

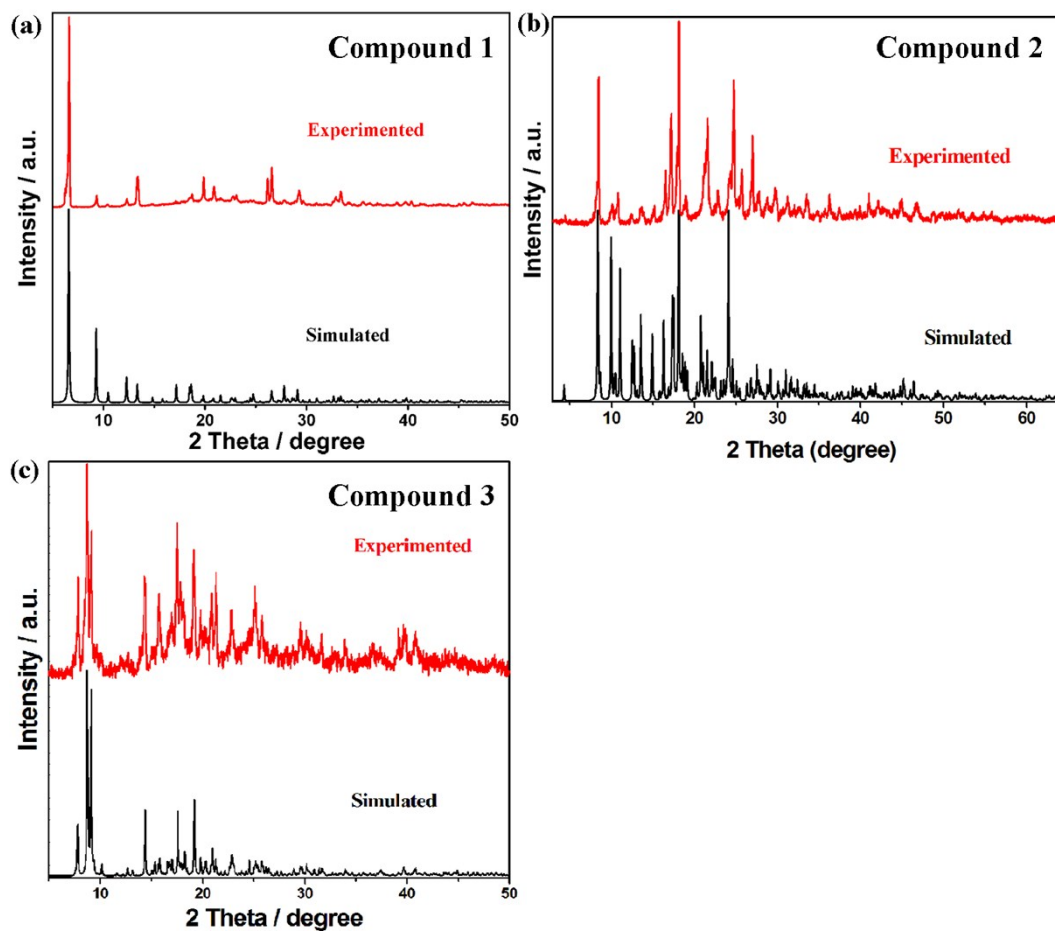
## Supporting Information

### A series of Mg-Zn heterometallic coordination polymers: Synthesis, characterization and fluorescence sensing for Fe<sup>3+</sup>, CS<sub>2</sub> and nitroaromatic compounds

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**Fig. S1** PXRD patterns of the title compounds are comparable to the simulated ones from the single crystal X-ray data.

