Electronic Supplementary Information for Dalton Transactions

Novel lanthanide-azido complexes: hydrothermal syntheses, structures and magnetic properties

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Electronic Supplementary Information

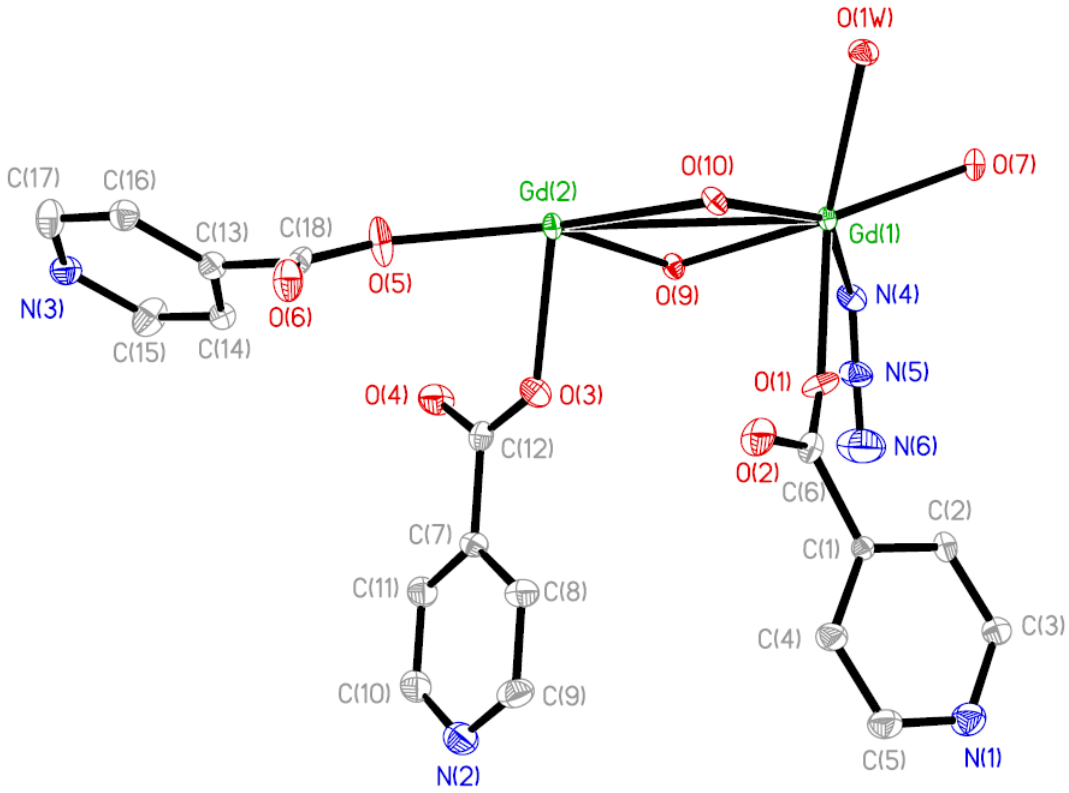

Fig. S1 The asymmetric unit of **1**

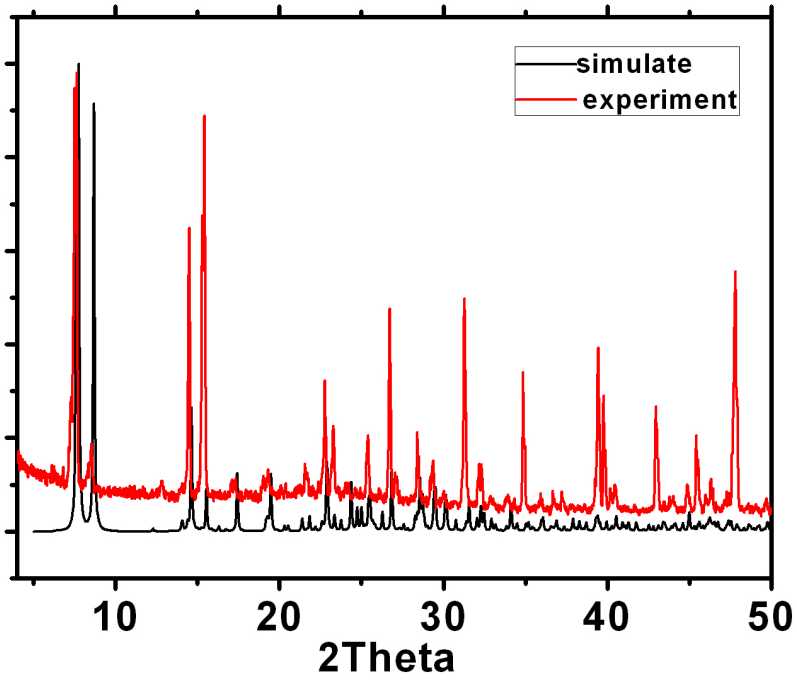

Fig. S2 The XRPD diagrams for complex **1**.

