Supporting Information for:

EVAPORABLE LANTHANIDE SINGLE-ION MAGNET

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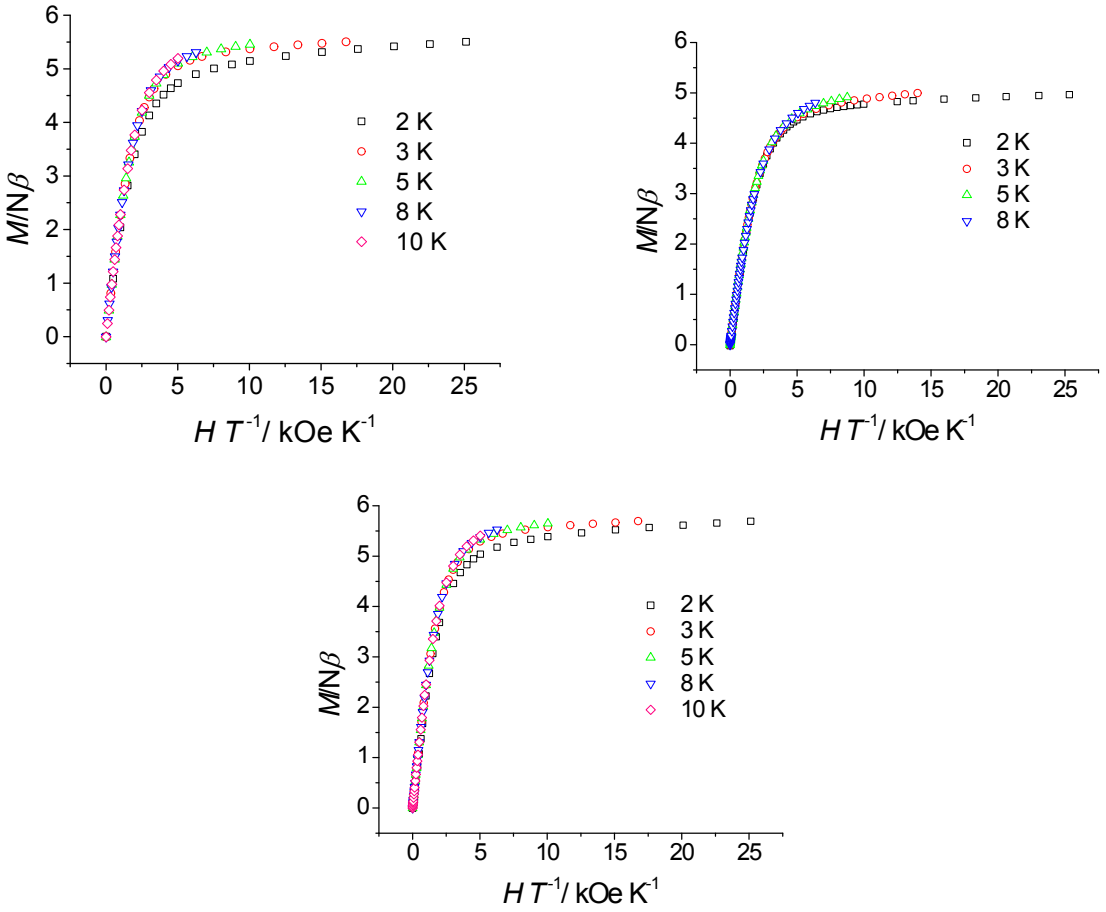

Fig S1 The field dependence of magnetization at 2, 3, 5, 8 and 10 K for 1Dy (top left), 2Dy (top right), 3Dy (bottom)

