Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary documents

A reversible fluorescent-colorimetric chemosensor based on a novel Schiff base for visual detection of CO_3^{2-} in aqueous solution

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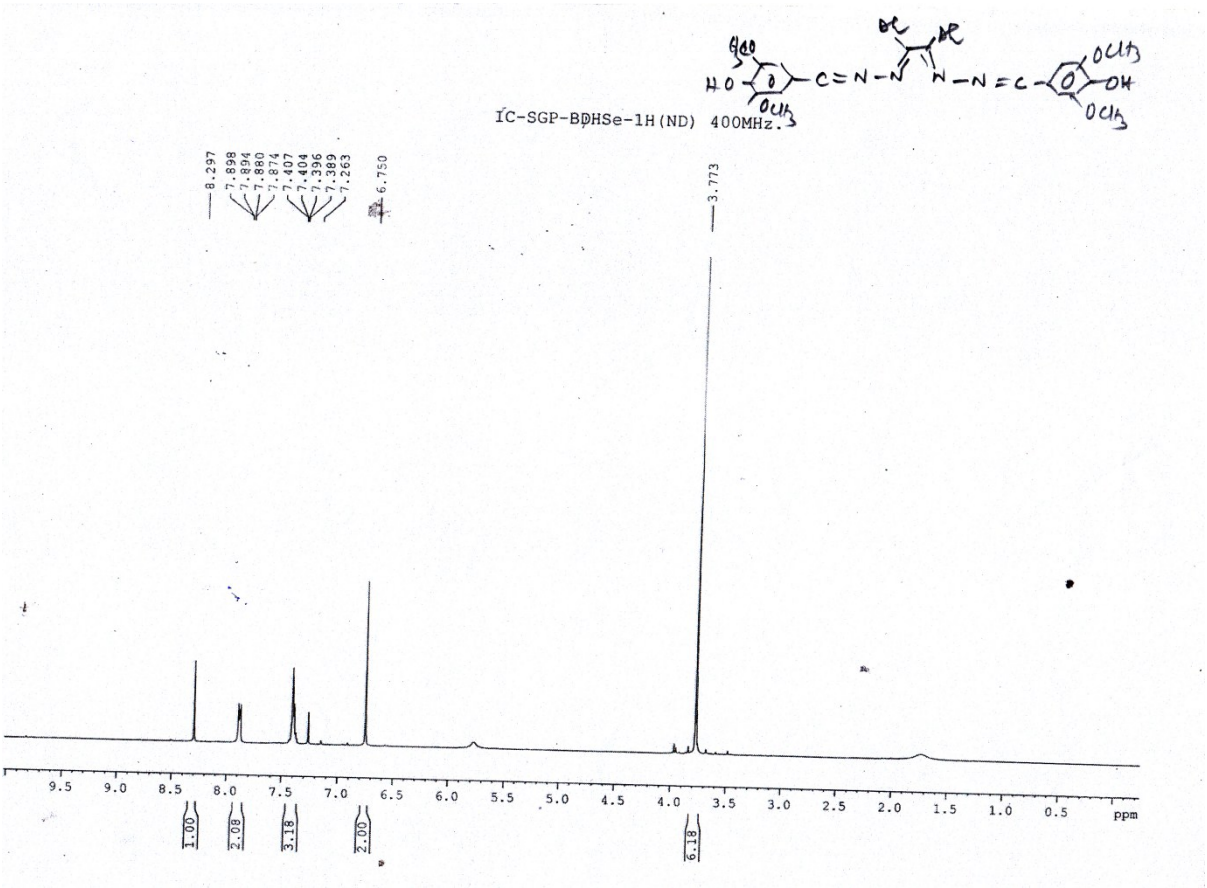

Fig. S1 ^{1}H NMR spectra of **L** in $CDCl_3$.

