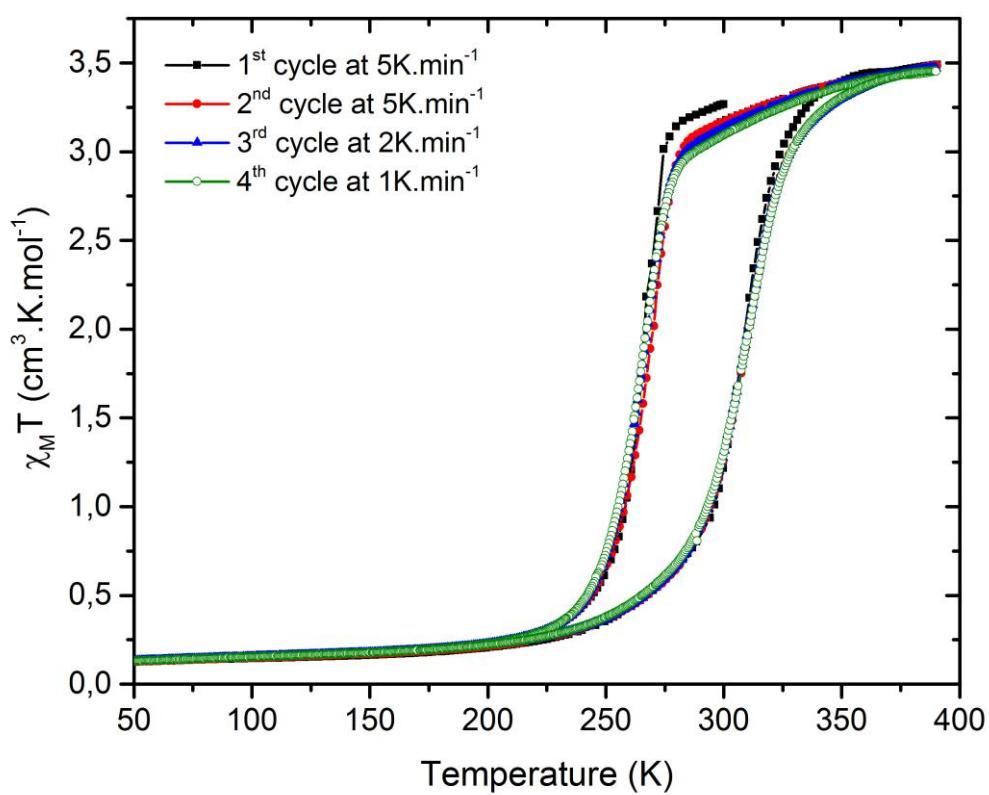


## Single-crystal to single-crystal thermal spin-crossover with a large hysteresis spanning room temperature†

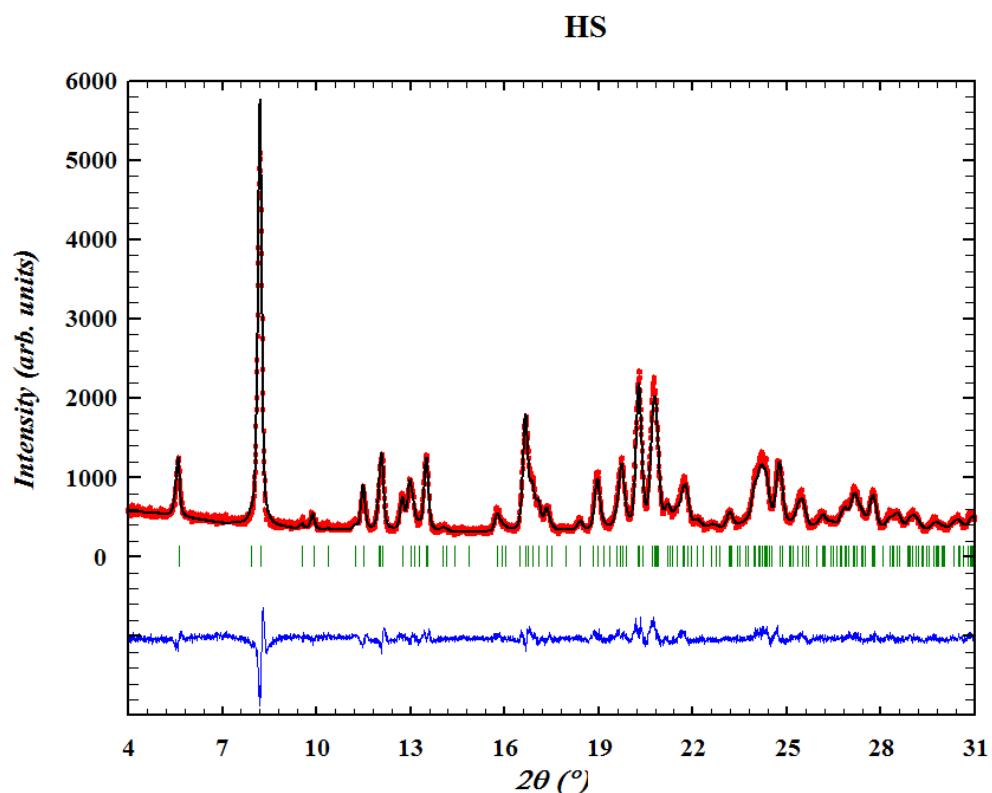
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ESI

**ESI-1.** Squid measurements for a polycrystalline assembly of  $[\text{Fe}(\text{PM-PEA})_2(\text{NCSe})_2]$  at various speed and for subsequent thermal cycles. No significant effects is noted.



**ESI-2.** Figure showing the powder X-Ray diffraction experimental pattern (black) and the simulated diffraction pattern from single-crystal XRD data (red) as well as their difference (blue). Allowed Bragg peaks positions from the single-crystal unit-cell and symmetry (green). This superposition demonstrates that powder and single-crystal are isostructural.



**ESI-3.** Squid measurements on one single-crystal for  $[\text{Fe}(\text{PM-PEA})_2(\text{NCSe})_2]$ .

