Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry

Supporting Information

Fluorene-Based Material Containing Triple Azacrown Ether Groups: Synthesis, Characterization and Application in Chemosensor and Electroluminescent Device

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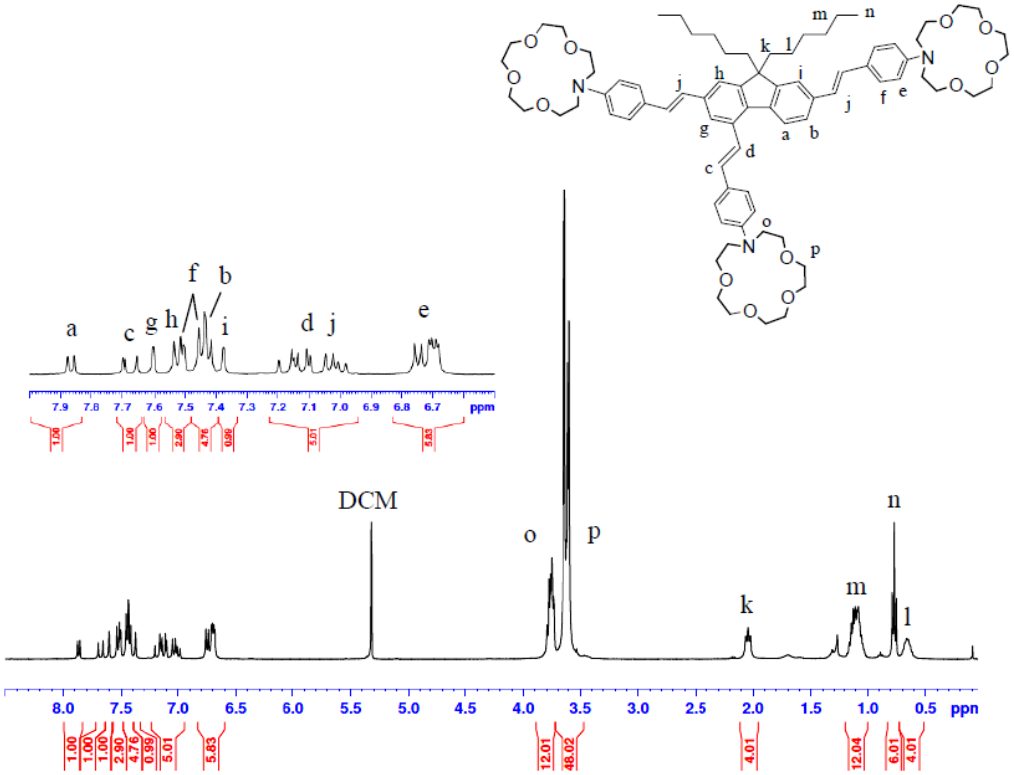


