Supporting Information

Fluorescence turn-on detection of Fe^{3+} in pure water based on a cationic poly(perylene diimide) derivative

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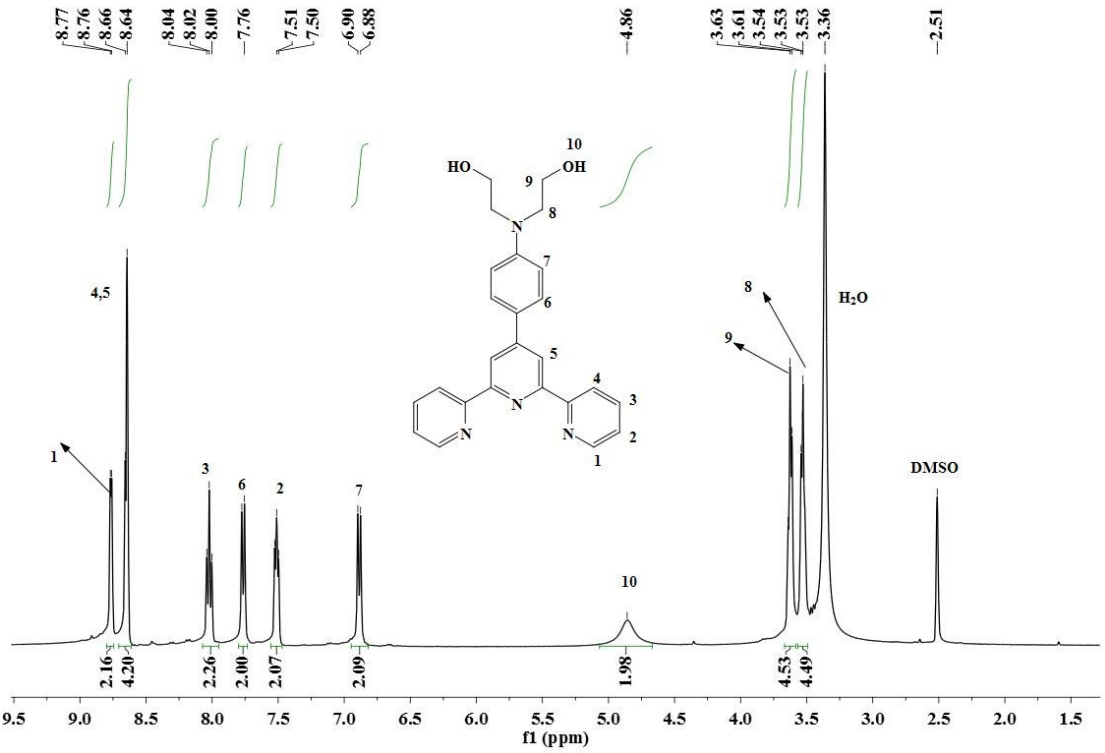

Fig. S1: ^{1}H NMR of compound **1**.

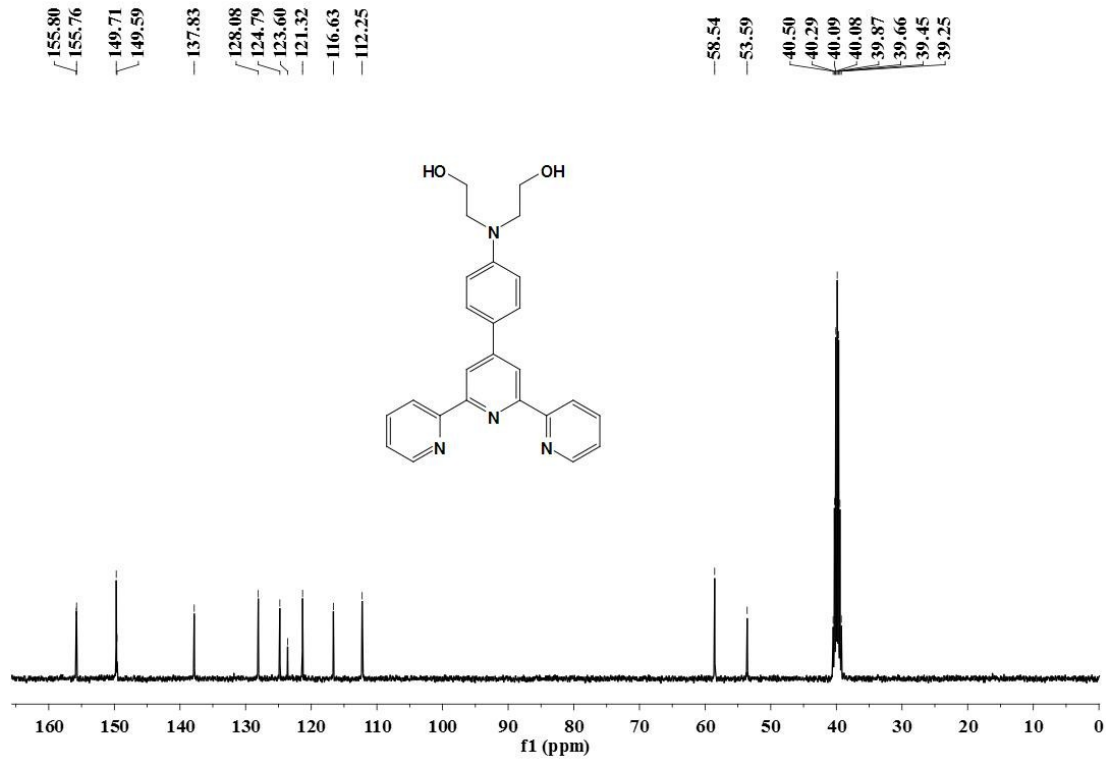

Fig. S2: ^{13}C NMR of compound **1**.