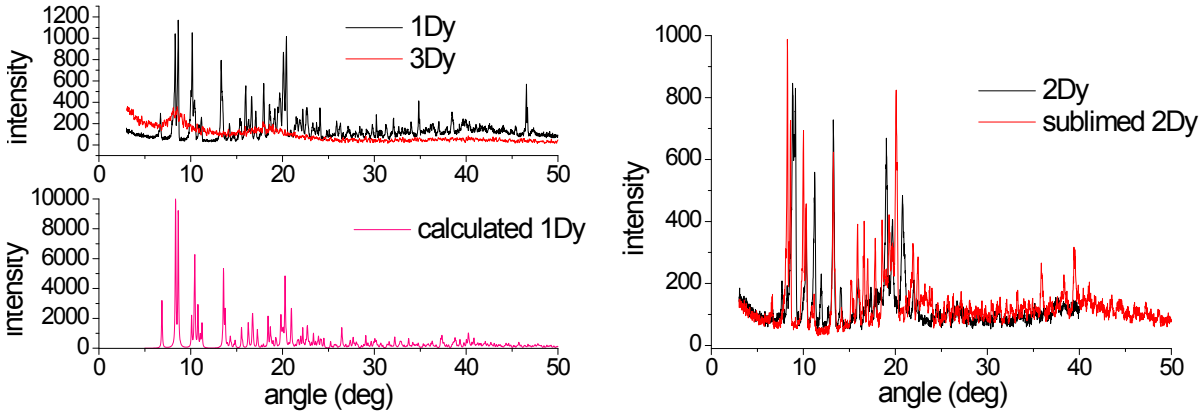

Fig S2 PXRD patterns for grinded 1Dy and 3Dy(left top), the calculated PXRD patterns from the result of single crystal of 1Dy(left down), the calculated PXRD patterns of 2Dy and sublimed 2Dy(right)

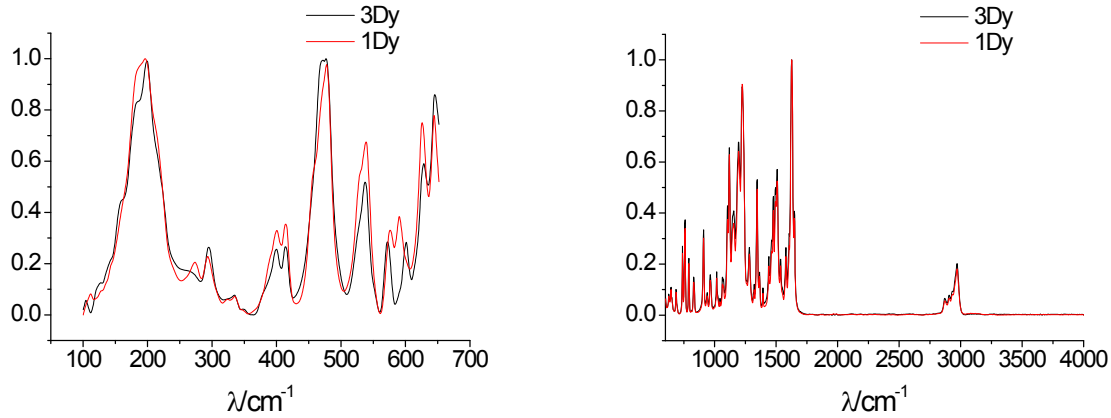

Fig S3 Comparison of IR absorption spectra of 1Dy and 3Dy: far-infrared(left), mid-infrared(right)

