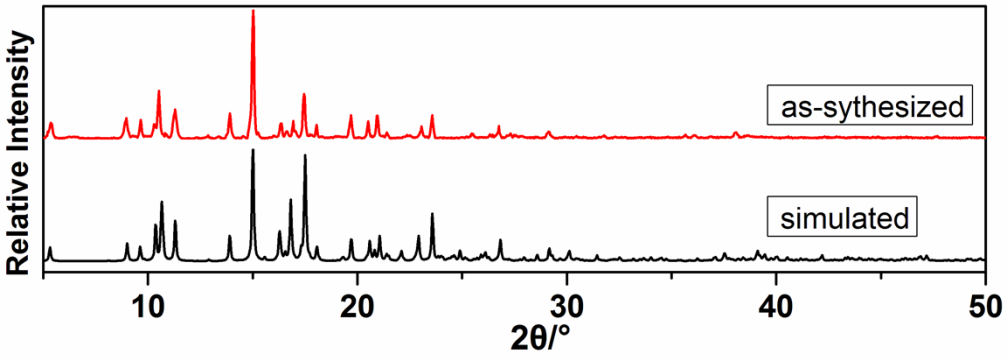
Figure S2 TG curves for **1- 3**



Complex 1



Complex 2



Complex 3

Figure S3 X-Ray powder diffraction patterns of **1- 3**.

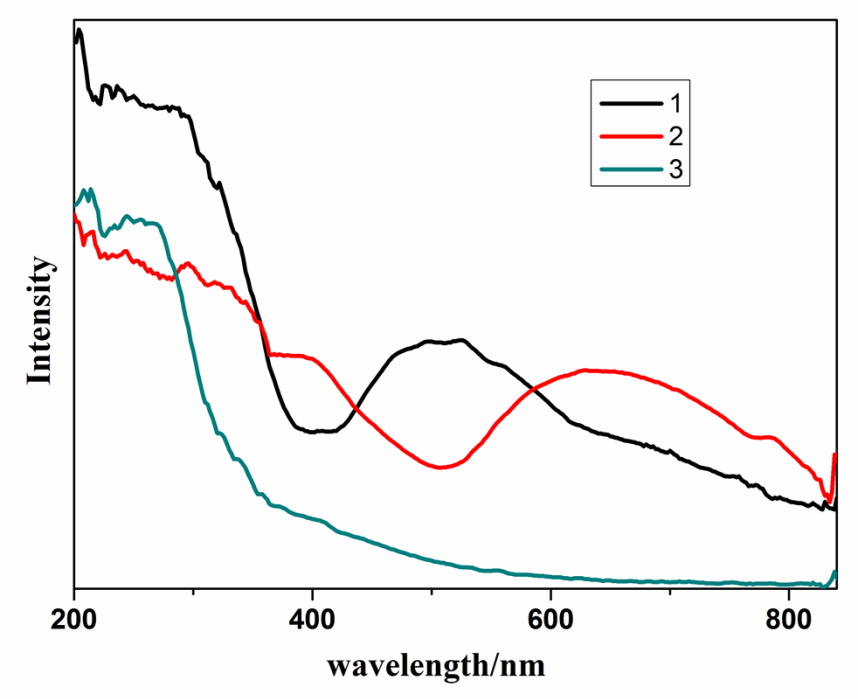


Figure S4 Solid-state optical absorption spectra of compounds **1**- **3**.

