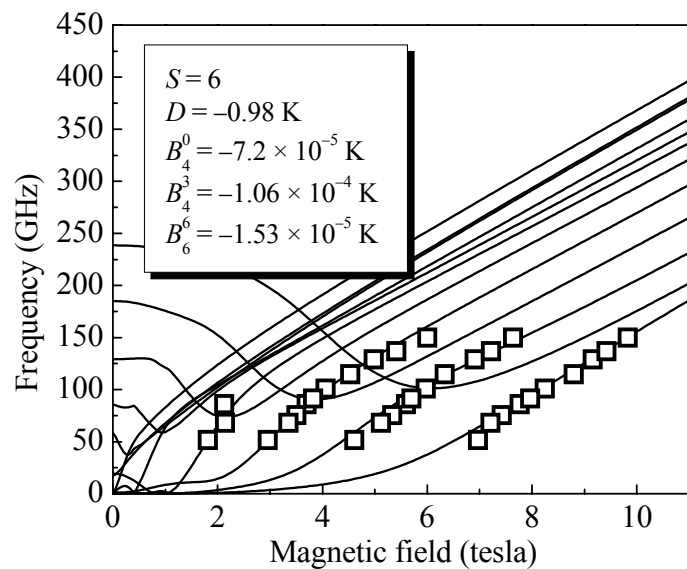




**Figure SI2.** The hydrogen bonded layer (left) and the chain (right) in **15**. Colour code: Mn, purple; O, red; N, blue; C, gold; H, cyan. Most hydrogen and carbon atoms have been omitted for clarity. Symmetry codes: a x-1, y, z; b -x, 1-y, 2-z; c 1-x, 1-y, 2-z.



**Fig. SI3.** Energy difference diagram constructed from frequency-dependent measurements for the hard plane orientation for complex **13** at a temperature of 5 K. The solid lines are simulations using the parameters shown in the figure.