Supplementary Material (ESI) for New Journal of Chemistry

Luminescent sensing, DFT, extraction and monitoring of Cr^{3+} and Al^{3+} via the application of first derivative fluorescence spectroscopy

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Fig. S1 ^{1}H NMR spectra of L in DMSO-d_6.

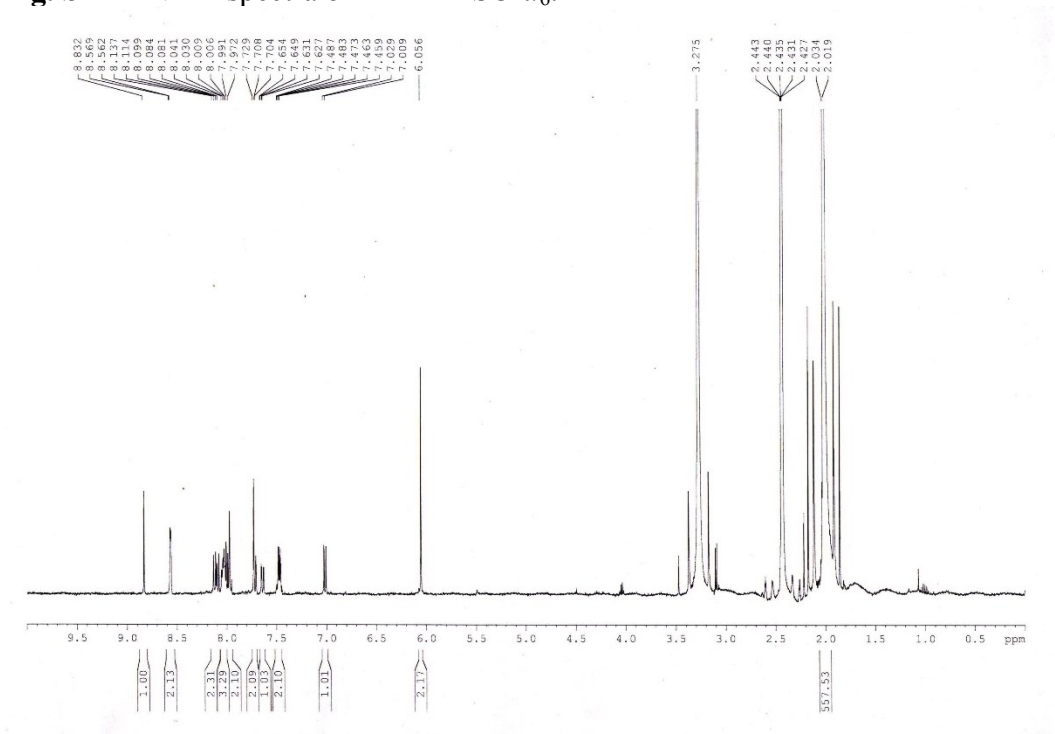


Fig. S2 ^{13}C NMR spectra of L in DMSO-d_6.

