Electronic supplementary information

Heteronuclear Ni(II)-Ln(III) (Ln = La, Pr, Tb, Dy) complexes: Synthesis and Single-Molecule Magnet Behaviour

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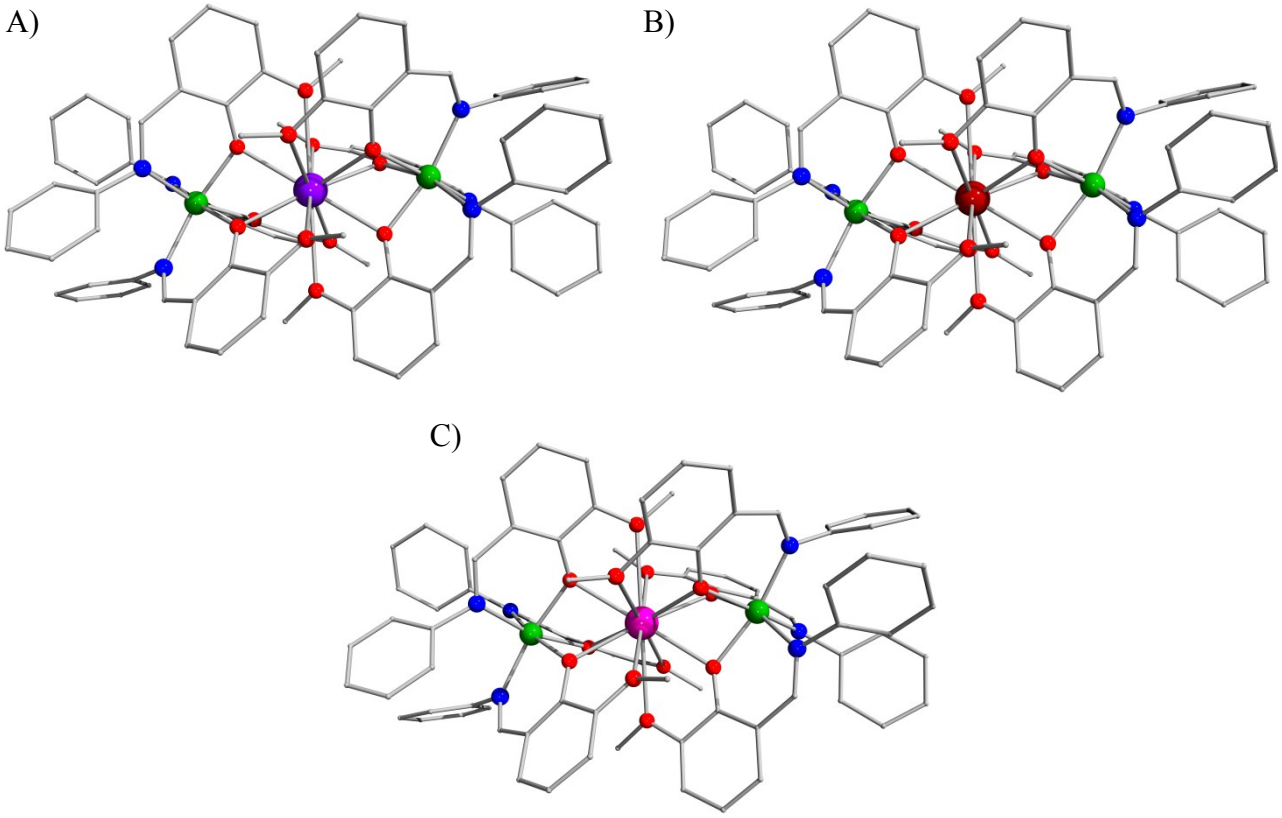

Figure S1. Crystal structures of cationic complexes of **1** (panel A), **2** (panel B) and **3** (panel C).

