

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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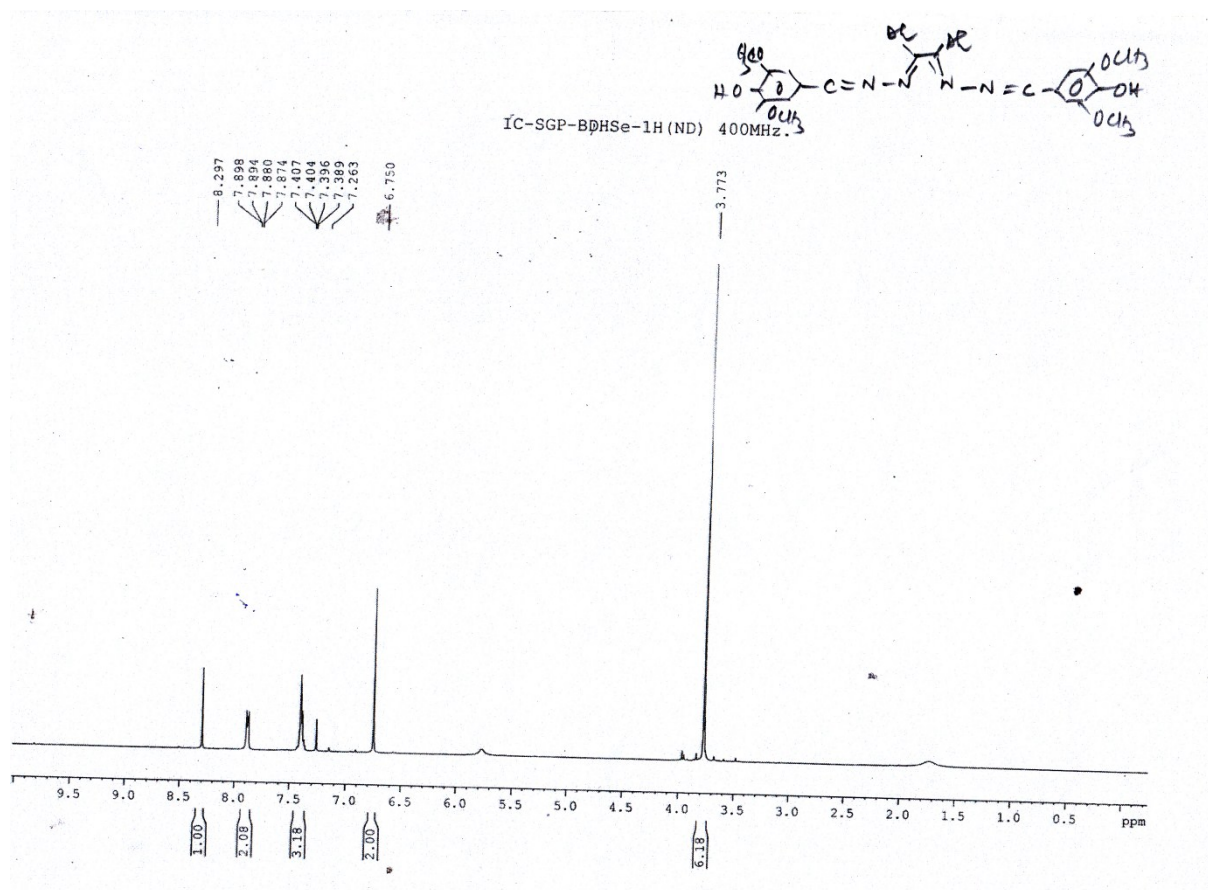


Fig. S1 ^1H NMR spectra of **L** in CDCl_3 .