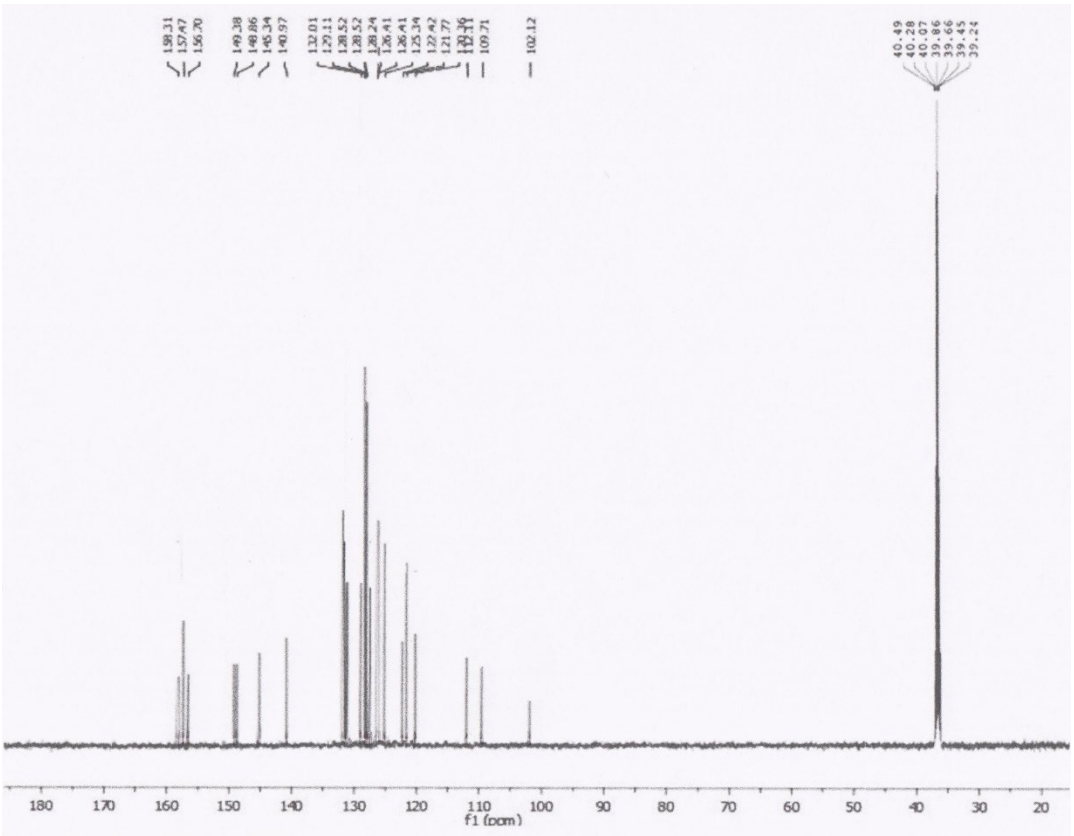


Fig. S3 IR spectra of L.

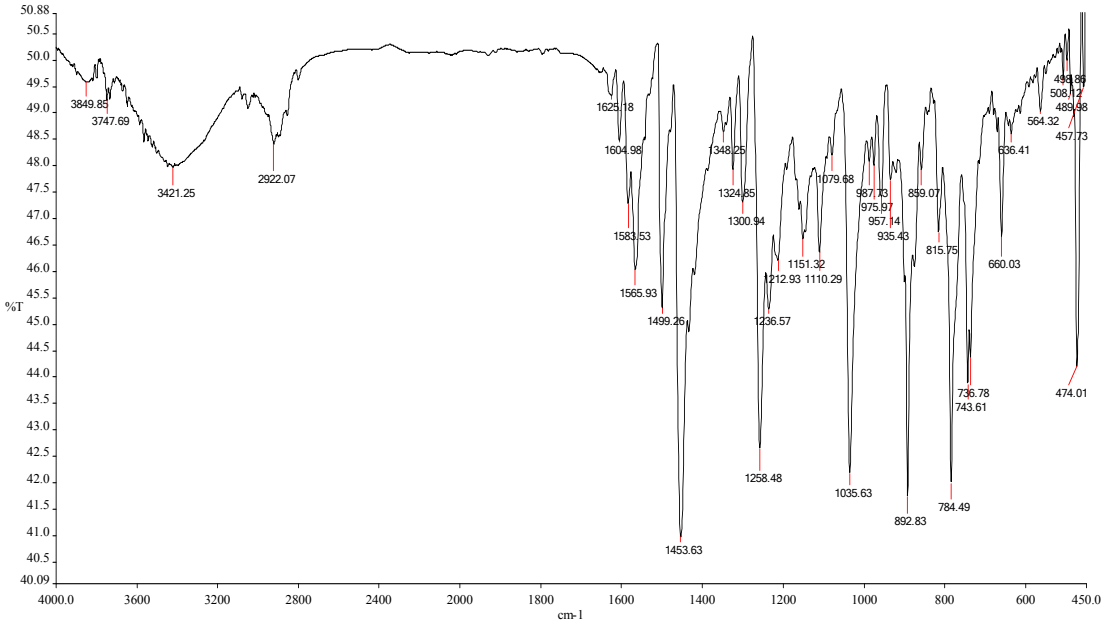


Fig. S4 Mass Spectra of L.

