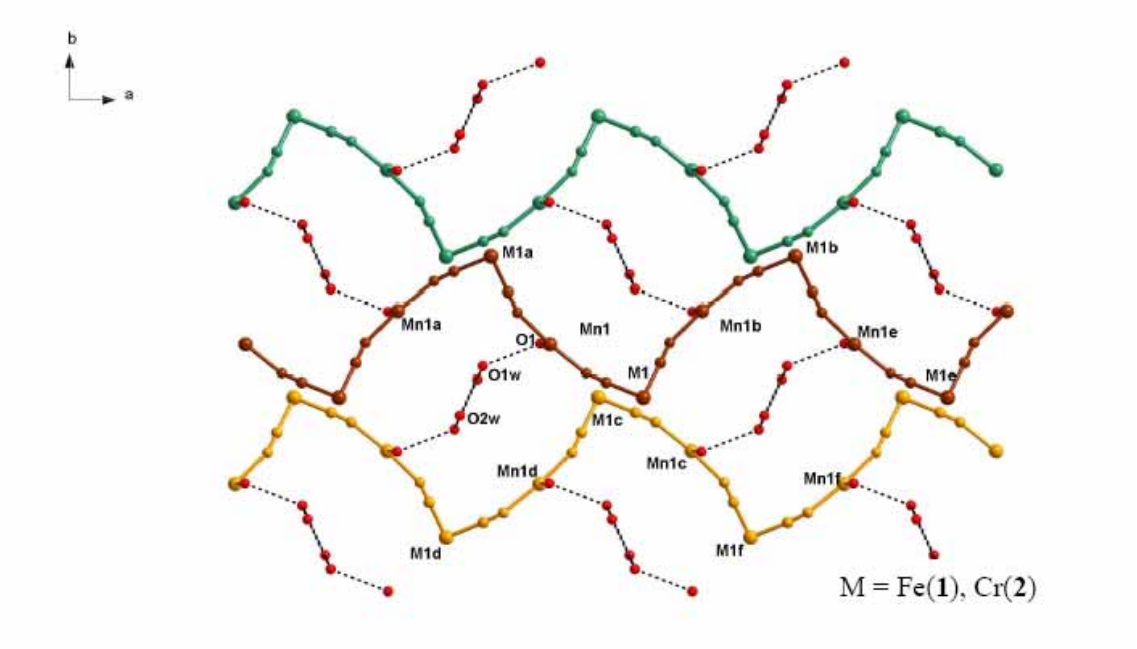
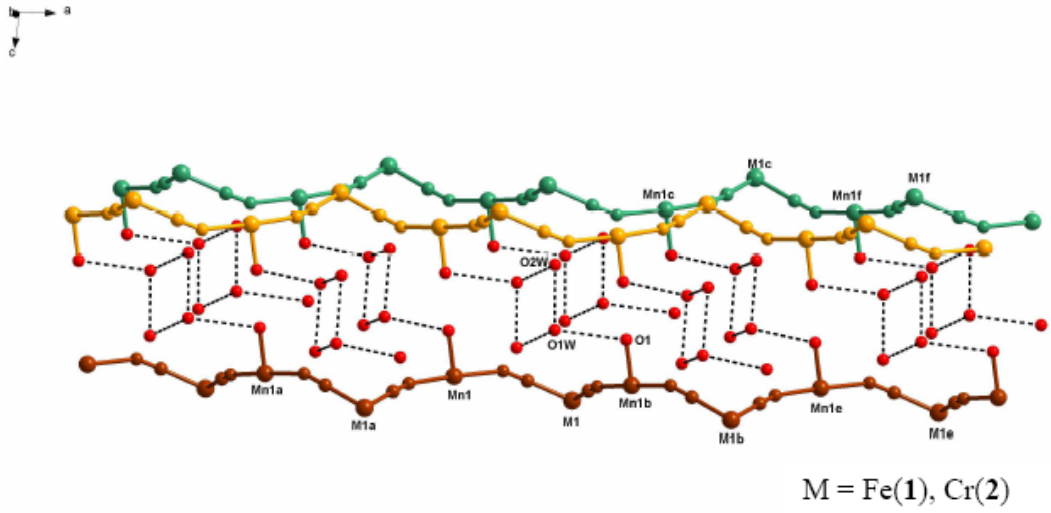


(a)



(b)

Fig. S1 (a) Projection along *c* axis for **1** and **2** showing the hydrogen bonds. (b) View along *b* axis for **1** and **2,** showing the interchain interactions mediated by the water clusters. The atoms from the bpym group and the Schiff base ligand were omitted for clarity. Symmetry code: (a) -1/2+*x*, ½-*y*, *z*; (b) ½+*x*, ½-*y*, *z*; (c) 1-*x*, -*y*, 1-*z*; (d) ½-*x*, -1/2+*y*, 1-*z*; (e) 1+*x*, *y*, *z*; (f) 3/2-*x*, -1/2+*y*, 1-*z*.