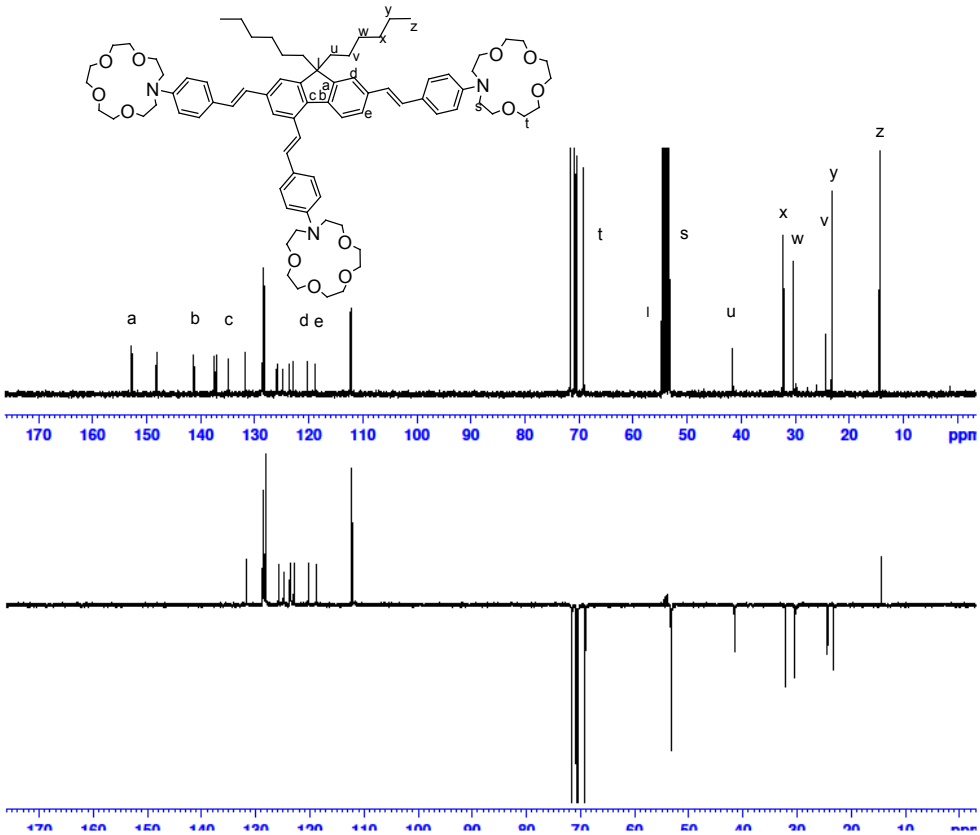
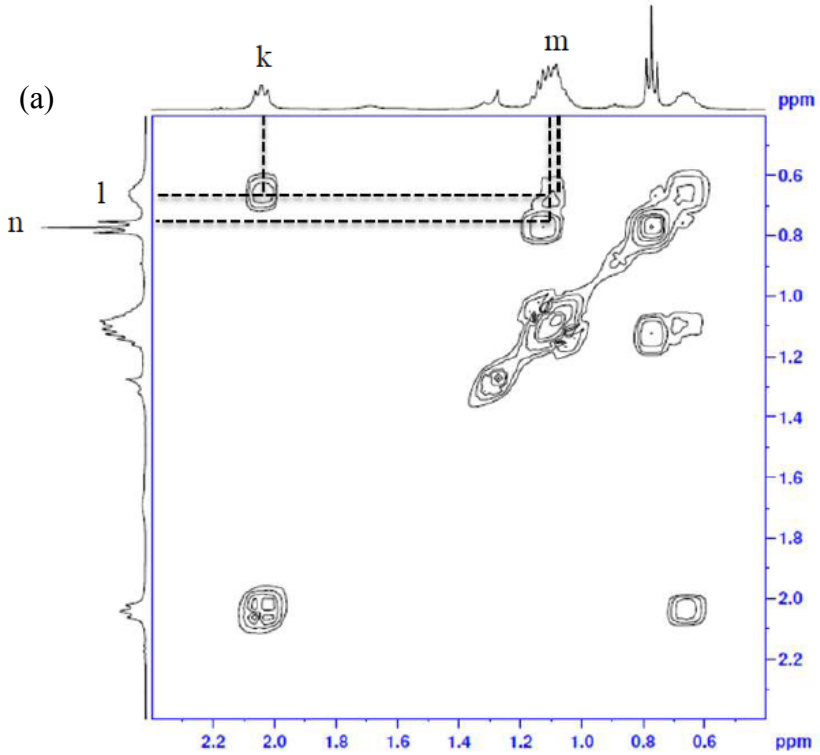


Figure S1 ^{1}H NMR and ^{13}C NMR spectra of compound **FTC**.



