Supplementary Material (ESI) for Dalton Transactions

Supplementary Information

Molecules based on M(V) (M = Mo, W) and Ni(II) ions: a new class of trigonal bipyramidal cluster and confirmation of SMM behavior for the pentadecanuclear molecule $\{Ni^{II}[Ni^{II}(tmphen)(MeOH)]_6[Ni(H_2O)_3]_2[\mu\text{-}CN]_{30}[W^{V}(CN)_3]_6\}$

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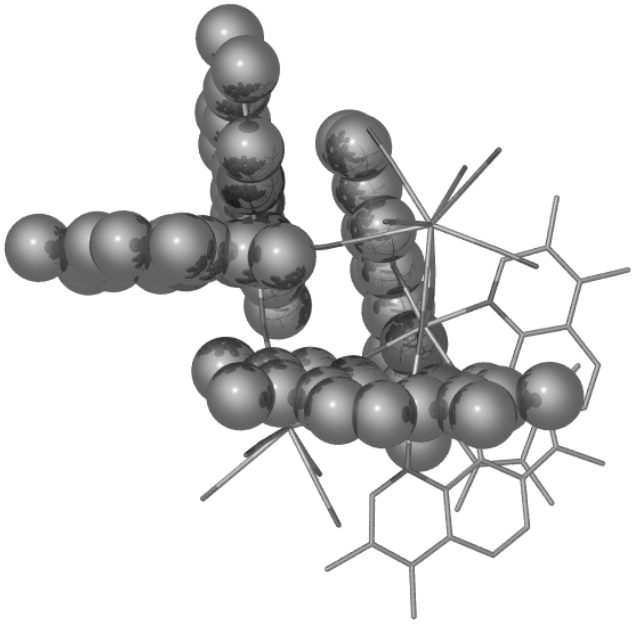

Figure S1. Intramolecular π–π interactions between tmphen ligands in the TBP clusters.

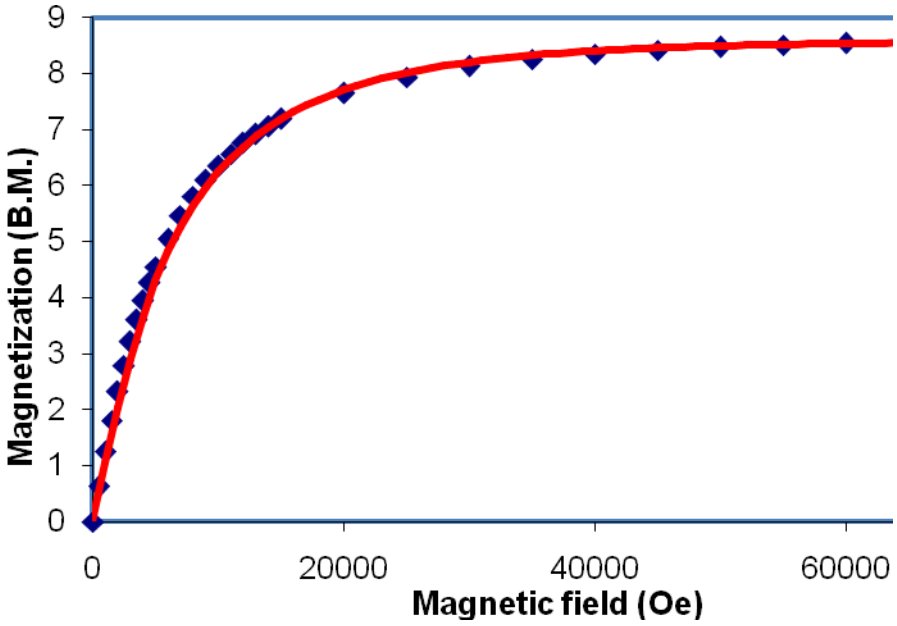

Figure S2. Field dependent magnetization for compound **1**. The solid line corresponds to the best fit using Magpack: S = 4, g = 2.15, D = - 0.22 cm^{-1}.

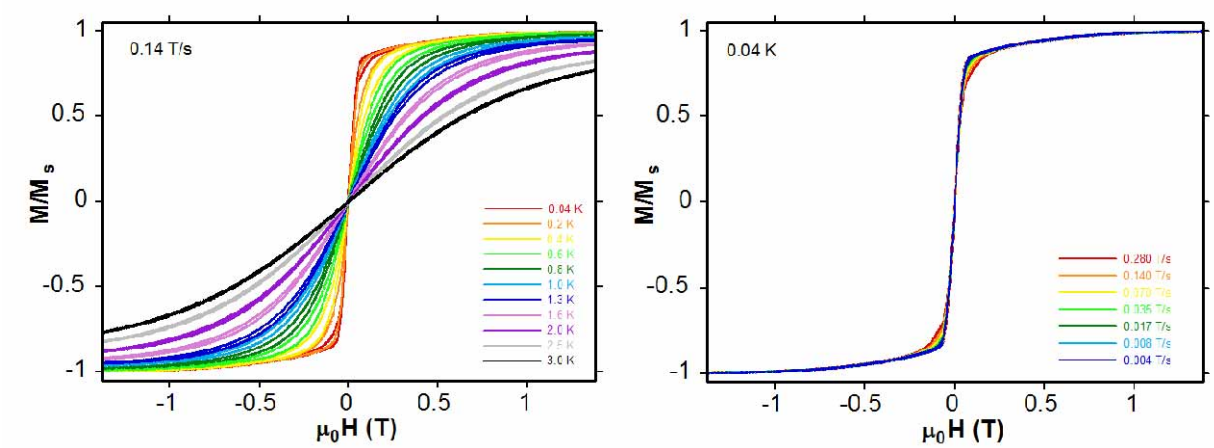

Figure S3: Magnetization data from Micro-SQUID measurements for a crystal of **1** with a variation in temperature at a constant scan rate of 0.14T/s (left) and with a variation of the scan rate at a constant temperature of 0.04 K (right).