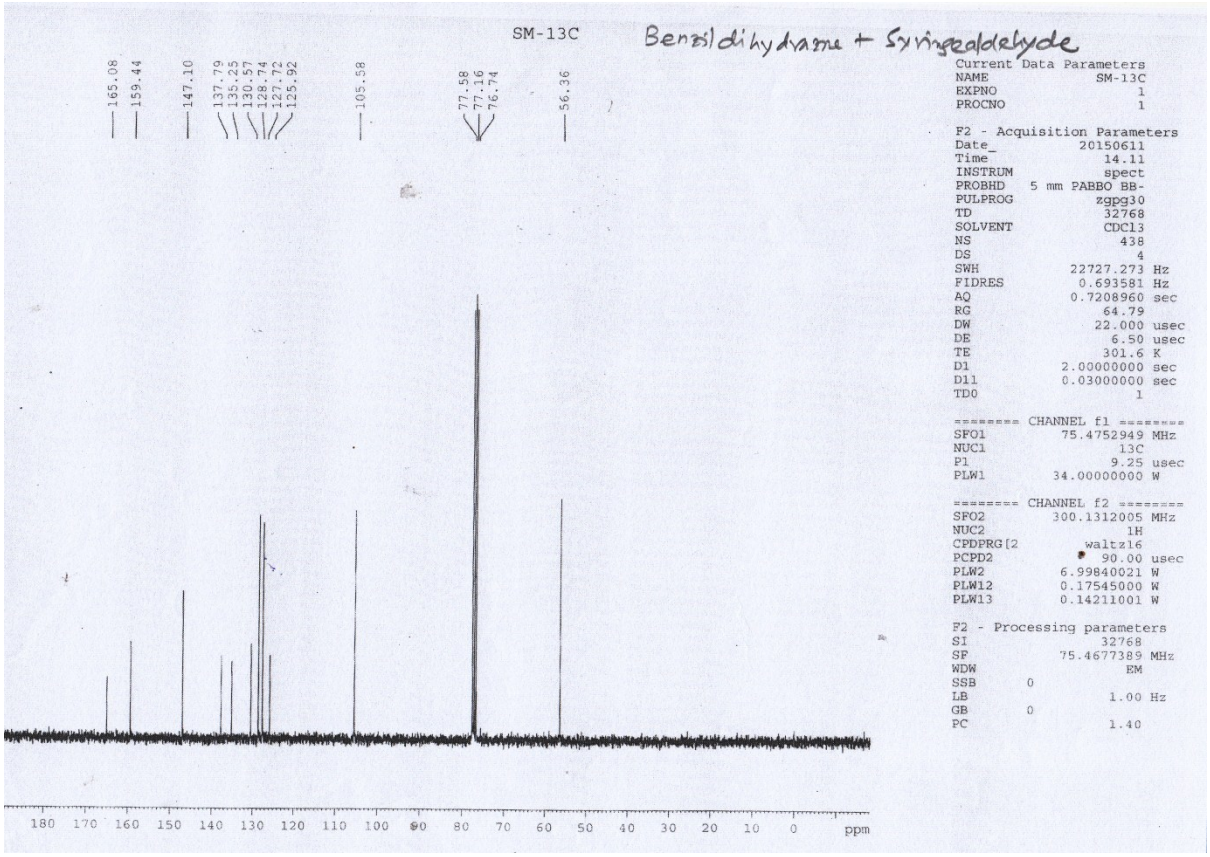

Fig. S2 ^{13}C NMR Spectra of **L** in $CDCl_3$.