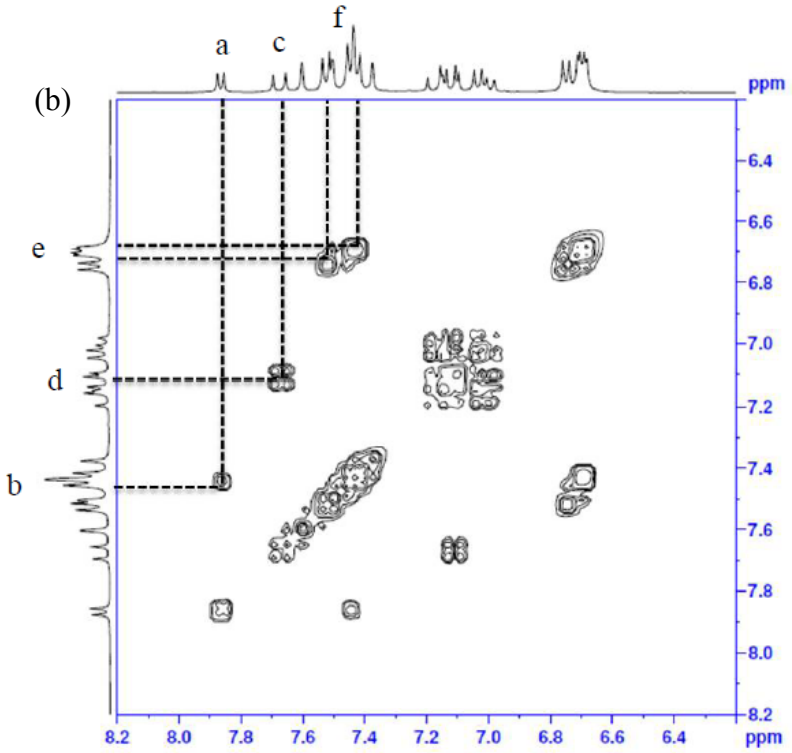


Figure S2 COSY spectrum of **FTC** [(a) 0.4~2.4 ppm and (b) 6.2~8.2 ppm)].

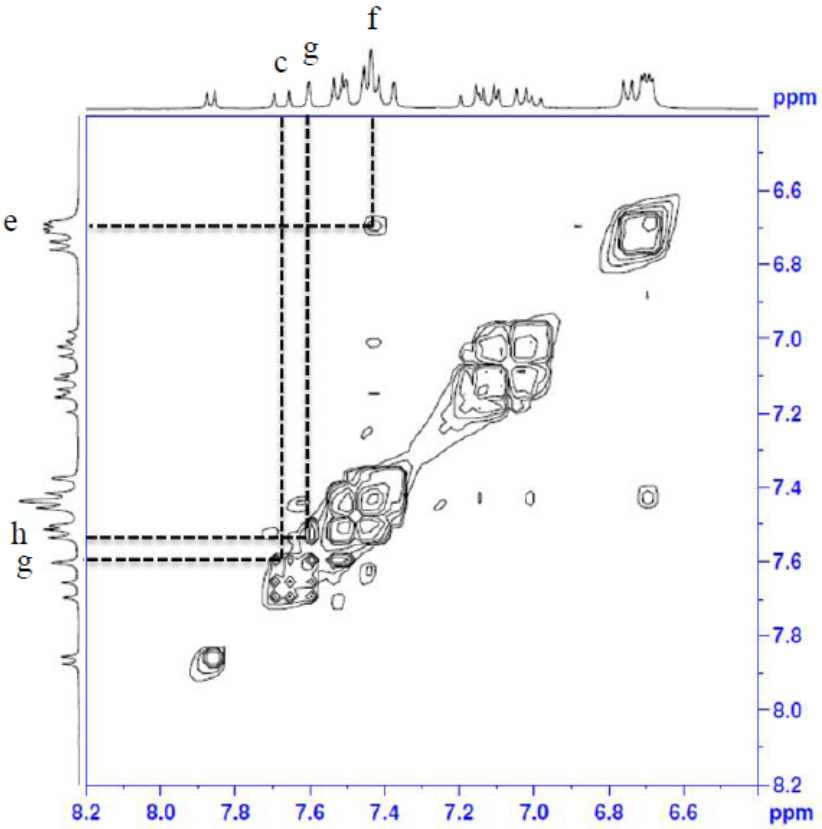
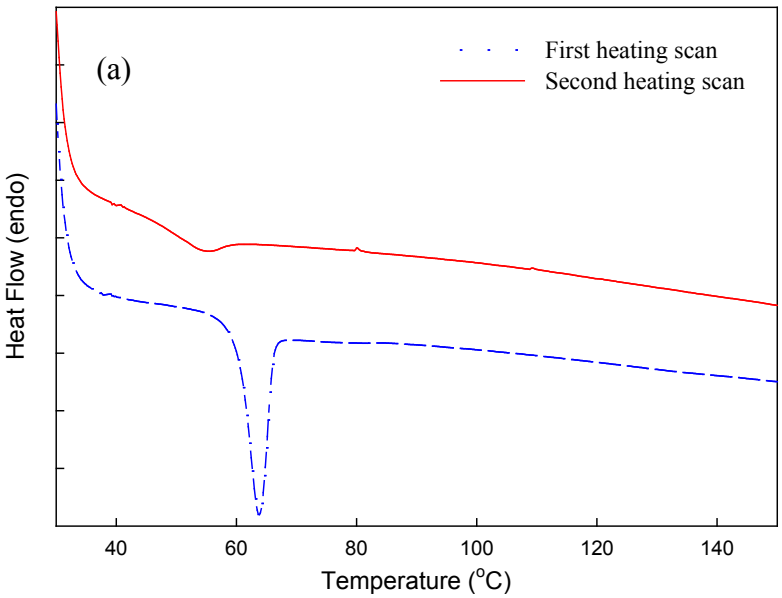


Figure S3 NOESY spectrum of **FTC** (6.4~8.2 ppm).



