Erratic Magnetic Hysteresis of TbPc₂ Molecular Nanomagnets

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Figure S1. Temperature dependance of the hysteresis loop of a pristine sample of TbPc₂-CH₂Cl₂. Tfield sweeping rate is 50 Oe/s.
Figure S2. Frequency dependence of the product of temperature with the out-of-phase component of the magnetic susceptibility of pristine powder of TbPc₂-CH₂Cl₂, measured in zero static field (a) and applied static field of 5 kOe (b) in the temperature range 5-60 K. Filled circles refer to data acquired with a Quantum Design PPMS, empty square to data acquired with a Quantum Design MPMS.
Figure S3. Frequency dependence of the product of temperature with the out-of-phase component of the magnetic susceptibility of heated powder of TbPc$_2$, measured in zero static field (a) and applied static field of 5 kOe (b) in the temperature range 5-60 K. Filled circles refer to data acquired with a Quantum Design PPMS, empty square to data acquired with a Quantum Design MPMS.
Figure S4. Temperature dependence of the parameter describing the width of the distribution of relaxation time extracted from the simulation of the out-of-phase component of the ac susceptibility according to the extended Debye model:

$$\chi'' = \left(\chi_T - \chi_S\right) \frac{\left(\omega\tau\right)^{1-\alpha} \cos\left(\frac{\pi\alpha}{2}\right)}{1 + 2\left(\omega\tau\right)^{1-\alpha} \sin\left(\frac{\pi\alpha}{2}\right) + \left(\omega\tau\right)^{2-2\alpha}}$$

Where $\chi_T$ and $\chi_S$ correspond to the isothermal and adiabatic limits.