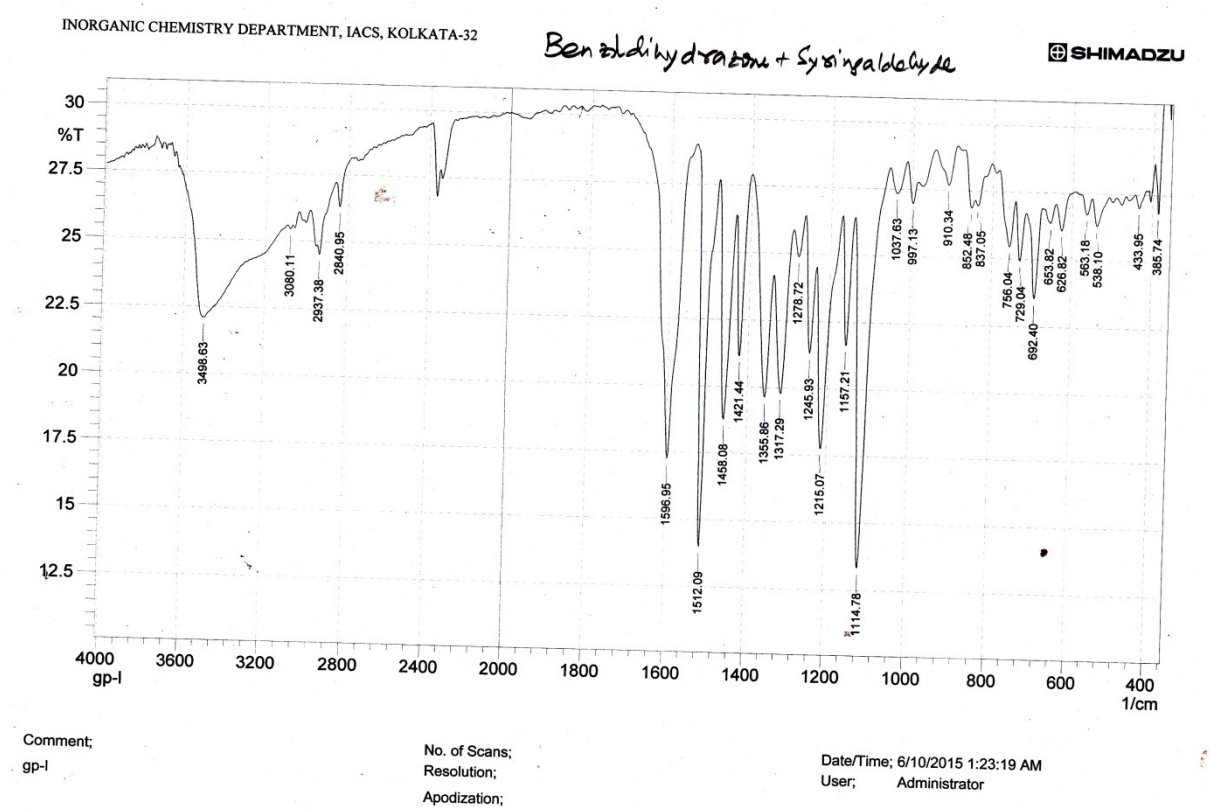

Fig. S3 FTIR spectra of **L.**

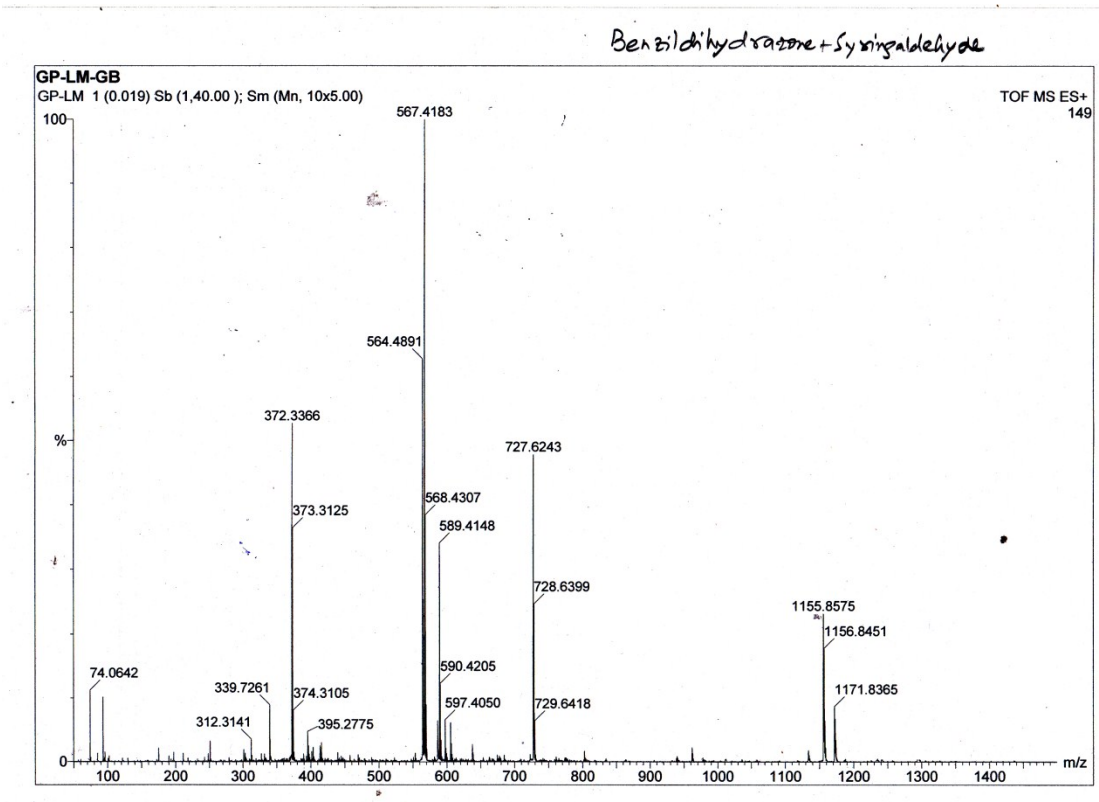

Fig. S4 Mass spectra of **L.**

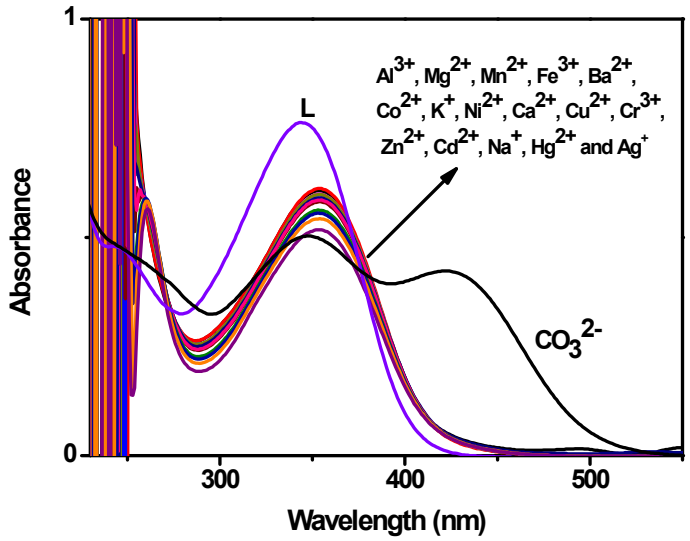

Fig. S5 Changes in the absorption spectra of **L** (10 μM) in the presence of 2 eq. of different cations.

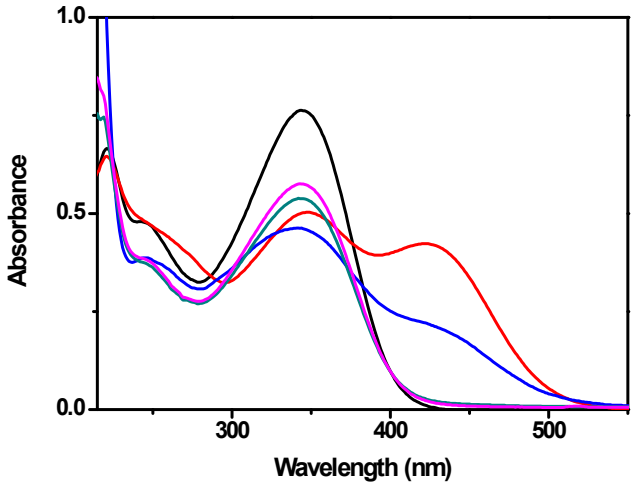

Fig. S6 Changes in absorption spectra of L (10μM) in presence of 2 equiv. of CO_3^{2-} (Red trace); CN- (pink trace) and S^{2-}(green trace). Only L (black trace) and L in presence of S^{2-} at high concentration 8×10^{-3} M (blue trace).