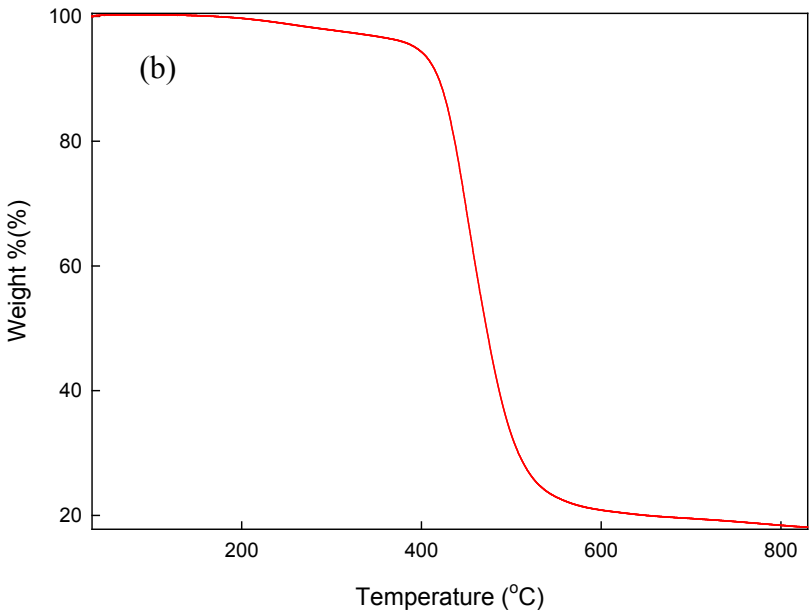


Figure S4 (a) Differential scanning calorimetric curves of **FTC** obtained from the first and second scan with a heating rate of 10 °C/min. (b) Thermogravimetric analysis of **FTC** with heating rate of 10 °C/min under nitrogen atmosphere.

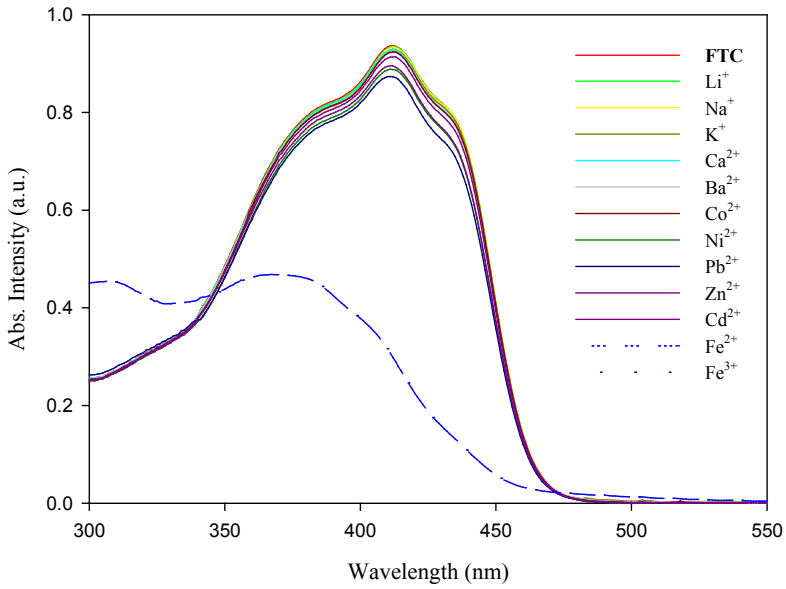


Figure S5 Absorption spectra of **FTC** with various metal ions in solution (methanol/H_2O = 9/1, v/v). The concentration of **FTC** and metal ions were fixed at 10^{-5} M and 10^{-4} M, respectively.

