

Figure S1 ^1H NMR spectrum (500 MHz) of Zn-MEPE-1 with a metal ion to ligand ratio $[\text{M}]/[\text{L}] = 0.75$ in D_2O . Whereas the (#) marked signals correspond to the coordinated and dissolved terpyridine ligand (MEPE) the (*) marked bands correspond to the uncoordinated ligand dispersed in the solution. We observe a broadening of the signals due to the formation of coordination polymers and the insolubility of the non coordinated ligand respectively.

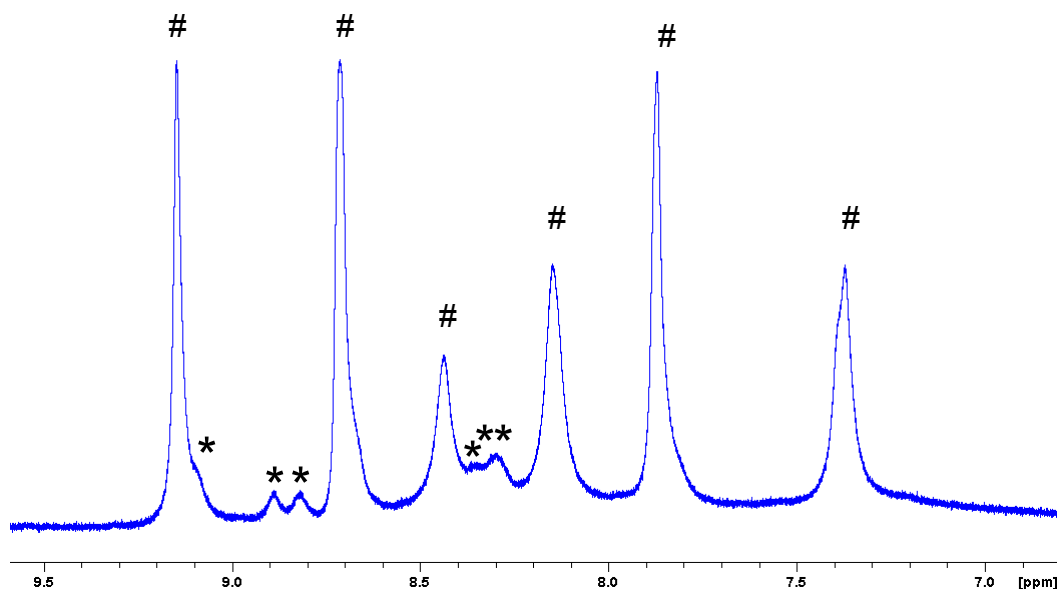


Figure S2 ^1H NMR spectrum (500 MHz) of Zn-MEPE-1 with $[\text{M}]/[\text{L}] = 0.98$ in D_2O . In contrast to Zn-MEPE-1 with $[\text{M}]/[\text{L}] = 0.75$ (Fig. S1) the MEPE bands (#) are even broader and the signals for the uncoordinated ligand (*) are almost vanished because the concentration of uncoordinated ligand decreases to $[\text{M}]/[\text{L}] = 1$.

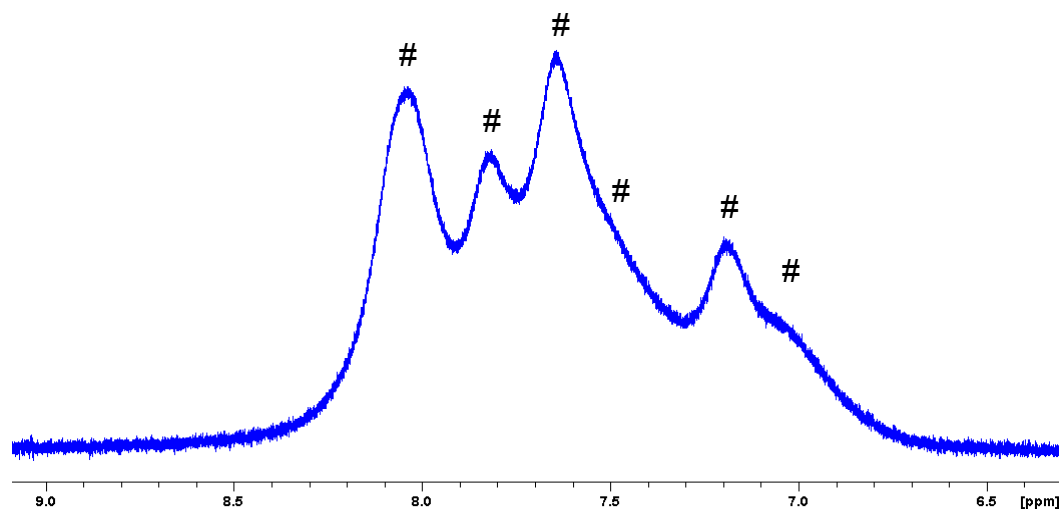


Figure S3 ¹H NMR spectrum (500 MHz) of Zn-MEPE-1 with [M]/[L] of 2.0 in D₂O. The fusion of the broadened signals is not a result of the MEPE chain growth. As discussed in the paper the Zn-MEPE-1 chains dissociate into smaller units in the range between [M]/[L] = 1 and 2. The chemical shift decreases to lower ppm values due to the excess of acetate-ions.