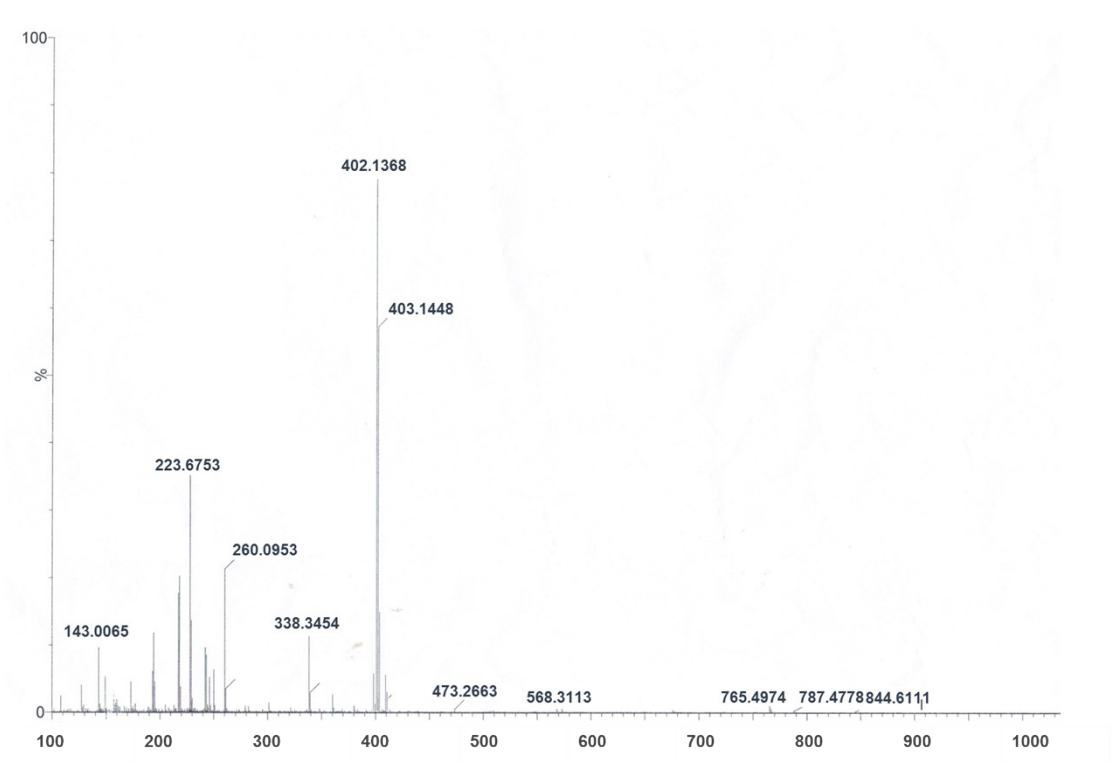


Fig. S5 IR spectra of L-Cr^{3+}.

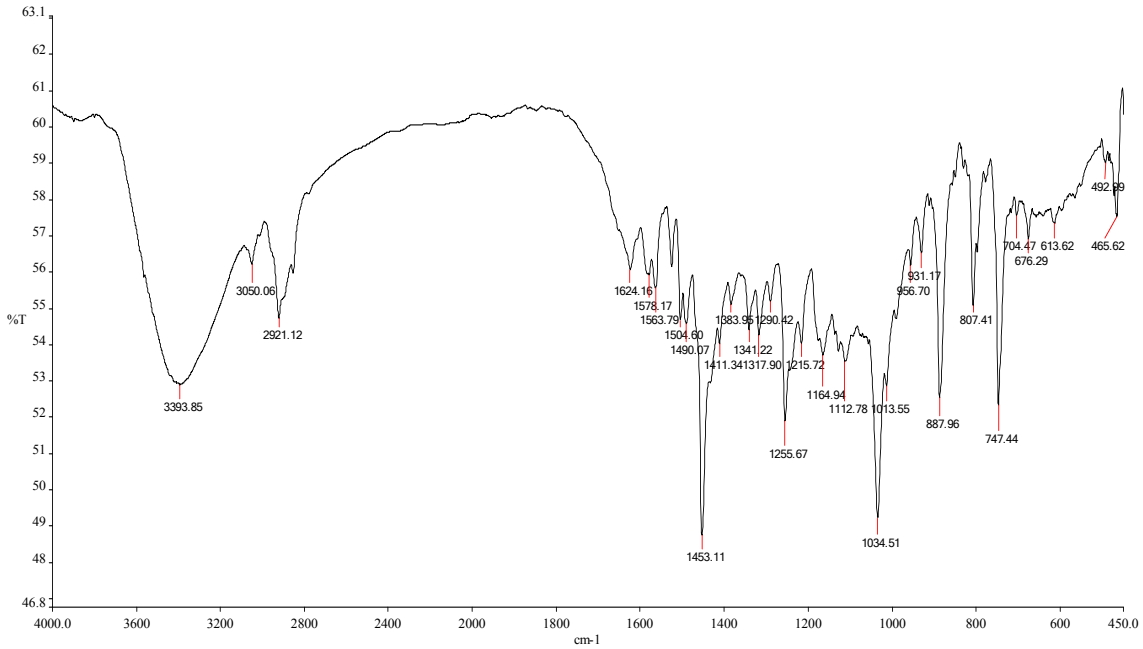


Fig. S6 Mass Spectra of L-Cr^{3+}.