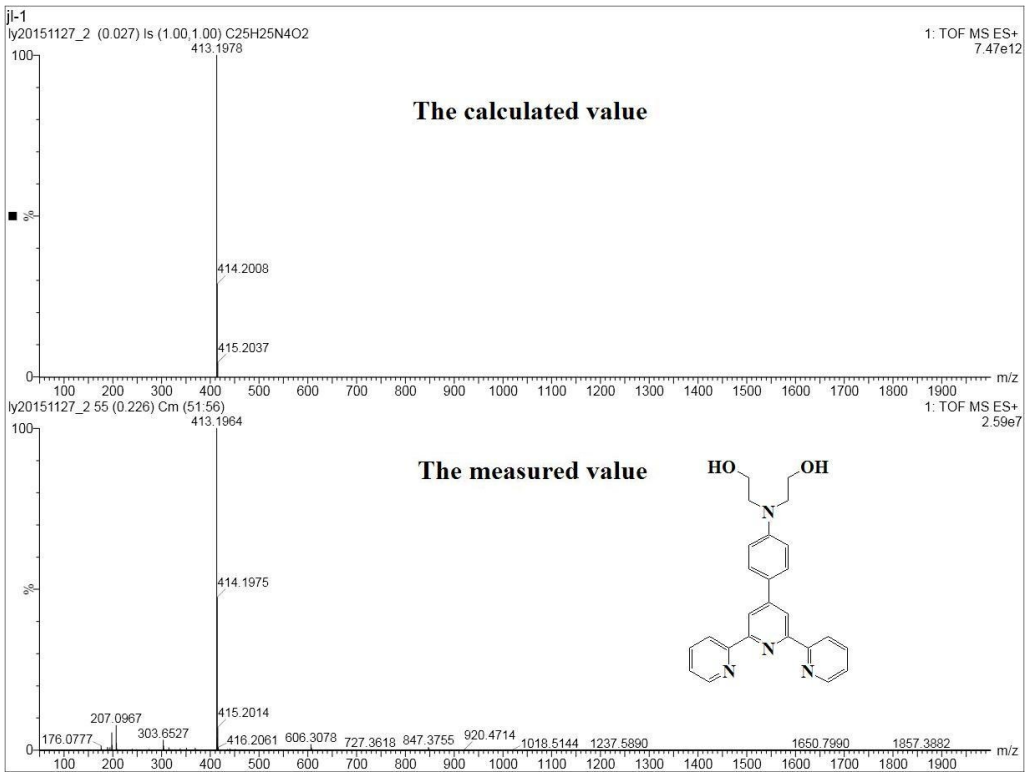

Fig. S3: HRMS spectra of compound **1**.

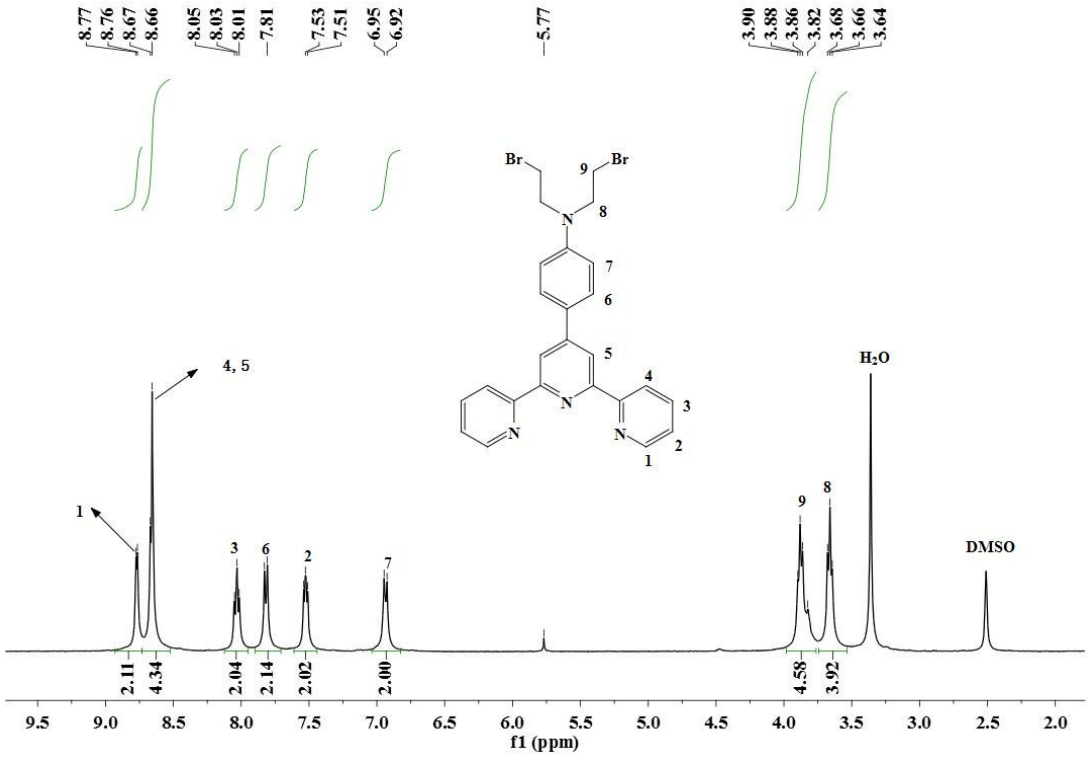

Fig. S4: ^{1}H NMR of compound **2**.