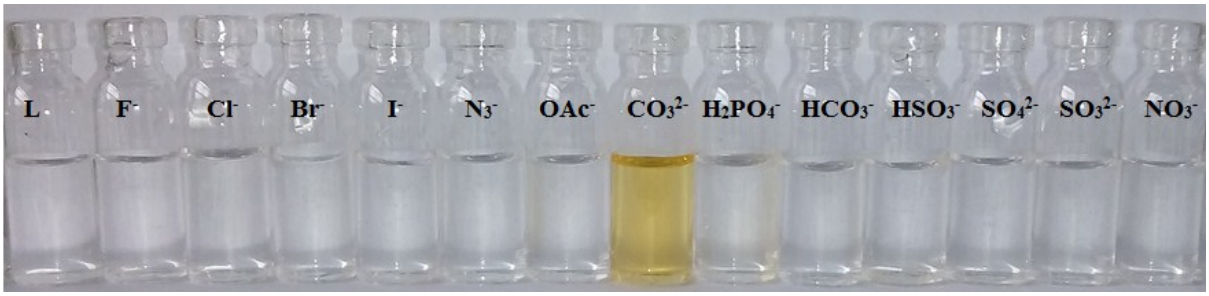

Fig. S7 The colour change of **L** (10 μM) upon addition of various anions (2 equiv.) in MeOH–H_2O (2: 1, v/v) at room temperature.

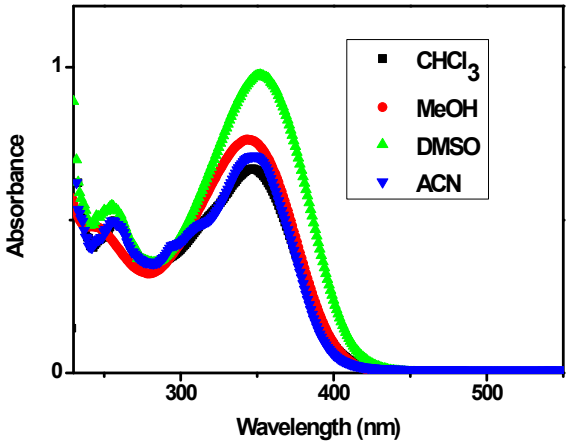

Fig. S8 UV-Vis spectra of **L** in different solvents.

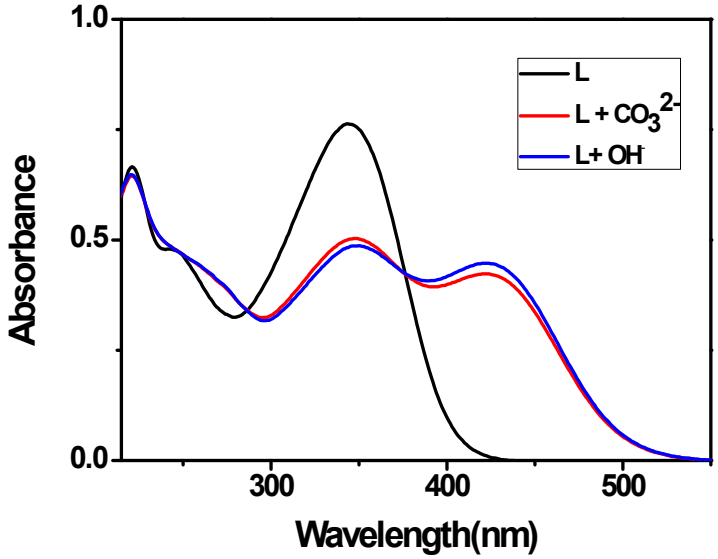

Fig. S9 Absorbance spectra of **L** (10 mM), **L** + CO_3^{2-}(2 equiv.) and **L**+ OH^- (2 equiv.)

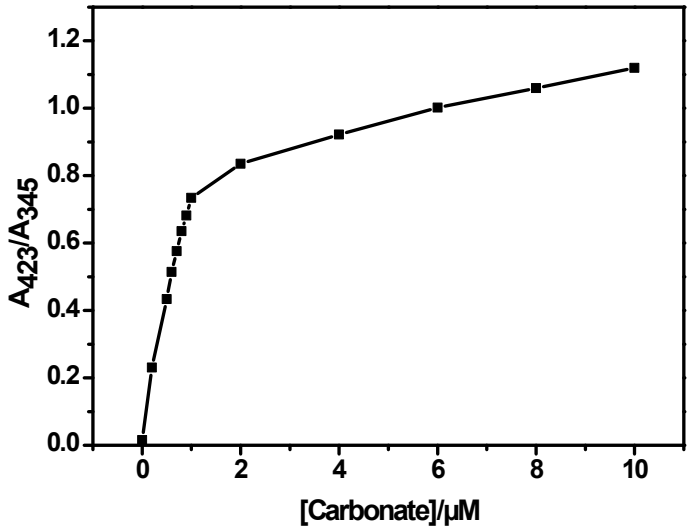

Fig. S10 Ratiometric response of **L** vs. the number of equiv. of CO_3^{2-} added.