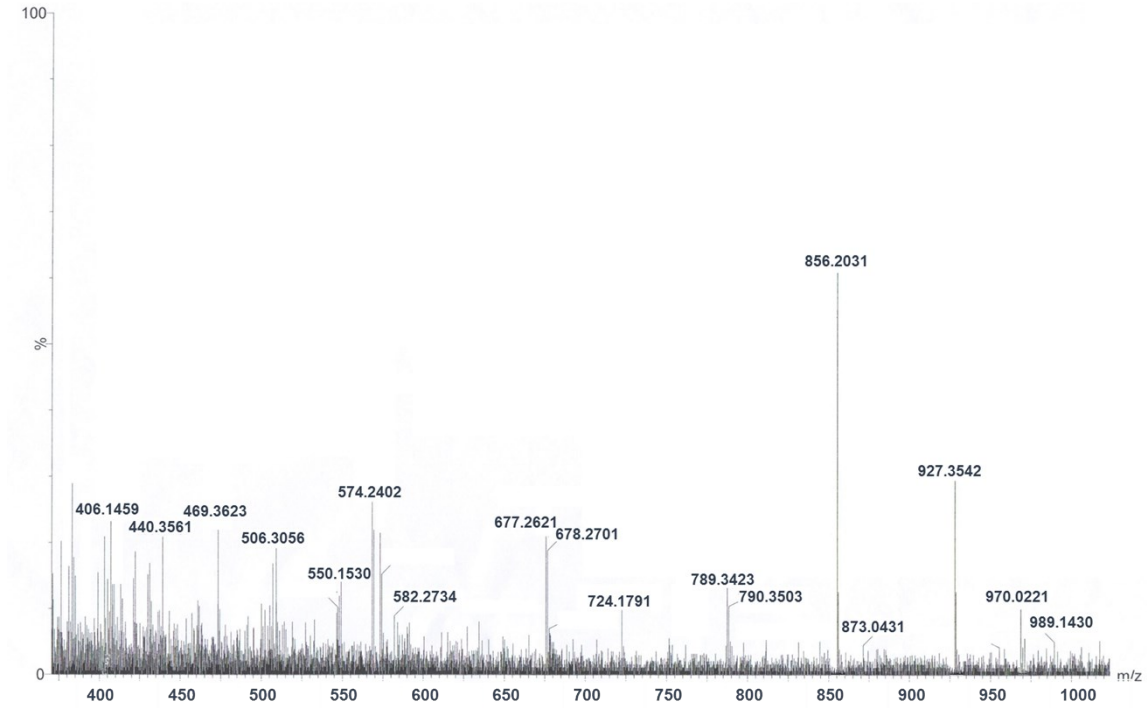


Fig. S7 IR spectra of L-Al^{3+}.

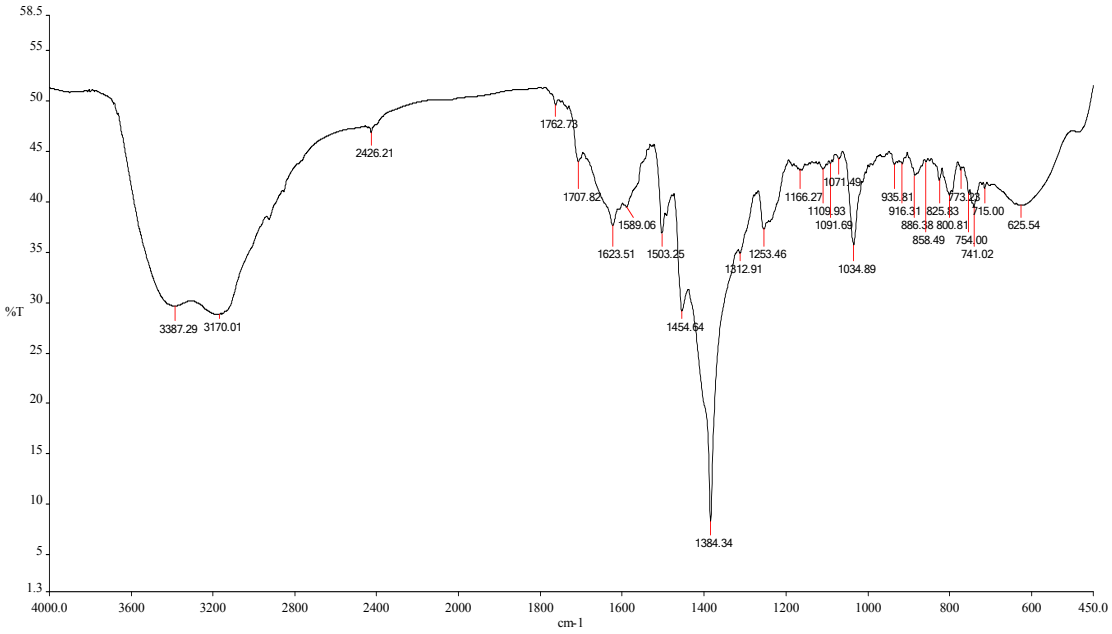
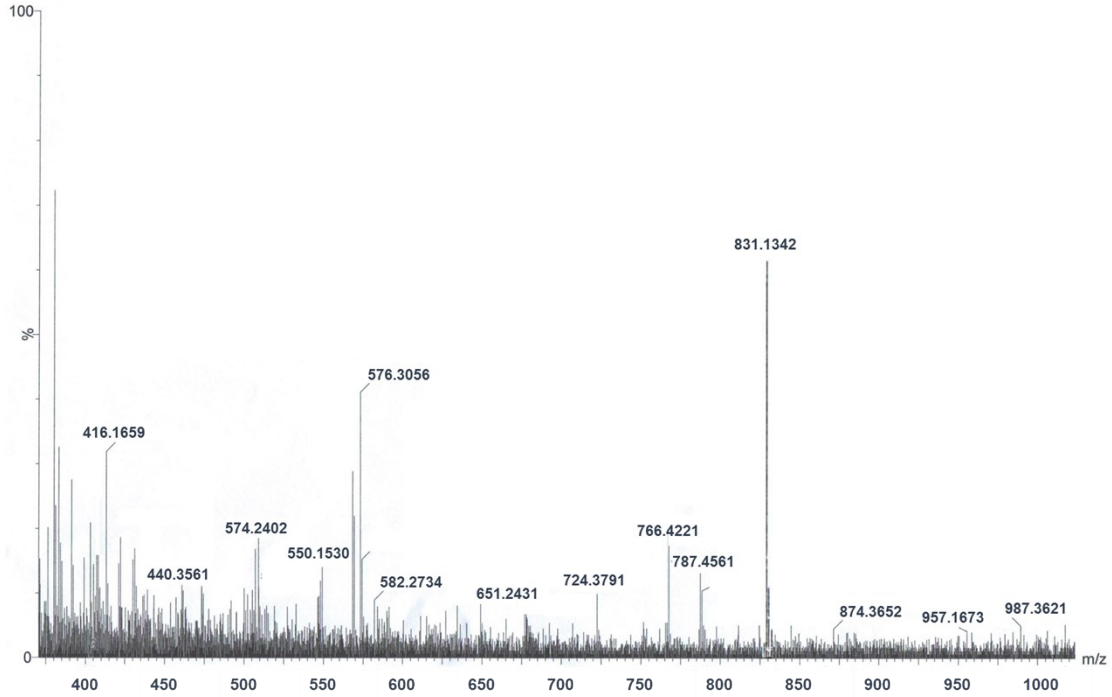