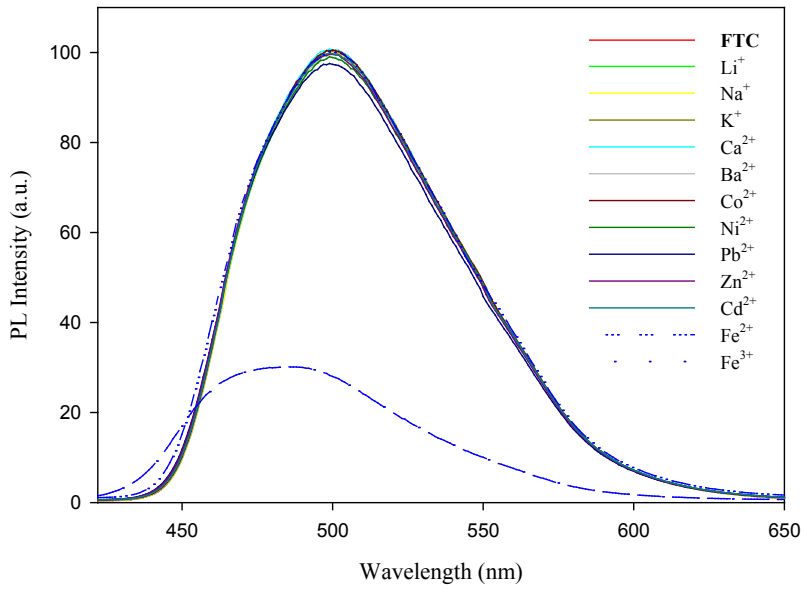


Figure S6 Photoluminescence spectra of **FTC** with various metal ions in solution (methanol/H_2O = 9/1, v/v).The concentration of **FTC** and metal ions were fixed at 10^{-5} M and 10^{-4} M, respectively. Excitation wavelength was 412 nm.

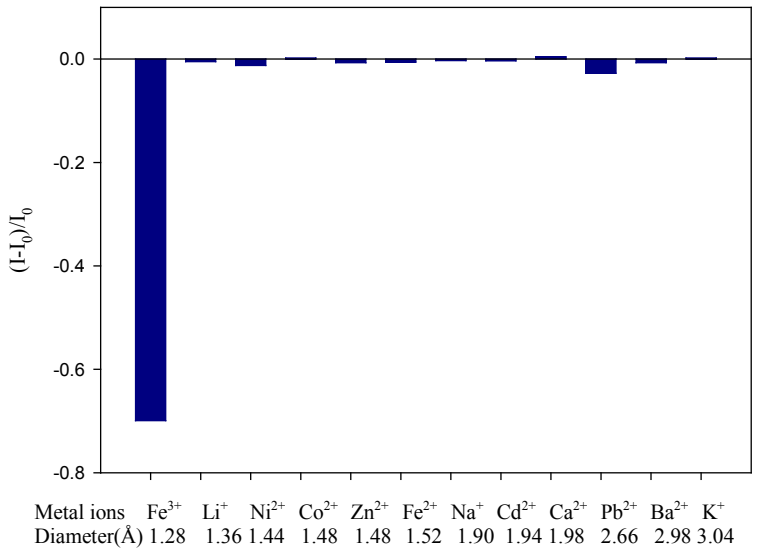


Figure S7 Fluorescence emission response profile of **FTC** upon addition of various metal ions in solution (methanol/H_2O = 9/1, v/v). The concentration of **FTC** and metal ions were fixed at 10^{-5} M and 10^{-4} M, respectively. Excitation wavelength was 412 nm.

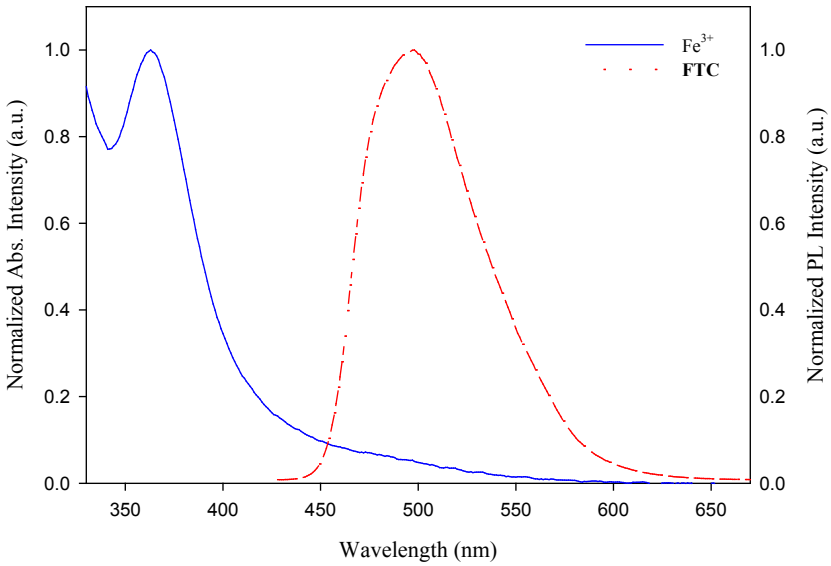


Figure S8 Absorption spectrum of Fe^{3+} (solid line) and fluorescence spectrum of **FTC** (dashed line) in solution (THF/H_2O = 9/1, v/v). Excitation wavelength was 418 nm.