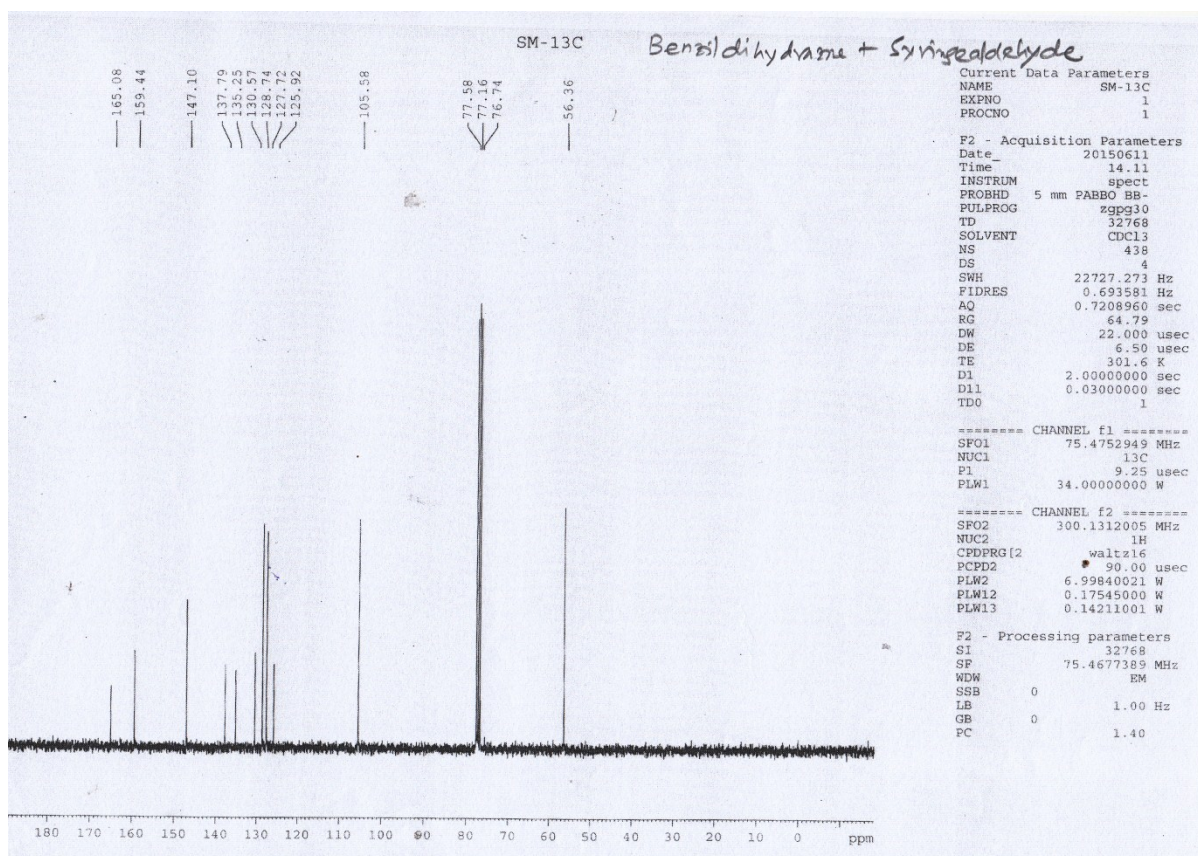


Fig. S2 ^{13}C NMR Spectra of L in CDCl_3 .

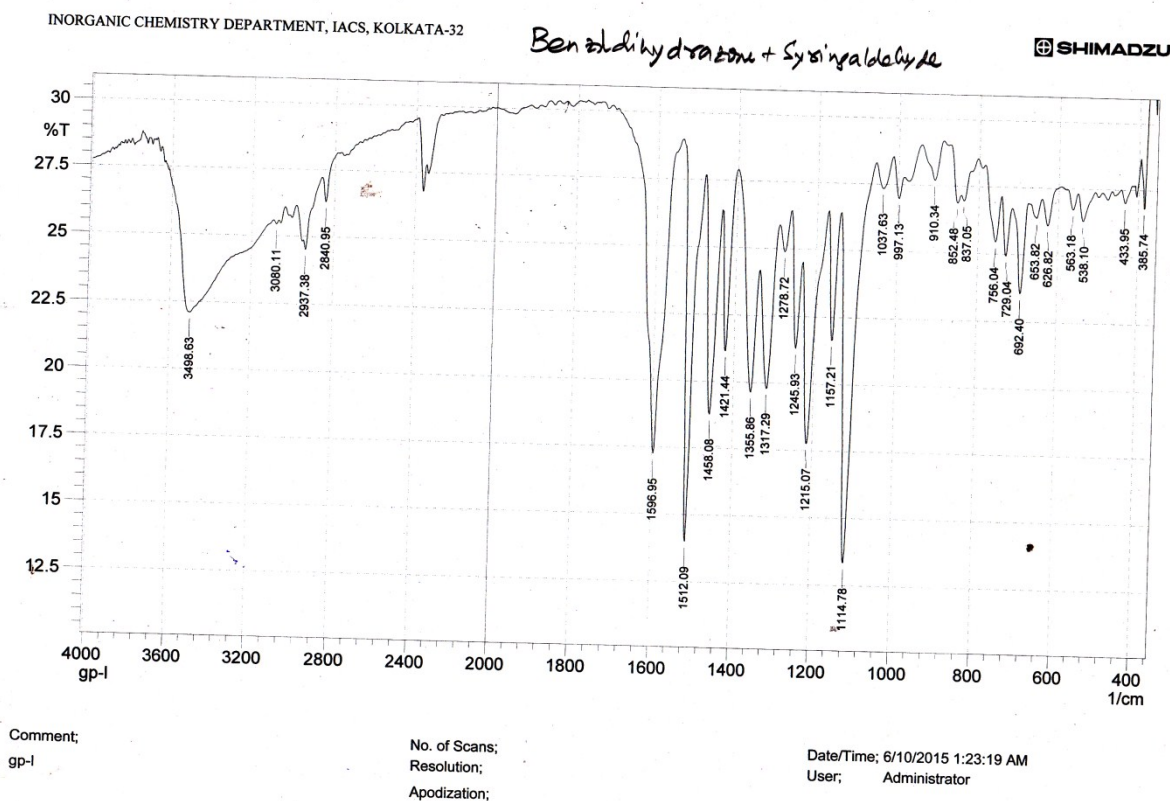


Fig. S3 FTIR spectra of L.