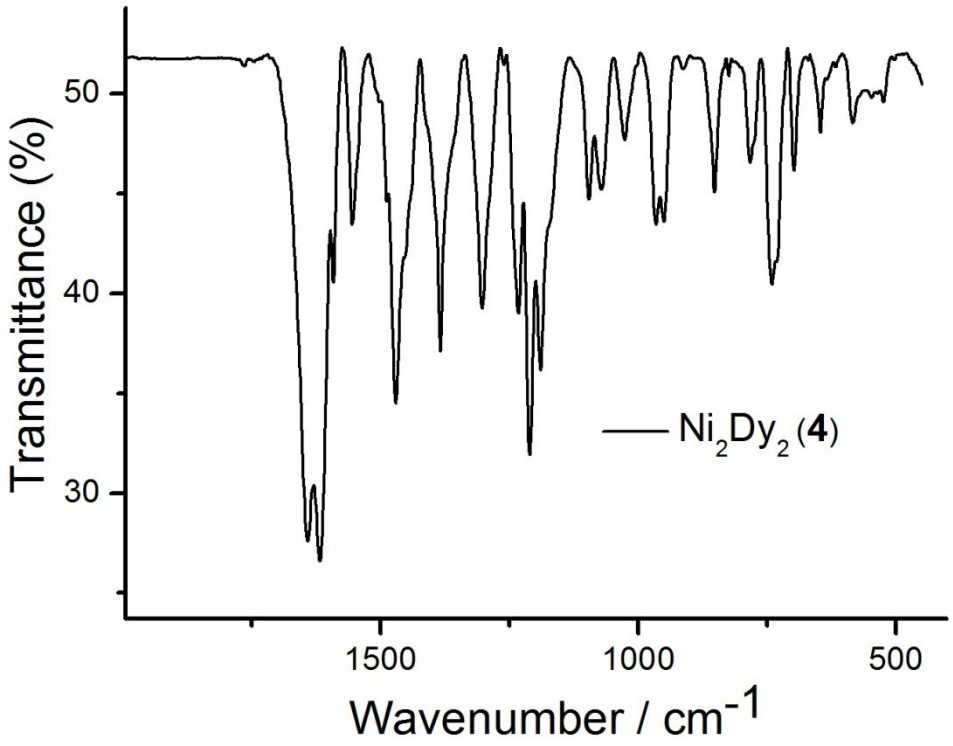

Figure S2. Infrared spectrum (KBr pellet) of complex **4**.

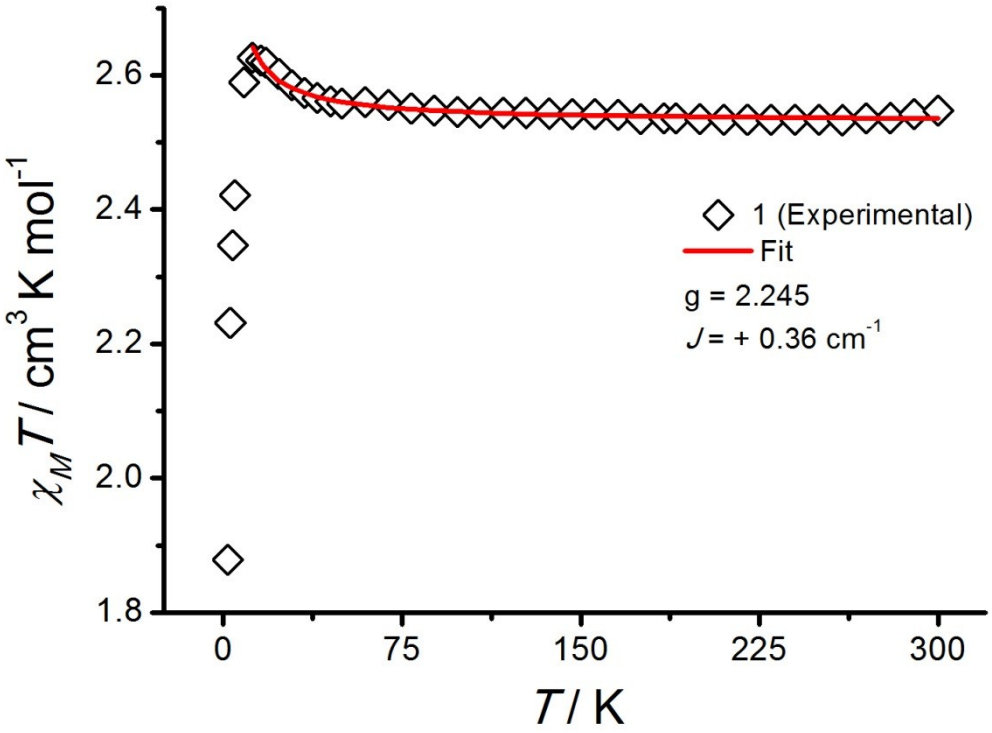

Figure S3. Temperature dependent magnetic susceptibility data ($\chi_M T(T)$) of complex **1** measured in the presence of 0.1 Tesla. The red solid indicates the best fit obtained for the parameters (g and J without magnetic anisotropy) described in the plot.

