Table S1. Selected Bond Distances (Å) and Angles (deg) for polymers **1-6**

		1			
Fe(1)-O(5)	2.1385(19)	Fe(1)-O(4)	2.0689(16)	Fe(1)-N(3)	2.3622(19)
O(2)#1-Fe(1)-O(4)	179.62(8)	O(4)-Fe(1)-O(5)	92.93(8)	O(4)-Fe(1)-O(3)#1	89.08(7)
O(2)#1-Fe(1)-O(5)	87.33(8)	O(4)-Fe(1)-N(1)#2	91.00(7)	O(3)#1-Fe(1)-O(5)	177.90(8)
O(5)-Fe(1)-N(1)#2	95.39(8)	O(2)#1-Fe(1)-N(3)	104.63(7)	O(4)-Fe(1)-N(3)	75.61(7)
O(3)#1-Fe(1)-N(3)	82.14(7)	O(5)-Fe(1)-N(3)	97.75(7)	N(1)#2-Fe(1)-N(3)	161.64(7)
		2			
Cd(1)-O(5)	2.3065(19)	Cd(1)-O(1)	2.3893(17)	Cd(1)-N(1)	2.2995(19)
O(1)#1-Cd(1)-O(5)	89.94(7)	O(1)#1-Cd(1)-N(1)	139.50(7)	N(2)#2-Cd(1)-N(1)	112.00(7)
O(1)#1-Cd(1)-O(1)	70.76(7)	N(2)#2-Cd(1)-O(5)	92.24(8)	N(1)-Cd(1)-O(5)	102.34(7)
O(5)-Cd(1)-O(1)	90.53(7)	N(2)#2-Cd(1)-O(1)	175.59(8)	N(1)-Cd(1)-O(1)	70.69(6)
N(1)-Cd(1)-O(4)#3	85.51(6)	O(5)-Cd(1)-O(4)#3	167.86(6)	O(1)-Cd(1)-O(4)#3	83.28(7)
		3			
Zn(1)-O(5)	2.1215(15)	Zn(1)-N(1)	2.1740(15)	Zn(1)-O(2)	2.1890(14)
N(3)#1-Zn(1)-O(5)	96.90(6)	O(5)-Zn(1)-O(3)#2	171.42(6)	O(5)-Zn(1)-N(2)#2	93.98(6)
N(3)#1-Zn(1)-N(1)	97.20(6)	O(5)-Zn(1)-N(1)	85.87(6)	N(2)#2-Zn(1)-N(1)	165.44(6)
O(3)#2-Zn(1)-N(1)	99.24(6)	N(3)#1-Zn(1)-O(2)	167.99(6)	O(5)-Zn(1)-O(2)	93.51(6)
N(2)#2-Zn(1)-O(2)	87.93(6)	O(3)#2-Zn(1)-O(2)	80.97(6)	N(1)-Zn(1)-O(2)	77.56(6)
		4			
Eu(1)-O(7)	2.369(3)	Eu(1)-O(5)	2.449(4)	Eu(1)-O(6)	2.424(4)
Eu(1)-O(9)	2.374(3)	Eu(1)-O(1)	2.428(3)	Eu(2)-O(10)	2.389(3)
Eu(2)-O(11)	2.369(4)	Eu(2)-O(12)	2.425(4)		
O(7)-Eu(1)-O(2)#1	116.56(13)	O(7)-Eu(1)-O(3)#1	71.32(12)	O(3)#1-Eu(1)-O(9)	106.93(13)
O(7)-Eu(1)-O(9)	72.44(12)	O(2)#1-Eu(1)-O(9)	72.30(11)	O(2)#1-Eu(1)-O(6)	137.85(14)
O(7)-Eu(1)-O(4)#2	145.62(12)	O(7)-Eu(1)-O(6)	82.76(15)	O(4)#2-Eu(1)-O(6)	69.78(15)
O(9)-Eu(1)-O(4)#2	82.39(12)	O(9)-Eu(1)-O(6)	79.77(15)	O(3)#1-Eu(1)-O(1)	86.36(12)
O(3)#1-Eu(1)-O(6)	149.16(14)	O(2)#1-Eu(1)-O(1)	149.14(11)	O(6)-Eu(1)-O(1)	69.93(14)
O(7)-Eu(1)-O(1)	73.03(12)	O(4)#2-Eu(1)-O(1)	113.94(12)	O(3)#1-Eu(1)-O(5)	78.34(12)
O(9)-Eu(1)-O(1)	136.23(11)	O(2)#1-Eu(1)-O(5)	81.32(13)	O(6)-Eu(1)-O(5)	111.67(16)
O(7)-Eu(1)-O(5)	135.70(13)	O(4)#2-Eu(1)-O(5)	75.64(12)	O(11)#3-Eu(2)-O(11)	156.1(2)
O(9)-Eu(1)-O(5)	149.12(12)	O(11)-Eu(2)-O(10)	89.29(15)	O(12)-Eu(2)-O(8)#4	73.43(12)
O(1)-Eu(1)-O(5)	73.58(12)	O(11)#3-Eu(2)-O(10)	71.73(14)	O(10)-Eu(2)-O(10)#3	75.95(17)
O(10)-Eu(2)-O(12)	135.51(12)	O(10)#3-Eu(2)-O(12)	76.60(13)	O(10)-Eu(2)-O(12)#3	76.60(13)
O(11)-Eu(2)-O(10)#3	71.73(14)	O(11)-Eu(2)-O(8)#2	132.80(13)	O(11)-Eu(2)-O(12)	114.09(18)
O(11)-Eu(2)-O(12)#3	73.62(18)	O(11)-Eu(2)-O(8)#4	69.98(14)	O(12)#3-Eu(2)-O(12)	144.43(17)
O(11)#3-Eu(2)-O(12)	73.62(17)	O(12)-Eu(2)-O(8)#2	77.70(13)	O(10)-Eu(2)-O(8)#2	114.47(12)
		5			
Tb(1)-O(7)	2.337(2)	Tb(1)-O(6)	2.387(3)	Tb(2)-O(11)	2.347(3)
Tb(1)-O(9)	2.357(2)	Tb(1)-O(5)	2.422(3)	Tb(2)-O(10)	2.377(2)
Tb(1)-O(1)	2.421(2)	Tb(2)-O(12)	2.411(3)		

