New Journal of Chemistry

SUPPLEMENTARY MATERIAL

Imine modified ZnO nanoparticles: luminescent chemodosimeter for Al^{3+} and S^{2-} ions based on ligand displacement reaction

Kamaljot Kaur, Savita Chaudhary, Sukhjinder Singh and Surinder Kumar Mehta*

Department of Chemistry and Centre of Advanced Studies in Chemistry, Panjab University, Chandigarh 160 014, India.

* Corresponding author

E-mail address: skmehta@pu.ac.in

Tel: +91 172 2534423; Fax: +91 172 2545074

Date: 15. 12. 2014

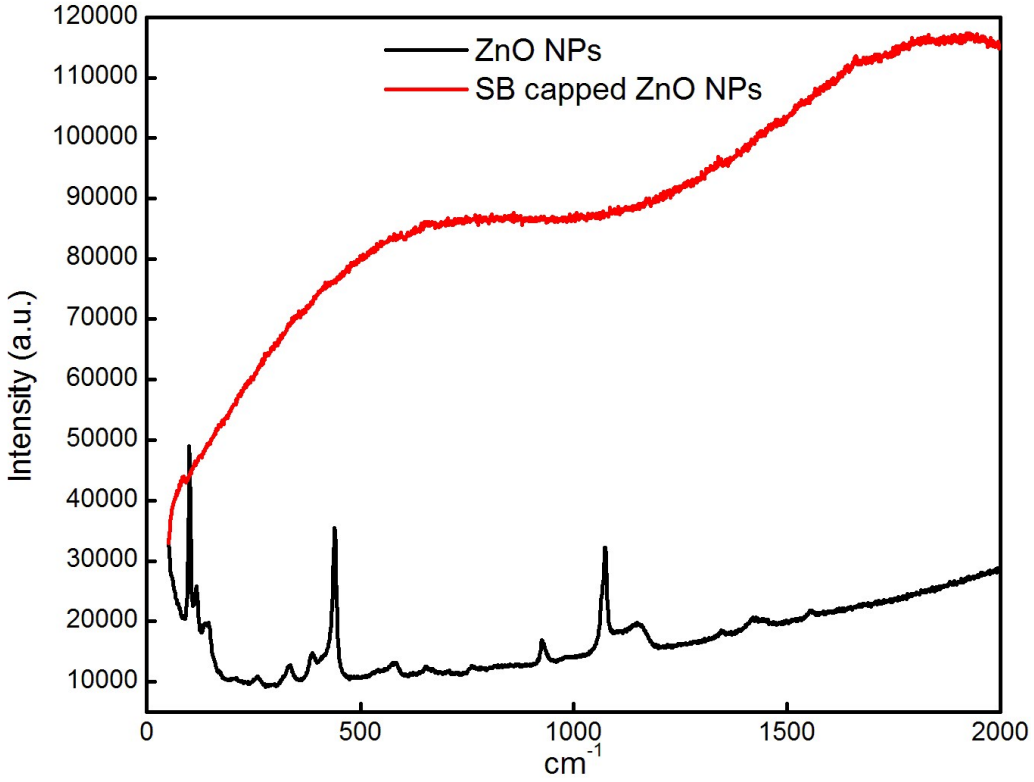

Fig. S1. Raman spectra of bare and capped ZnO NPs.

