

Supporting Information

Dinuclear Lanthanide(III) Clusters Incorporated a Polydentate Schiff Base
Ligand with Dy₂ Displaying Single-Molecule Magnet Behaviour

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Table S1 Selected bond lengths (Å) and angles (°) for compounds 1-3

1		2		3	
N(1)-Gd(1)	2.510(4)	N(1)-Tb(1)	2.496(4)	Dy(1)-O(5)	2.2300(19)
N(2)-Gd(1)	2.780(4)	N(2)-Tb(1)	2.769(4)	Dy(1)-O(1)	2.2427(17)
Gd(1)-N(4)#1	2.523(4)	N(3)-Tb(1)#1	2.764(4)	Dy(1)-O(3)#1	2.3220(19)
N(4)-Gd(1)#1	2.522(4)	N(4)-Tb(1)#1	2.515(4)	Dy(1)-O(3)	2.3296(17)
O(3)-Gd(1)#1	2.380(3)	O(1)-Tb(1)	2.262(3)	Dy(1)-N(1)	2.494(2)
O(3)-Gd(1)	2.368(3)	O(3)-Tb(1)	2.353(3)	Dy(1)-N(4)	2.498(2)
O(5)-Gd(1)#1	2.270(3)	O(3)-Tb(1)#1	2.361(3)	Dy(1)-N(3)	2.725(2)
Gd(1)-O(5)#1	2.270(3)	O(5)-Tb(1)#1	2.250(4)	Dy(1)-N(2)#1	2.752(2)
O(5)#1-Gd(1)-O(1)	131.53(12)	O(5)#1-Tb(1)-O(1)	131.79(13)	O(5)-Dy(1)-O(1)	134.20(7)
O(5)#1-Gd(1)-O(3)	142.31(11)	O(5)#1-Tb(1)-O(3)	142.15(12)	O(5)-Dy(1)-O(3)#1	141.41(7)
O(1)-Gd(1)-N(1)	71.06(13)	O(1)-Tb(1)-O(3)	83.66(12)	O(5)-Dy(1)-N(1)	74.77(7)
O(3)-Gd(1)-N(4)#1	142.66(12)	O(5)#1-Tb(1)-N(1)	73.90(14)	O(1)-Dy(1)-N(1)	71.08(7)
O(3)#1-Gd(1)-N(4)#1	112.94(9)	O(1)-Tb(1)-N(1)	71.23(14)	O(3)-Dy(1)-N(4)	115.53(7)
O(1)-Gd(1)-N(2)	112.87(12)	O(3)-Tb(1)-N(1)	115.12(13)	N(1)-Dy(1)-N(4)	83.47(7)
N(3)#1-Gd(1)-N(2)	147.73(11)	O(1)-Tb(1)-N(4)#1	73.67(14)	O(5)-Dy(1)-N(3)	110.90(7)
O(5)#1-Gd(1)-N(3)#1	112.16(12)	O(3)-Tb(1)-N(4)#1	142.67(13)	O(1)-Dy(1)-N(3)	82.42(7)
O(1)-Gd(1)-N(3)#1	81.21(12)	O(5)#1-Tb(1)-N(3)#1	112.06(13)	O(3)-Dy(1)-N(2)#1	81.75(6)
O(3)-Gd(1)-N(3)#1	82.43(11)	O(1)-Tb(1)-N(3)#1	81.10(13)	N(1)-Dy(1)-N(2)#1	66.16(7)
O(3)#1-Gd(1)-N(3)#1	70.43(11)	O(1)-Tb(1)-N(2)	112.66(13)	N(4)-Dy(1)-N(2)#1	143.18(7)
N(1)-Gd(1)-N(3)#1	144.73(12)	N(4)#1-Tb(1)-N(2)	145.11(13)	N(3)-Dy(1)-N(2)#1	148.35(6)

Symmetry transformations used to generate equivalent atoms: Gd, Tb: #1 -x,-y+1,-z+1; Dy: #1 -x,-y,-z.

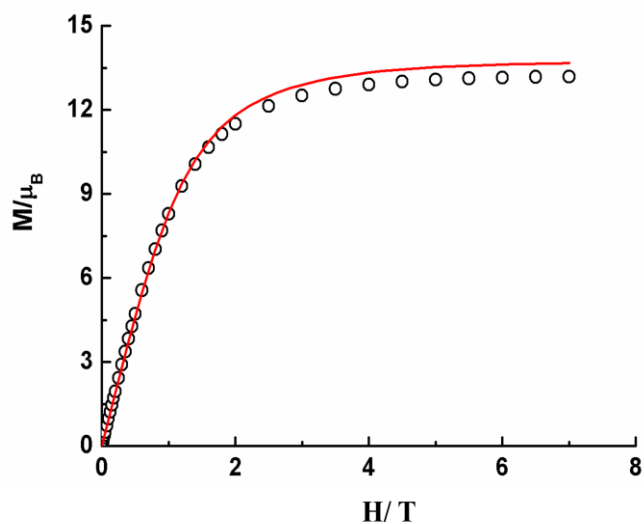


Figure S1. The M vs. H plot of **3** collected at 2 K. Data were simulated using MAGPACK (solid line), see the main text for parameters.