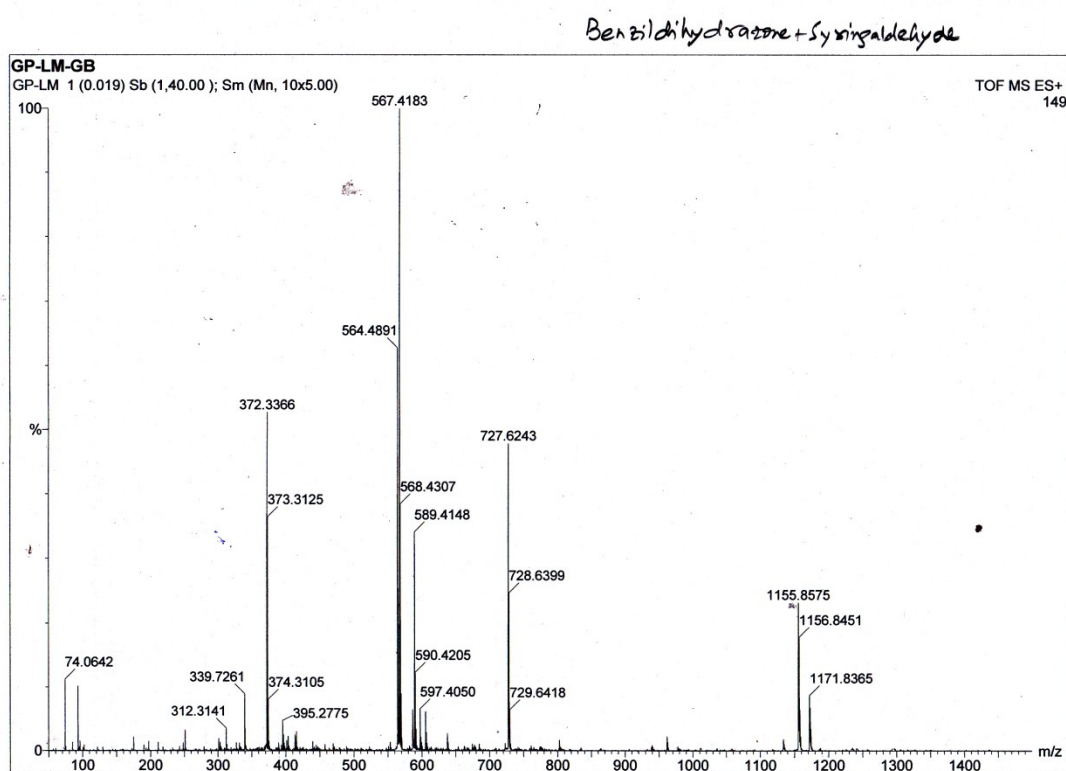


Fig. S4 Mass spectra of L.

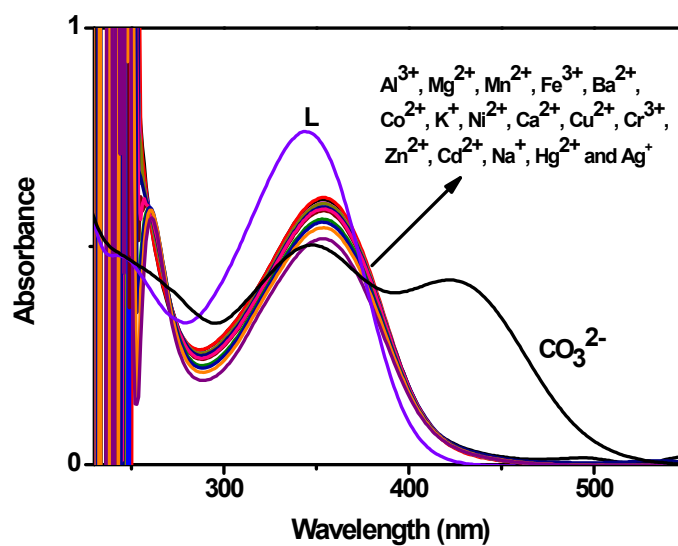


Fig. S5 Changes in the absorption spectra of L (10 μM) in the presence of 2 eq. of different cations.

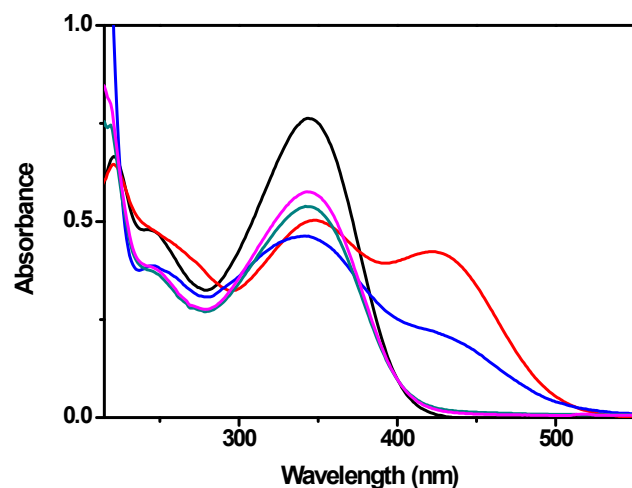


Fig. S6 Changes in absorption spectra of L (10 μ M) in presence of 2 equiv. of CO_3^{2-} (Red trace); CN^- (pink trace) and S^{2-} (green trace). Only L (black trace) and L in presence of S^{2-} at high concentration 8×10^{-3} M (blue trace).