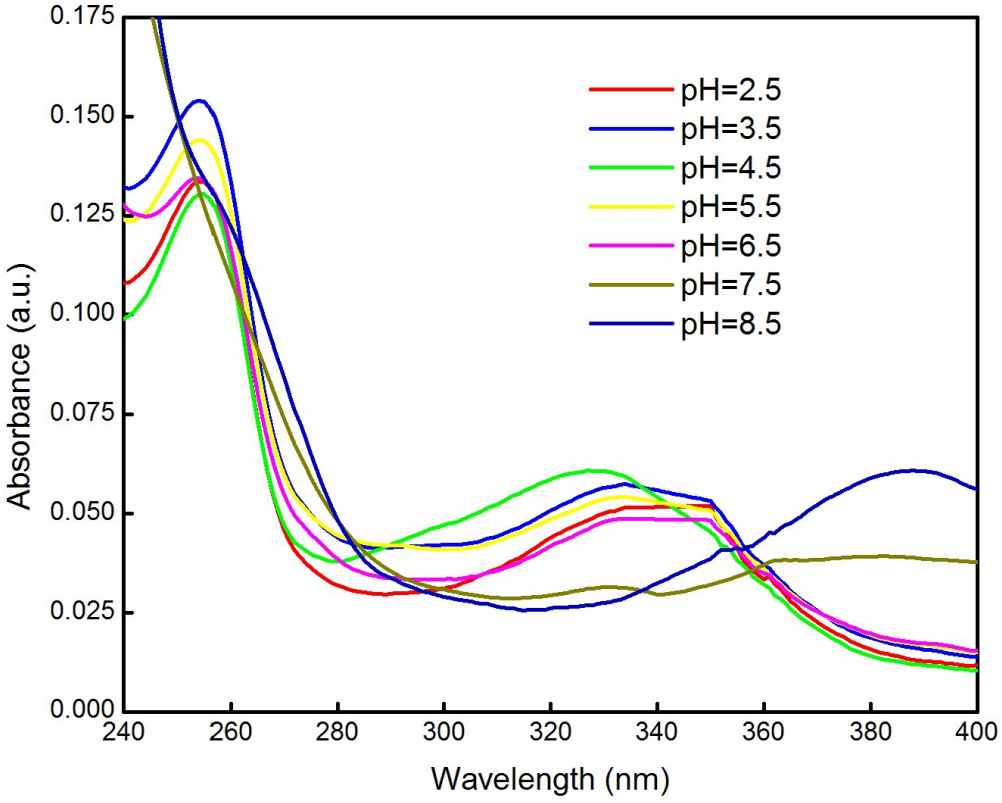

Fig. S2. Variation in absorbance of SB probe L alone in methanol: water (v/v, 1:99), measured over pH range of 2.5-8.5.

