## Electronic Supplementary Information

# Magnetic properties of two 2D complexes based on 1D chain containing $[Fe(bpy)(CN)^4]^-$ unit†‡

Xiao-Jiao Song, Mohd. Muddassir, Ying Chen, Hui-Sheng Wang,You Song* and Xiao-Zeng You

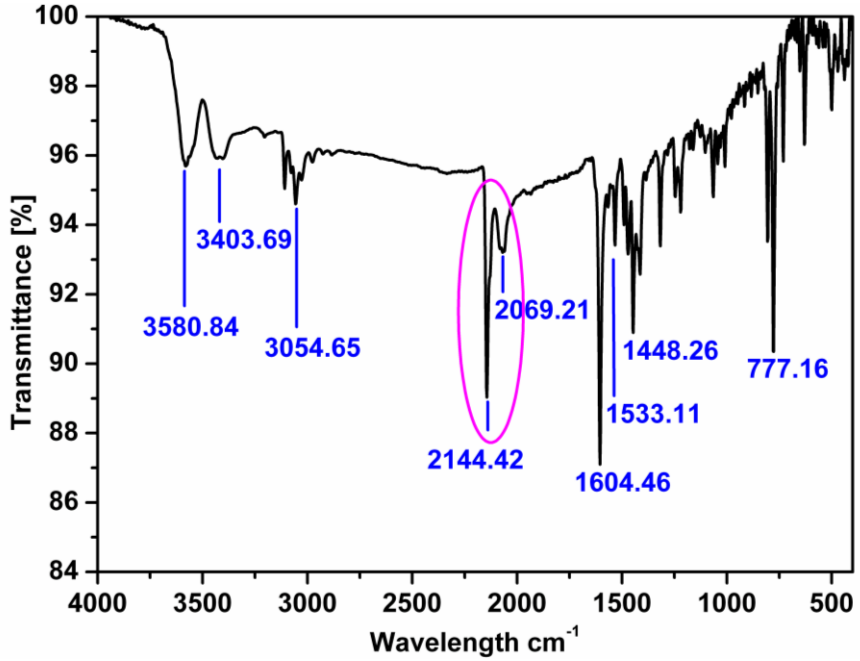


**Fig. S1** IR spectra of complex **1**.

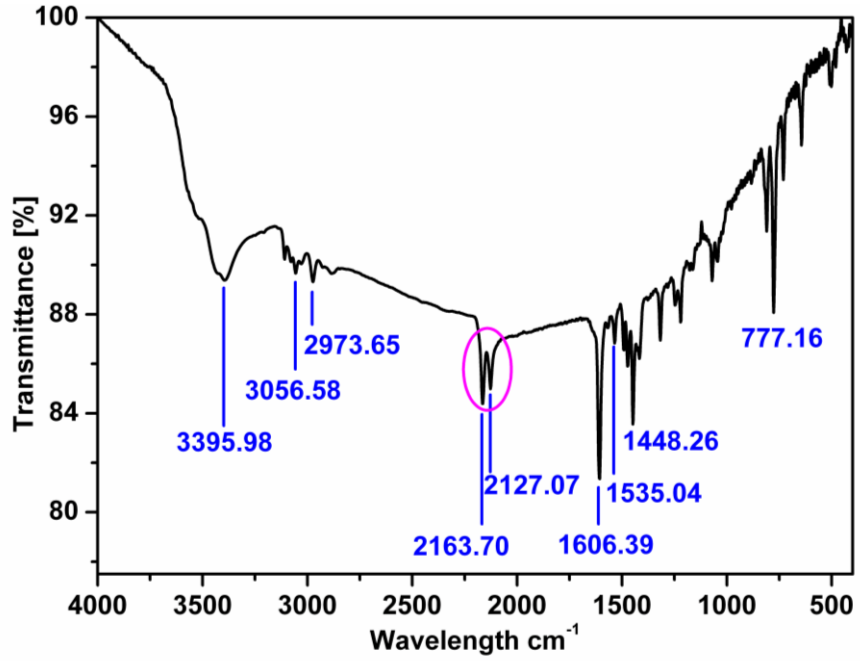


**Fig. S2** IR spectra of complex **2**.

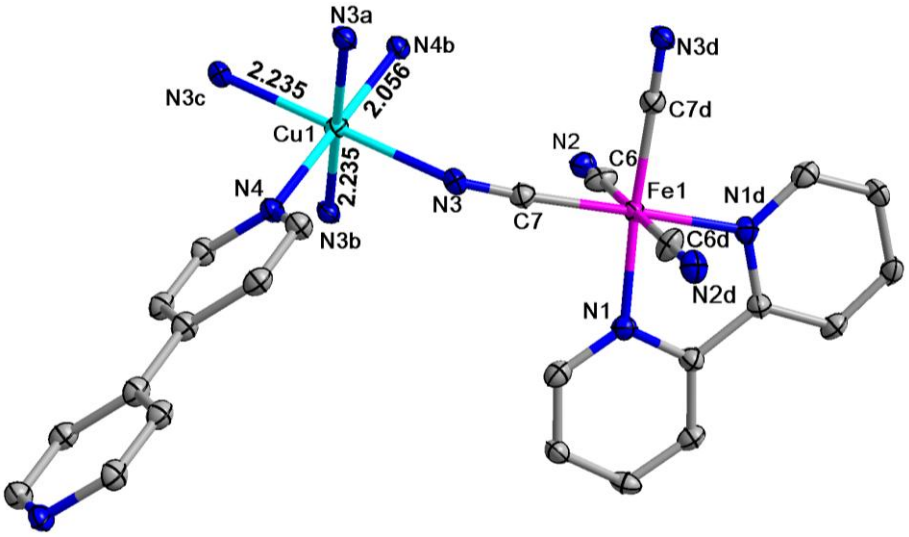