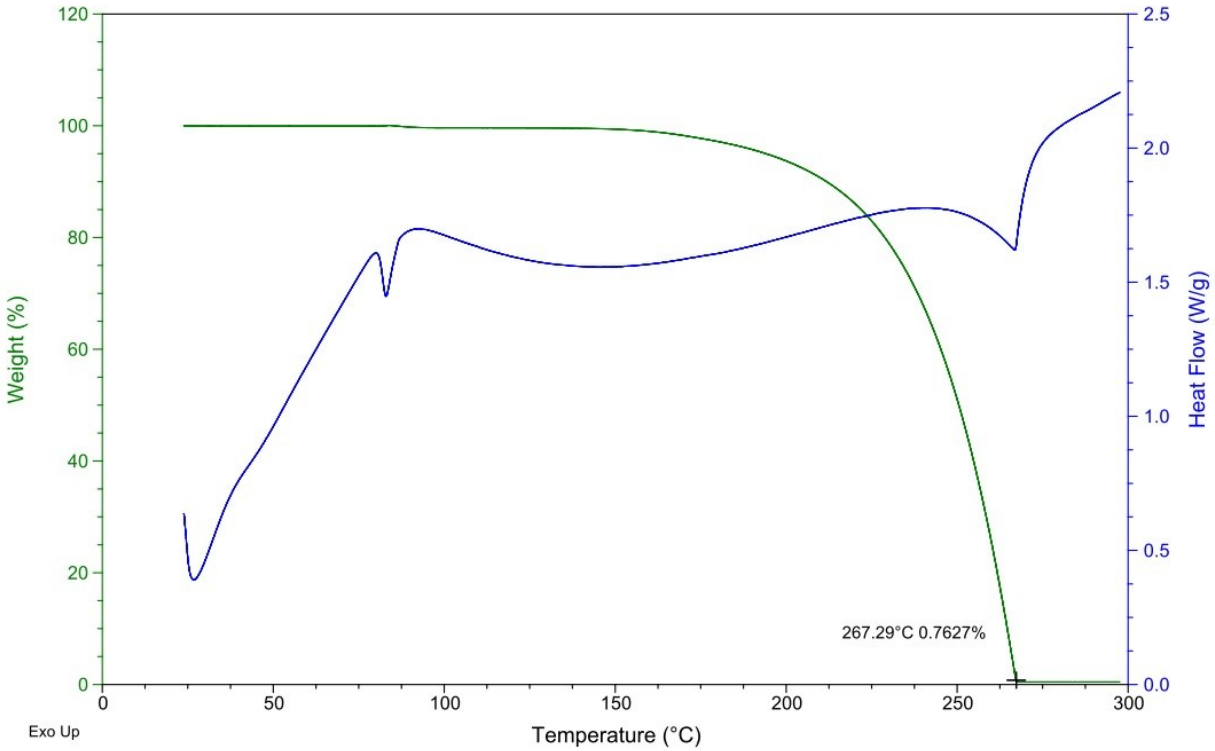

Fig S4 Thermo gravimetric Analysis of 1Dy

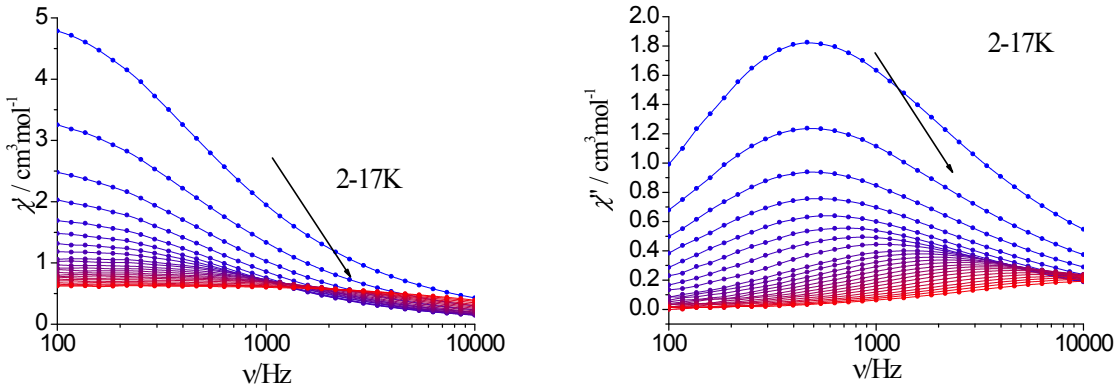

Fig S5 The frequency dependence of the in-phase (χ') and out-of-phase (χ'') ac susceptibility under 0 Oe dc fields for 1Dy.