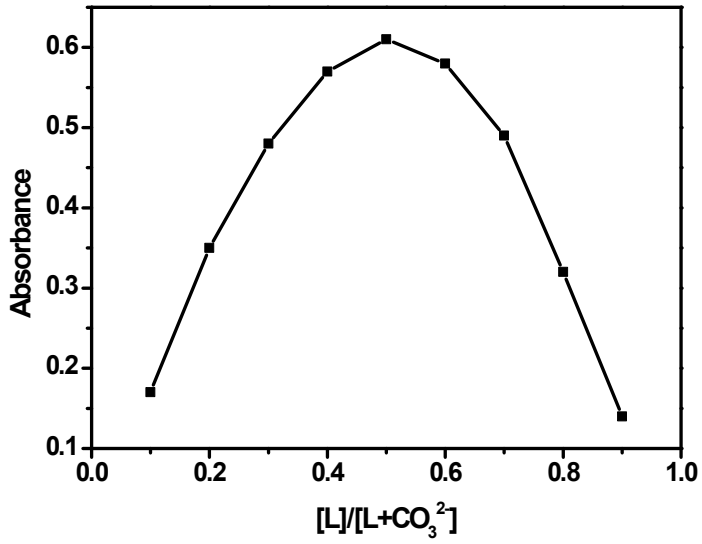

Fig. S11 Job plot for CO_3^{2-}.

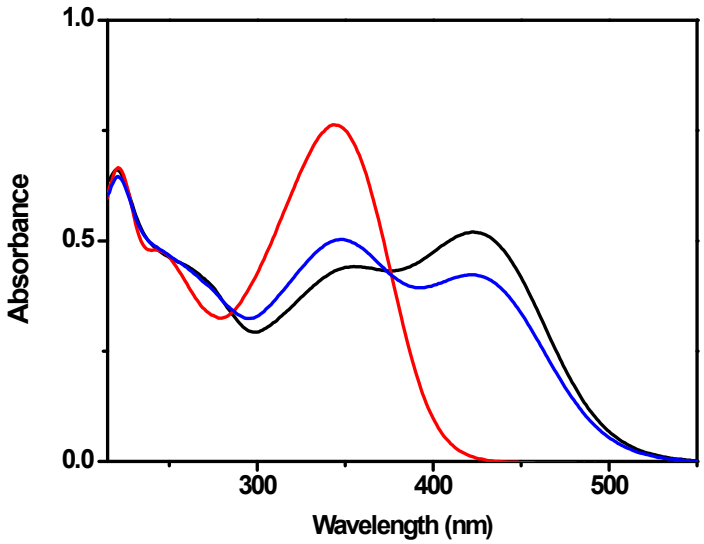

Fig. S12 UV-Vis spectra of **L** (red line), **L**+Na_2CO_3 (blue line) and **L**+K_2CO_3 (black line).

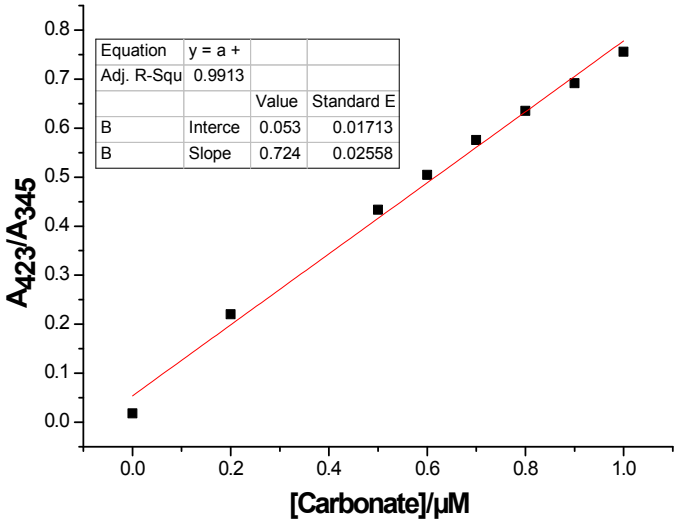

Fig. S13 Detection limit.