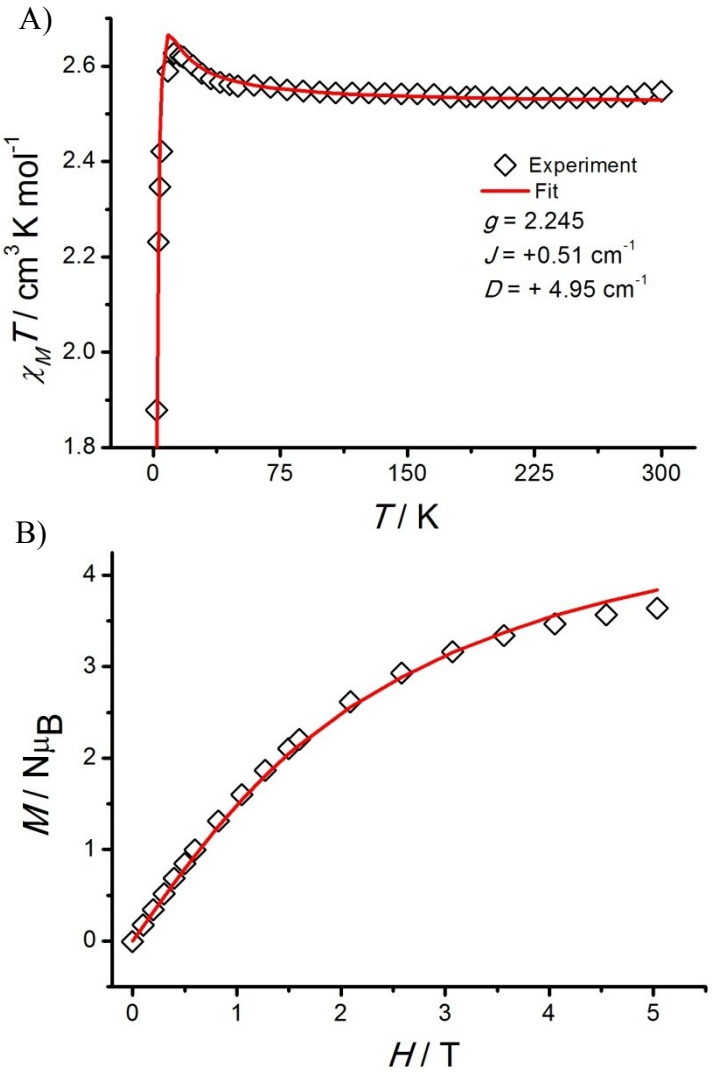

Figure S4. A) Temperature dependent magnetic susceptibility data ($\chi_M T(T)$) of complex **1** measured in the presence of 0.1 Tesla. B) Field dependent magnetization measurement of complex **1** measured at 2.0 K. The red solid indicates the best fit (simultaneous fit of $\chi_M T(T)$ and $M(H)$ data) obtained for the parameters (g and J with magnetic anisotropy) described in the plot.