**Fig. S3** The drawing of the coordination environment ellipse for complex **2**. H atoms and $H_2O$ molecules are omitted for clarity. Symmetry code: (a) −1+x, y, z; (b) 2-x, 2-y, 1-z; (c) 2-x, 2-y, 2-z.

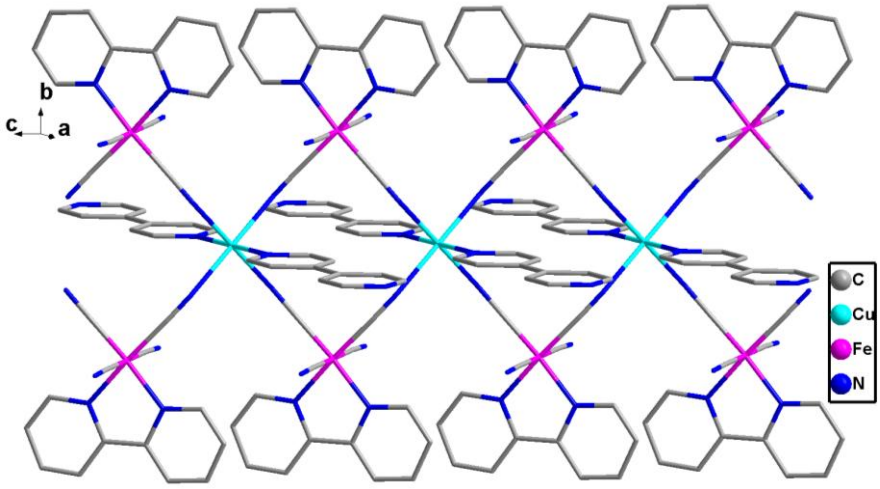


**Fig. S4** Side view of the 1D 2,4-ribbon double zigzag chain for complex **2**. H atoms and $H_2O$ molecules are omitted for clarity.