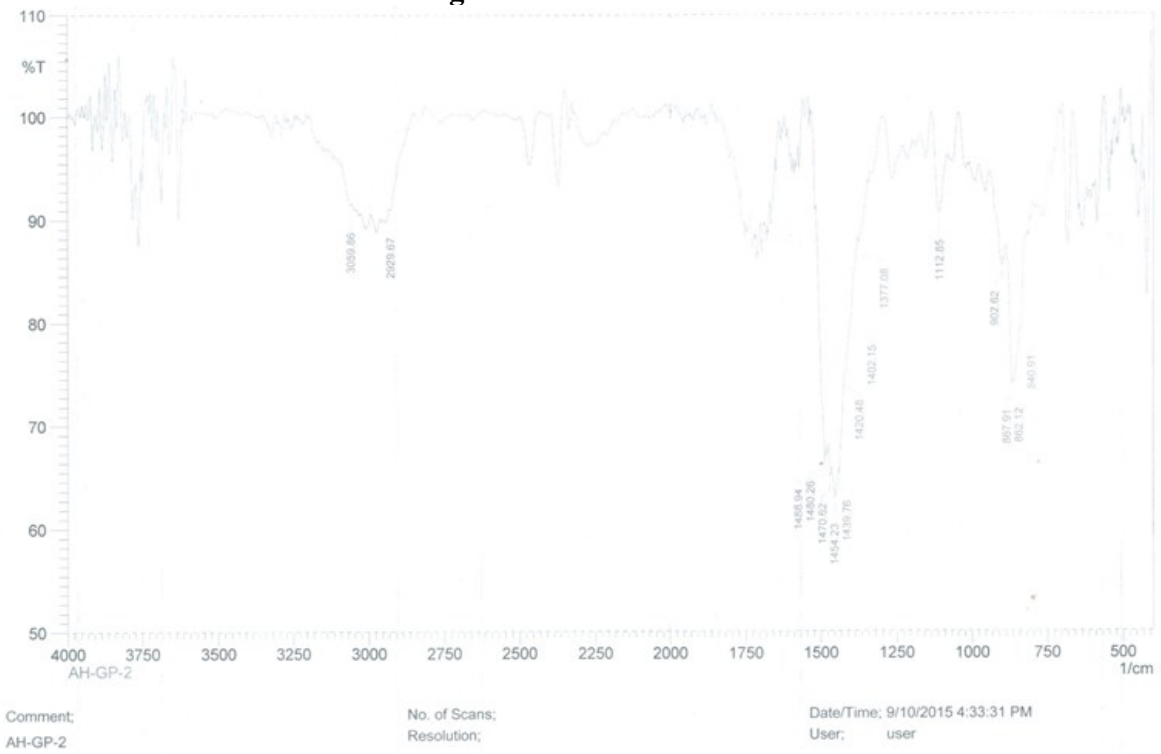

Fig. S14 FTIR spectra of **L+ Na_2CO_3.**

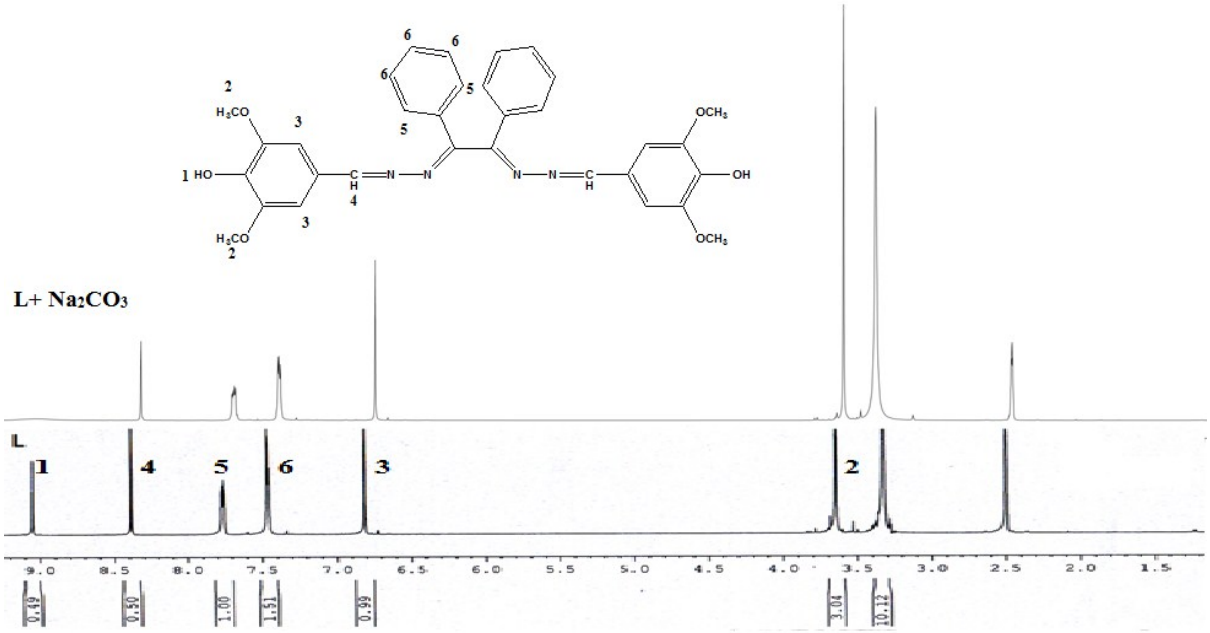

Fig. S15 ^{1}H NMR spectra of **L** and **L** + $\mathbf{Na_2CO_3}$ in d_6-DMSO-D_2O (9/1, v/v).

