Electronic Supplementary Information

Magnetic properties of two 2D complexes based on 1D chain containing [Fe(bpy)(CN)₄]⁻⁻ unit

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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$_2$O 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$_2$O 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: $g_\parallel = 2.07-2.08, g_\perp = 2.14$.

**Fig. S7** Real ($\chi'_M$) and imaginary ($\chi''_M$) ac susceptibilities in 50e applied ac field at different frequencies for 1.

**Fig. S8** $\chi'_M$ and $\chi''_M$ ac susceptibilities in $H_{dc} = 0$ and an $H_{ac} = 50e$ at different frequencies for 2.
Fig. S9 The plot of $dM/dH$ vs $H$ for complex 1.

Fig. S10 The plot of $dM/dH$ 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.