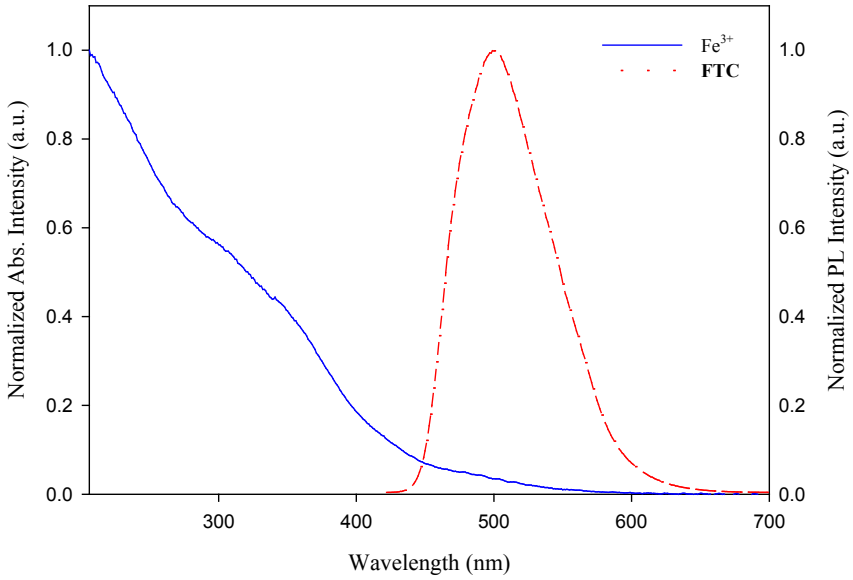


Figure S9 Absorption spectrum of Fe^{3+} (solid line) and fluorescence spectrum of **FTC** (dashed line) in solution (Methanol/H_2O = 9/1, v/v). Excitation wavelength was 412 nm.

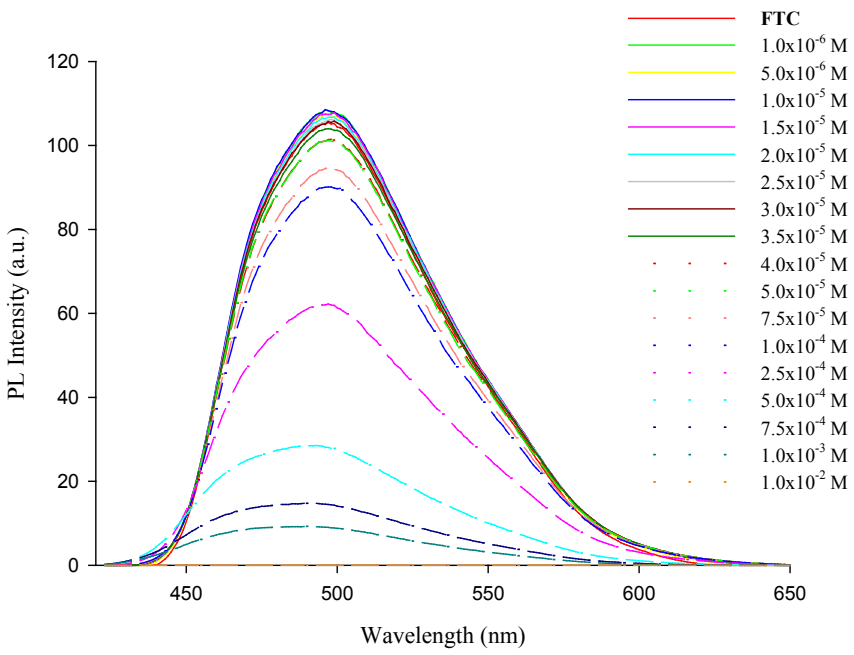


Figure S10 Photoluminescence spectra of **FTC** with varying concentration of Fe^{3+}in solution (ethanol/H_2O = 9/1, v/v). The concentration of **FTC** was fixed at 10^{-5} M. Excitation wavelength was 413 nm.