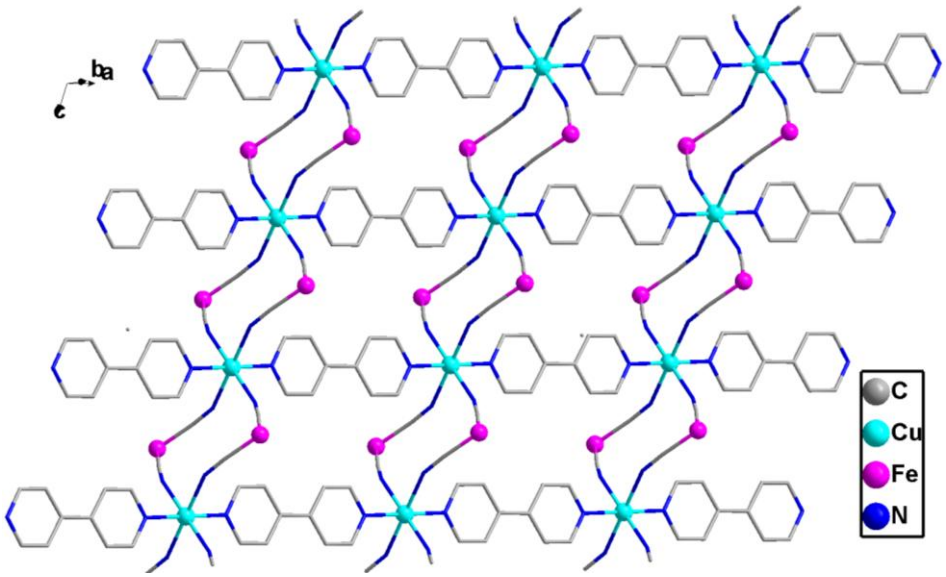


**Fig. S5** Side view of 2D layer for **2**. Atoms not involved in bridging are omitted for clarity.

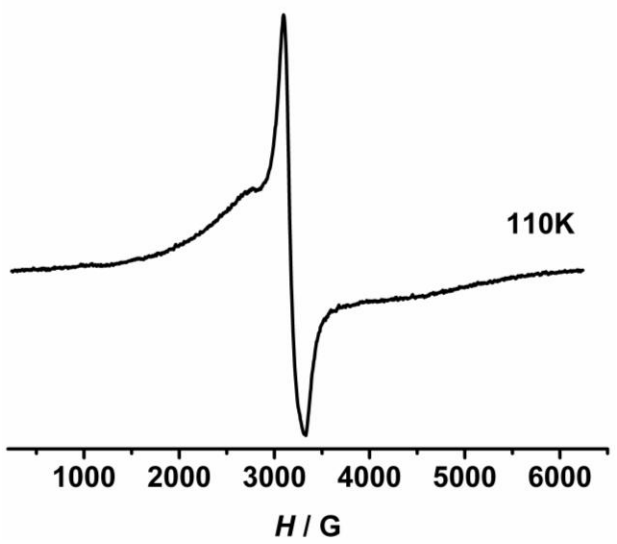


**Figure S6** The X-band EPR spectra of **2** at 110K. Parameters: $g_{//}$ = 2.07–2.08, $g_{\perp}$ = 2.14.

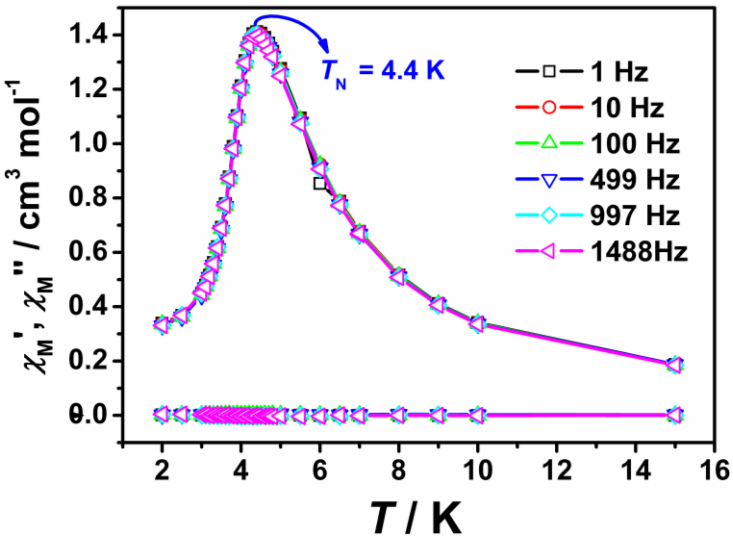


**Fig. S7** Real ($\chi_M'$) and imaginary ($\chi_M''$) ac susceptibilities in 5Oe applied ac field at different frequencies for **1.**

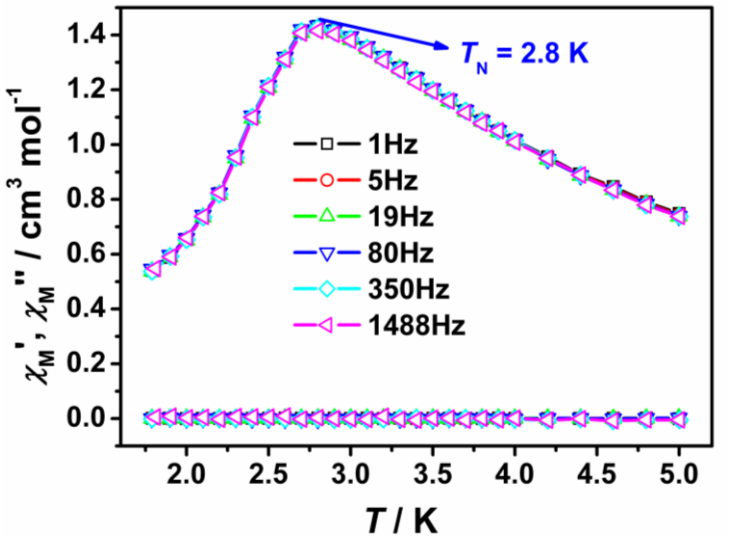


**Fig. S8** $\chi_M'$ and $\chi_M''$ ac susceptibilities in $H_{dc}$ = 0 and an $H_{ac}$ = 5Oe at different frequencies for **2**.