Fig. S8 Mass Spectra of L-Al^{3+}.



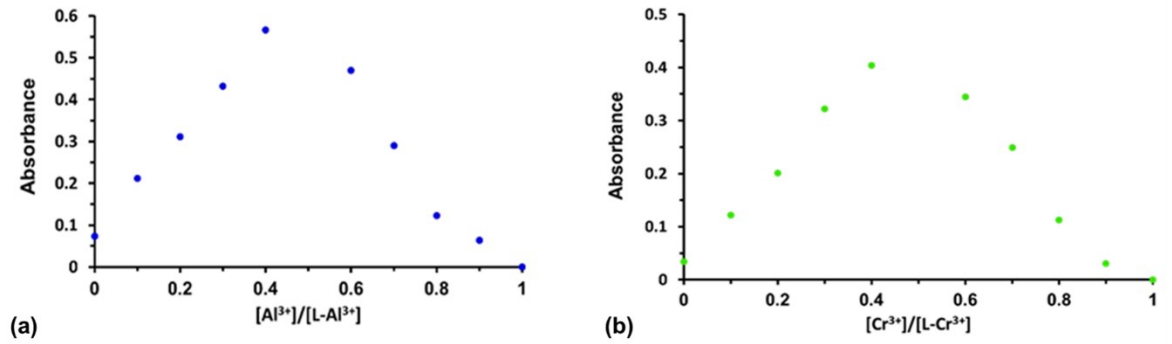


Fig. S9 Job's plot of (a) L-Al^{3+} (b) L-Cr^{3+}.

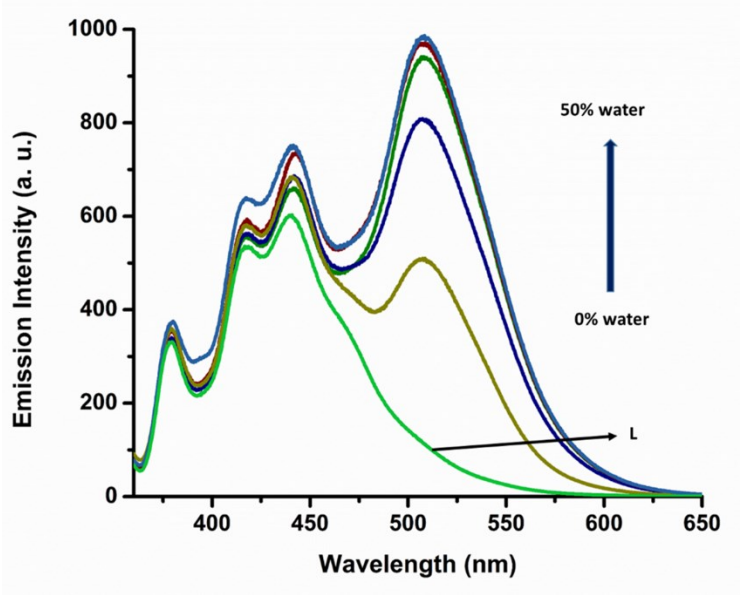


Fig. S10 Effect of emission L upon addition of water (0.0-50.0% in DMSO).