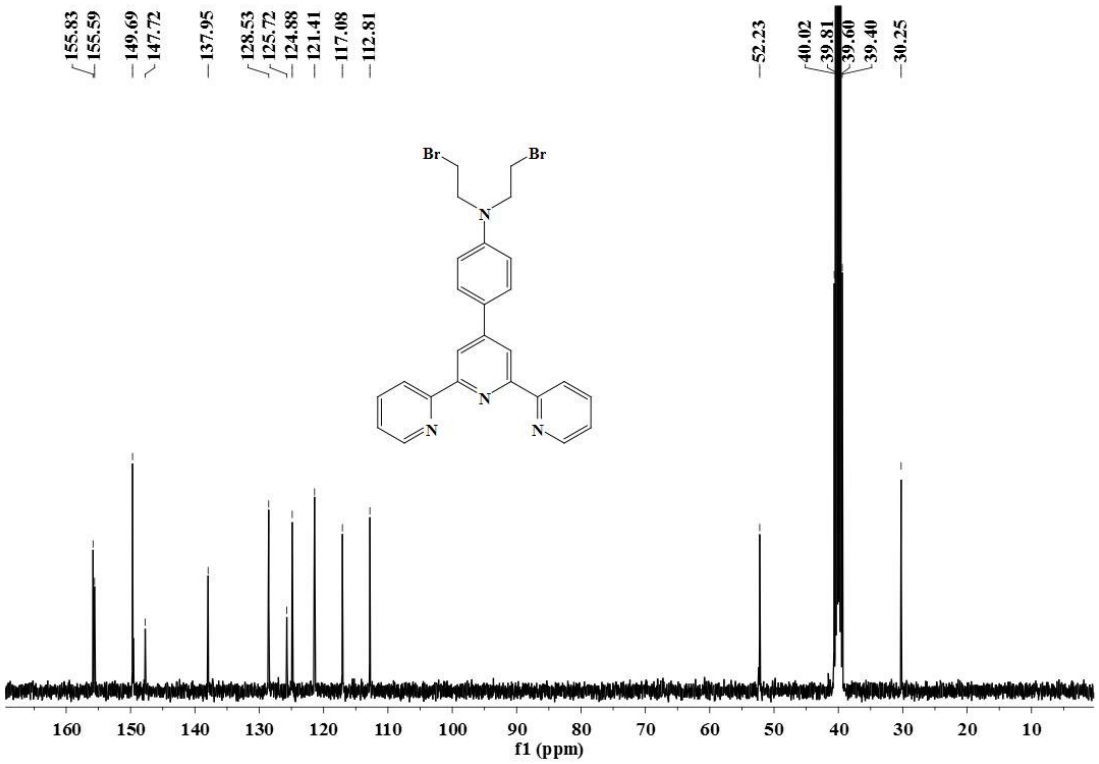

Fig. S5: ^{13}C NMR of compound **2**.

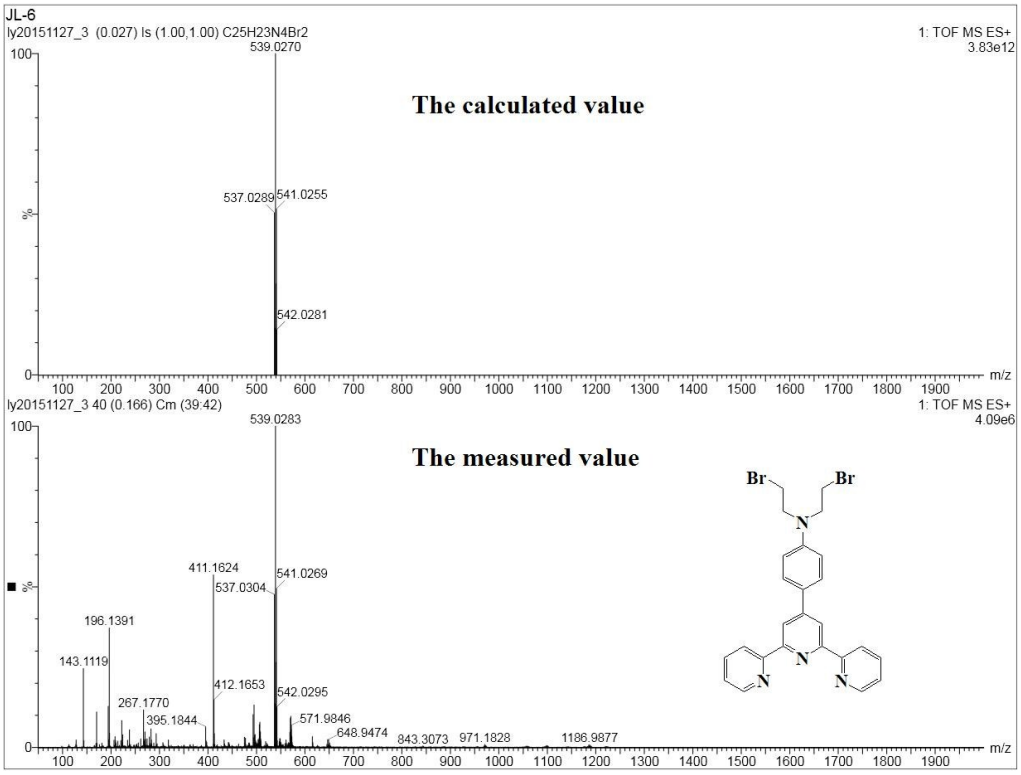

Fig. S6: HRMS spectra of compound **2**.

