

Supporting Information

Butterfly $M^{III}_2Er_2$ (M^{III} = Fe and Al) SMMs: Synthesis, Characterization and Magnetic Properties

Yan Peng,^{a,b} Valeriu Mereacre,^a Christopher E. Anson^a and Annie K. Powell^{a,b*}

^a Institute of Inorganic Chemistry, Karlsruhe Institute of Technology, Engesserstrasse 15, 76131 Karlsruhe (Germany)

E-mail: annie.powell@kit.edu

^b Institute of Nanotechnology, Karlsruhe Institute of Technology, Postfach 3640, 76021 Karlsruhe (Germany)

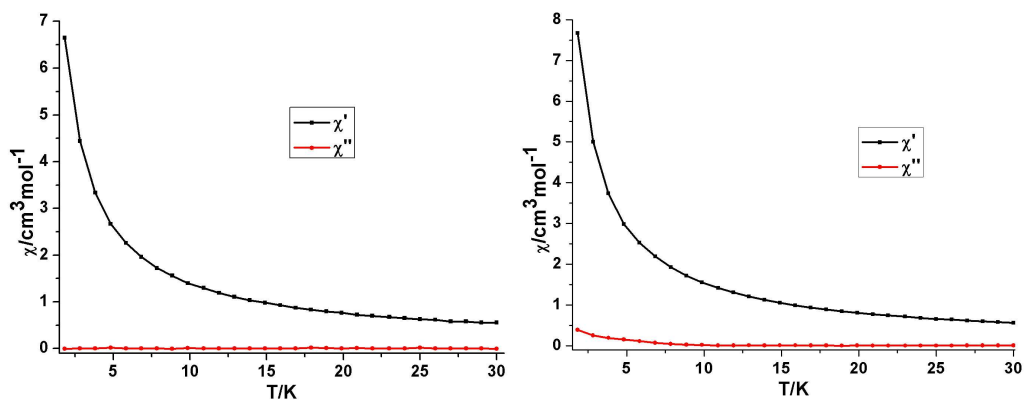


Figure S1 Plots of χ' and χ'' vs T under zero dc magnetic fields for **1** (left) and **2** (right) at 1000 Hz