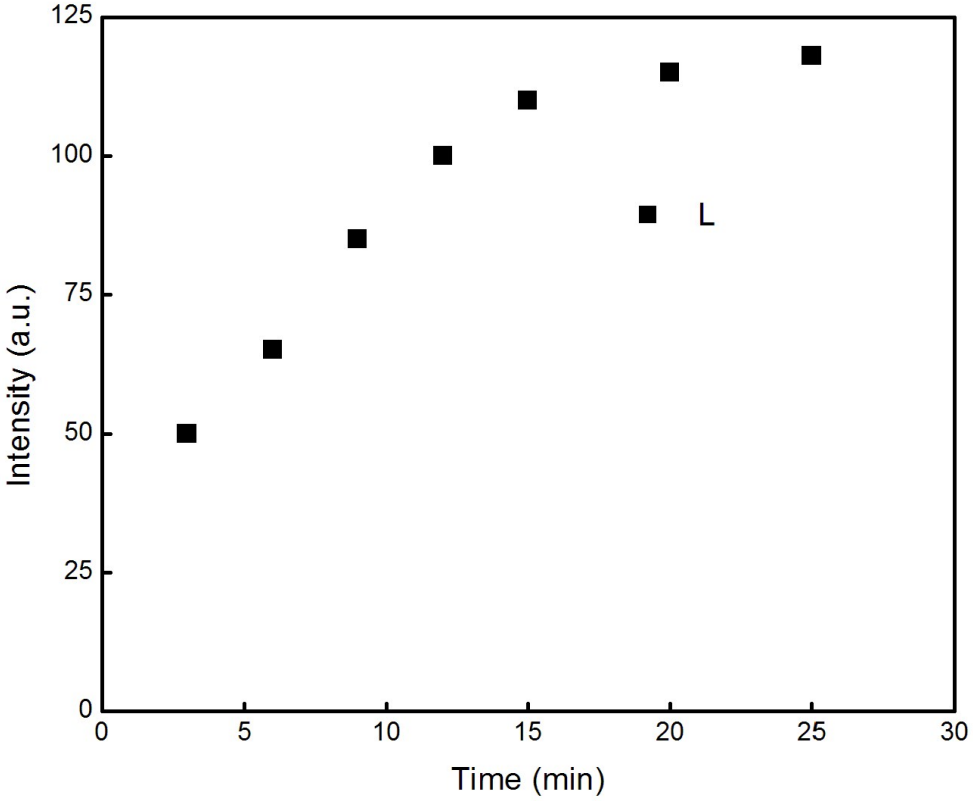

Fig. S3. Variation in emission intensity of probe L with increase in sonication time.

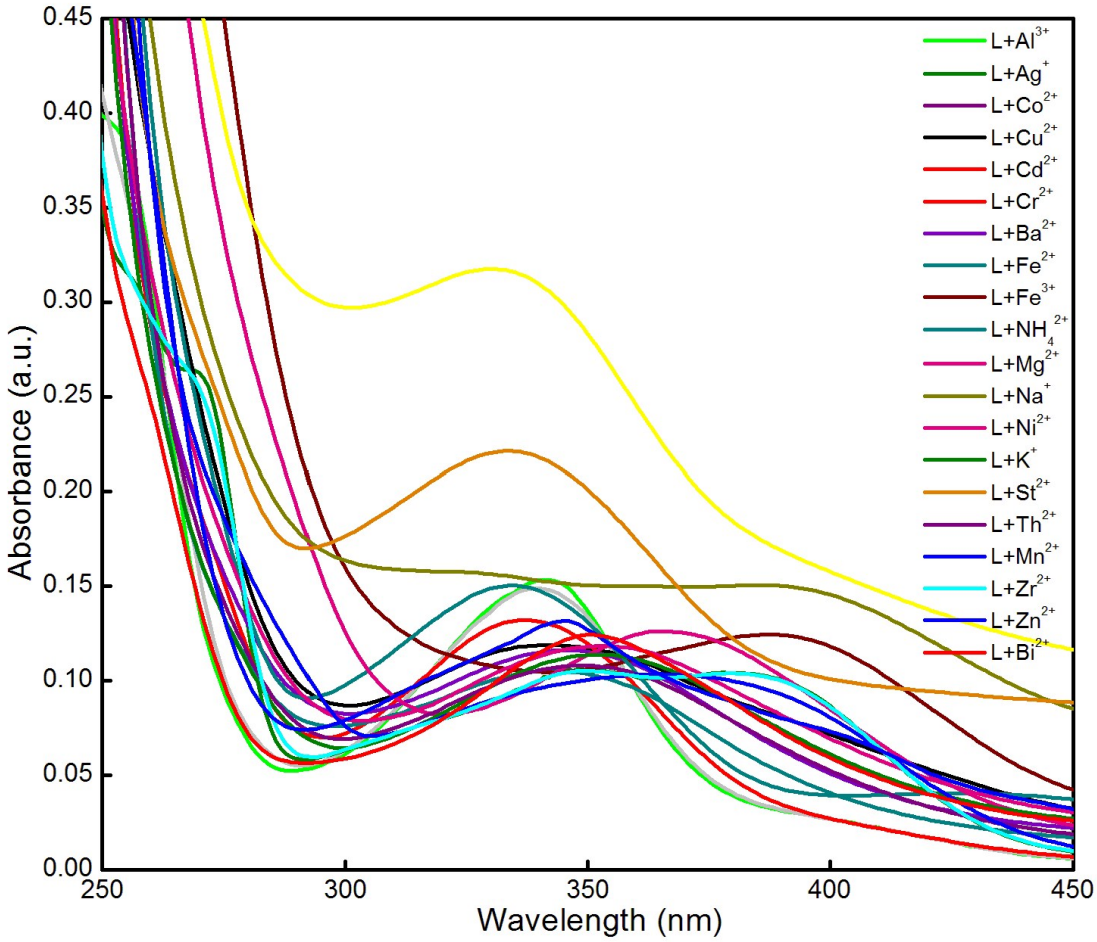

Fig. S4. Absorbance spectra of sensor L after addition of different metal ions (10 μM) in methanol: water (v,v/1:99) at pH ≈ 7.5.