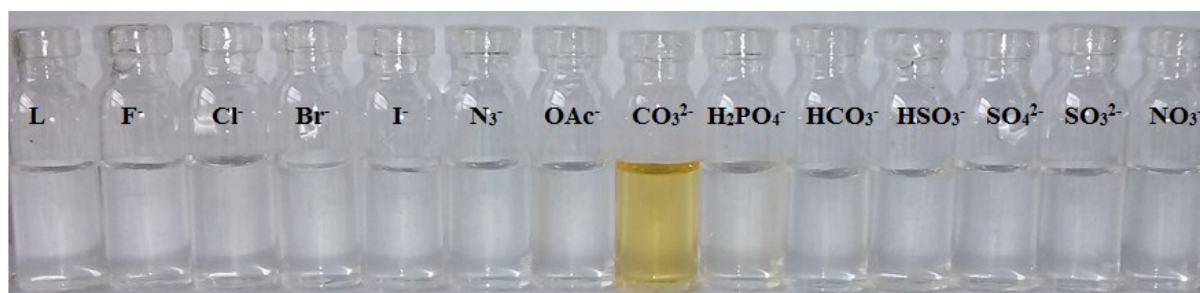


Fig. S7 The colour change of L (10 μ M) upon addition of various anions (2 equiv.) in MeOH–H₂O (2: 1, v/v) at room temperature.

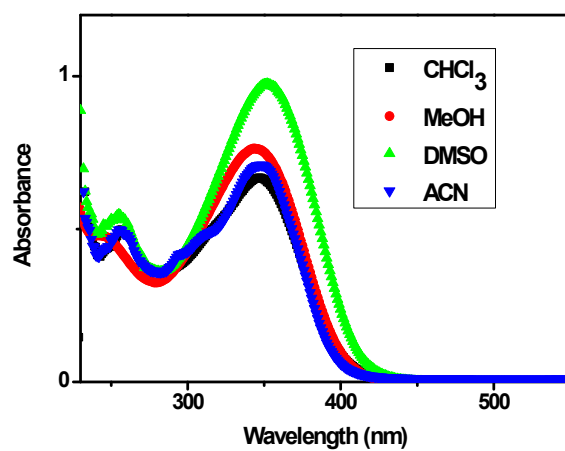


Fig. S8 UV-Vis spectra of L in different solvents.

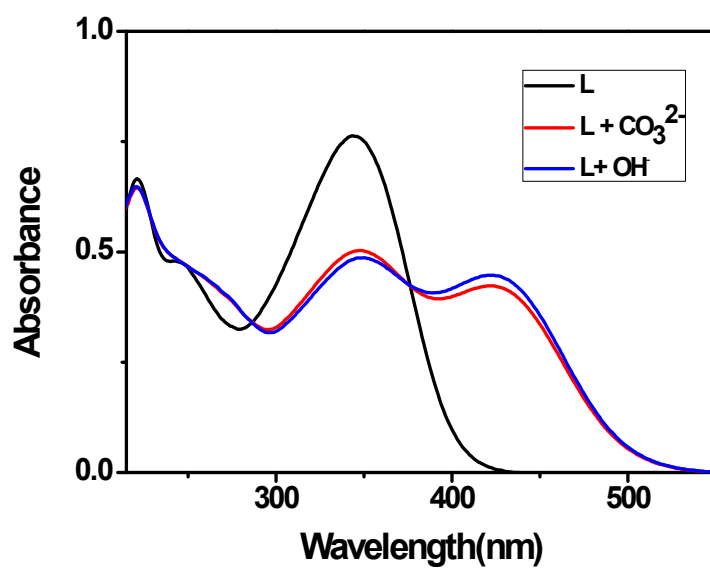


Fig. S9 Absorbance spectra of L (10 mM), L + CO₃²⁻ (2 equiv.) and L + OH⁻ (2 equiv.)

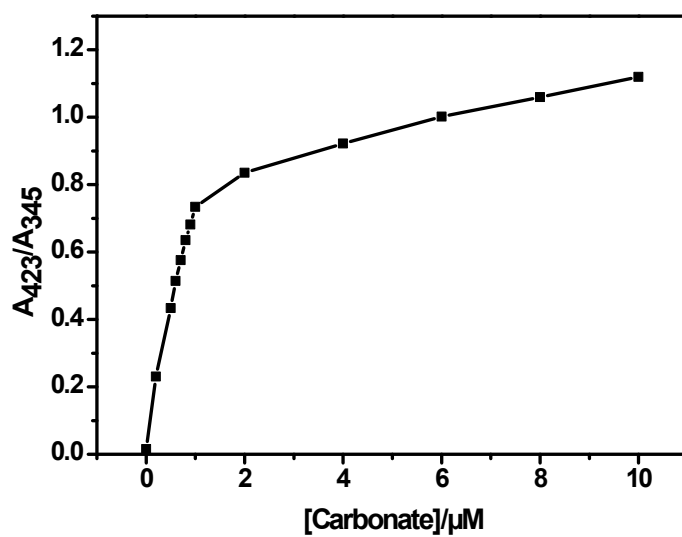


Fig. S10 Ratiometric response of L vs. the number of equiv. of CO₃²⁻ added.