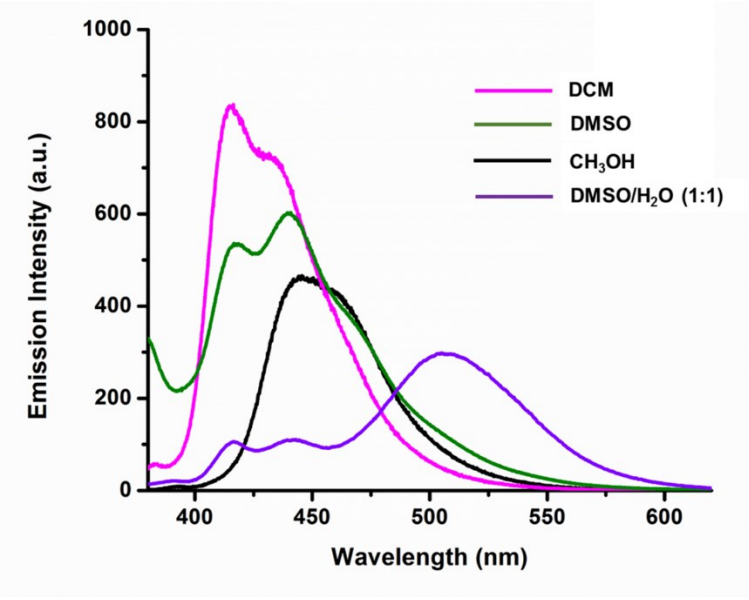


Fig. S11 Solvent effects (DCM, DMSO, CH_3OH, DMSO/H_2O (1:1)) of L**.**

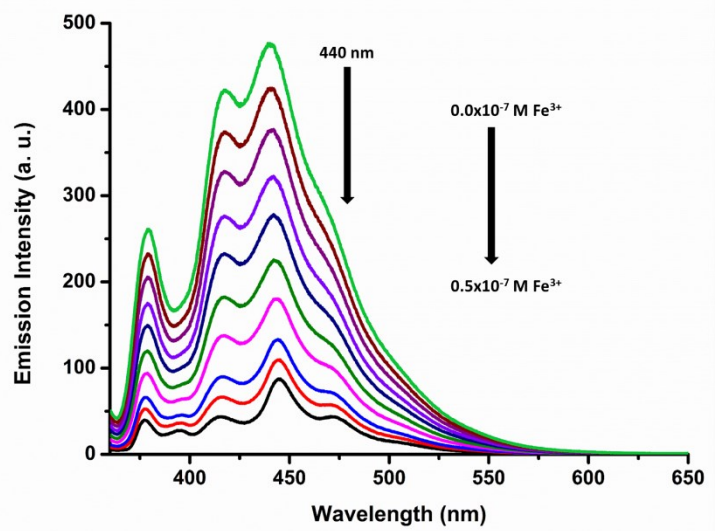


Fig. S12 Fluorescence titration (λ_{ex}, 340.0 nm) of L (1.0×10^{-7} M) upon addition of various amounts of (**a)** Fe^{3+} ions (0.5 equiv.) in DMSO.

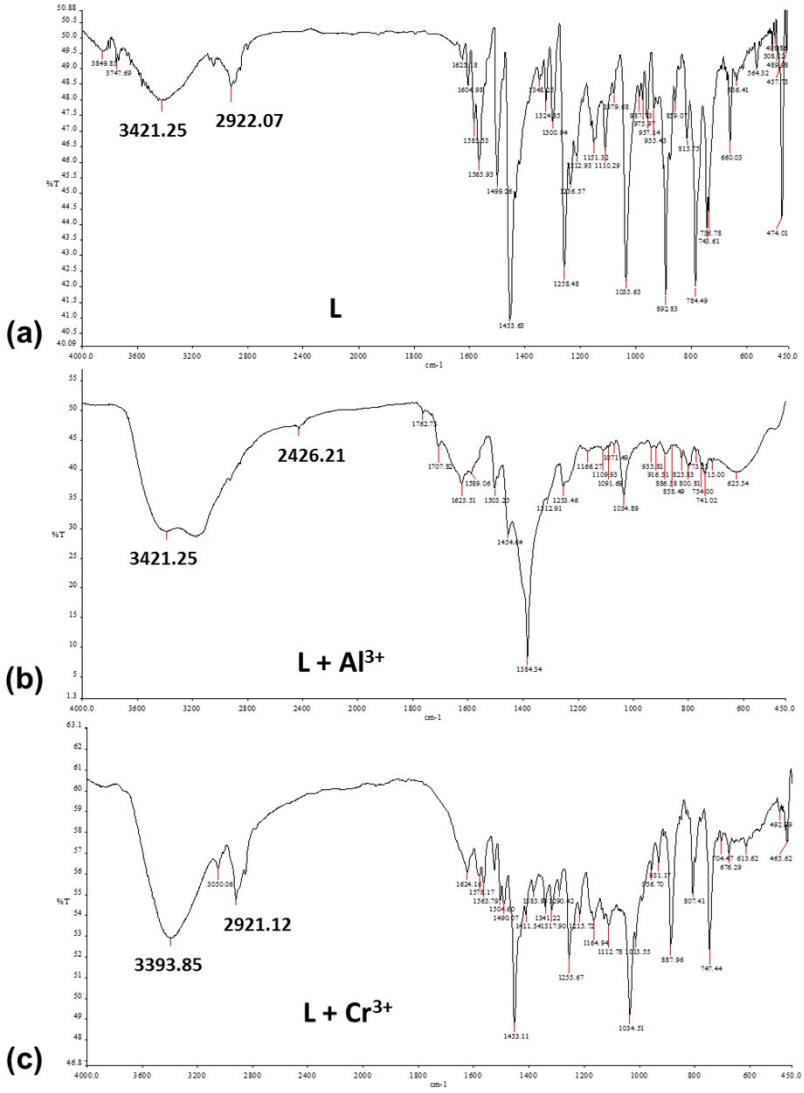


Fig. S13 FTIR spectra of (a) L, (b) L-Al^{3+}, (c) L-Cr^{3+}.

