Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C

Electronic Supplementary Information

Erratic Magnetic Hysteresis of $TbPc_2$ Molecular Nanomagnets

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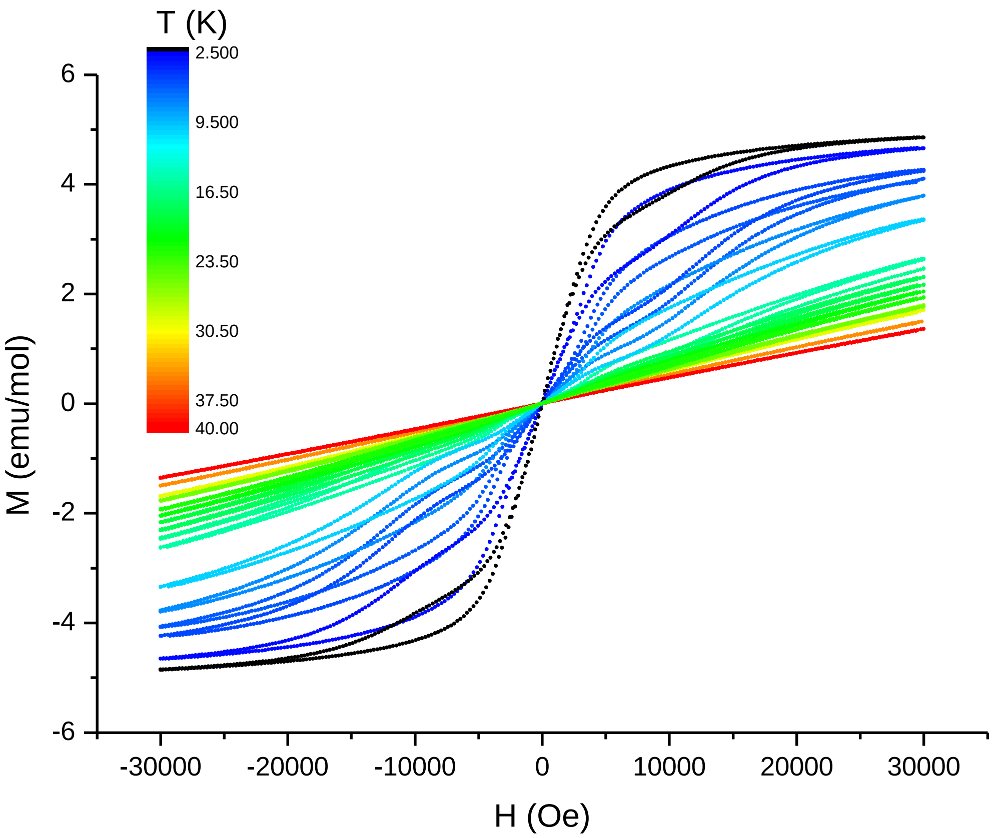

Figure S1. Temperature dependance of the hysteresis loop of a pristine sample of $TbPc_2{\cdot}CH_2Cl_2$. Tfield sweeping rate is 50 Oe/s.

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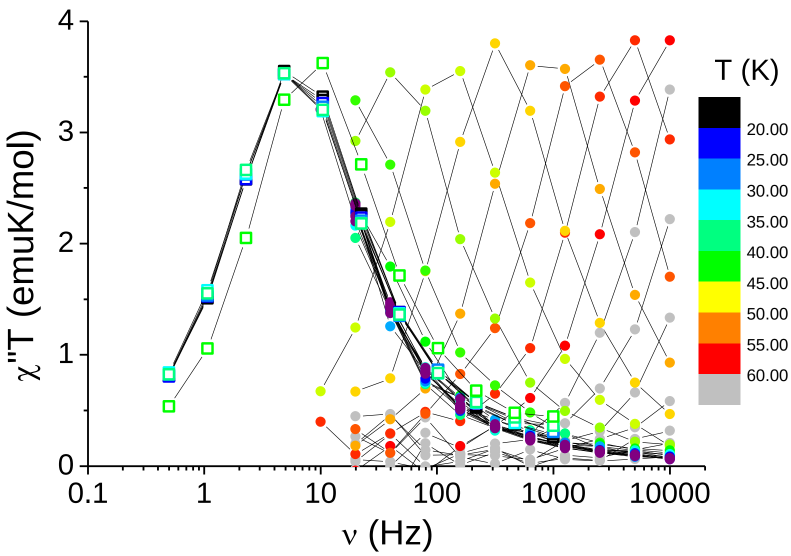
a)



b)