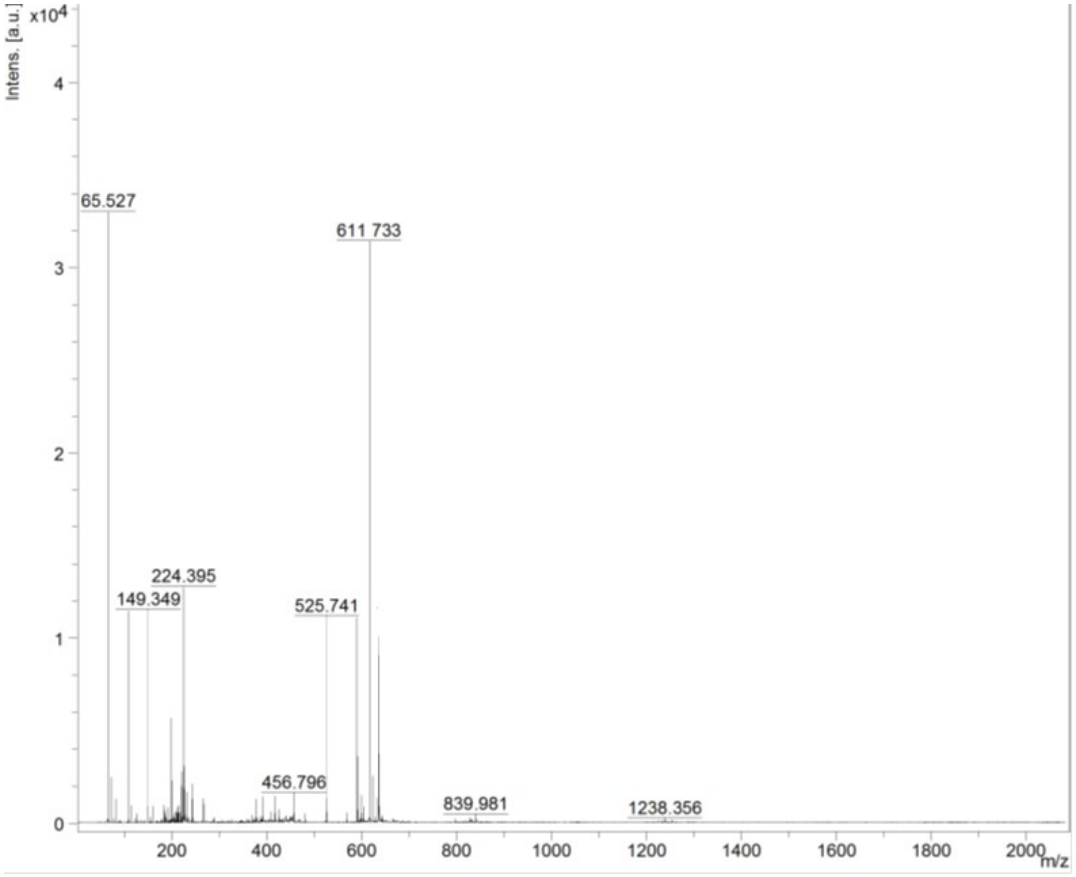

Fig. S16 HRMS spectra of **L** + $\mathbf{Na_2CO_3}$.

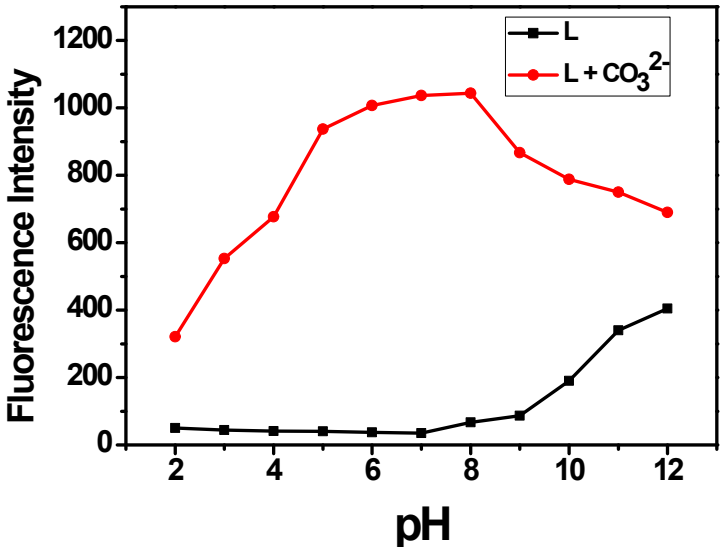

Fig. S17 Fluorescence intensity of **L** before and after addition of carbonate ion (2 equiv.) in various pH medium.