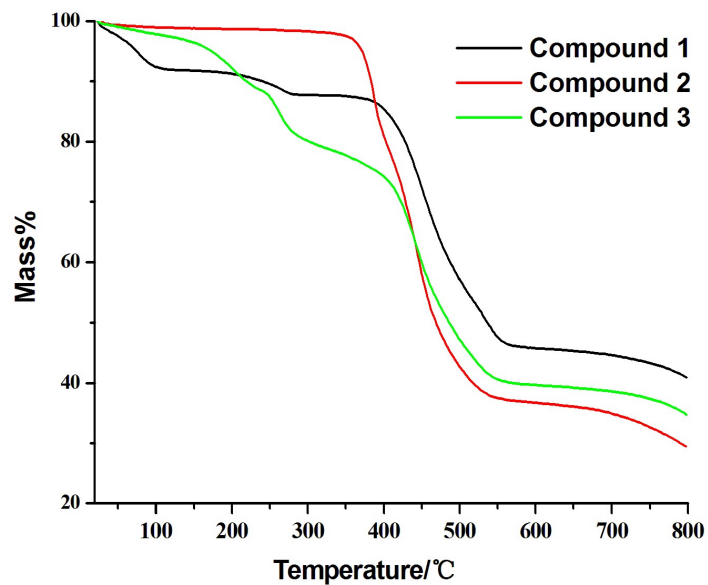


Fig. S2 TG curves of the title compounds.

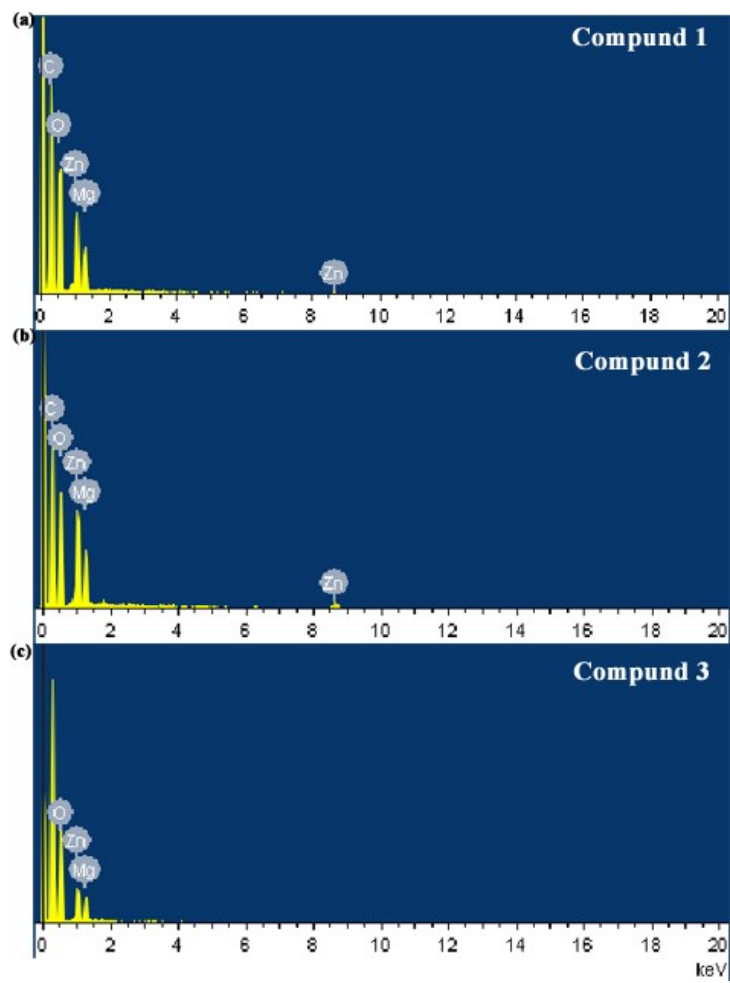
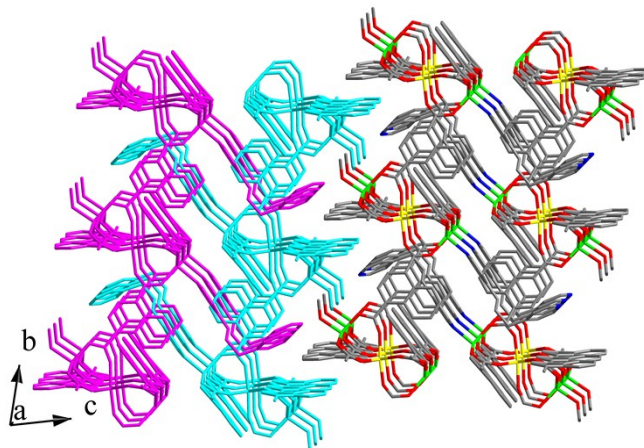
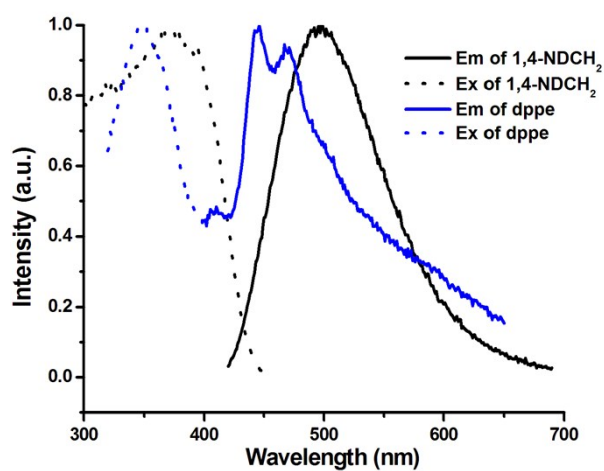