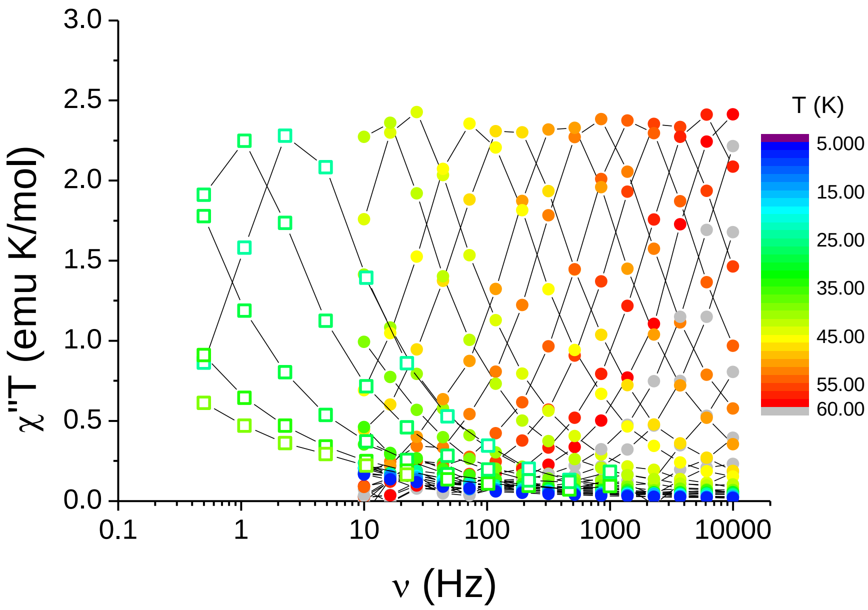
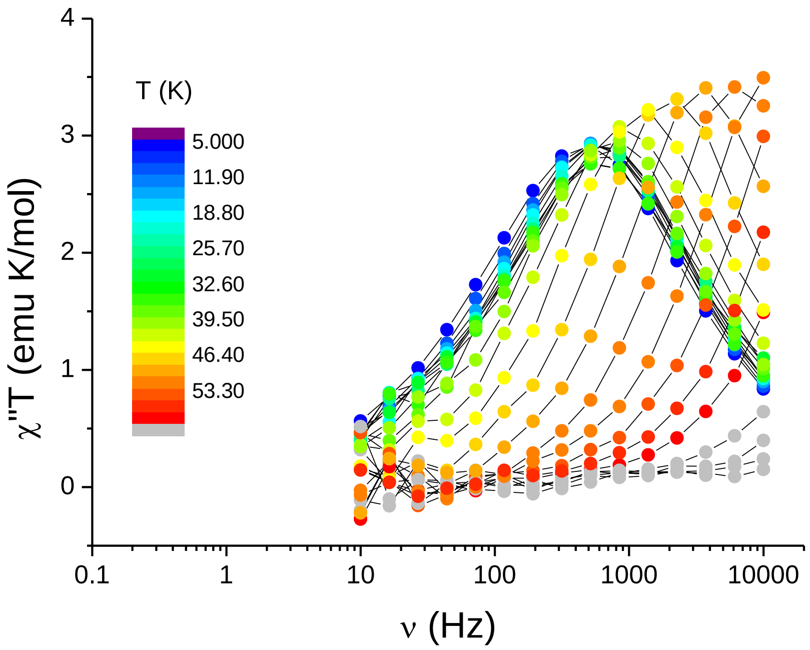


Figure S2. Frequency dependence of the product of temperature with the out-of-phase component of the magnetic susceptibility of pristine powder of $TbPc_2{\cdot}CH_2Cl_2$, measured in zero static field (a) and applied static field of 5 kOe (b) in the temperature range 5-60 K. Filled circles refer to data acquired with a Quantum Design PPMS, empty square to data acquired with a Quantum Design MPMS.

a)



b)