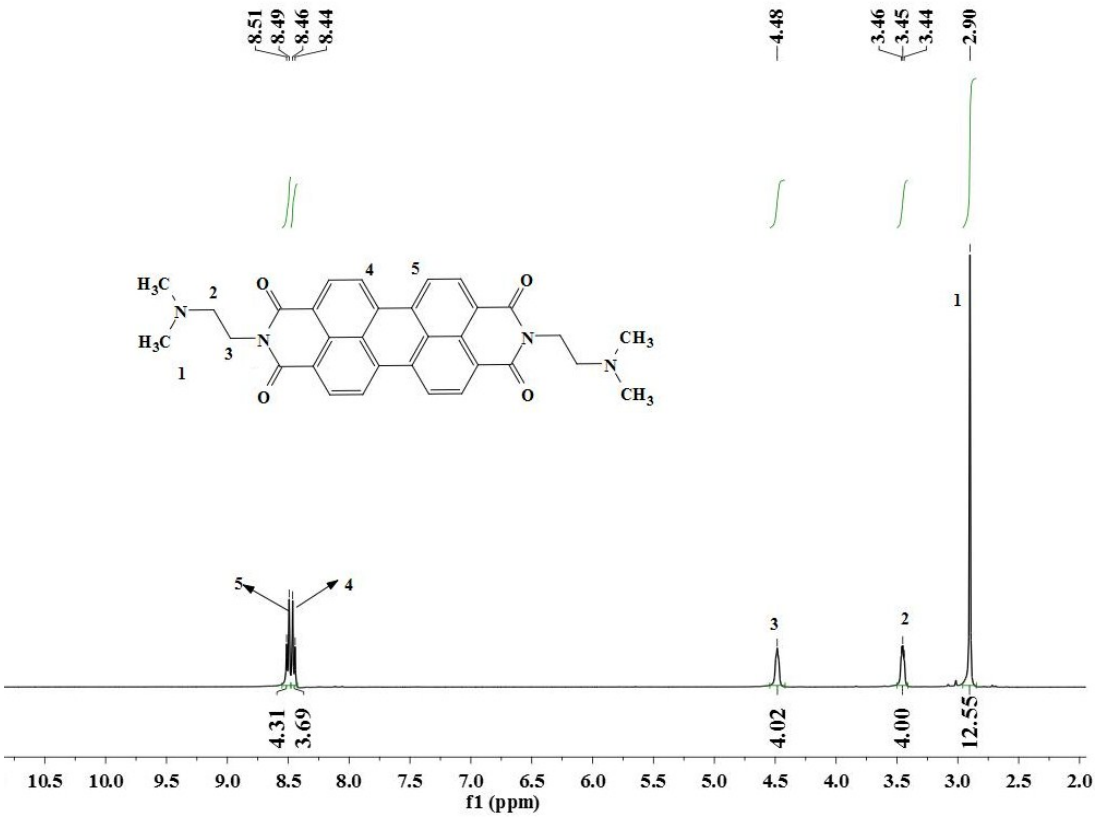

Fig. S7: ^{1}H NMR of compound **3**.

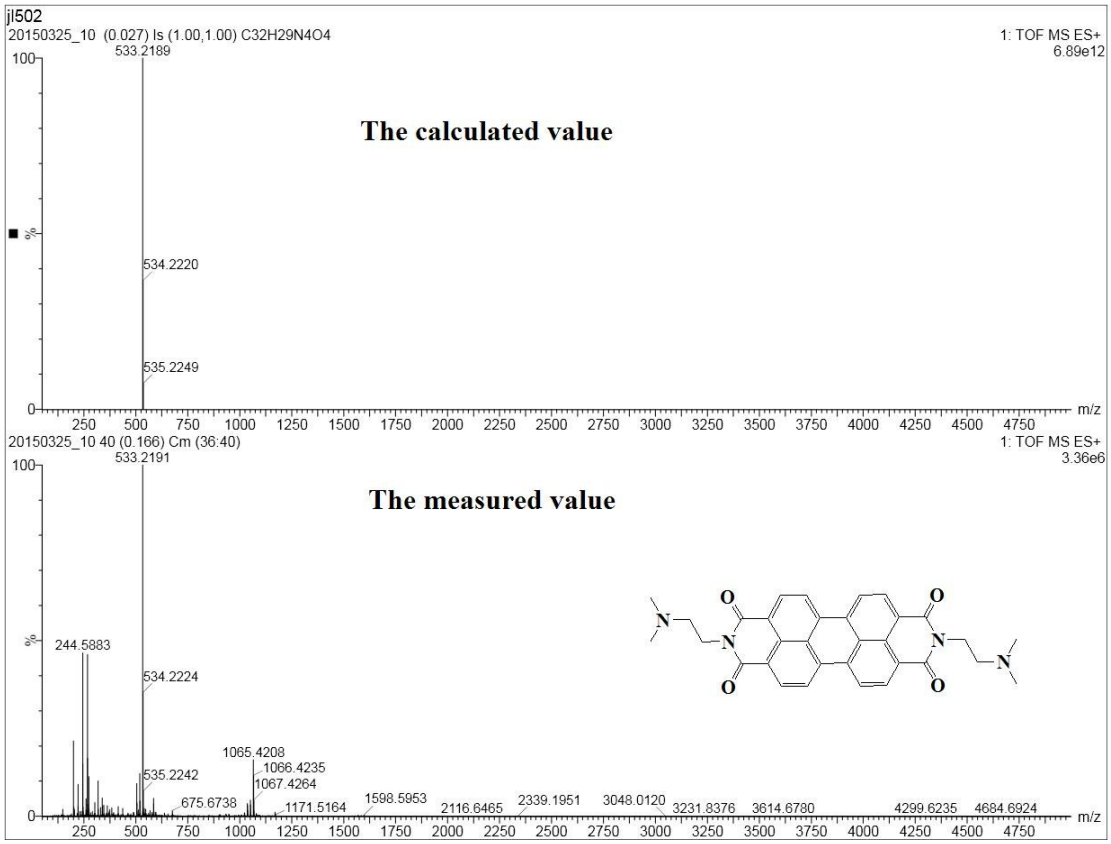

Fig. S8: HRMS spectra of compound **3**.