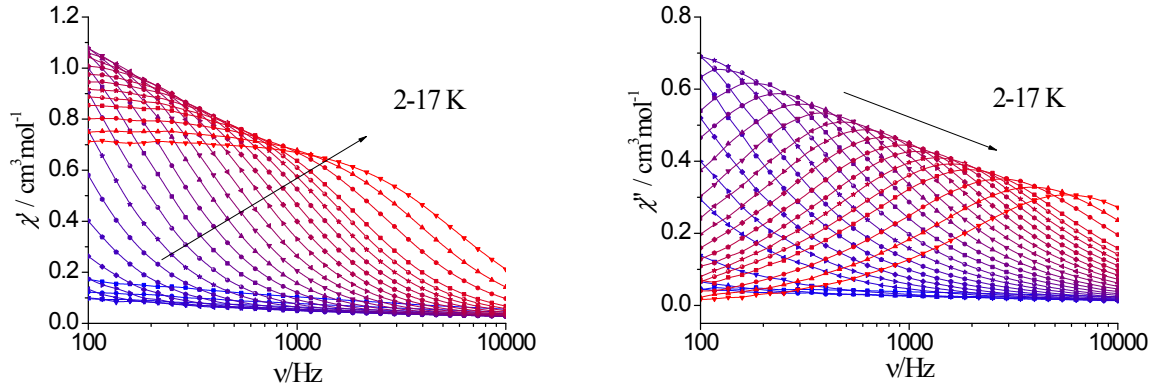

Fig S6 The frequency dependence of the in-phase (χ') and out-of-phase (χ'') ac susceptibility under 1k Oe dc fields for 1Dy.

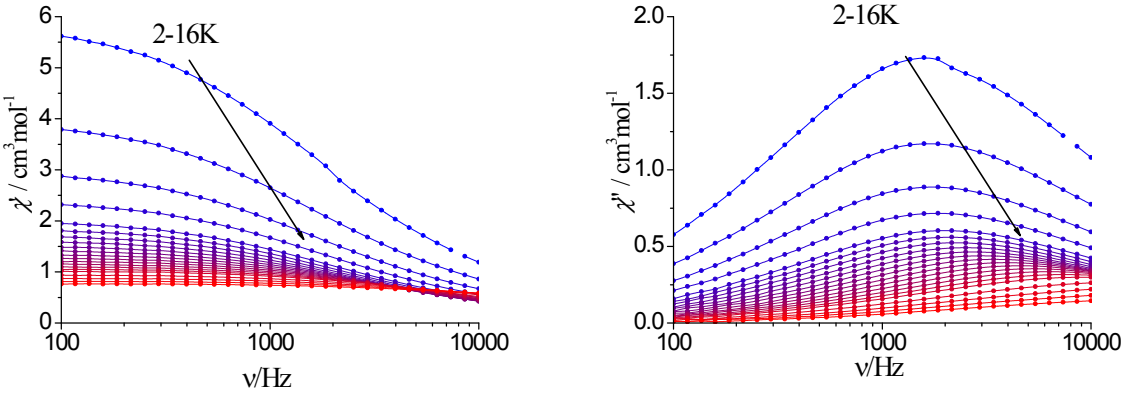

Fig S7 The frequency dependence of the in-phase (χ') and out-of-phase (χ'') ac susceptibility under 0 Oe dc fields for 2Dy.

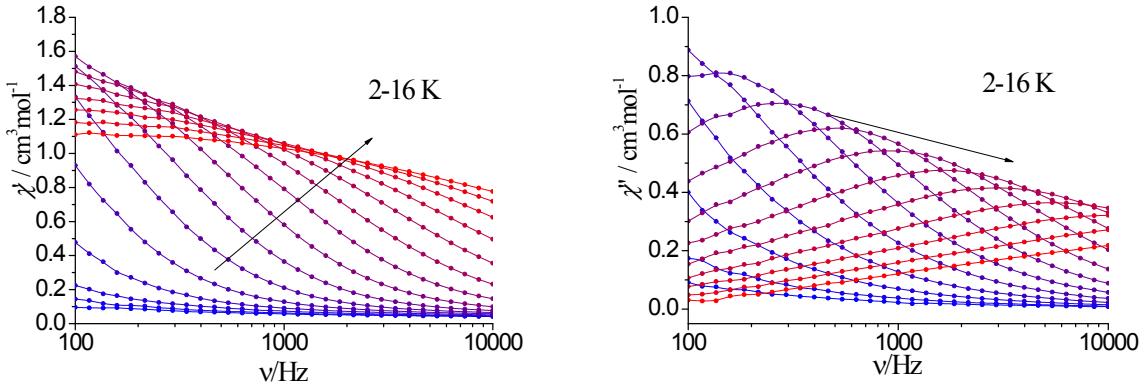

Fig S8 The frequency dependence of the in-phase (χ') and out-of-phase (χ'') ac susceptibility under 1k Oe dc fields for 2Dy.