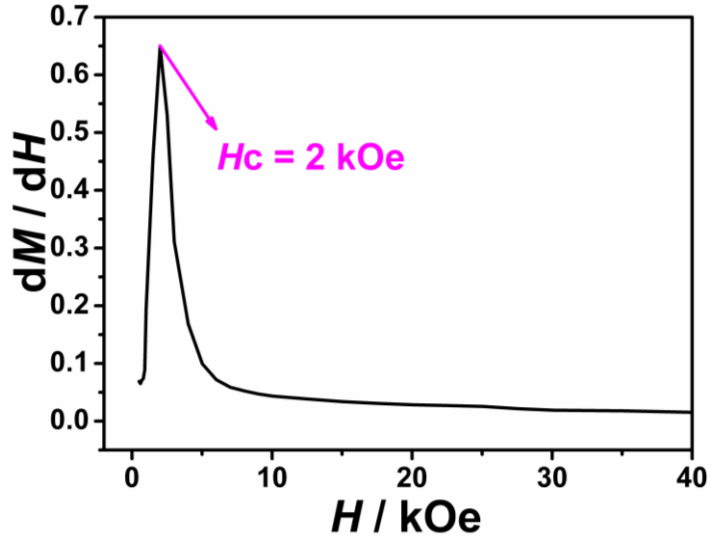


**Fig. S9** The plot of d*M* / d*H* vs *H* for complex **1.**

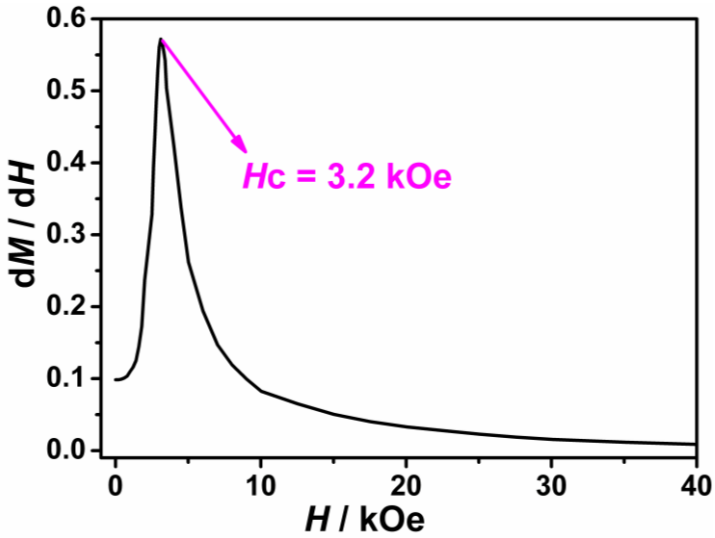


**Fig. S10** The plot of d*M* / d*H* vs *H* for complex **2.**

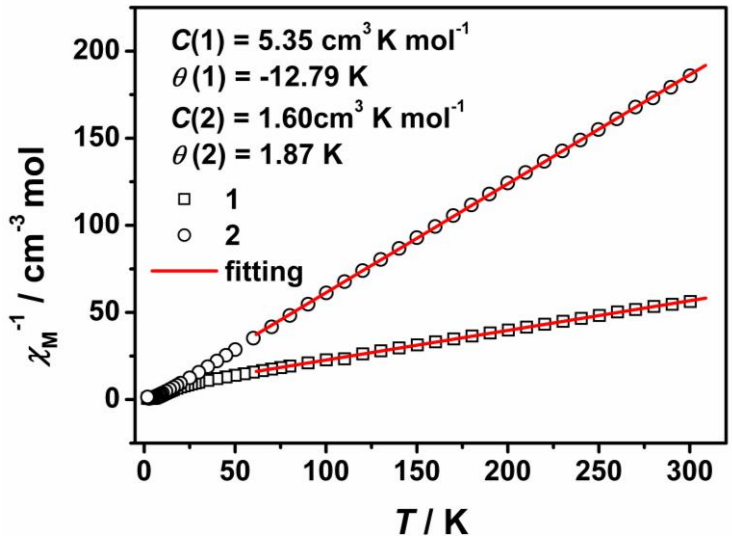


**Fig. S11** $\chi_M^{-1}$ vs *T* in an applied field of 2 kOe for **1** (square) and **2** (circle). The red solid lines correspond to the best fit to the Curie-Weiss law.