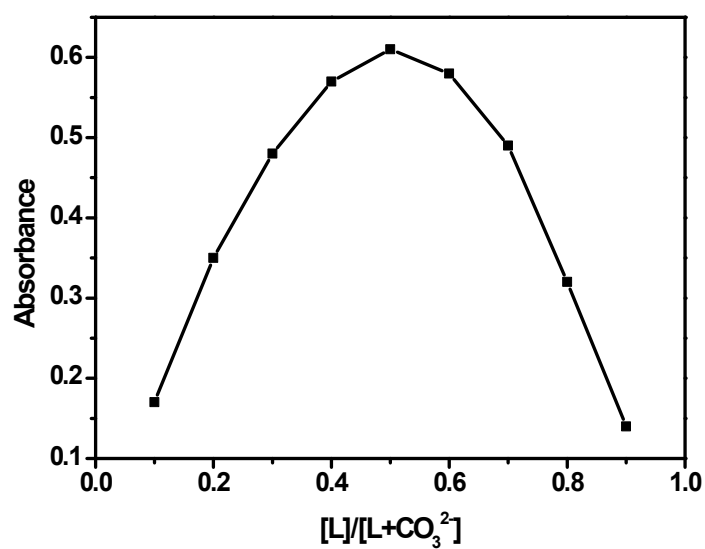


Fig. S11 Job plot for CO_3^{2-} .

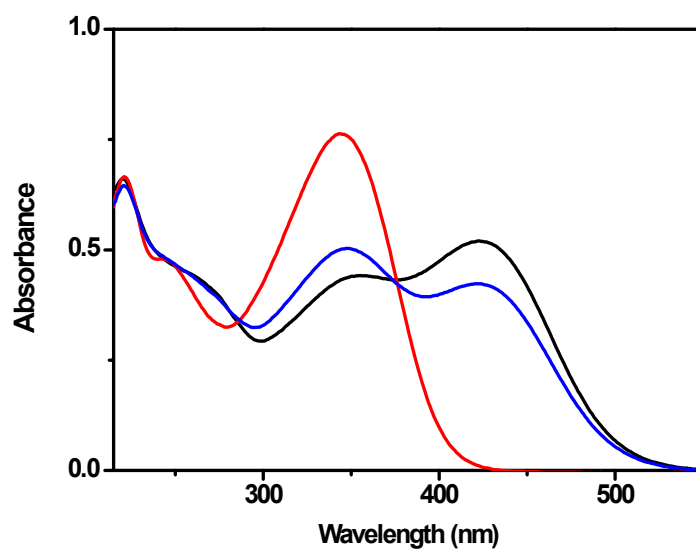


Fig. S12 UV-Vis spectra of L (red line), L+ Na_2CO_3 (blue line) and L+ K_2CO_3 (black line).

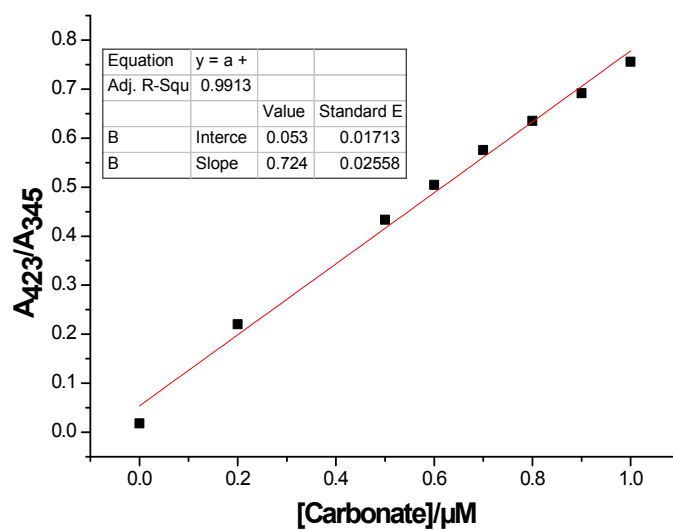


Fig. S13 Detection limit.