O(7)-Tb(1)-O(2)#1	116.76(10)	O(7)-Tb(1)-O(3)#1	71.05(9)	O(3)#1-Tb(1)-O(9)	106.77(9)
O(7)-Tb(1)-O(9)	72.67(9)	O(2)#1-Tb(1)-O(9)	72.16(8)	O(3)#1-Tb(1)-O(6)	149.08(9)
O(7)-Tb(1)-O(6)	83.02(11)	O(2)#1-Tb(1)-O(6)	137.78(9)	O(6)-Tb(1)-O(4)#2	69.86(10)
O(9)-Tb(1)-O(6)	80.16(10)	O(7)-Tb(1)-O(4)#2	146.17(8)	O(3)#1-Tb(1)-O(1)	86.25(9)
O(7)-Tb(1)-O(1)	72.36(9)	O(9)-Tb(1)-O(4)#2	82.83(8)	O(4)#2-Tb(1)-O(1)	114.07(9)
O(9)-Tb(1)-O(1)	135.86(9)	O(2)#1-Tb(1)-O(1)	149.52(8)	O(3)#1-Tb(1)-O(5)	78.29(9)
O(7)-Tb(1)-O(5)	135.27(9)	O(6)-Tb(1)-O(1)	69.66(9)	O(4)#2-Tb(1)-O(5)	75.45(9)
O(9)-Tb(1)-O(5)	149.25(9)	O(2)#1-Tb(1)-O(5)	81.40(9)	O(11)-Tb(2)-O(10)#3	88.26(10)
O(1)-Tb(1)-O(5)	73.91(9)	O(6)-Tb(1)-O(5)	111.45(11)	O(11)#3-Tb(2)-O(10)	88.26(10)
O(10)#3-Tb(2)-O(10)	76.31(12)	O(11)-Tb(2)-O(11)#3	155.66(14)	O(11)-Tb(2)-O(12)	73.38(11)
O(11)#3-Tb(2)-O(12)	114.48(12)	O(11)-Tb(2)-O(10)	72.48(10)	O(10)-Tb(2)-O(12)	136.15(9)
O(12)#3-Tb(2)-O(12)	144.55(13)	O(11)-Tb(2)-O(12)#3	114.48(12)	O(11)-Tb(2)-O(8)#4	133.07(9)
O(12)-Tb(2)-O(8)#4	73.27(9)	O(10)-Tb(2)-O(12)#3	75.97(9)	O(10)-Tb(2)-O(8)#4	150.06(9)
O(12)-Tb(2)-O(8)#2	78.08(9)	O(10)#3-Tb(2)-O(12)	75.97(9)	O(11)-Tb(2)-O(8)#2	70.09(10)