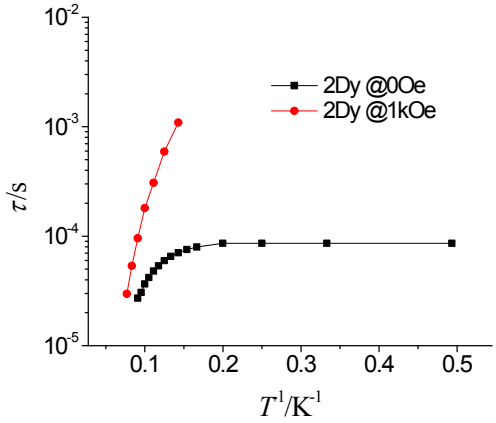

Fig S9 lnτ vs T^{-1} curve of 2Dy.

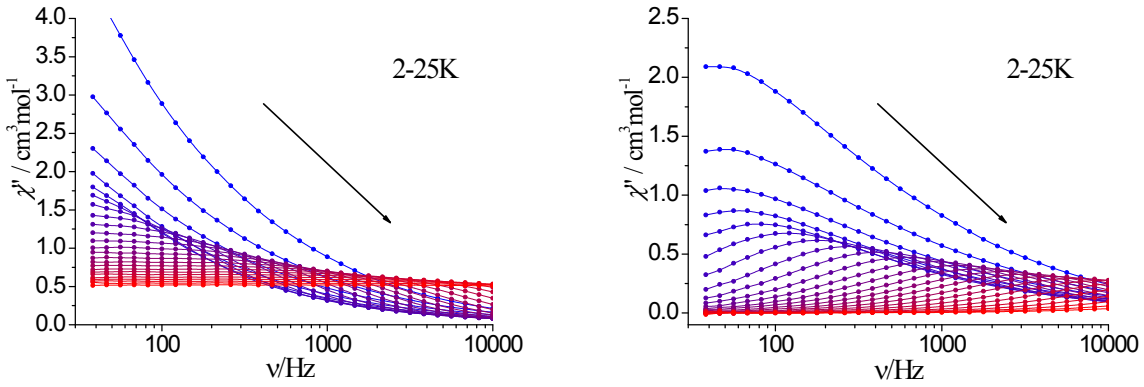

Fig S10 The frequency dependence of the in-phase (χ') and out-of-phase (χ'') ac susceptibility under 0 Oe dc fields for 3Dy.

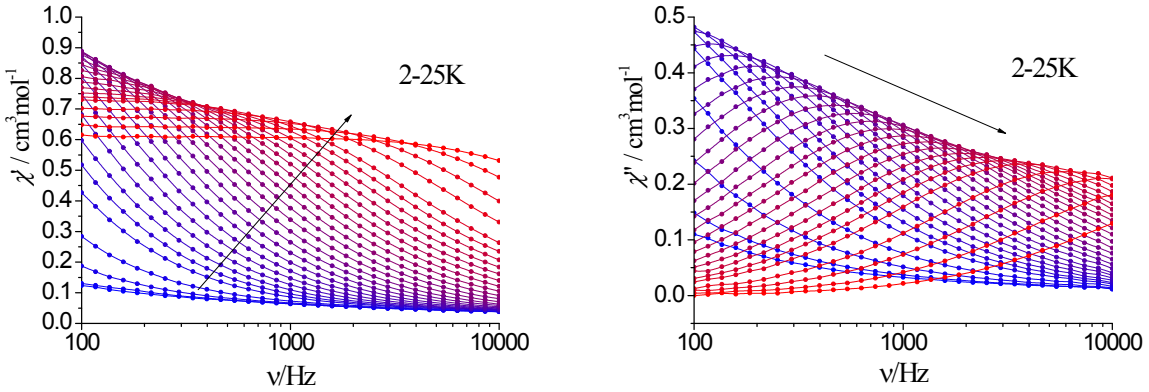

Fig S11 The frequency dependence of the in-phase (χ') and out-of-phase (χ'') ac susceptibility under 1k Oe dc fields for 3Dy.

Table S1 detailed Element analysis result of 1Dy, 2Dy, 3Dy

	C	H	N
1Dy	39.83	3.20	2.35
	39.82	3.16	2.34
3Dy(evaporated 1Dy)	39.82	3.18	2.32
	39.79	3.18	2.37
2Dy	41.17	3.11	2.30
	41.14	3.12	2.28
Sublimed 2Dy	33.84	3.19	0.56
	34.38	3.15	0.55
	34.31	3.14	0.53