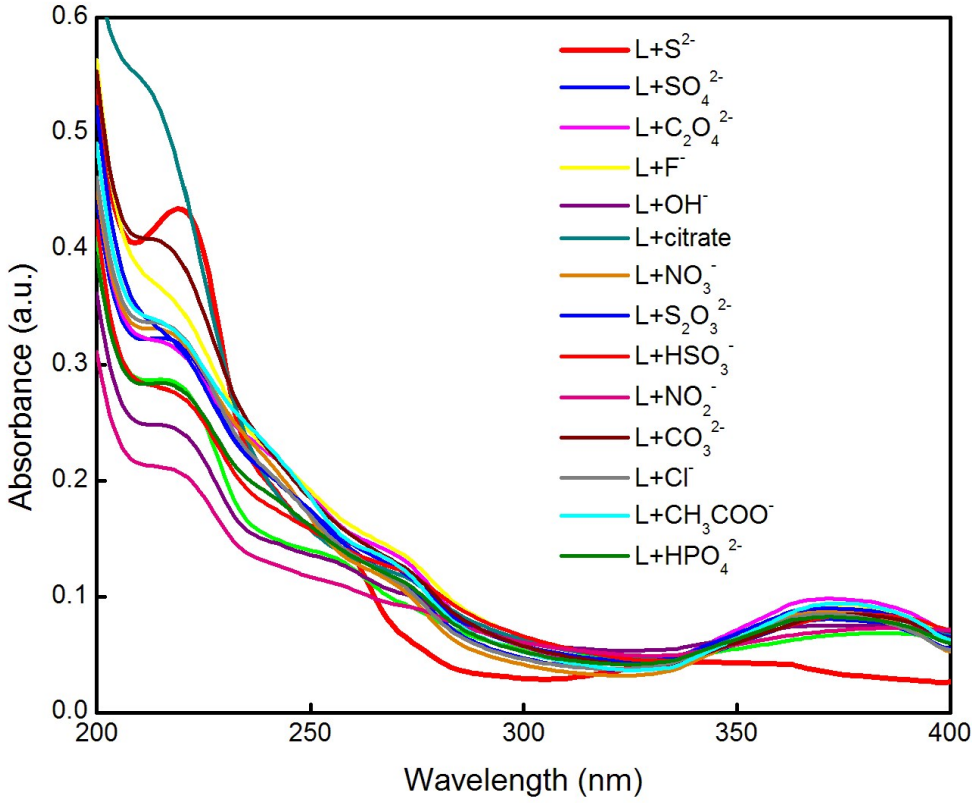

Fig. S5. Absorbance spectra of sensor L after addition of different anions (10 μM) in methanol: water (v,v/1:99) at pH ≈ 7.5.