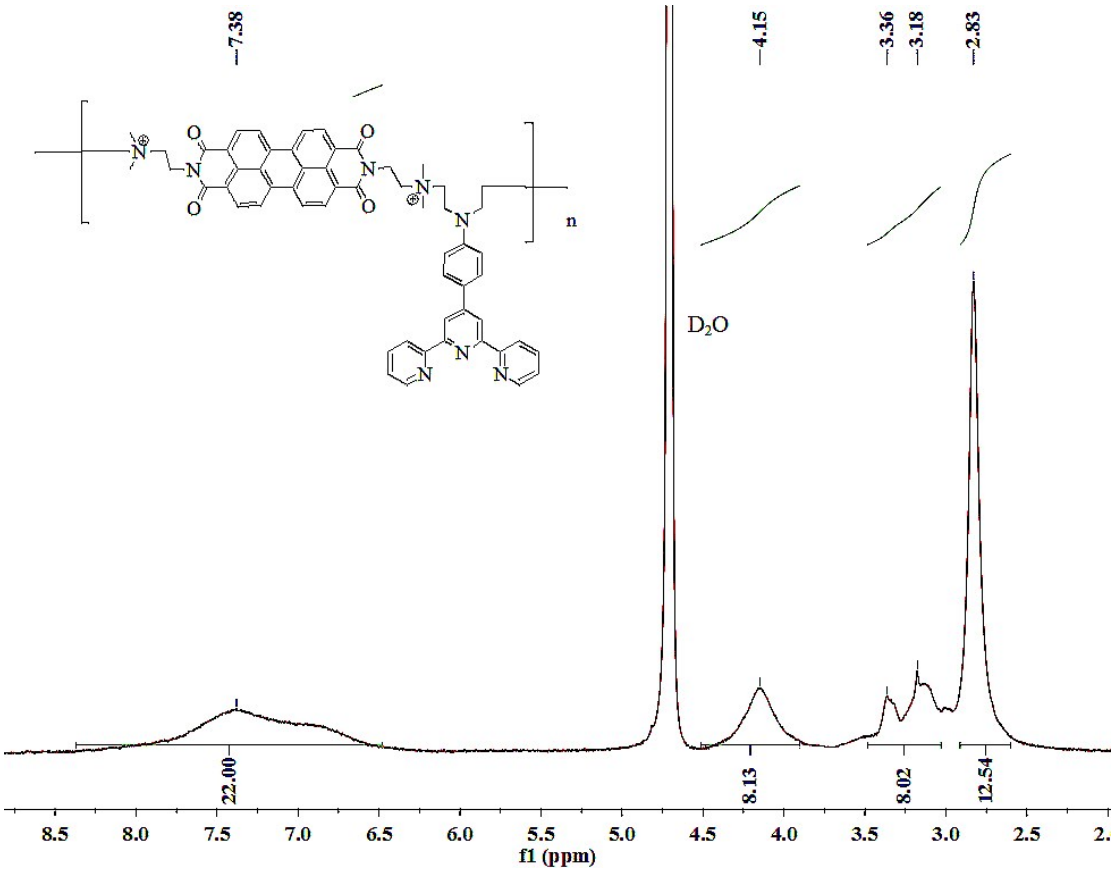

Fig. S9: ^{1}H NMR of polymer **L**.

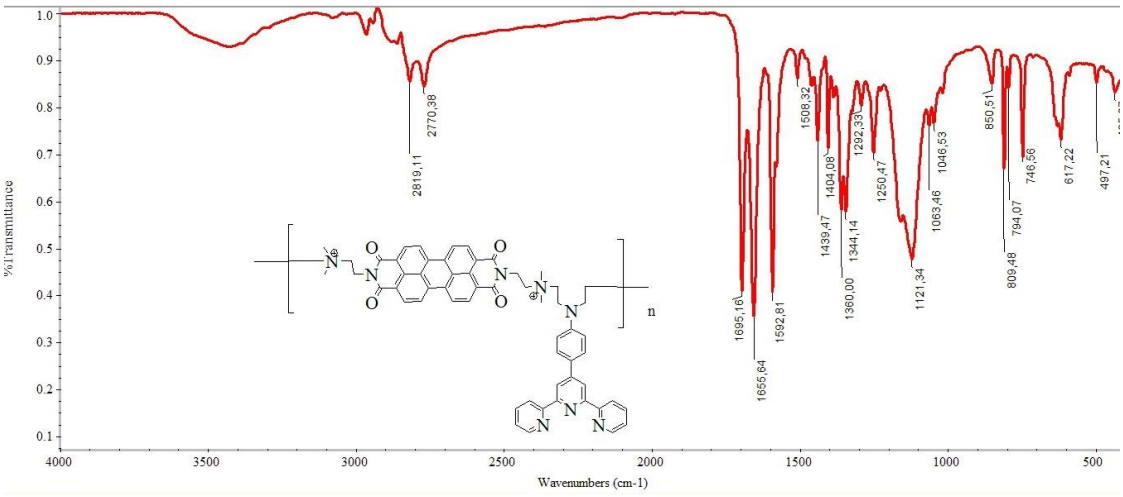

Fig. S10: FT-IR of polymer **L**.