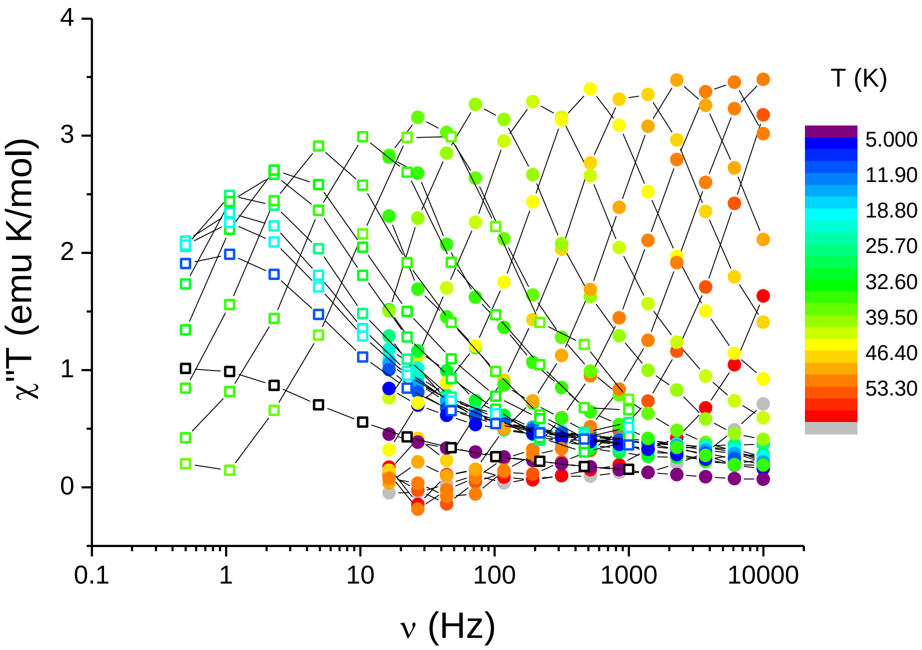


Figure S3. Frequency dependence of the product of temperature with the out-of-phase component of the magnetic susceptibility of heated powder of $TbPc_2$, measured in zero static field (a) and applied static field of 5 kOe (b) in the temperature range 5-60 K. Filled circles refer to data acquired with a Quantum Design PPMS, empty square to data acquired with a Quantum Design MPMS.

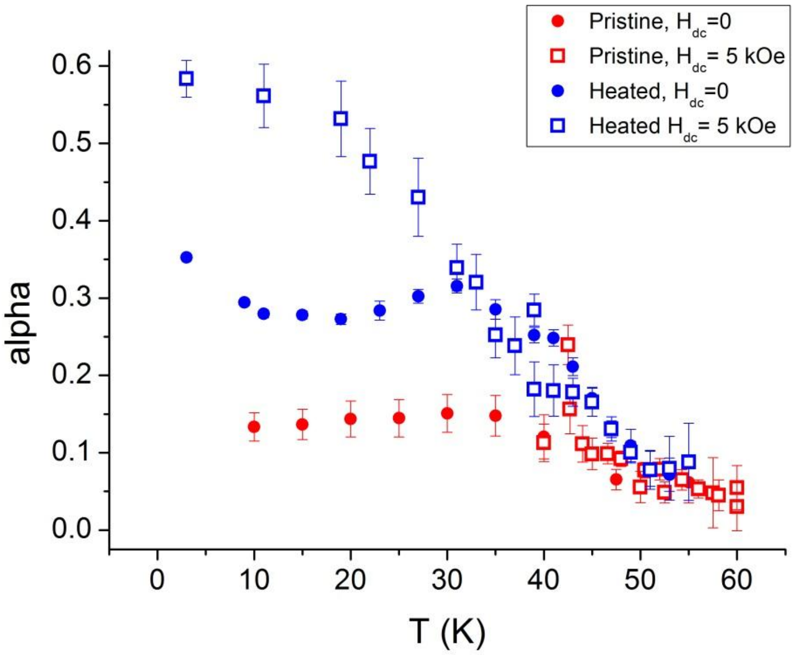


Figure S4. Temperature dependence of the parameter describing the width of the distribution of relaxation time extracted from the simulation of the out-of-phase component of the ac susceptibility according to the extended Debye model:

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

Where χ_T and χ_S correspond to the isothermal and adiabatic limits.