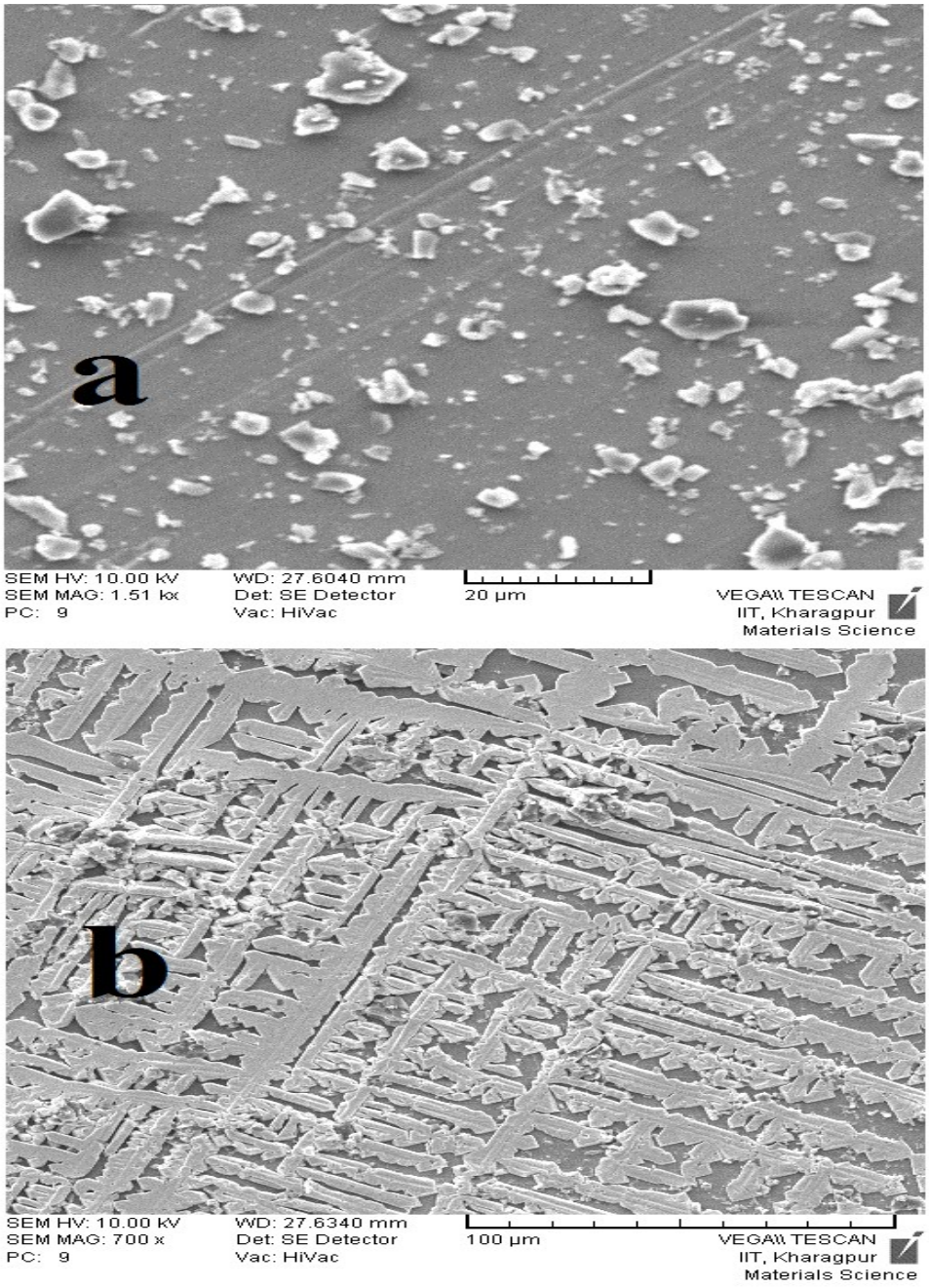

Fig. S18 (a) SEM image of **L** (b) SEM image of **L** + Na_2CO_3.

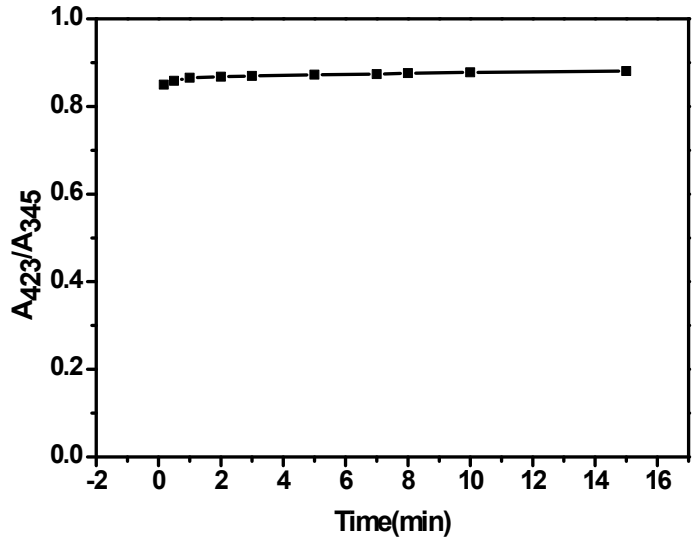

Fig. S19 Time evolution for carbonate ion.

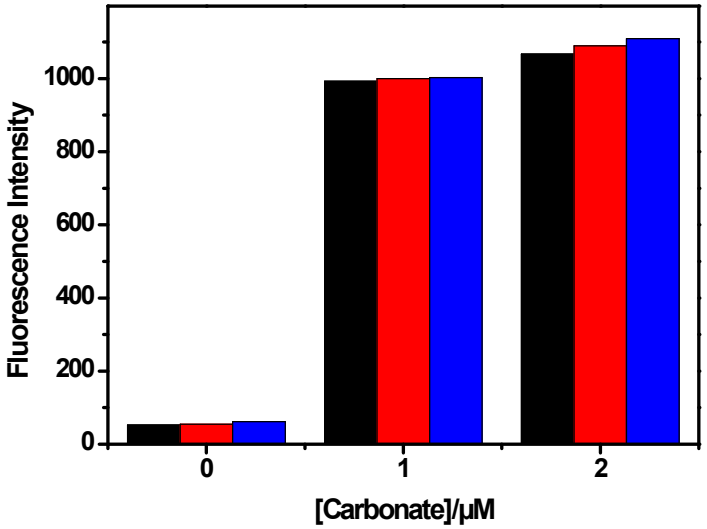

Fig. S20 Change in fluorescence intensity of **L** on addition of carbonate ion in different water samples.