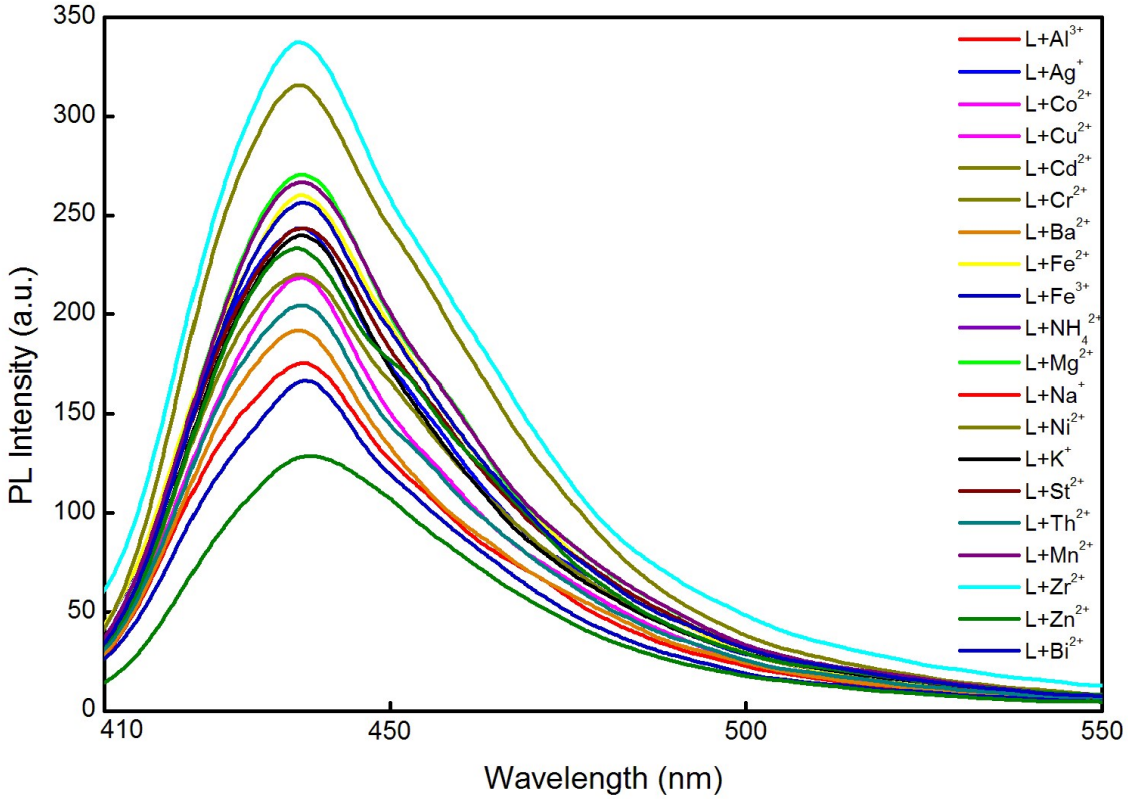

Fig. S6. Emission profile of sensor L (1 mg) after addition of different metal ions (10 μM) in 100% aqueous system.

