

Supporting Information

Table S1 Selected Bond Lengths(Å) and Angles (°) for complexes **1-3**.

	1		2		3
Nd(1)- (4)#1	2.372(3)	Dy(1)-O(1)	2.443(5)	Ho(1)-O(8)#1	2.271(5)
Nd(1)- O(8)	2.398(3)	Dy(1)-O(8)#2	2.339(4)	Ho(1)-O(3)	2.309(5)
Nd(1)- O(11)	2.417(3)	Dy(1)-O(7)	2.315(4)	Ho(1)-O(4)#2	2.323(5)
Nd(1)- O(7)#2	2.446(3)	Dy(1)-O(10)	2.408(6)	Ho(1)-O(7)#3	2.338(5)
Nd(1)- O(3)#3	2.449(3)	Dy(1)-O(2)	2.432(4)	Ho(1)-O(6)	2.359(7)
Nd(1)- O(10)	2.499(3)	Dy(1)-O(11)	2.361(6)	Ho(1)-O(5)	2.396(7)
Nd(1)- O(2)	2.513(3)	Dy(1)-O(3) #3	2.354(4)	Ho(1)-O(1)	2.419(5)
Nd(1)- O(1)	2.551(3)	Dy(1)-O(4) #1	2.279(4)	Ho(1)-O(2)	2.435(5)
O(4)#1-Nd(1)-O(8)	73.99(11)	O(4)#1-Dy(1)-O(7)	76.00(16)	O(8)#1-Ho(1)-O(3)	75.93(19)
O(4)#1-Nd(1)-O(11)	147.73(11)	O(4)#1-Dy(1)-O(8)#2	80.29(17)	O(8)#1-Ho(1)-O(4)#2	80.28(19)
O(8)-Nd(1)-O(11)	138.23(11)	O(7)-Dy(1)-O(8)#2	125.43(15)	O(3)-Ho(1)-O(4)#2	125.20(18)
O(4)#1-Nd(1)-O(7)#2	78.34(11)	O(4)#1-Dy(1)-O(3)#3	124.98(18)	O(8)#1-Ho(1)-O(7)#3	124.7(2)
O(8)-Nd(1)-O(7)#2	123.68(10)	O(7)-Dy(1)-O(3)#3	78.36(16)	O(3)-Ho(1)-O(7)#3	78.16(19)
O(11)-Nd(1)-O(7)#2	79.22(11)	O(8)#2-Dy(1)-O(3)#3	76.46(16)	O(4)#2-Ho(1)-O(7)#3	76.33(18)
O(4)#1-Nd(1)-O(3)#3	122.26(11)	O(4)#1-Dy(1)-O(11)	145.7(2)	O(8)#1-Ho(1)-O(6)	146.1(2)
O(8)-Nd(1)-O(3)#3	77.99(11)	O(7)-Dy(1)-O(11)	138.3(2)	O(3)-Ho(1)-O(6)	138.0(2)
O(11)-Nd(1)-O(3)#3	74.10(11)	O(8)#2-Dy(1)-O(11)	77.9(2)	O(4)#2-Ho(1)-O(6)	78.1(2)
O(7)#2-Nd(1)-O(3)#3	77.02(10)	O(3)#3-Dy(1)-O(11)	74.7(2)	O(7)#3-Ho(1)-O(6)	74.6(2)
O(4)#1-Nd(1)-O(10)	76.00(12)	O(4)#1-Dy(1)-O(10)	78.2(2)	O(8)#1-Ho(1)-O(5)	78.6(3)
O(8)-Nd(1)-O(10)	139.90(12)	O(7)-Dy(1)-O(10)	142.8(2)	O(3)-Ho(1)-O(5)	143.2(3)
O(11)-Nd(1)-O(10)	75.79(12)	O(8)#2-Dy(1)-O(10)	75.0(2)	O(4)#2-Ho(1)-O(5)	75.0(2)
O(7)#2-Nd(1)-O(10)	74.29(11)	O(3)#3-Dy(1)-O(10)	138.8(2)	O(7)#3-Ho(1)-O(5)	138.6(3)
O(3)#3-Nd(1)-O(10)	141.53(11)	O(11)-Dy(1)-O(10)	70.8(3)	O(6)-Ho(1)-O(5)	70.7(3)
O(4)#1-Nd(1)-O(2)	94.54(12)	O(4)#1-Dy(1)-O(2)	89.80(18)	O(8)#1-Ho(1)-O(1)	89.5(2)
O(8)-Nd(1)-O(2)	81.44(11)	O(7)-Dy(1)-O(2)	79.89(17)	O(3)-Ho(1)-O(1)	79.7(2)
O(11)-Nd(1)-O(2)	93.05(12)	O(8)#2-Dy(1)-O(2)	148.46(15)	O(4)#2-Ho(1)-O(1)	148.67(18)
O(7)#2-Nd(1)-O(2)	149.34(10)	O(3)#3-Dy(1)-O(2)	131.85(16)	O(7)#3-Ho(1)-O(1)	132.03(18)
O(3)#3-Nd(1)-O(2)	129.66(10)	O(11)-Dy(1)-O(2)	95.1(2)	O(6)-Ho(1)-O(1)	95.5(2)
O(10)-Nd(1)-O(2)	75.05(11)	O(10)-Dy(1)-O(2)	73.7(2)	O(5)-Ho(1)-O(1)	74.0(2)
O(4)#1-Nd(1)-O(1)	134.71(11)	O(4)#1-Dy(1)-O(1)	135.10(16)	O(8)#1-Ho(1)-O(2)	134.96(19)
O(8)-Nd(1)-O(1)	72.18(10)	O(7)-Dy(1)-O(1)	72.89(17)	O(3)-Ho(1)-O(2)	72.7(2)
O(11)-Nd(1)-O(1)	72.25(11)	O(8)#2-Dy(1)-O(1)	144.56(16)	O(4)#2-Ho(1)-O(2)	144.67(18)
O(7)#2-Nd(1)-O(1)	146.46(10)	O(3)#3-Dy(1)-O(1)	78.98(16)	O(7)#3-Ho(1)-O(2)	78.98(18)
O(3)#3-Nd(1)-O(1)	78.49(10)	O(11)-Dy(1)-O(1)	71.2(2)	O(6)-Ho(1)-O(2)	71.2(2)
O(10)- Nd(1)-O(1)	114.07(11)	O(10)-Dy(1)-O(1)	109.5(2)	O(5)-Ho(1)-O(2)	109.6(2)
O(2)-Nd(1)-O(1)	51.47(10)	O(2)-Dy(1)-O(1)	53.62(15)	O(1)-Ho(1)-O(2)	53.86(18)