TabS1 The selected bonds length (Å) and angles (°) of **2**

Eu(1)-O(1)	2.362(6)	Eu(1)-O(10)	2.414(4)
Eu(1)-O(9)#1	2.380(5)	Eu(1)-O(1W)	2.446(5)
Eu(1)-O(9)	2.399(4)	Eu(1)-N(4)	2.544(6)
Eu(1)-O(6)#2	2.404(5)	Eu(1)-O(7)	2.607(5)
Eu(2)-O(5)	2.364(5)	Eu(2)-O(9)	2.416(5)
Eu(2)-O(2)#2	2.365(6)	Eu(2)-O(10)#2	2.44(4)
Eu(2)-O(3)	2.372(6)	Eu(2)-N(4)#1	2.492(6)
Eu(2)-O(10)	2.398(4)	Eu(2)-O(7)#1	2.573(5)
O(1)-Eu(1)-O(9)#1	136.64(17)	O(5)-Eu(2)-O(2)#2	76.9(2)
O(1)-Eu(1)-O(9)	75.66(18)	O(5)-Eu(2)-O(3)	80.3(2)
O(9)#1-Eu(1)-O(9)	72.37(17)	O(2)#2-Eu(2)-O(3)	147.79(18)
O(1)-Eu(1)-O(6)#2	75.27(19)	O(5)-Eu(2)-O(10)	149.93(17)
O(9)#1-Eu(1)-O(6)#2	141.24(17)	O(2)#2-Eu(2)-O(10)	82.51(18)
O(9)-Eu(1)-O(6)#2	146.37(17)	O(3)-Eu(2)-O(10)	107.8(18)
O(1)-Eu(1)-O(10)	83.01(18)	O(5)-Eu(2)-O(9)	137.94(18)
O(9)#1-Eu(1)-O(10)	112.44(16)	O(2)#2-Eu(2)-O(9)	138.06(17)
O(9)-Eu(1)-O(10)	70.91(15)	O(3)-Eu(2)-O(9)	73.1(17)
O(6)#2-Eu(1)-O(10)	89.07(16)	O(10)-Eu(2)-O(9)	70.9(15)
O(1)-Eu(1)-O(1W)	144.58(18)	O(5)-Eu(2)-O(10)#2	81.35(17)
O(9)#1-Eu(1)-O(1W)	78.32(17)	O(2)#2-Eu(2)-O(10)#2	82.71(18)
O(9)-Eu(1)-O(1W)	121.63(18)	O(3)-Eu(2)-O(10)#2	71.49(17)
O(6)#2-Eu(1)-O(1W)	76.37(19)	O(10)-Eu(2)-O(10)#2	74.41(16)
O(10)-Eu(1)-O(1W)	75.72(16)	O(9)-Eu(2)-O(10)#2	118.54(16)
O(1)-Eu(1)-N(4)	75.88(19)	O(5)-Eu(2)-N(4)#1	112.4(2)
O(9)#1-Eu(1)-N(4)	68.8(2)	O(2)#2-Eu(2)-N(4)#1	76.1(2)
O(9)-Eu(1)-N(4)	76.49(18)	O(3)-Eu(2)-N(4)#1	134.36(19)
O(6)#2-Eu(1)-N(4)	112.0(2)	O(10)-Eu(2)-N(4)#1	83.08(18)
O(10)-Eu(1)-N(4)	144.62(18)	O(9)-Eu(2)-N(4)#1	69.11(19)
O(1W)-Eu(1)-N(4)	135.28(18)	O(10)#2-Eu(2)-N(4)#1	150.88(18)
O(1)-Eu(1)-O(7)	116.65(18)	O(5)-Eu(2)-O(7)#1	73.47(17)
O(9)#1-Eu(1)-O(7)	69.39(15)	O(2)#2-Eu(2)-O(7)#1	116.46(19)
O(9)-Eu(1)-O(7)	132.81(15)	O(3)-Eu(2)-O(7)#1	77.66(17)
O(6)#2-Eu(1)-O(7)	76.31(16)	O(10)-Eu(2)-O(7)#1	136.13(15)
O(10)-Eu(1)-O(7)	150.56(16)	O(9)-Eu(2)-O(7)#1	69.44(15)
O(1W)-Eu(1)-O(7)	76.05(16)	O(10)#2-Eu(2)-O(7)#1	142.89(15)
N(4)-Eu(1)-O(7)	64.65(18)	N(4)#1-Eu(2)-O(7)#1	65.87(18)