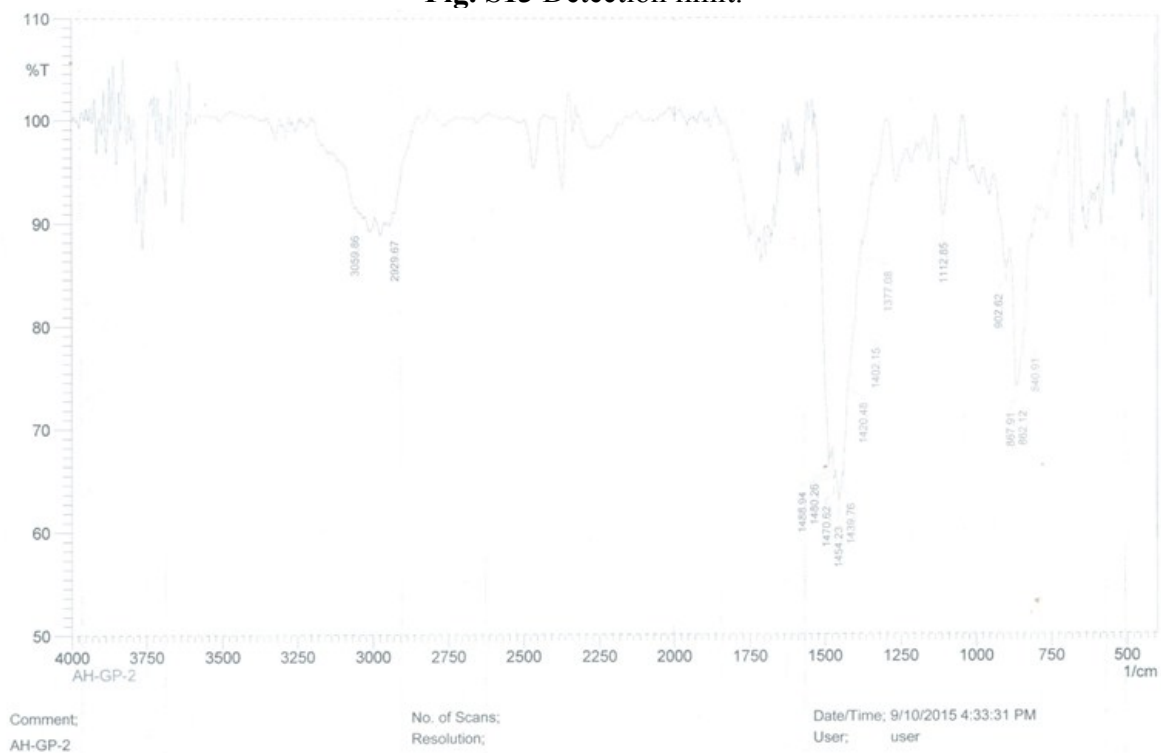


Fig. S14 FTIR spectra of L+ Na₂CO₃.

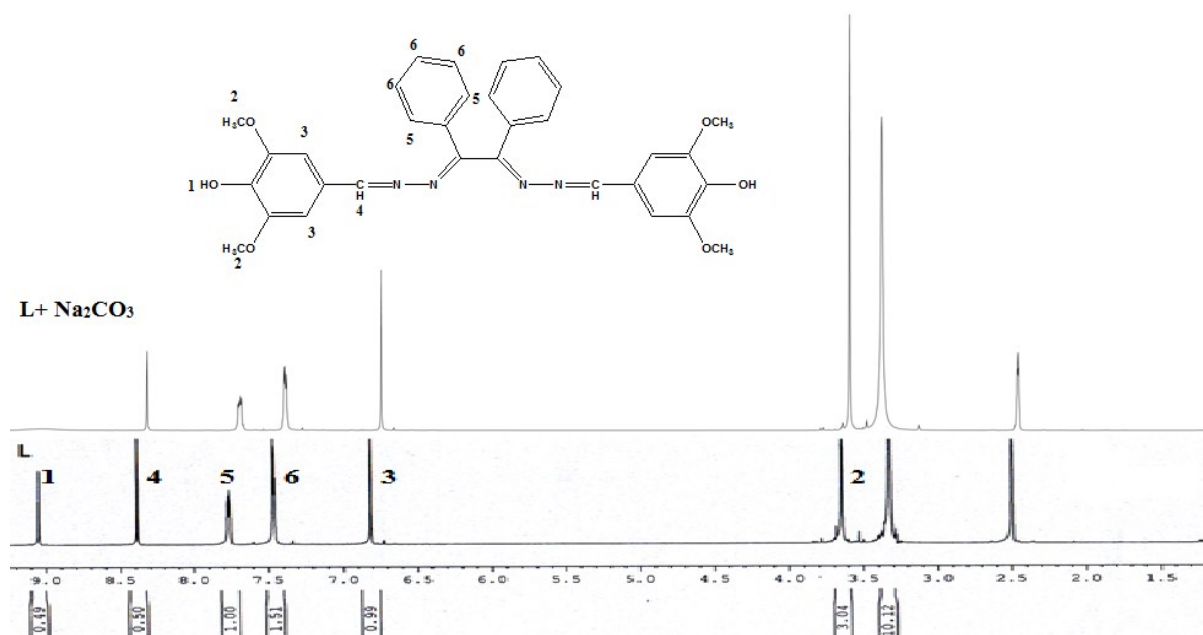


Fig. S15 ^1H NMR spectra of L and L + Na_2CO_3 in d_6 -DMSO- D_2O (9/1, v/v).