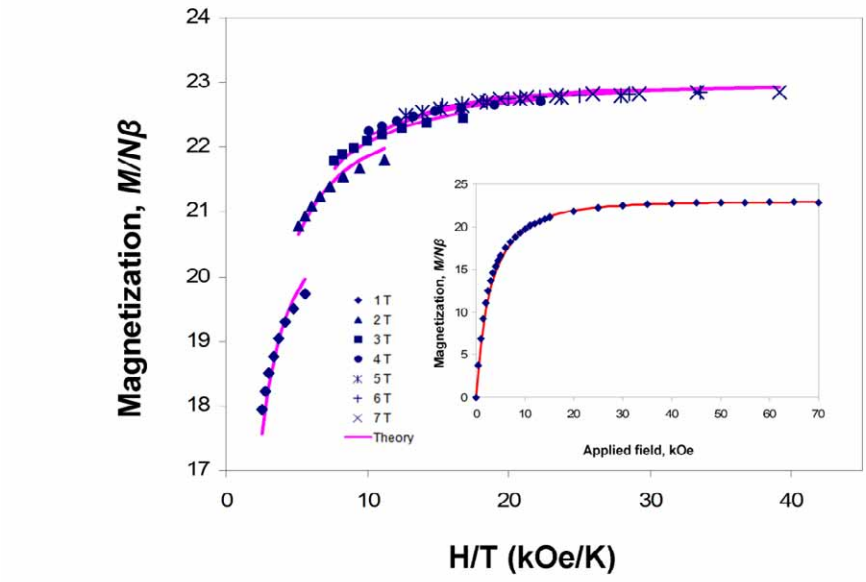

Figure S4. Reduced magnetization data for **3** under the application of different external fields. The lines indicate the best-fit for S = 12, g_{avg} = 1.91, and D = - 0.039 cm^{-1}. Inset: Field dependent magnetization of **3**. The solid line corresponds to the best fit using Magpack: S = 12, gav = 1.91.

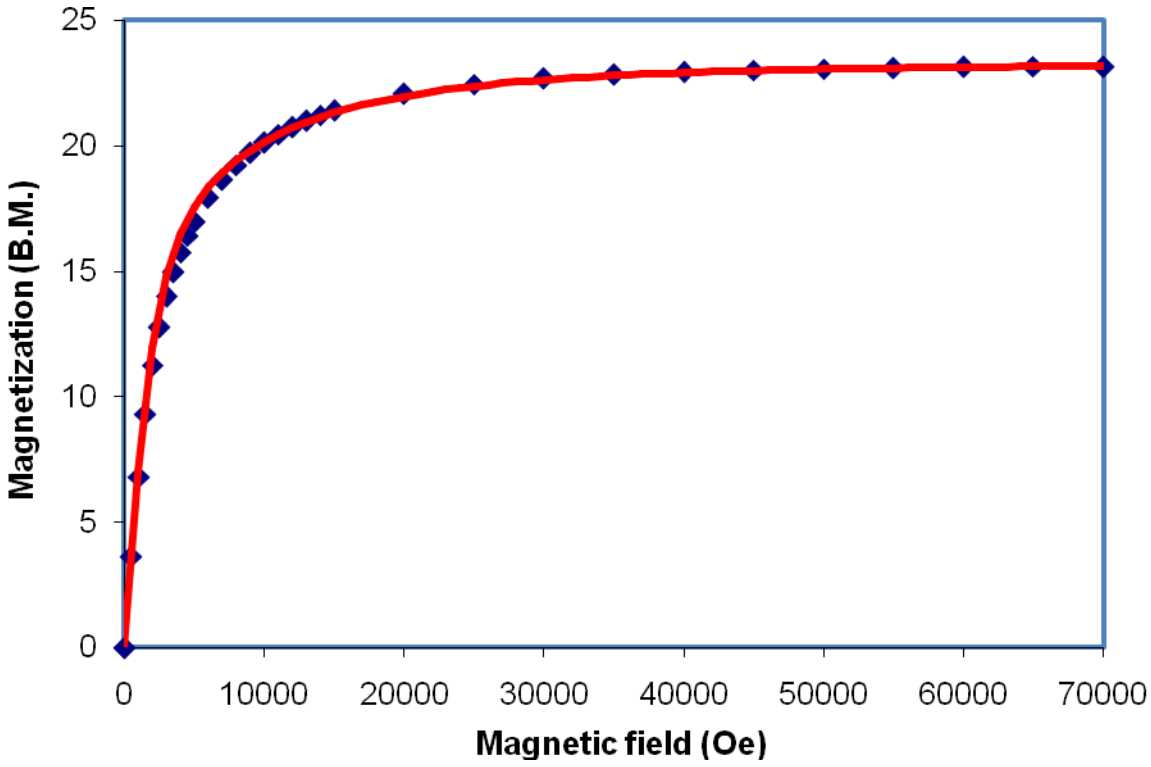

Figure S5. Field dependent magnetization data for **1**. The solid line corresponds to the best fit using Magpack: S = 12, g = 1.94, D = + 0.07 cm-1.