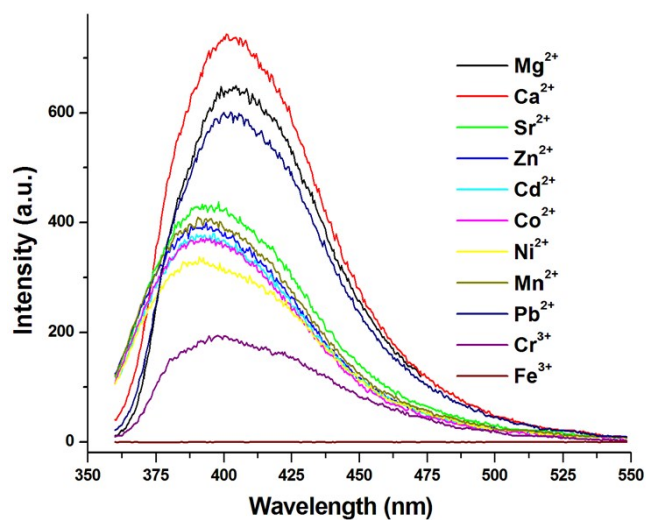
Fig. S3 Energy dispersive spectroscopy (EDS) of the title compounds.



**Fig. S4** Packing diagram for compound **2** showing four layers. The lattice py molecules and hydrogen atoms are omitted for clarity.



**Fig. S5** Fluorescence spectra of the free organic linkers.



**Fig. S6** Comparison of the fluorescence intensities of compound **1** dispersed in various  $10^{-2}$  M metal ions.

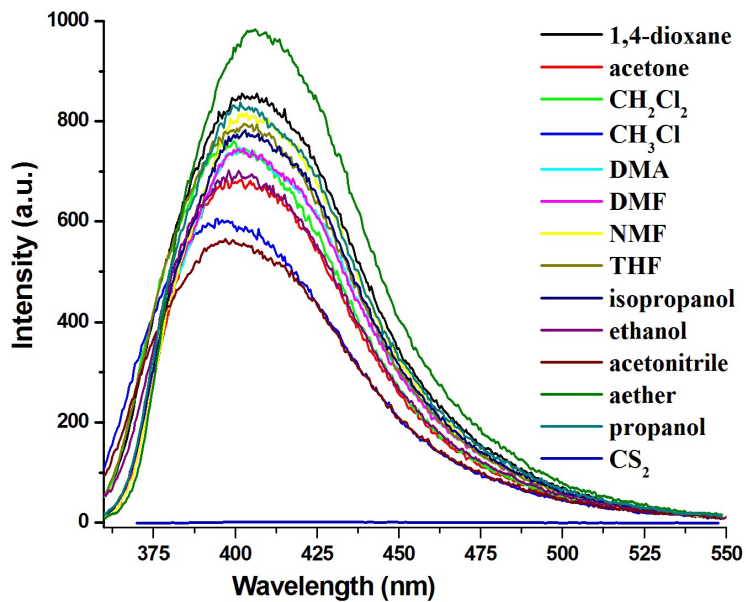


Fig. S7 The fluorescence spectra of compound 1 dispersed in different solvents.