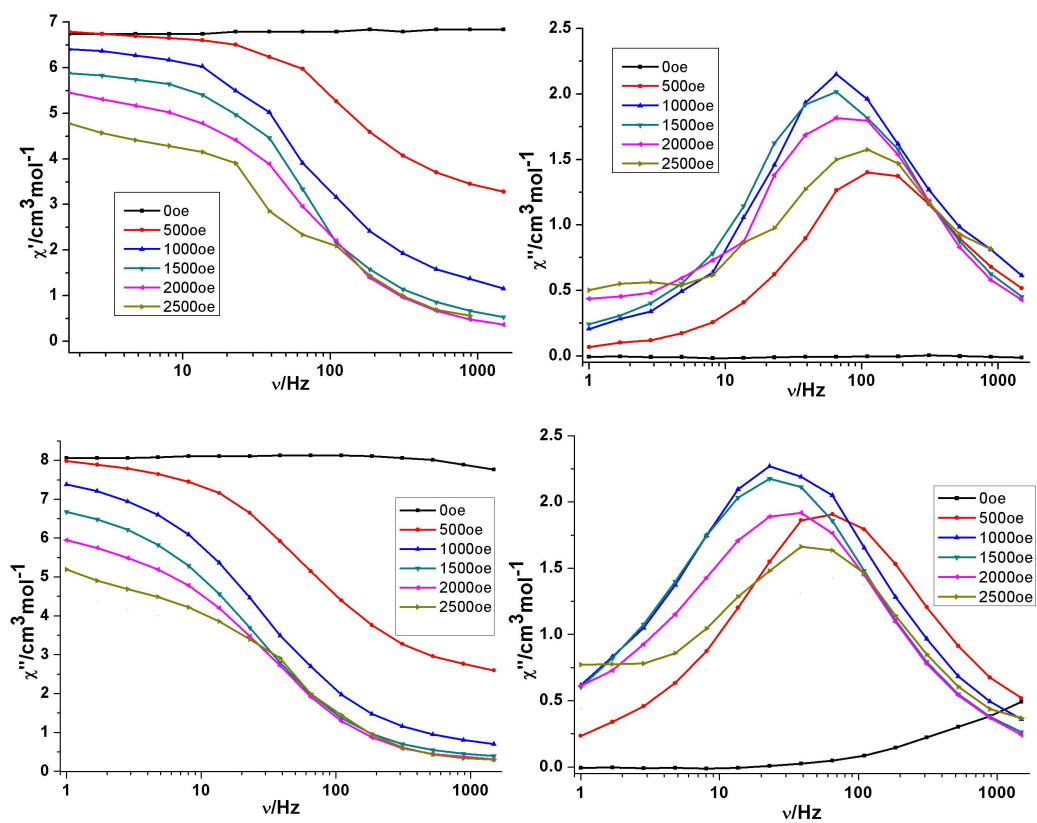


Figure S2 Plots of χ' (left) and χ'' (right) vs frequency under different dc magnetic fields for **1** (upper) and **2** (lower) at 1.8 K

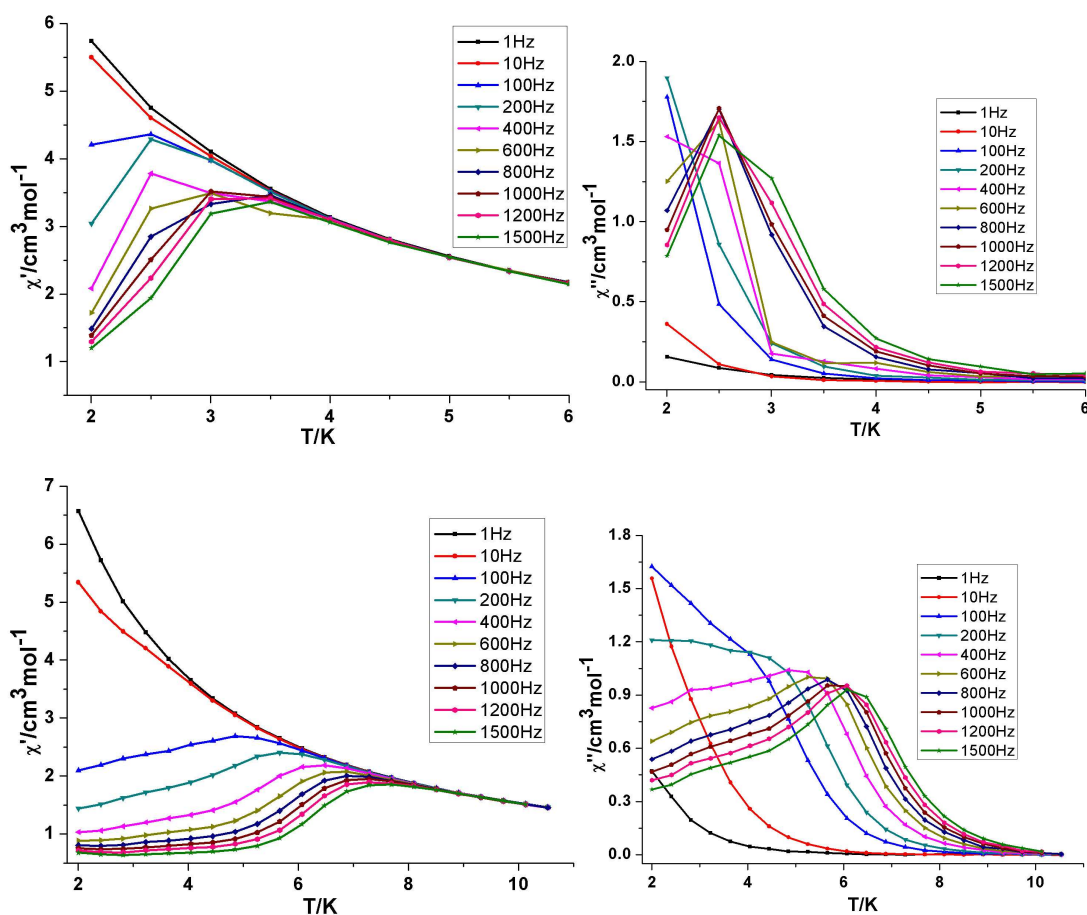


Figure S3 Plots of χ' (left) and χ'' (right) vs temperature (T) under different dc magnetic fields for **1** (upper) and **2** (lower) at 1.8 K

