Supplementary Information

Photoluminescent 3D lanthanide MOFs with a rare (10, 3)-*d* net based on a new tripodal organic linker

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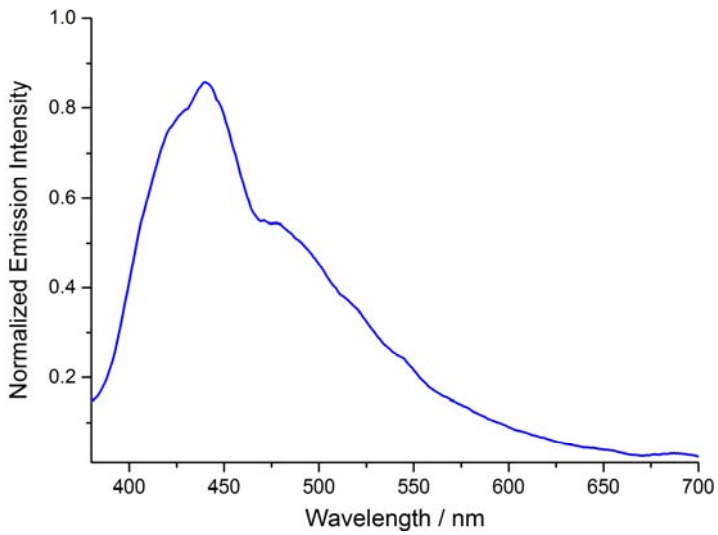

Figure S1. Phosphorescence spectrum of complex **5** (**Gd**) under excitation at 370 nm; T = 77 K.

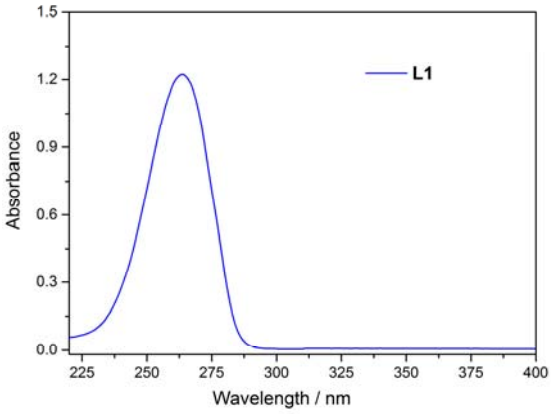

Figure S2. UV-vis absorption spectra of ligand **L1** at room temperature (5×10^{-5} mol/l, methanol).

Table S1. Selected bond distances (Å) and angles (°) for complex **2**.

Tb(1)-O(1)	2.250(5)	Tb(1)-O(3)#1	2.302(4)	Tb(1)-O(2)#2	2.306(4)
Tb(1)-O(9)	2.452(5)	Tb(1)-O(12)	2.490(5)	Tb(1)-O(6)	2.511(5)
Tb(1)-O(11)	2.519(5)	Tb(1)-O(5)	2.538(5)	Tb(1)-O(8)	2.539(5)
O(1)-Tb(1)-O(3)#1	81.15(18)	O(1)-Tb(1)-O(2)#2	80.78(17)	O(3)#1-Tb(1)-O(2)#2	89.15(15)
O(1)-Tb(1)-O(9)	130.57(17)	O(3)#1-Tb(1)-O(9)	79.78(16)	O(2)#2-Tb(1)-O(9)	143.49(18)
O(1)-Tb(1)-O(12)	145.86(16)	O(3)#1-Tb(1)-O(12)	125.21(18)	O(2)#2-Tb(1)-O(12)	78.66(16)
O(9)-Tb(1)-O(12)	79.73(16)	O(1)-Tb(1)-O(6)	92.0(2)	O(3)#1-Tb(1)-O(6)	141.46(16)
O(2)#2-Tb(1)-O(6)	127.37(16)	O(9)-Tb(1)-O(6)	76.23(17)	O(12)-Tb(1)-O(6)	79.41(18)
O(1)-Tb(1)-O(11)	144.86(18)	O(3)#1-Tb(1)-O(11)	74.72(16)	O(2)#2-Tb(1)-O(11)	73.78(16)
O(9)-Tb(1)-O(11)	69.75(16)	O(12)-Tb(1)-O(11)	50.52(16)	O(6)-Tb(1)-O(11)	122.66(17)
O(1)-Tb(1)-O(5)	73.84(18)	O(3)#1-Tb(1)-O(5)	153.45(17)	O(2)#2-Tb(1)-O(5)	78.32(16)
O(9)-Tb(1)-O(5)	123.60(16)	O(12)-Tb(1)-O(5)	75.49(17)	O(6)-Tb(1)-O(5)	49.98(16)
O(11)-Tb(1)-O(5)	122.56(17)	O(1)-Tb(1)-O(8)	79.34(17)	O(3)#1-Tb(1)-O(8)	73.36(16)
O(2)#2-Tb(1)-O(8)	155.24(15)	O(9)-Tb(1)-O(8)	51.56(17)	O(12)-Tb(1)-O(8)	125.70(16)
O(6)-Tb(1)-O(8)	68.10(17)	O(11)-Tb(1)-O(8)	116.49(16)	O(5)-Tb(1)-O(8)	109.79(17)