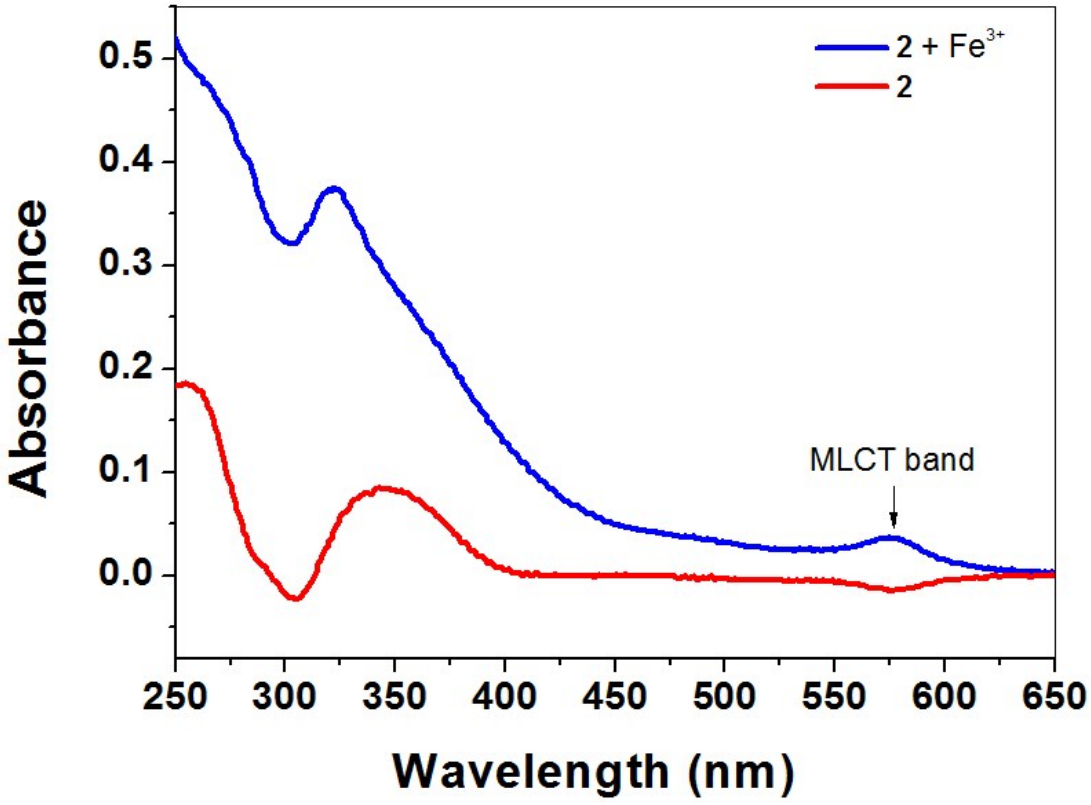

Fig. S11: UV-vis absorption spectra of compound **2** (20 μM) in the absence and presence of 4 equiv. of Fe^{3+} ions in water.

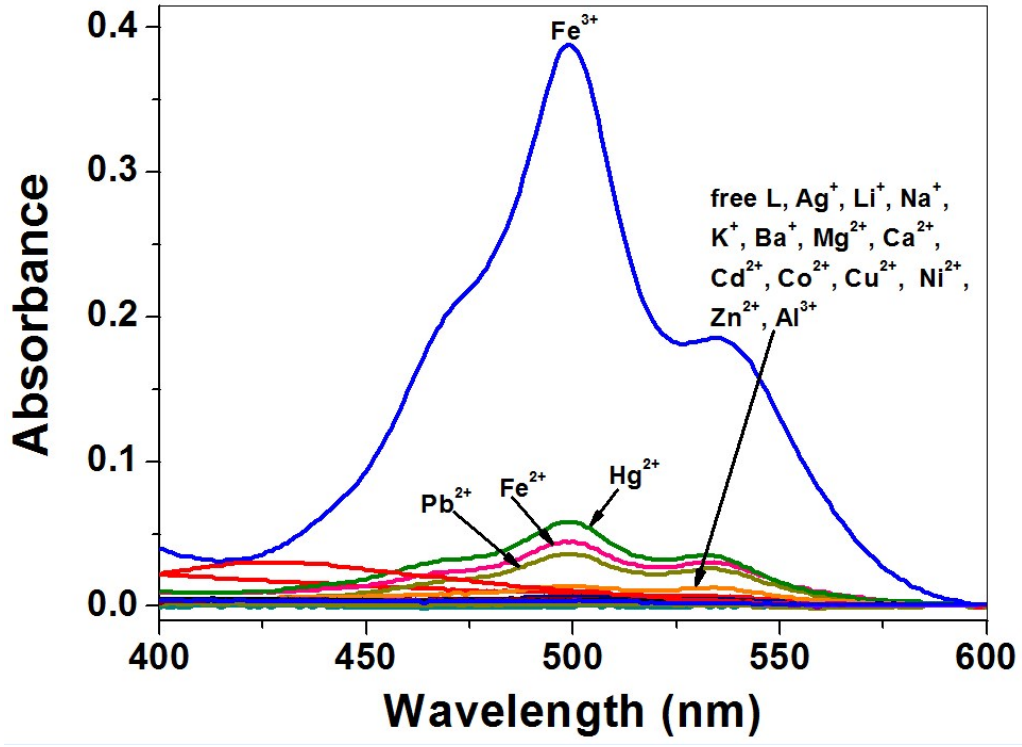

Fig. S12: UV-vis absorption spectra of **L** (10 μM) in water in the presence of various

relevant metal ions (5 equiv. for each metal ion).