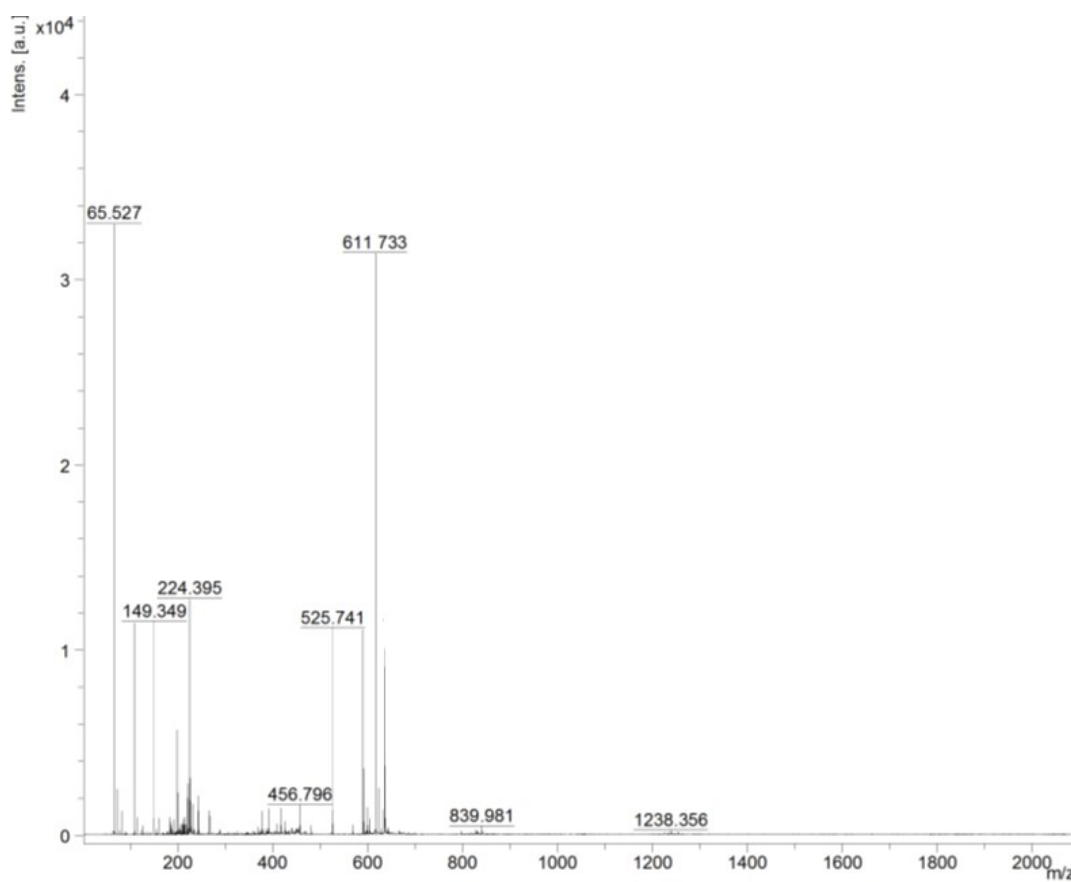


Fig. S16 HRMS spectra of L + Na_2CO_3 .

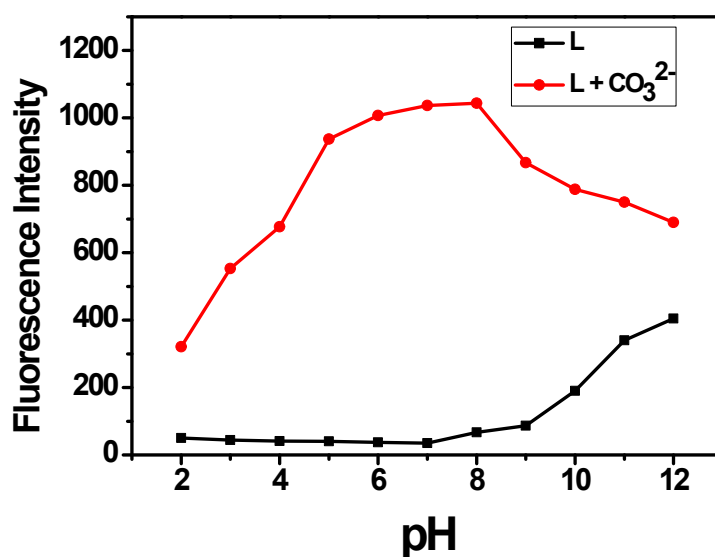
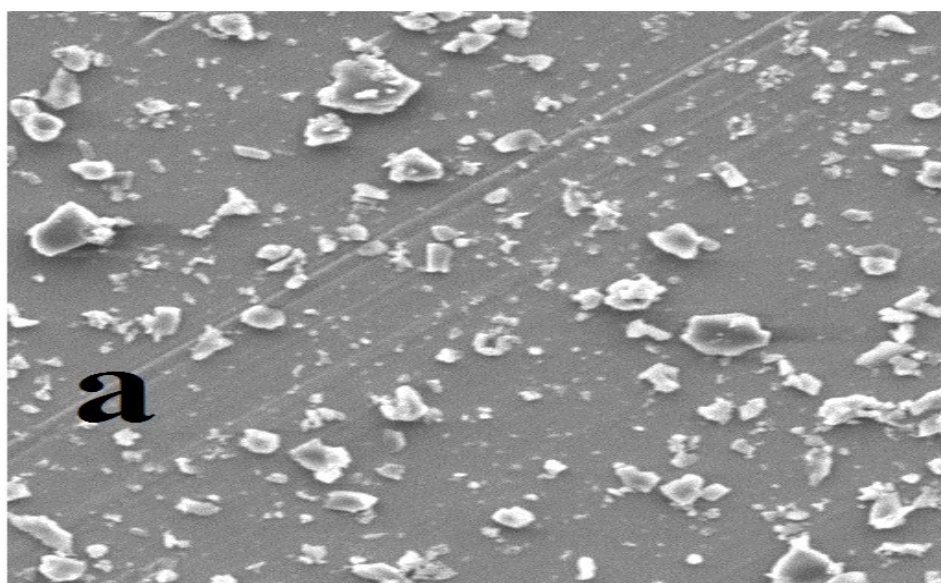
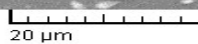


Fig. S17 Fluorescence intensity of **L** before and after addition of carbonate ion (2 equiv.) in various pH medium.