(Symmetry transformations used to generate equivalent atoms: for **1**: #1, $-x+3/2, y+1/2, -z+3/2$; #2, $-x+3/2, -y+3/2, -z+1$; #3, $x, -y+1, z-1/2$. for **2**: #1, $-x+3/2, y+1/2, -z+3/2$; #2, $-x+3/2, -y+1/2, -z+1$; #3 $x, -y, z-1/2$. for **3**: #1, $-x+3/2, y-1/2, -z+1/2$; #2, $-x+3/2, -y+1/2, -z$; #3, $x, -y+1, z-1/2$.)

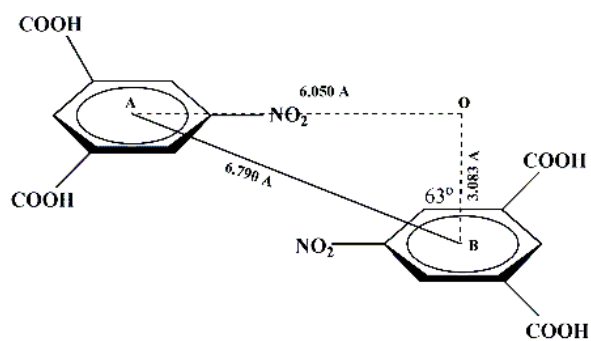


Fig. S1 The illustrated distances of the near 5-nip ligands in the 2D network in **1**.

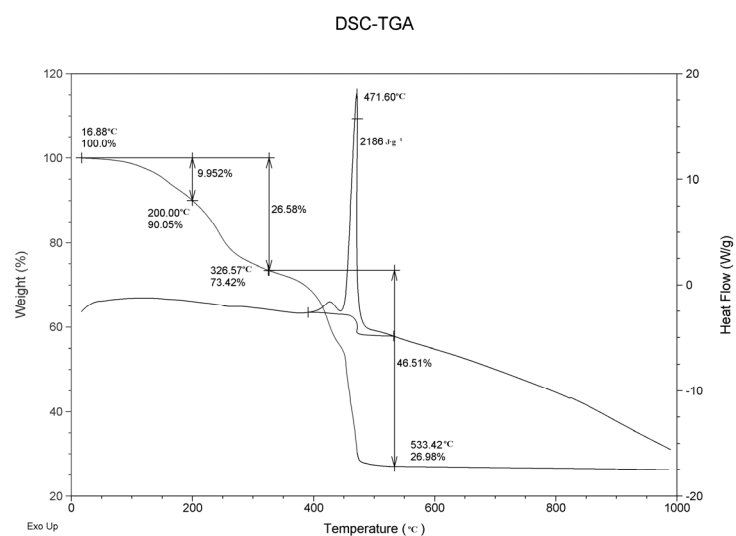


Fig. S2 The TG - DSC curve of **2** at heat rate of $10\text{ }^{\circ}\text{C min}^{-1}$.

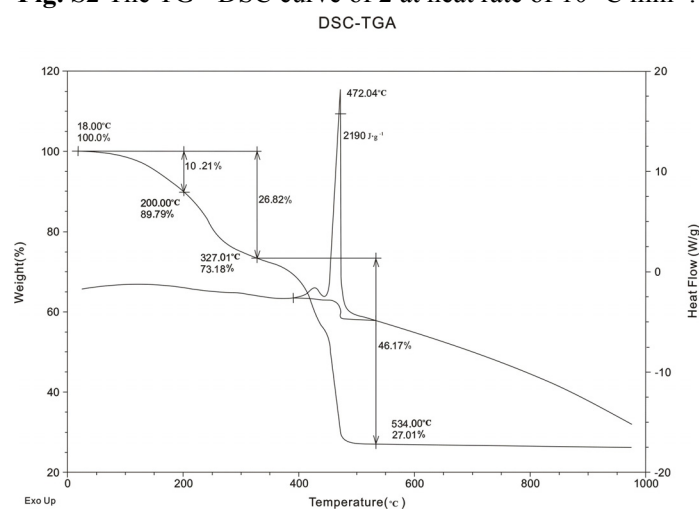


Fig. S3 TGA - DSC curves for the soaked sample with DMF of the guest-free **2** at $200\text{ }^{\circ}\text{C}$ at heat rate of $10\text{ }^{\circ}\text{C min}^{-1}$.