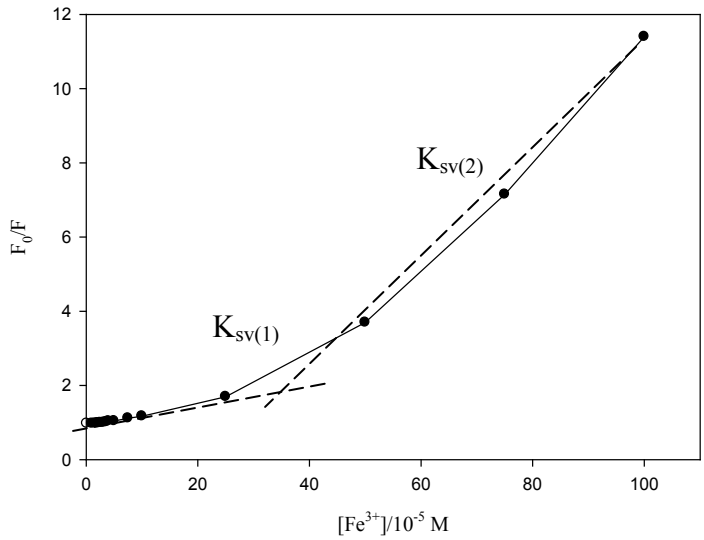


Figure S11 The Stern-Volmer plot of **FTC** with varying concentration of Fe^{3+}in solution (ethanol/H_2O = 9/1, v/v). The concentration of **FTC** was fixed at 10^{-5} M. Excitation wavelength was 413 nm.

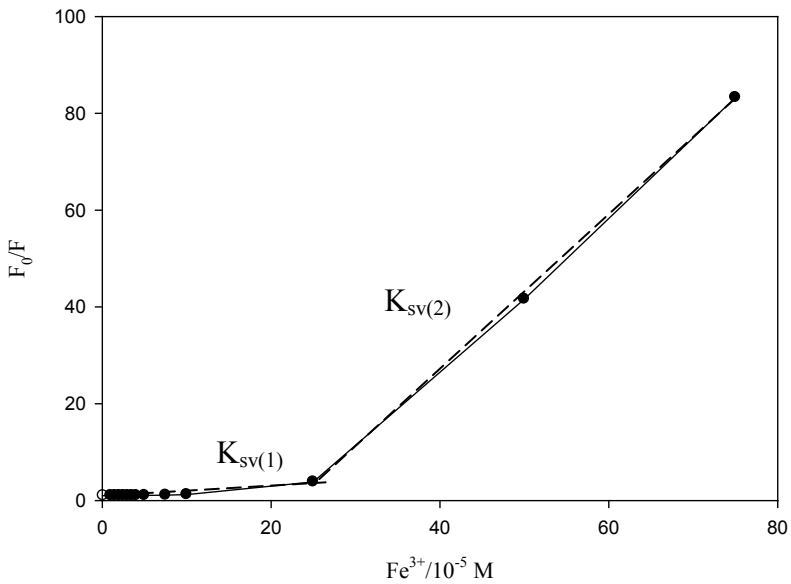


Figure S12 The Stern-Volmer plot of **FTC** with varying concentration of Fe^{3+}in solution (THF/H_2O = 9/1, v/v). The concentration of **FTC** was fixed at 10^{-5} M. Excitation wavelength was 418 nm.