Symmetry transformations used to generate equivalent atoms: #1, -x+1, -y+2, z+1/2; #2, -x+1/2, y-1/2, z+1/2.

Table S2. Selected bond distances (Å) and angles (°) for complex **4**.

Ce(1)-O(1)	2.329(5)	Ce(1)-O(2)#1	2.400(5)	Ce(1)-O(3)#2	2.406(4)
Ce(1)-O(7)	2.582(5)	Ce(1)-O(5)	2.603(5)	Ce(1)-O(10)	2.609(5)
Ce(1)-O(4)	2.610(5)	Ce(1)-O(8)	2.615(5)	Ce(1)-O(11)	2.628(6)
O(1)-Ce(1)-O(2)#1	80.0(2)	O(1)-Ce(1)-O(3)#2	79.88(18)	O(2)#1-Ce(1)-O(3)#2	89.90(17)
O(1)-Ce(1)-O(7)	126.98(18)	O(2)#1-Ce(1)-O(7)	77.52(18)	O(3)#2-Ce(1)-O(7)	146.42(17)
O(1)-Ce(1)-O(5)	143.0(2)	O(2)#1-Ce(1)-O(5)	73.01(17)	O(3)#2-Ce(1)-O(5)	75.27(16)
O(7)-Ce(1)-O(5)	71.30(17)	O(1)-Ce(1)-O(10)	95.4(2)	O(2)#1-Ce(1)-O(10)	143.91(17)
O(3)#2-Ce(1)-O(10)	124.80(17)	O(7)-Ce(1)-O(10)	77.11(17)	O(5)-Ce(1)-O(10)	121.33(18)
O(1)-Ce(1)-O(4)	147.74(17)	O(2)#1-Ce(1)-O(4)	121.86(16)	O(3)#2-Ce(1)-O(4)	77.02(16)
O(7)-Ce(1)-O(4)	83.43(17)	O(5)-Ce(1)-O(4)	48.85(15)	O(10)-Ce(1)-O(4)	79.95(18)
O(1)-Ce(1)-O(8)	78.64(17)	O(2)#1-Ce(1)-O(8)	74.86(17)	O(3)#2-Ce(1)-O(8)	155.48(16)

O(7)-Ce(1)-O(8)	49.33(16)	O(5)-Ce(1)-O(8)	116.80(16)	O(10)-Ce(1)-O(8)	69.16(18)
O(4)-Ce(1)-O(8)	127.32(15)	O(1)-Ce(1)-O(11)	74.0(2)	O(2)#1-Ce(1)-O(11)	153.05(18)
O(3)#2-Ce(1)-O(11)	78.75(17)	O(7)-Ce(1)-O(11)	124.34(17)	O(5)-Ce(1)-O(11)	125.95(19)
O(10)-Ce(1)-O(11)	47.92(15)	O(4)-Ce(1)-O(11)	79.60(18)	O(8)-Ce(1)-O(11)	106.29(17)

Symmetry transformations used to generate equivalent atoms: #1, -x,-y, z+1/2; #2, -x+1/2, y-1/2, z+1/2.

References

S1. CrysAlis CCD and RED, Oxford Diffraction Ltd., Version 1.171.31.7, (2006).

S2. CrysAlis CCD, Oxford Diffraction Ltd., Version 1.171.31.7, (2006).

S3. Sheldrick, G. M. *SHELX 97*, *Program for Crystal Structure Solution and Refinement*, Göttingen University, (1997).