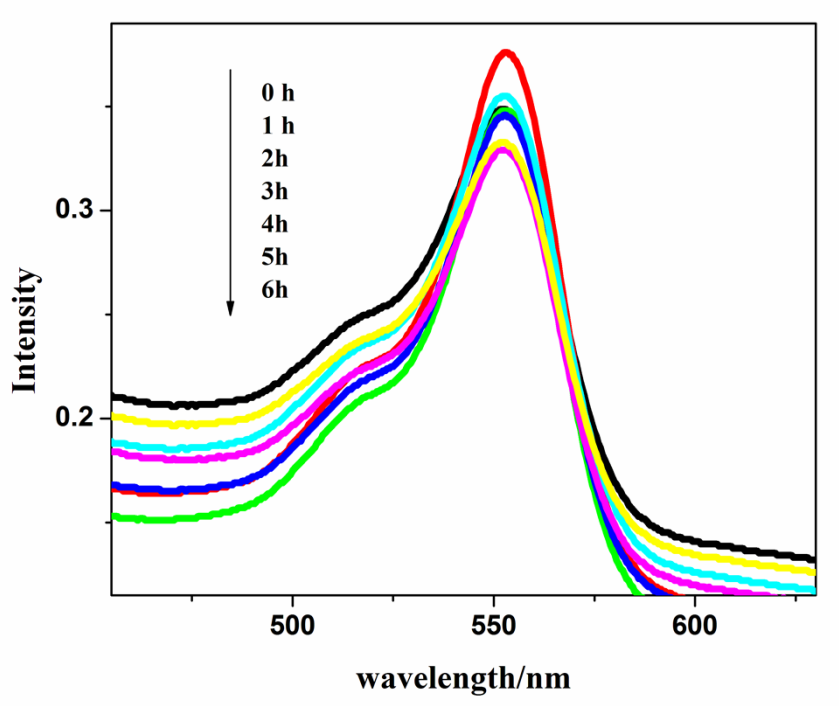


Figure S5 Absorption spectra of a solution of RhB without compounds **1** and **2** under exposure to visible light.

Table S1 Selected bond lengths (Å) and angles (°) for complexes

Complex **1**			
Co1-O1	2.3327(18)	Co1-O4^{2}	2.1239(19)
Co1-O3^{1}	2.0858(19)	Co1-N1	2.193(2)
Co1-O2	2.0949(19)	Co1-N2	2.137(2)
O3^{1}-Co1-O1	149.77(7)	O2-Co1-O1	63.73(7)
O3^{1}-Co1-O2	86.75(8)	O2-Co1-O4^{2}	159.21(7)
O3^{1}-Co1-O4^{2}	113.93(8)	O2-Co1-N1	97.49(8)
O3^{1}-Co1-N1	102.57(9)	O2-Co1-N2	89.26(8)
O3^{1}-Co1-N2	92.01(8)	N2-Co1-O1	81.78(7)
N1-Co1-O1	88.40(8)	N2-Co1-N1	164.21(9)
O4^{2}-Co1-O1	95.47(7)	O4^{2}-Co1-N1	80.71(8)
Complex **2**			
Ni1-O1W	2.1039(17)	Ni1-O1	2.0484(15)
Ni1-O3^{1}	2.0436(15)	Ni1-N5	2.0961(19)
Ni1-N1	2.1474(18)	Ni1-N4^{2}	2.1258(19)
O1W-Ni1-N1	172.39(7)	O1-Ni1-O1W	87.03(6)
O1W-Ni1-N4^{1}	89.89(7)	O1-Ni1-N1	86.13(6)
O3^{2}-Ni1-O1W	97.94(6)	O1-Ni1-N5	94.50(7)
O3^{2}-Ni1-N1	89.21(7)	O1-Ni1-N4^{1}	90.23(7)
O3^{2}-Ni1-O1	172.43(6)	N5-Ni1-O1W	89.08(7)
O3^{2}-Ni1-N5	91.30(7)	N5-Ni1-N1	88.13(7)
O3^{2}-Ni1-N4^{1}	84.10(7)	N5-Ni1-N4^{1}	175.11(7)
Complex **3**			
Cd1-N1	2.361(4)	Cd1-O1	2.260(3)
Cd1-N5	2.346(4)	Cd1-O3^{1}	2.571(3)
Cd1-N4^{2}	2.416(4)	Cd1-O4^{1}	2.331(3)
O4^{1}-Cd1-N4^{2}	88.87(13)	N5-Cd1-N1	91.03(14)
O4^{1}-Cd1-N5	134.90(11)	O1-Cd1-O4^{1}	86.65(13)
O4^{1}-Cd1-O3^{1}	52.73(11)	O1-Cd1-N4^{2}	85.31(13)
O4^{1}-Cd1-N1	97.08(13)	O1-Cd1-N5	136.17(12)
N4^{2}-Cd1-O3^{1}	92.94(11)	O1-Cd1-O3^{1}	139.38(11)
N5-Cd1-N4^{2}	82.84(14)	O1-Cd1-N1	97.67(14)
N1-Cd1-N4^{2}	173.47(13)	N1-Cd1-O3^{1}	88.56(12)

Symmetry transformations used to generate equivalent atoms:
for **1** 1 -X,-Y,-Z; 2 1+X,+Y,+Z
for **2** 1 1-X,1/2+Y,-1/2-Z; 2 -1+X,+Y,+Z
for **3** 1 +X,1+Y,+Z; 2 -1+X,+Y,+Z