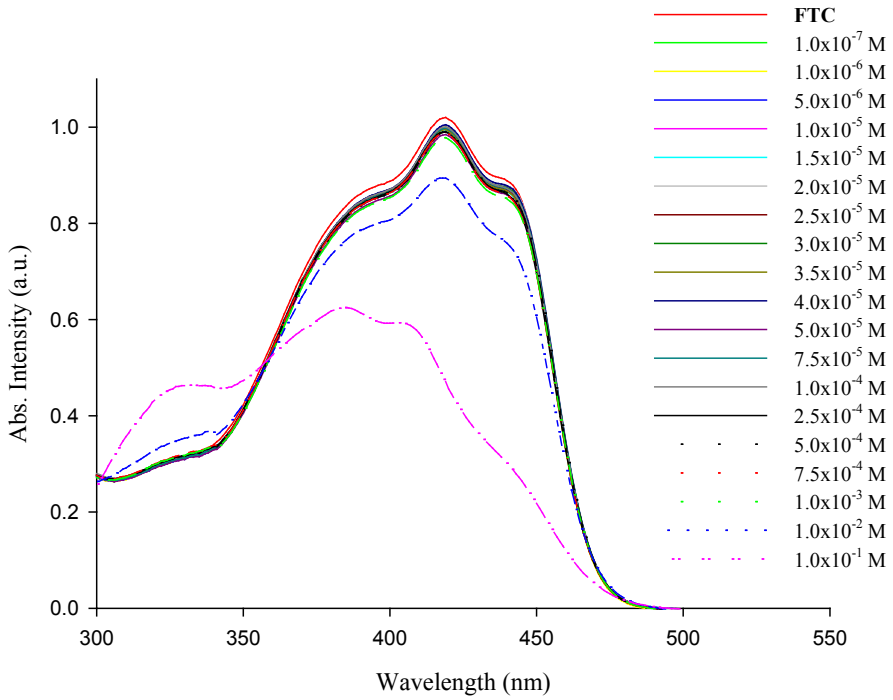


Figure S13 Absorption spectra of **FTC** with varying concentration of HCl in solution (THF/H_2O = 9/1, v/v). The concentration of **FTC** was fixed at 10^{-5} M.

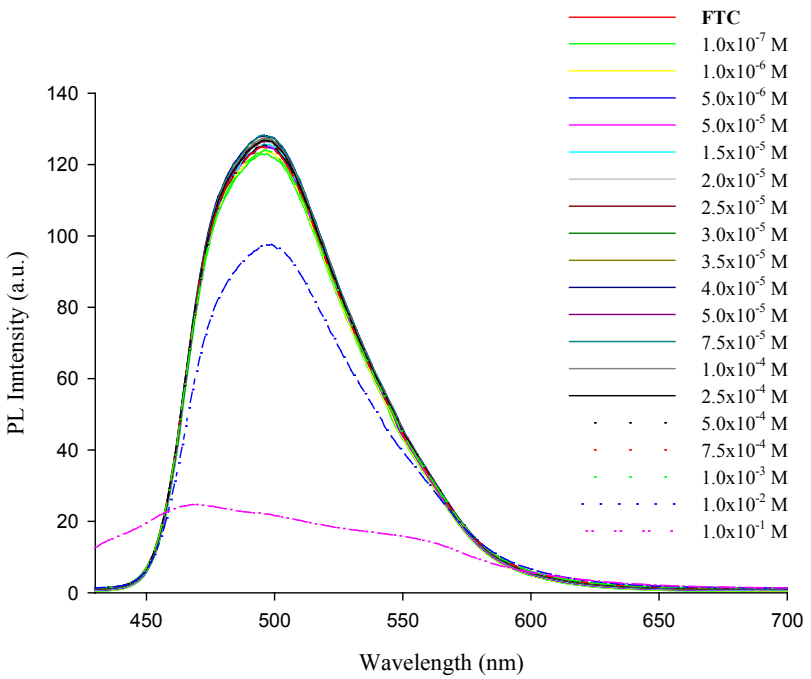


Figure S14 Photoluminescence spectra of **FTC** with various concentration of HCl in solution (THF/H_2O = 9/1, v/v). The concentration of **FTC** was fixed at 10^{-5} M. Excitation wavelength was 419 nm

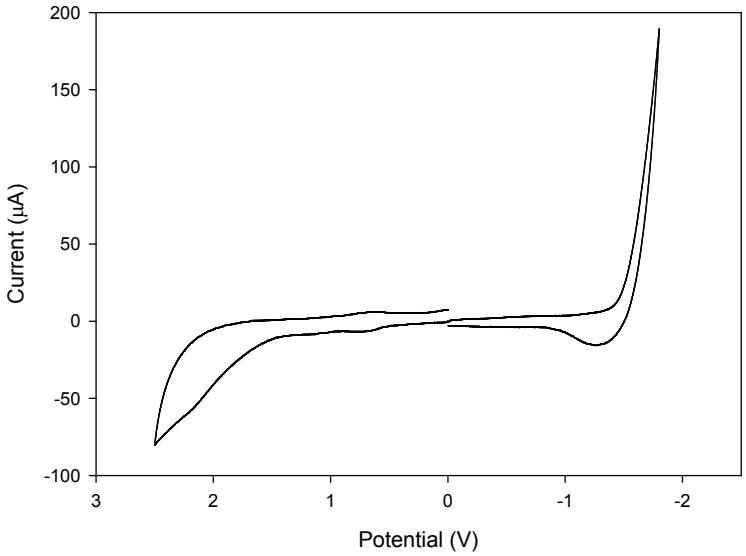


Figure S15 Cyclic voltammogram of **FTC** in 0.1 M n-Bu_4NClO_4, scan rate: 100 mV/s.