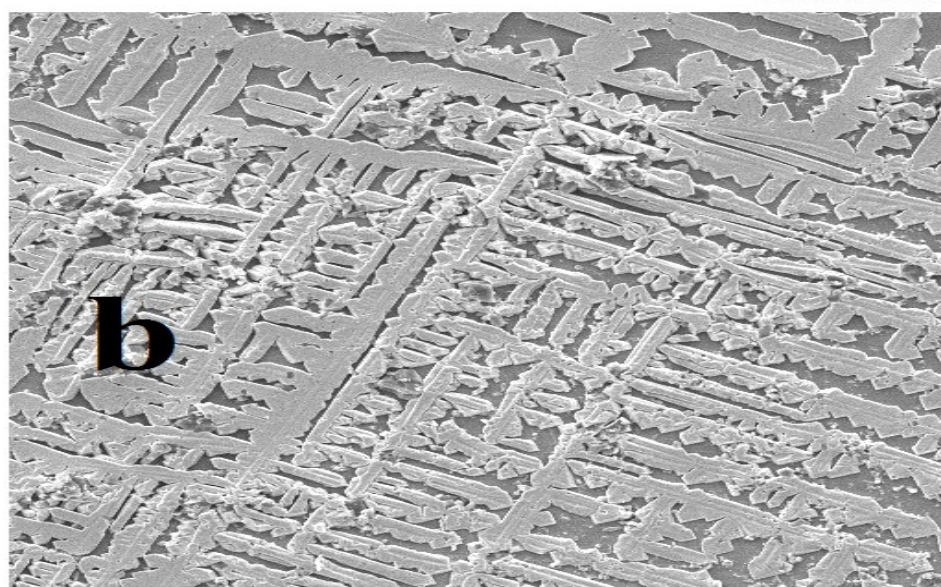


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SEM MAG: 1.51 kx
PC: 9

WD: 27.6040 mm
Det: SE Detector
Vac: HiVac

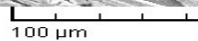


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SEM HV: 10.00 kV
SEM MAG: 700 x
PC: 9

WD: 27.6340 mm
Det: SE Detector
Vac: HiVac



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IIT, Kharagpur
Materials Science

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

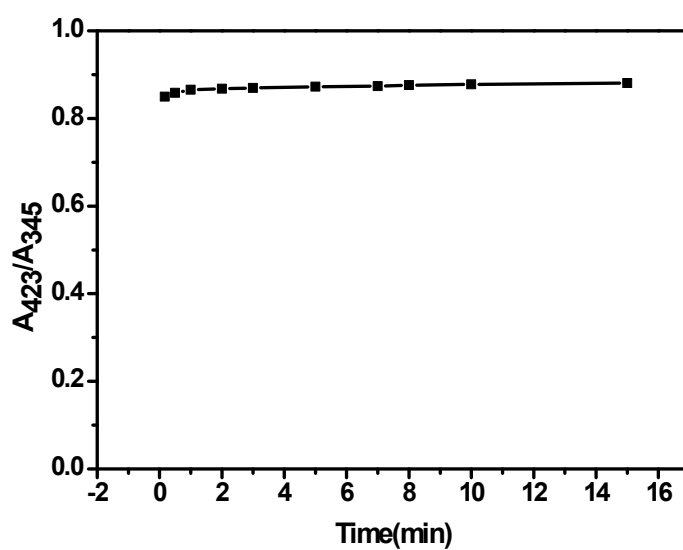


Fig. S19 Time evolution for carbonate ion.

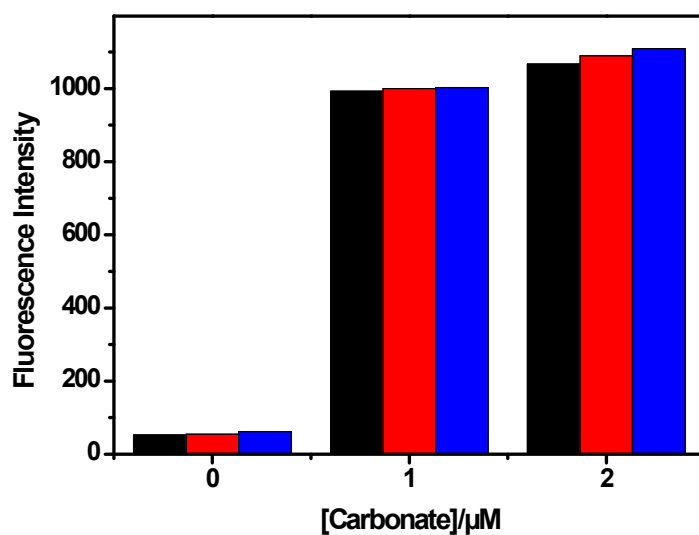


Fig. S20 Change in fluorescence intensity of L on addition of carbonate ion in different water samples.