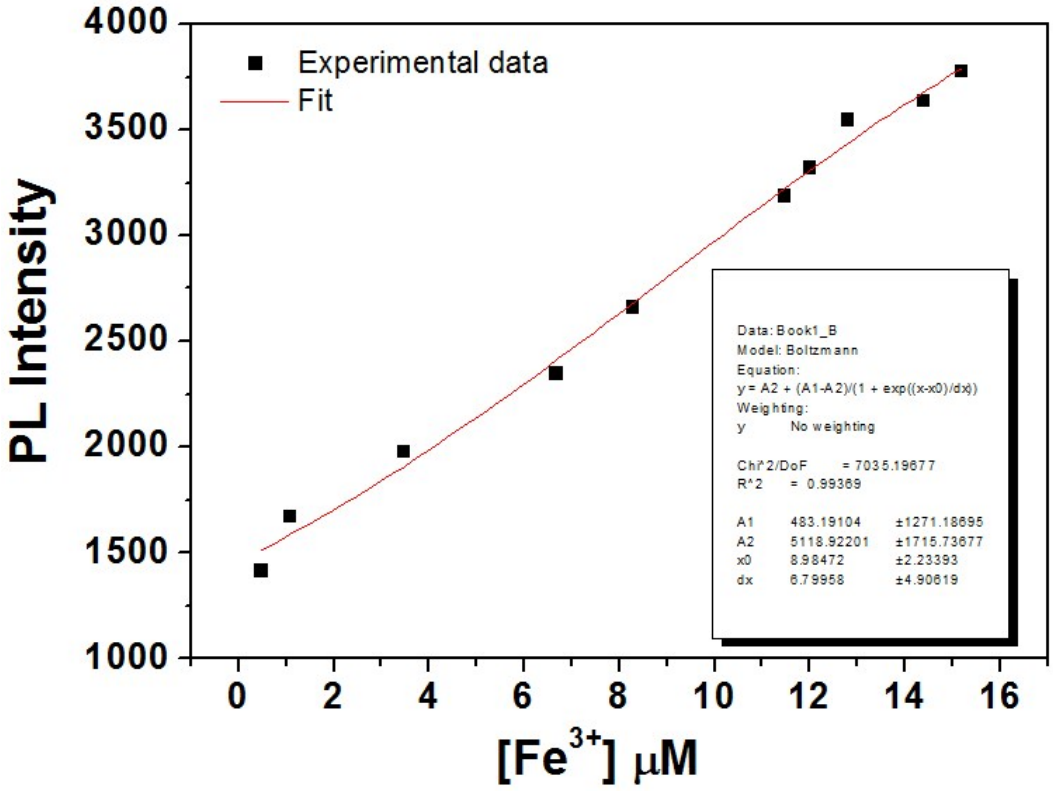

Fig. 13: Measurement of the fluorescence turn-on constant ($K_{\text{turn-on}}$) of **L**.

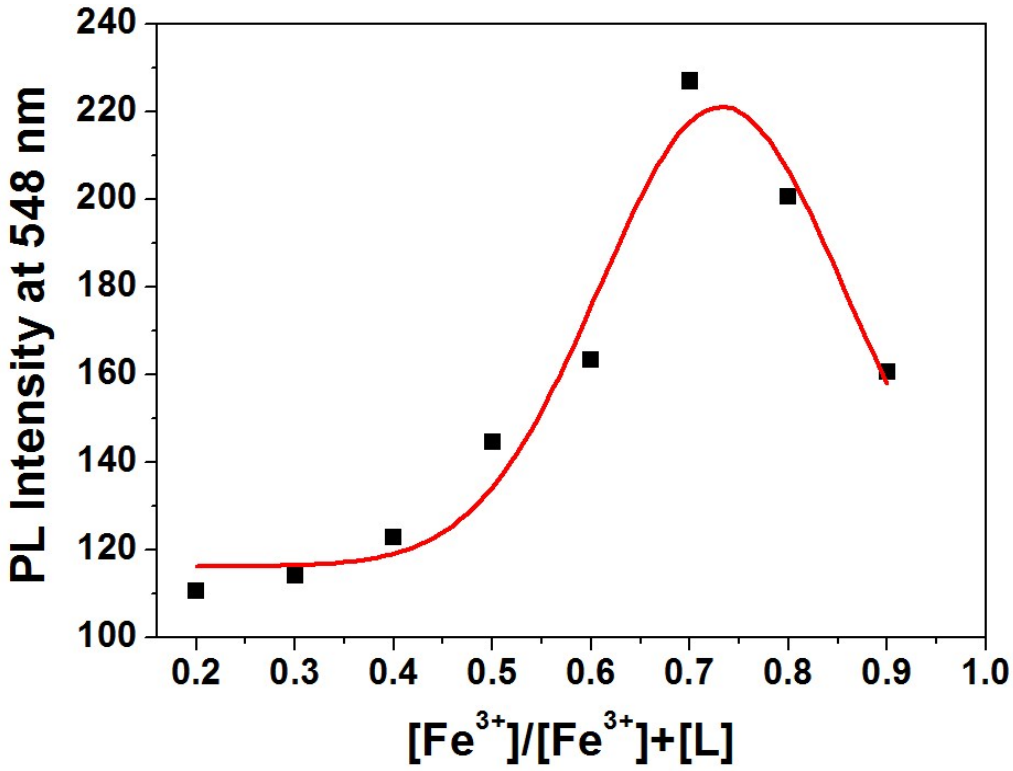

Fig. 14: Job's plot of **L** in water showing the 1:2 stoichiometry of the complex between **L** and Fe^{3+} ion. The total of the chemosensor and Fe^{3+} is 50 μM. λ_{ex}= 495 nm.