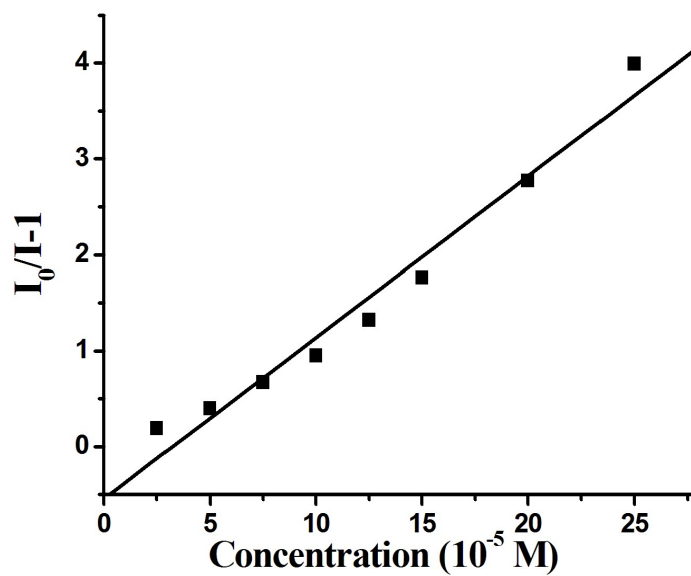


Fig. S8 The SV plot for the quenching of compound 1 by 10<sup>-2</sup> M Fe<sup>3+</sup>.

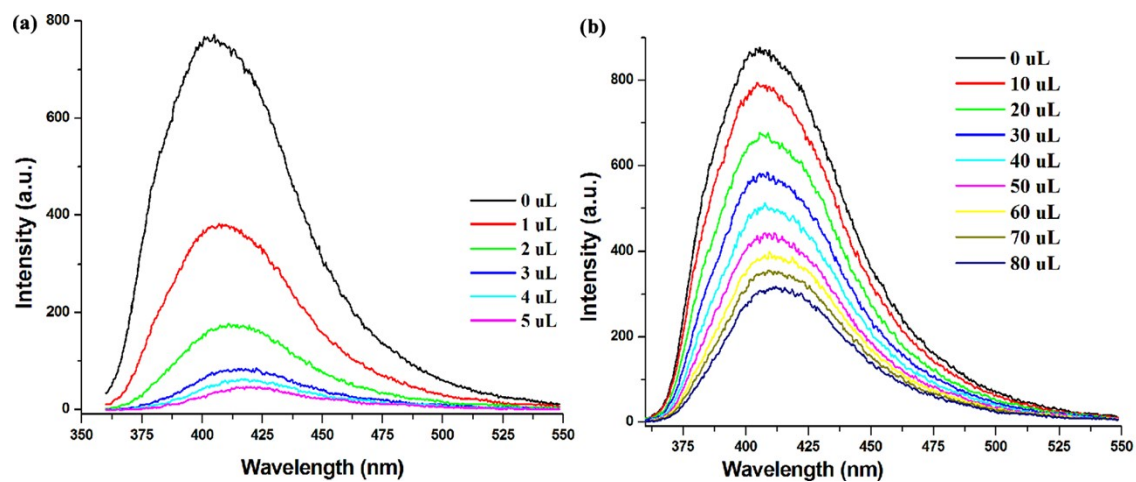


Fig. S9 Fluorescence spectra of **1** with various contents of nitrobenzene (a) and o-nitrophenol (b).