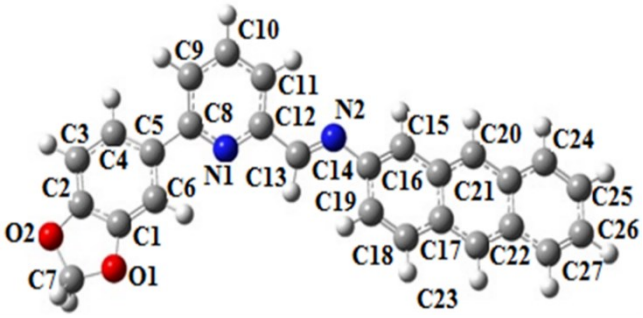


Fig. S14 Optimized structure of L.

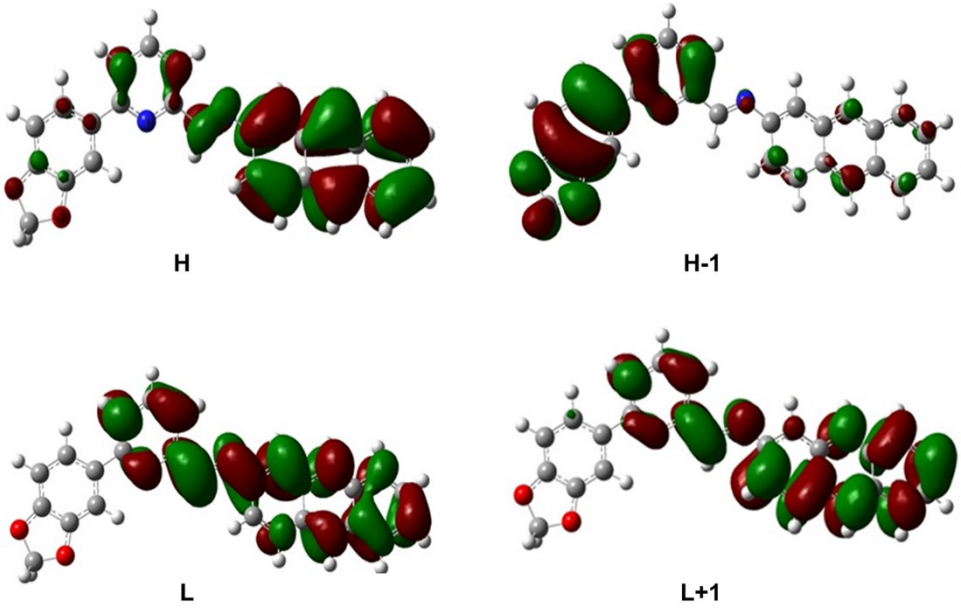


Fig. S15 Frontier molecular orbitals of L.

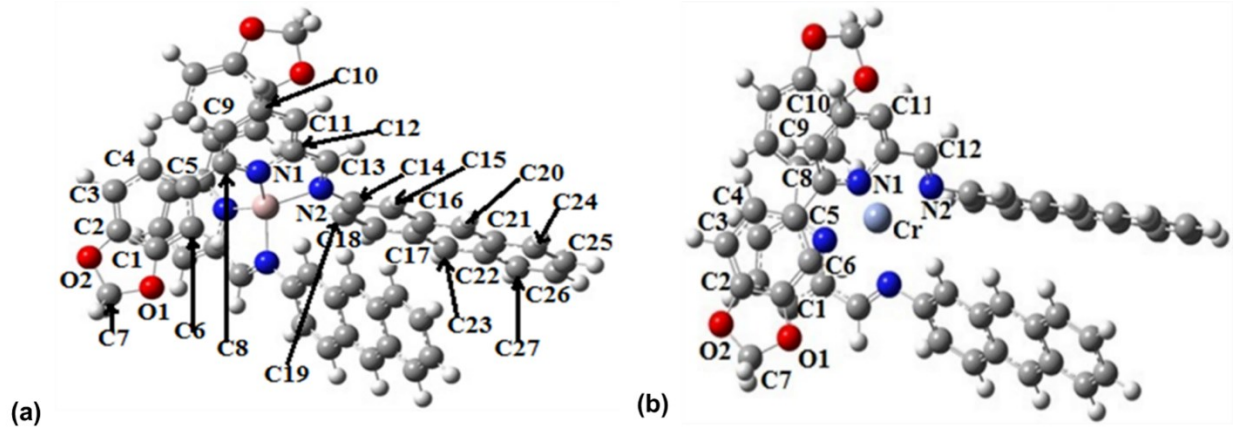


Fig. S16 Optimised structure of (a) L-Al^{3+} and (b) L-Cr^{3+}.