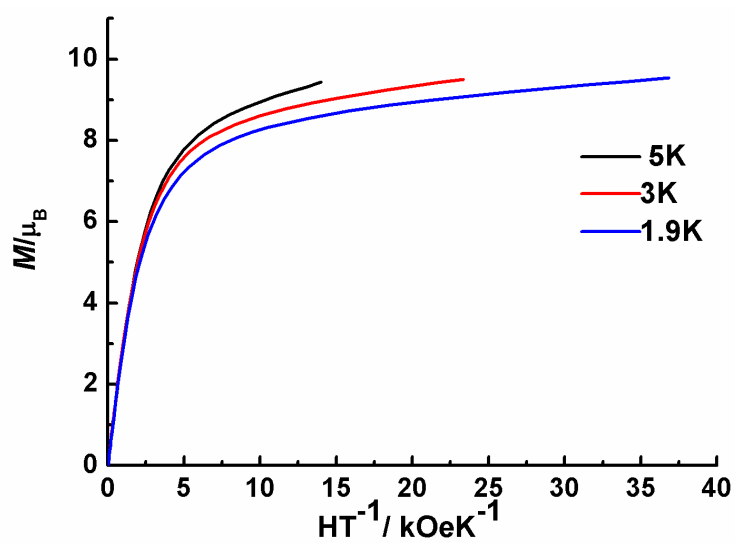


Figure S2. M vs H/T plots for **2** at indicated temperatures.

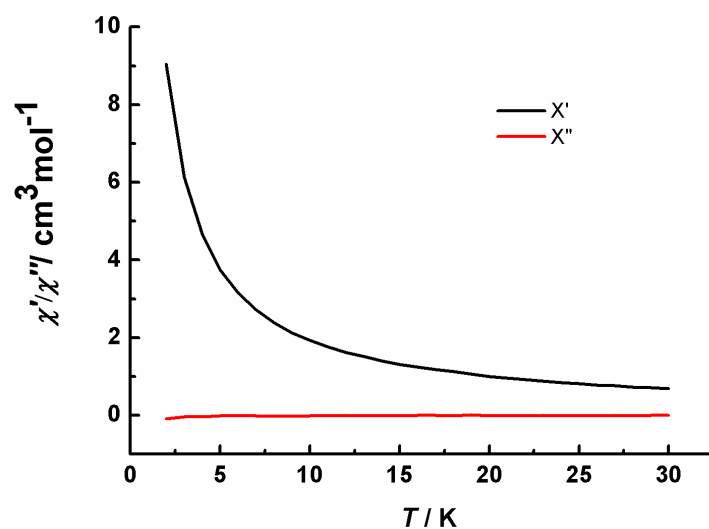


Figure S3. Temperature dependence of in-phase (χ') and out-of-phase (χ'') (bottom) ac susceptibilities of **2** at 997 Hz in zero dc field and 3 Oe ac field.

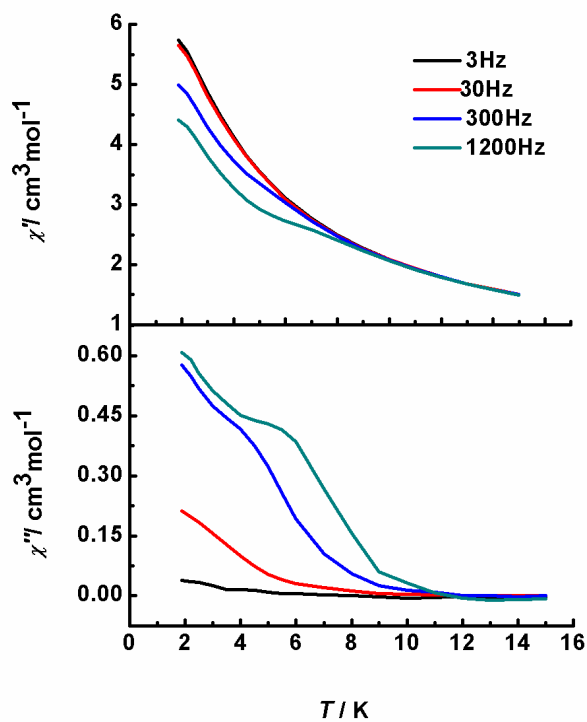


Figure S4. Temperature dependence of in-phase (χ') and out-of-phase (χ'') (bottom) ac susceptibilities of **3** in zero dc field and 3 Oe ac field.

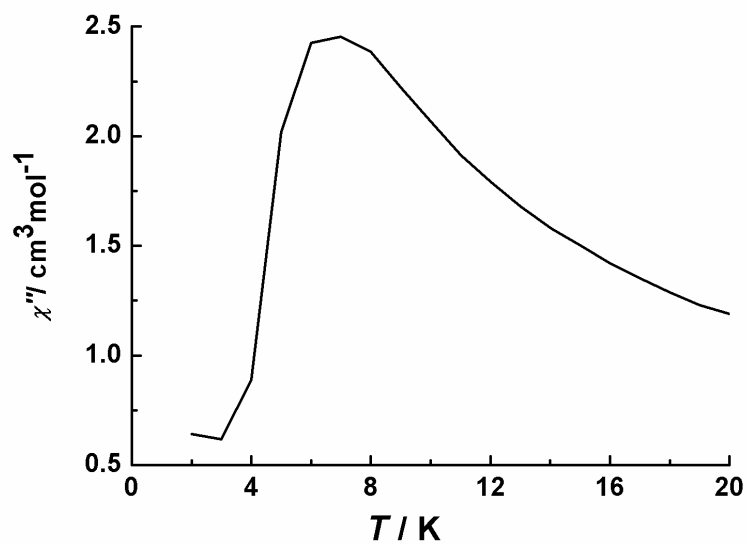


Figure S5. Out-of-phase ac susceptibility (χ'') collected on **3** at different temperature under a 800 Oe dc field for the frequency of 997 Hz