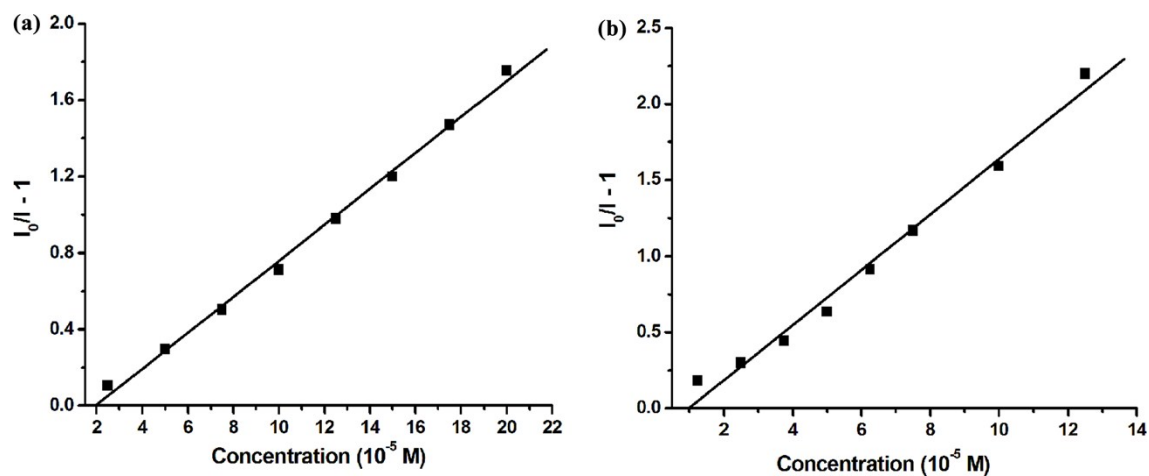


Fig. S10 The SV plots for the quenching of compound **1** by o-nitrophenol (a) and TNP (b).

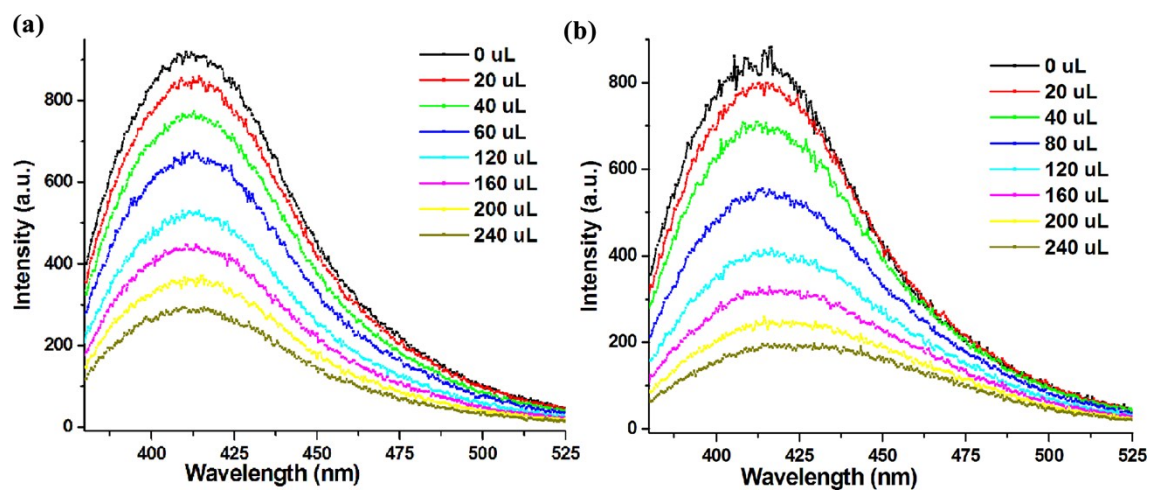


Fig. S11 Fluorescence spectra of compound **2** with various contents of CS<sub>2</sub> (a) and TNP (b).