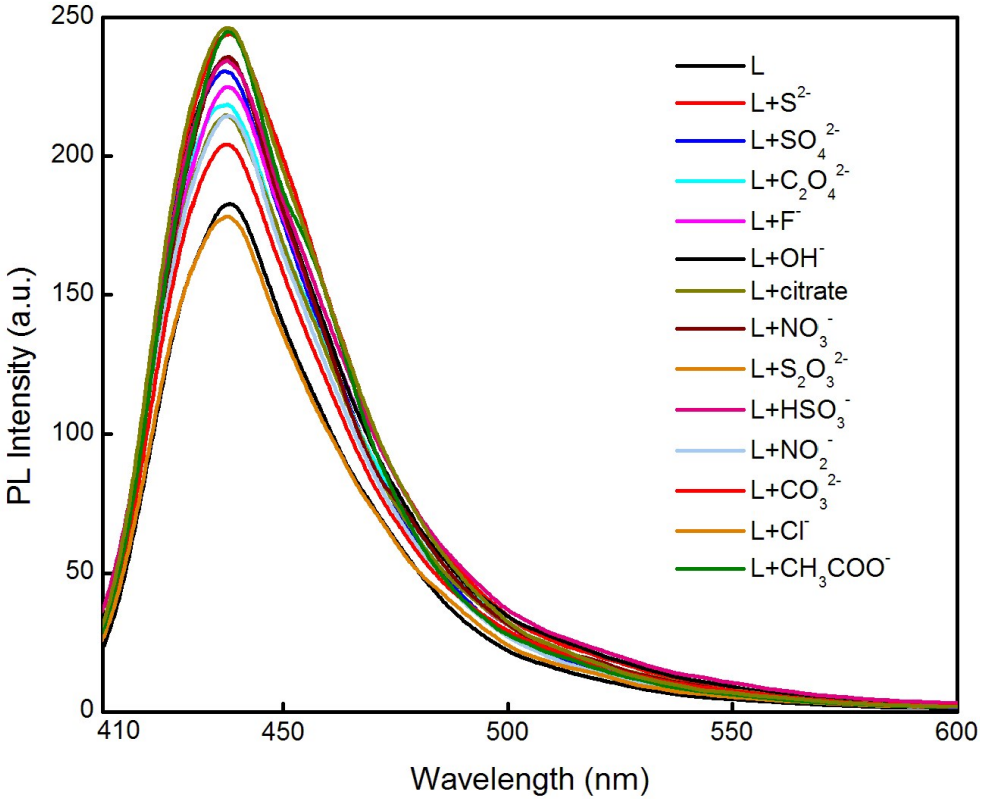

Fig. S7. Emission profile of sensor L (1 mg) after addition of different anions (10 μM) in 100% aqueous system.

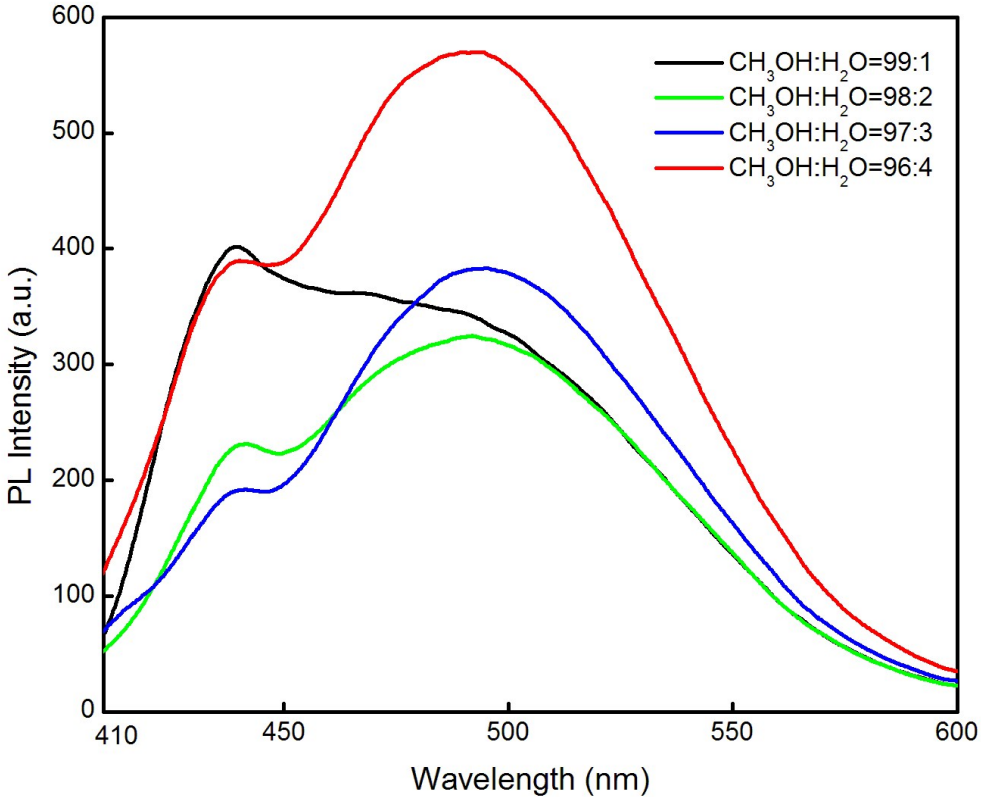

Fig. S8. Emission shift of ZnO capped NPs after addition of Al^{3+} ions in different solvent systems.