Symmetry transformations used to generate equivalent atoms:

#1 -x,-y+2,-z+1 #2 -x+1,-y+2,-z+1

TabS2 The selected bonds length (Å) and angles (°) of **3**

Sm(1)-O(1)	2.376(6)	Sm(1)-O(10)	2.434(5)
Sm(1)-O(9)#1	2.361(5)	Sm(1)-O(1W)	2.451(6)
Sm(1)-O(9)	2.413(6)	Sm(1)-N(4)	2.565(7)
Sm(1)-O(6)#2	2.408(6)	Sm(1)-O(7)	2.614(6)
Sm(2)-O(2)#2	2.394(6)	Sm(2)-O(9)	2.446(5)
Sm(2)-O(5)	2.377(7)	Sm(2)-O(10)#2	2.449(5)
Sm(2)-O(3)	2.387(6)	Sm(2)-N(4)#1	2.502(7)
Sm(2)-O(10)	2.408(6)	Sm(2)-O(7)#1	2.59(6)
O(1)-Sm(1)-O(9)#1	136.4(2)	O(2)#2-Sm(2)-O(5)	77.0(3)
O(1)-Sm(1)-O(9)	75.9(2)	O(2)#2-Sm(2)-O(3)	147.8(2)
O(9)#1-Sm(1)-O(9)	71.5(2)	O(5)-Sm(2)-O(3)	79.9(2)
O(1)-Sm(1)-O(6)#2	75.8(2)	O(2)#2-Sm(2)-O(10)	82.3(2)
O(9)#1-Sm(1)-O(6)#2	141.2(2)	O(5)-Sm(2)-O(10)	149.8(2)
O(9)-Sm(1)-O(6)#2	147.3(2)	O(3)-Sm(2)-O(10)	108.4(2)
O(1)-Sm(1)-O(10)	83.19(19)	O(2)#2-Sm(2)-O(9)	137.8(2)
O(9)#1-Sm(1)-O(10)	112.11(19)	O(5)-Sm(2)-O(9)	137.7(2)
O(9)-Sm(1)-O(10)	71.53(19)	O(3)-Sm(2)-O(9)	73.5(2)
O(6)#2-Sm(1)-O(10)	89.2(2)	O(10)-Sm(2)-O(9)	71.42(19)
O(1)-Sm(1)-O(1W)	144.8(2)	O(2)#2-Sm(2)-O(10)#2	83.1(2)
O(9)#1-Sm(1)-O(1W)	78.33(19)	O(5)-Sm(2)-O(10)#2	81.3(2)
O(9)-Sm(1)-O(1W)	121.5(2)	O(3)-Sm(2)-O(10)#2	71.37(19)
O(6)#2-Sm(1)-O(1W)	76.2(2)	O(10)-Sm(2)-O(10)#2	74.4(2)
O(10)-Sm(1)-O(1W)	75.54(19)	O(9)-Sm(2)-O(10)#2	118.88(19)
O(1)-Sm(1)-N(4)	75.8(2)	O(2)#2-Sm(2)-N(4)#1	76.0(2)
O(9)#1-Sm(1)-N(4)	68.9(2)	O(5)-Sm(2)-N(4)#1	112.5(3)
O(9)-Sm(1)-N(4)	76.1(2)	O(3)-Sm(2)-N(4)#1	134.4(2)
O(6)#2-Sm(1)-N(4)	111.9(2)	O(10)-Sm(2)-N(4)#1	83.0(2)
O(10)-Sm(1)-N(4)	144.8(2)	O(9)-Sm(2)-N(4)#1	68.7(2)
O(1W)-Sm(1)-N(4)	135.2(2)	O(10)#2-Sm(2)-N(4)#1	151.0(2)
O(1)-Sm(1)-O(7)	116.9(2)	O(2)#2-Sm(2)-O(7)#1	116.6(2)
O(9)#1-Sm(1)-O(7)	69.57(19)	O(5)-Sm(2)-O(7)#1	73.7(2)
O(9)-Sm(1)-O(7)	132.17(18)	O(3)-Sm(2)-O(7)#1	77.2(2)
O(6)#2-Sm(1)-O(7)	76.1(2)	O(10)-Sm(2)-O(7)#1	136.09(18)
O(10)-Sm(1)-O(7)	150.27(18)	O(9)-Sm(2)-O(7)#1	68.76(18)
O(1W)-Sm(1)-O(7)	75.91(19)	O(10)#2-Sm(2)-O(7)#1	142.71(18)
N(4)-Sm(1)-O(7)	64.7(2)	N(4)#1-Sm(2)-O(7)#1	65.9(2)

Symmetry transformations used to generate equivalent atoms:

#1 -x,-y+2,-z+1 #2 -x+1,-y+2,-z+1