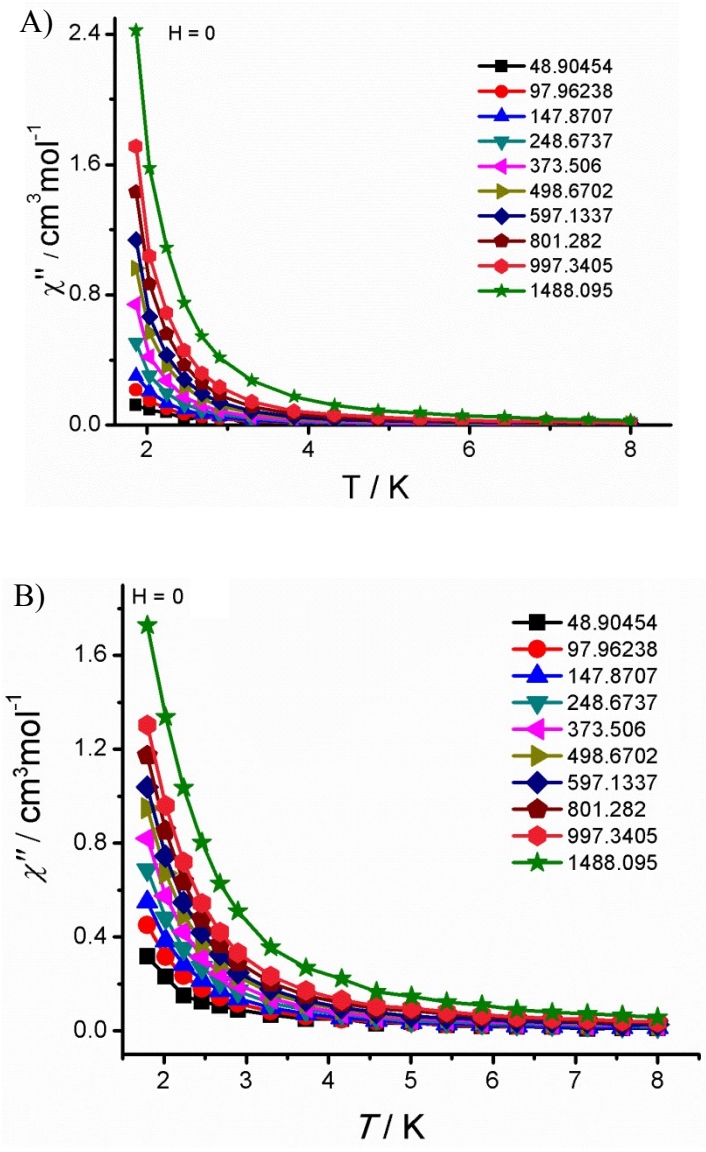

Figure S5. Frequency dependent out-of-phase susceptibility signals for complexes **3** (panel A) and **4** (panel B) measured at the indicated frequency in the absence of external magnetic field.

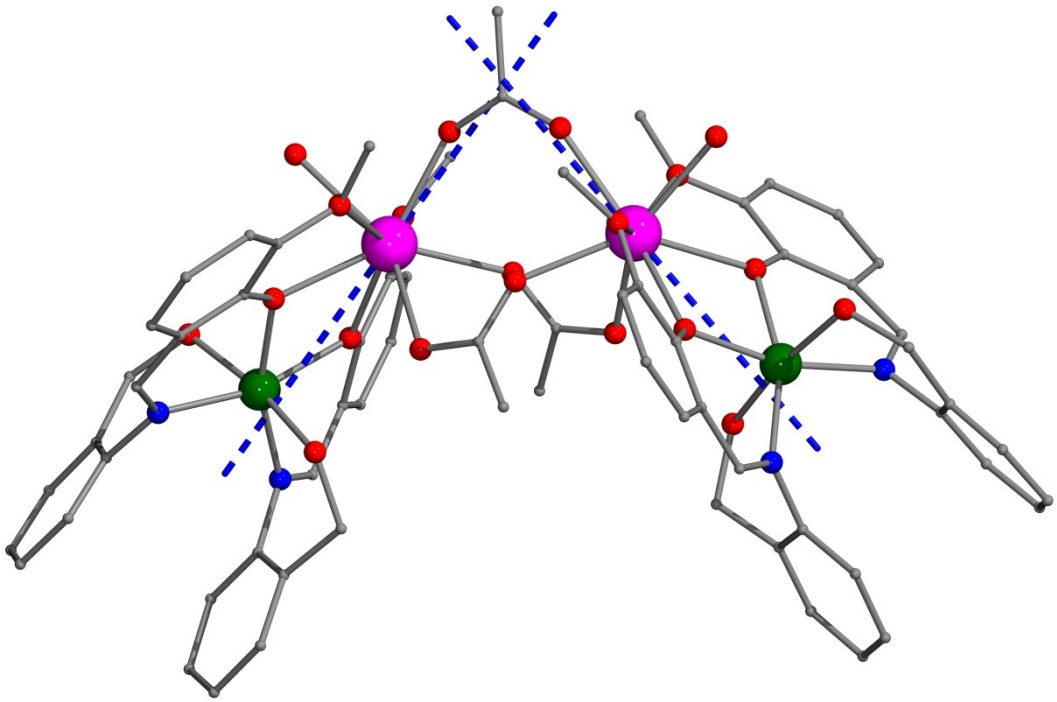

Figure S6. Crystal structure of cationic complex of $\{Ni_2Dy_2\}^{3+}$ is shown which is reported by us elsewhere. The dotted blue line represents the g_z orientation of the two Dy(III) ions derived from the electrostatic model (refer to main manuscript for details).