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Y(1)-O(3)	2.311(3)	Y(1)-O(10)	2.348(4)	Y(1)-O(9)	2.386(3)
Y(1)-O(1)	2.329(3)	Y(1)-O(5)	2.396(3)	Y(2)-O(12)	2.311(4)
Y(2)-O(11)	2.376(3)	Y(2)-O(4)	2.414(3)		
O(3)-Y(1)-O(7)#1	71.11(11)	O(3)-Y(1)-O(6)#1	116.82(13)	O(6)#1-Y(1)-O(1)	72.13(11)
O(3)-Y(1)-O(1)	73.28(11)	O(7)#1-Y(1)-O(1)	107.76(12)	O(6)#1-Y(1)-O(10)	137.83(12)
O(3)-Y(1)-O(10)	83.18(14)	O(7)#1-Y(1)-O(10)	148.94(13)	O(10)-Y(1)-O(8)#2	69.93(13)
O(1)-Y(1)-O(10)	80.06(13)	O(3)-Y(1)-O(8)#2	146.49(11)	O(6)#1-Y(1)-O(9)	81.61(12)
O(3)-Y(1)-O(9)	135.32(12)	O(1)-Y(1)-O(8)#2	82.46(11)	O(8)#2-Y(1)-O(9)	74.94(11)
O(1)-Y(1)-O(9)	148.91(11)	O(7)#1-Y(1)-O(9)	78.31(12)	O(6)#1-Y(1)-O(5)	149.22(11)
O(3)-Y(1)-O(5)	72.22(12)	O(10)-Y(1)-O(9)	110.87(14)	O(8)#2-Y(1)-O(5)	114.22(11)
O(1)-Y(1)-O(5)	136.23(10)	O(7)#1-Y(1)-O(5)	85.50(11)	O(12)-Y(2)-O(2)#5	72.60(13)
O(9)-Y(1)-O(5)	73.67(12)	O(10)-Y(1)-O(5)	69.89(12)	O(12)-Y(2)-O(11)#3	114.10(15)
O(12)-Y(2)-O(2)#4	88.73(13)	O(12)#3-Y(2)-O(12)	156.41(17)	O(12)#3-Y(2)-O(11)	114.10(15)
O(12)-Y(2)-O(11)	73.51(14)	O(2)#4-Y(2)-O(11)	75.90(11)	O(2)#5-Y(2)-O(11)	136.21(11)
O(11)#3-Y(2)-O(11)	144.55(16)	O(12)#3-Y(2)-O(4)	69.65(12)	O(12)-Y(2)-O(4)	132.79(12)
O(2)#4-Y(2)-O(4)	114.06(11)	O(2)#5-Y(2)-O(4)	150.12(11)	O(11)#3-Y(2)-O(4)	78.23(12)
O(11)-Y(2)-O(4)	73.15(11)	O(4)-Y(2)-O(4)#3	71.57(17)	O(12)-Y(2)-O(4)#3	69.65(12)

Symmetry transformations used to generate equivalent atoms: for **1** #1 x+1/2,-y+1/2,z, #2 -x+1,-y+1,z-1/2; for **2** #1 -x+2,-y+2,-z+2, #2 -x+1,-y+2,-z+2, #3 -x+3/2,y+1/2,-z+3/2; for **3** #1 -x+2,-y+1,-z+1, #2 x,-y+1/2,z-1/2; for **4** #1 -x+1/2,y+1/2,-z+1/2, #2 x,y+1,z, #3 -x,y,-z+1/2, #4 -x,y+1,-z+1/2; for **5** #1 -x+3/2,y-1/2,-z+1/2, #2 x,y-1,z, #3 -x+2,y,-z+1/2, #4 -x+2,y-1,-z+1/2; for **6** #1 -x+1/2,y+1/2,-z+1/2, #2 x,y+1,z, #3 -x+1,y,-z+1/2, #4 -x+1,y-1,-z+1/2, #5 x,y-1,z

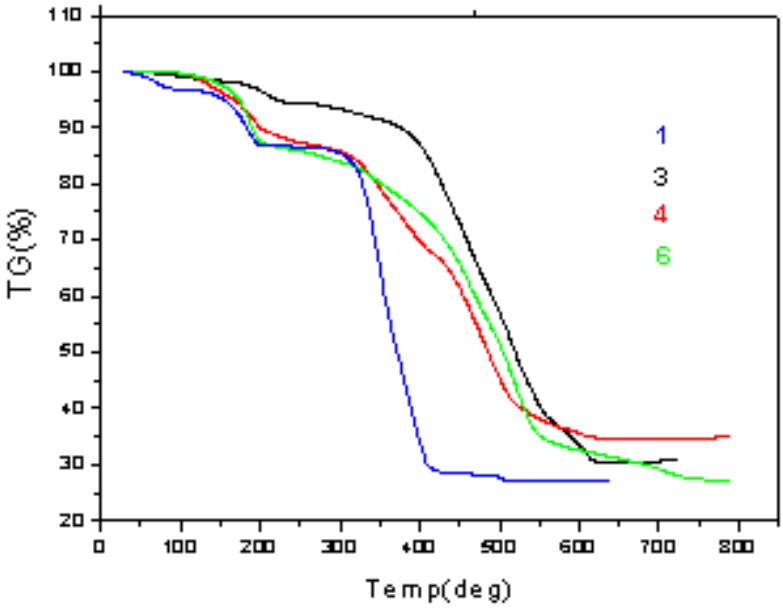

Fig.S1 The TG curves for complexes **1**, **3**, **4** and **6**