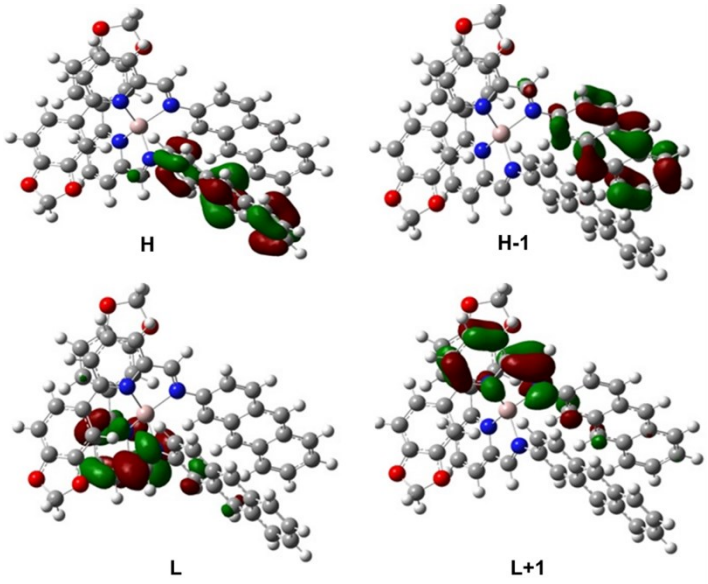


Fig. S17 Frontier molecular orbitals of L-Al^{3+}.

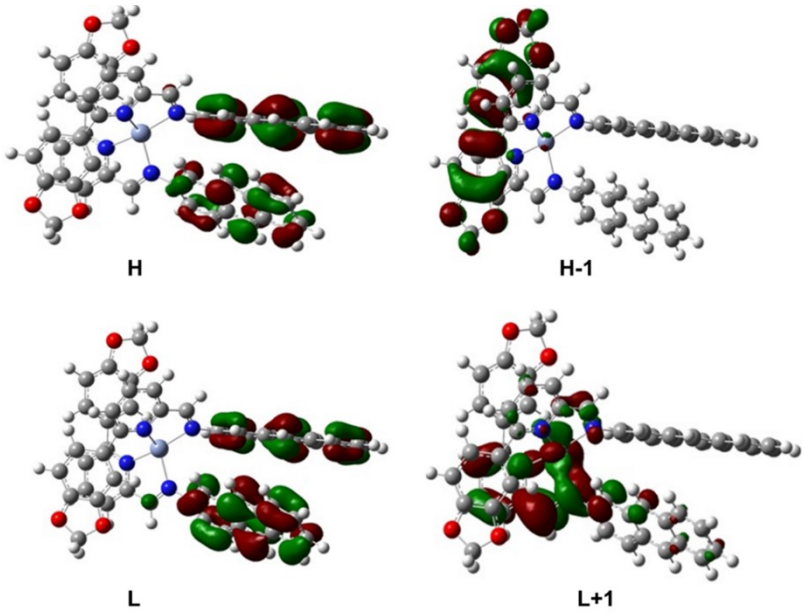


Fig. S18 Frontier molecular orbitals of L-Cr^{3+}.

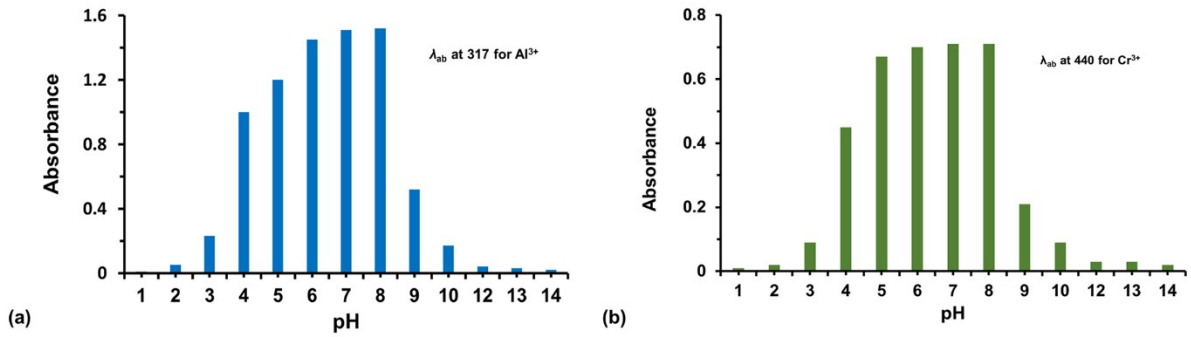


Fig. S19 pH effects on absorbance values of (a) L-Al^{3+} and (b) L-Cr^{3+}.