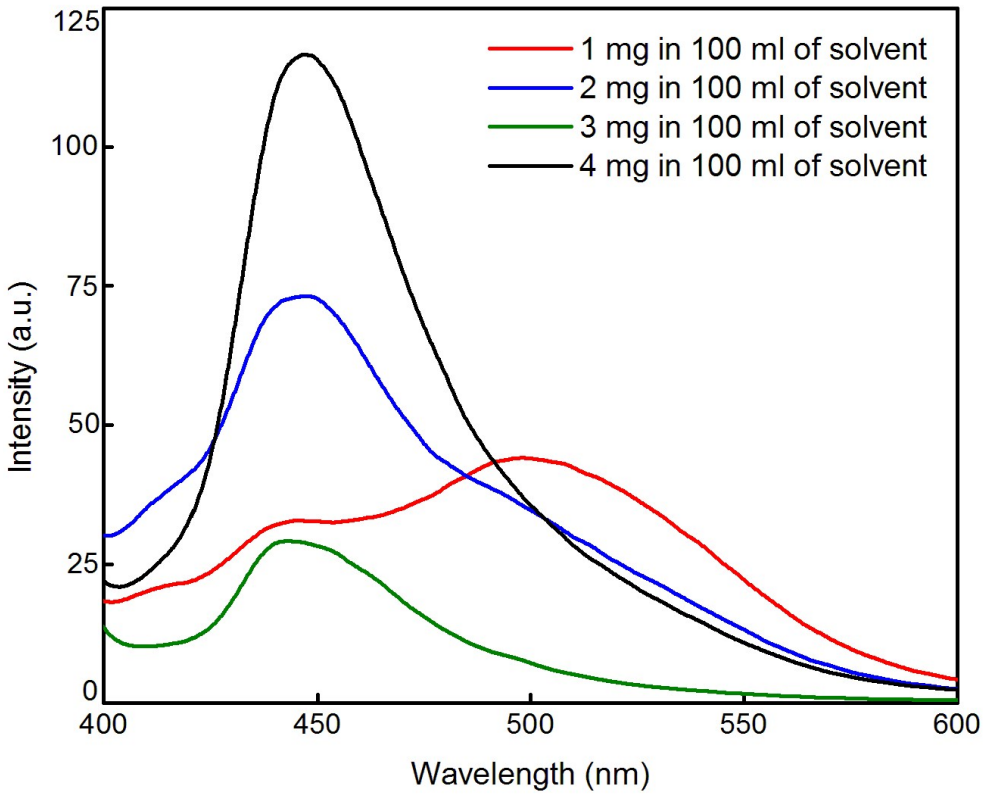

Fig. S9. Effect of change in the doze amount (L) on the variation of intensity at 445 and 500 nm.