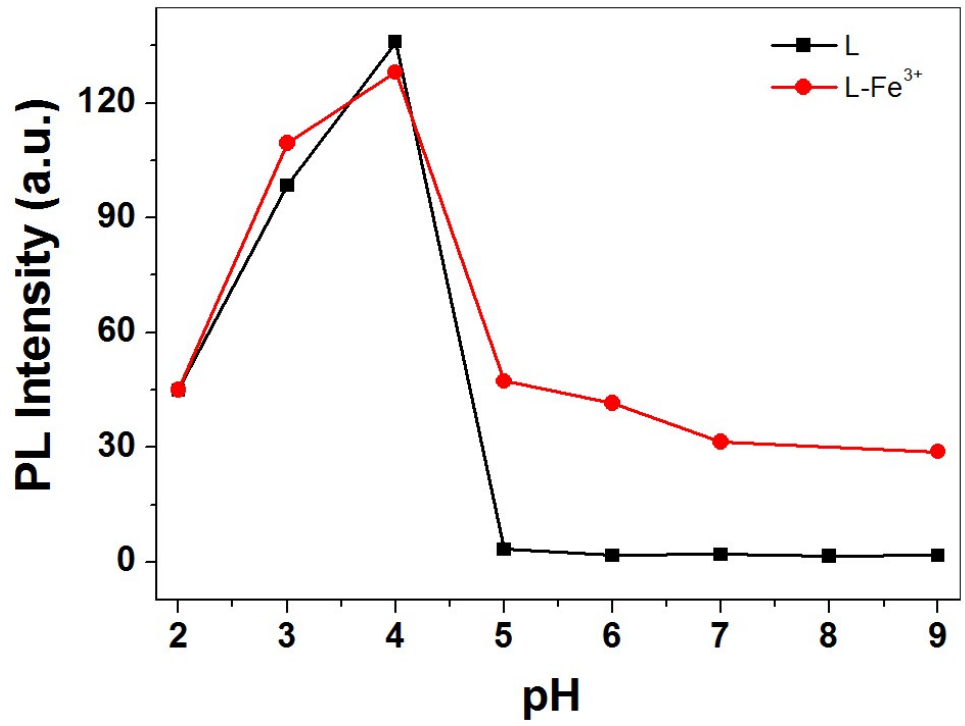

Fig. S15: Profile of pH dependence of the fluorescence intensity of **L** (2.5 μM) at 548 nm in the absence and presence of Fe^{3+} (4 equiv.) in water. λ_{ex}= 495 nm.

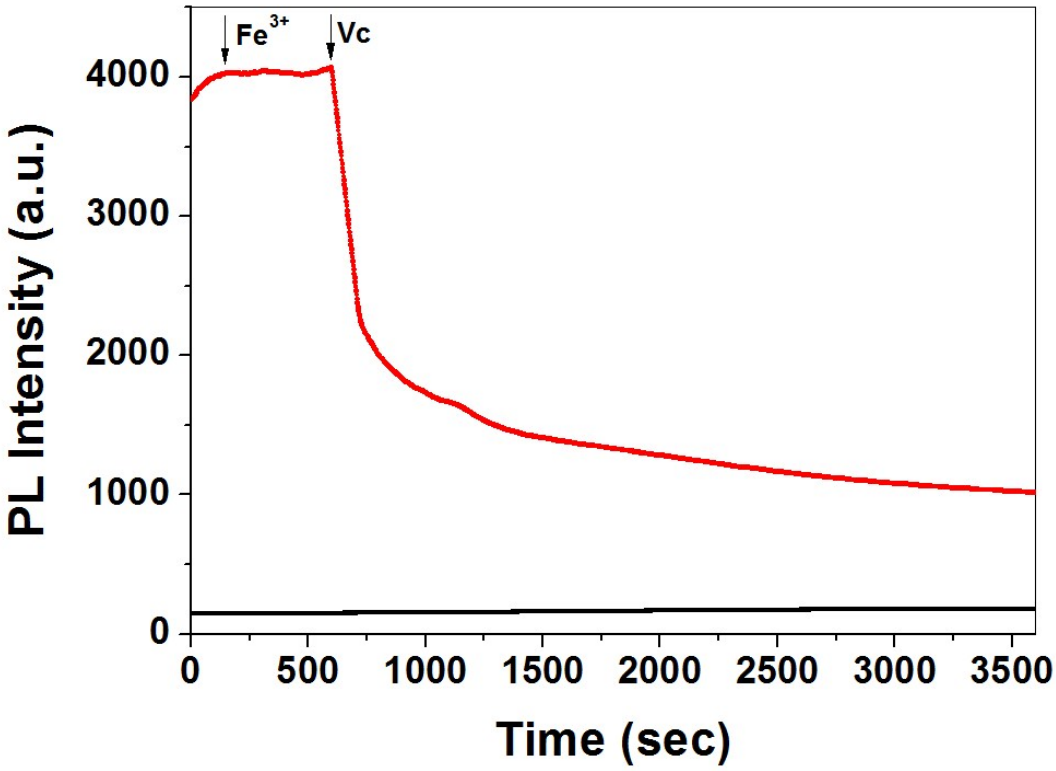

Fig. S16: The kinetic assay of redox conversion of iron from Fe^{3+} to Fe^{2+}. The emission spectra were recorded at 548 nm (λ_{ex} = 495 nm) in water. [**L**] = 2.5 μM. [Fe^{3+}] = 10 μM. [Vc] = 0.83 mM