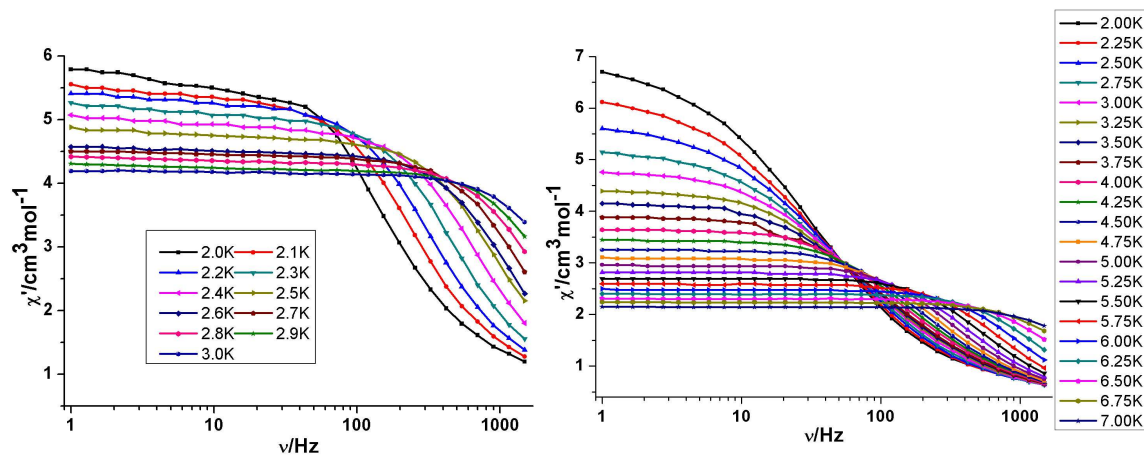


Figure S4 Plots of χ' vs frequency under 1000 Oe dc fields for **1** (left) and **2** (right)

Table S1 Analysis of Cole-Cole plots of complex **1**

T (K)	τ_0	α	χ_0 (cm ³ /mol)	χ_{inf} (cm ³ /mol)	R ² (%)
2.0	9.15148E-4	0.11159	5.67737	0.98424	96.354
2.1	6.24454E-4	0.10869	5.4723	0.90967	98.073
2.2	4.19041E-4	0.11772	5.34012	0.80009	98.131
2.3	2.93793E-4	0.14039	5.21497	0.64078	97.742
2.4	2.2748E-4	0.13051	5.00516	0.55176	97.676
2.5	1.67616E-4	0.12219	4.8304	0.47797	97.309
2.6	1.37272E-4	0.06539	4.50022	0.73626	99.255

Table S2 Analysis of Cole-Cole plots of complex **2**

T (K)	τ_0	α	χ_0 (cm ³ /mol)	χ_{inf} (cm ³ /mol)	R ² (%)
2.0	9.15148E-4	0.29834	6.96073	0.47057	99.888
2.25	6.24454E-4	0.30965	6.34141	0.41943	99.921
2.5	4.19041E-4	0.30544	6.78546	0.38950	99.964
2.75	2.93793E-4	0.29292	6.26122	0.38741	99.695
3.0	2.2748E-4	0.28188	4.86949	0.38287	99.257
3.25	1.67616E-4	0.25589	4.46482	0.40899	98.549
3.5	1.37272E-4	0.25451	4.20716	0.39832	99.019
3.75	9.15148E-4	0.24309	3.93416	0.38751	99.098
4.0	6.24454E-4	0.18337	3.67478	0.45849	98.405
4.25	4.19041E-4	0.15113	3.45999	0.48230	98.521
4.5	2.93793E-4	0.12350	3.26561	0.48622	98.749
4.75	2.2748E-4	0.10977	3.09867	0.47440	98.861
5.0	1.67616E-4	0.07799	2.94875	0.49128	99.124
5.25	1.37272E-4	0.06869	2.81921	0.47669	99.356
5.5	9.15148E-4	0.04314	2.69708	0.49125	99.462
5.75	6.24454E-4	0.02516	2.57788	0.49681	99.212
6.0	4.19041E-4	0.03170	2.47678	0.44551	99.573