Supporting information for:

Iron(II) thio- and selenocyanate coordination networks containing 3,3′-bipyridine.

Christopher J. Adams,*a Mairi F. Haddow, a David J. Harding, b Thomas J. Podesta a and Rachel E. Waddington a

Figure S1: Powder patterns of 2D 3 and 4

Figure S2: Powder patterns of trans-{Fe(NCS)2(3,3′-bipy)(MeOH)2} 1

Figure S3: Powder patterns of trans-{Fe(NCSe)2(3,3′-bipy)(MeOH)2} 2

Figure S4: Powder pattern of 3D 4

Figure S5: TGA of 1

Figure S6: TGA of 2
Figure S1: Powder patterns of the two-dimensional \( \{ \text{Fe(NCS)}_2(3,3'-\text{bipy})_2 \} \) grid 3: calculated from the crystal structure (pink), powder synthesised by dropwise addition in acetonitrile (blue), and by thermal decomposition of 1 at 150 °C overnight (green). Pattern of 4 synthesised by thermal decomposition of 2 for comparison (lilac).
Figure S2: Powder patterns of \textit{trans}-\{Fe(NCS)$_2$(3,3$'$-bipy)$_2$(MeOH)$_2$\} 1; calculated (brown), and by precipitation from methanol (blue).
Figure S3: Powder patterns of *trans*-{Fe(NCSe)$_2$(3,3′-bipy)$_2$(MeOH)$_2$} 2; Calculated from the crystal structure (brown), and by precipitation from methanol (lilac)
Figure S4: Experimental powder pattern of 4 (blue) compared with a tetragonal model using the cell lengths $a = b = 15.60$, $c = 19.02$ Å and atom coordinates based on published structure of $\{\text{Ni(NCS)}_2(3,3^\prime\text{-bipy})_2\}$ (with Fe and Se replacing Ni and S respectively).
Figure S5: TGA of 1.
Figure S6: TGA of 2.