Table S1. Hydrogen bonds in **1** and **2***

	1	**2**
O1···O1w	3.0064(2) Å	3.0391(2) Å
O1w···O2w	2.8229(2) Å	2.8085(2) Å
O1w···O2wg	2.8402(2) Å	2.8339(3) Å
O1-O1w-O2w	131.182(2)^{o}	133.506(2)^{o}
O1-O1w-O2wg	102.171(2)^{o}	101.220(3)^{o}
O1w-O2w-O1wg	89.995(2)^{o}	90.530(3)^{o}
O2w-O1w-O2wg	90.005(2)^{o}	89.470(3)^{o}

*Symmetry code: (g) = -*x*, -*y*, 1-*z*.

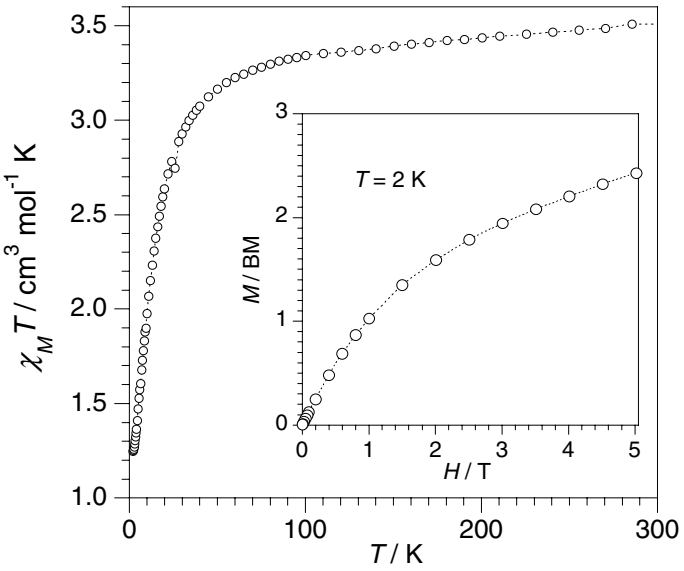
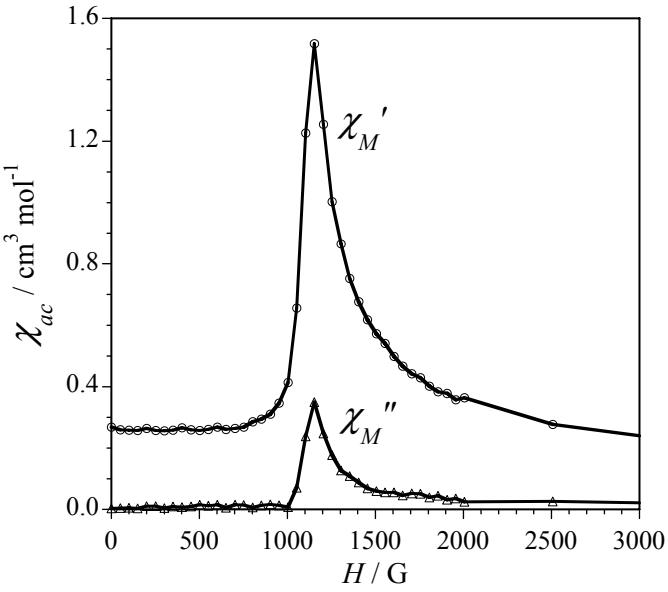
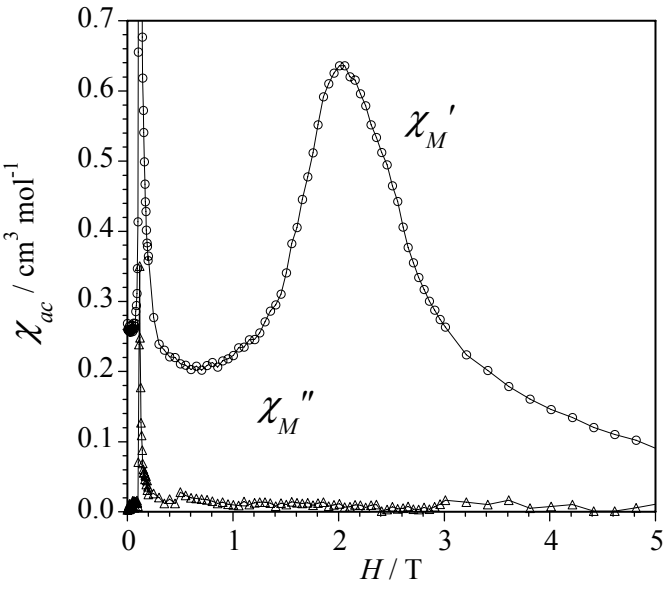


Fig. S2 $\chi_M T$ vs. T plot for **1** under applied magnetic fields of 1 T ($T > 30$ K) and 100 G ($T \leq 30$ K). The inset shows the magnetisation *vs.* H plot at 2.0 K.



(a)



(b)

Fig. S3 Ac vs. *H* plot for **2** at 2.0 K showing (a) the antiferromagnetic-ferromagnetic transition and (b) the transition to a non-magnetically ordered phase.