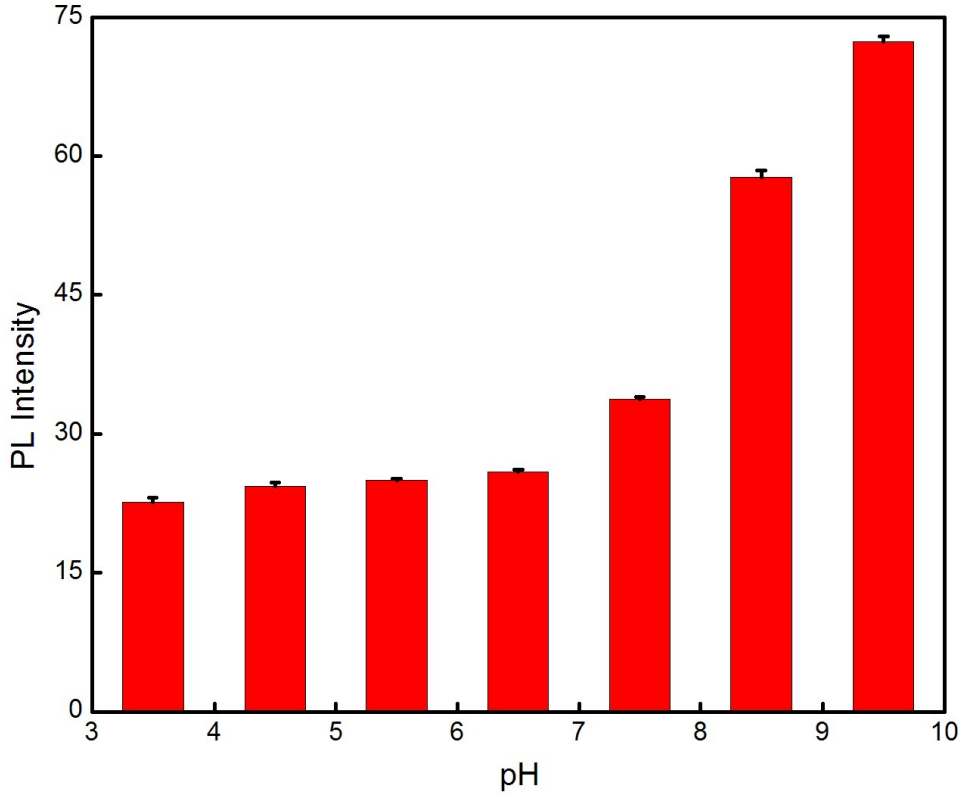

Fig. S10. Standard deviations after 3 repetitions for variation in emission signal of probe L in presence of Al^{3+} ions in methanol: water (v/v, 1:99), measured over pH range of 2.5-8.5 (λ_{max} = 500 nm).

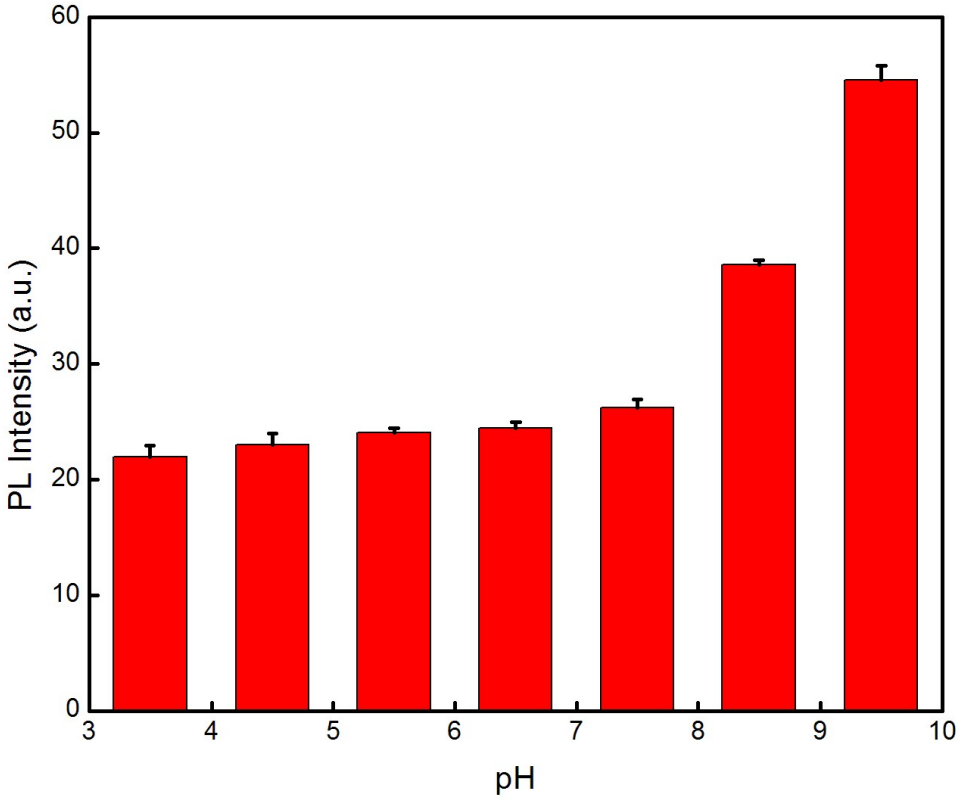

Fig. S11. Standard deviations after 3 repetitions for variation in emission signal of probe L in presence of S^{2-} ions in methanol: water (v/v, 1:99), measured over pH range of 2.5-8.5 (λ_{max} = 500 nm).

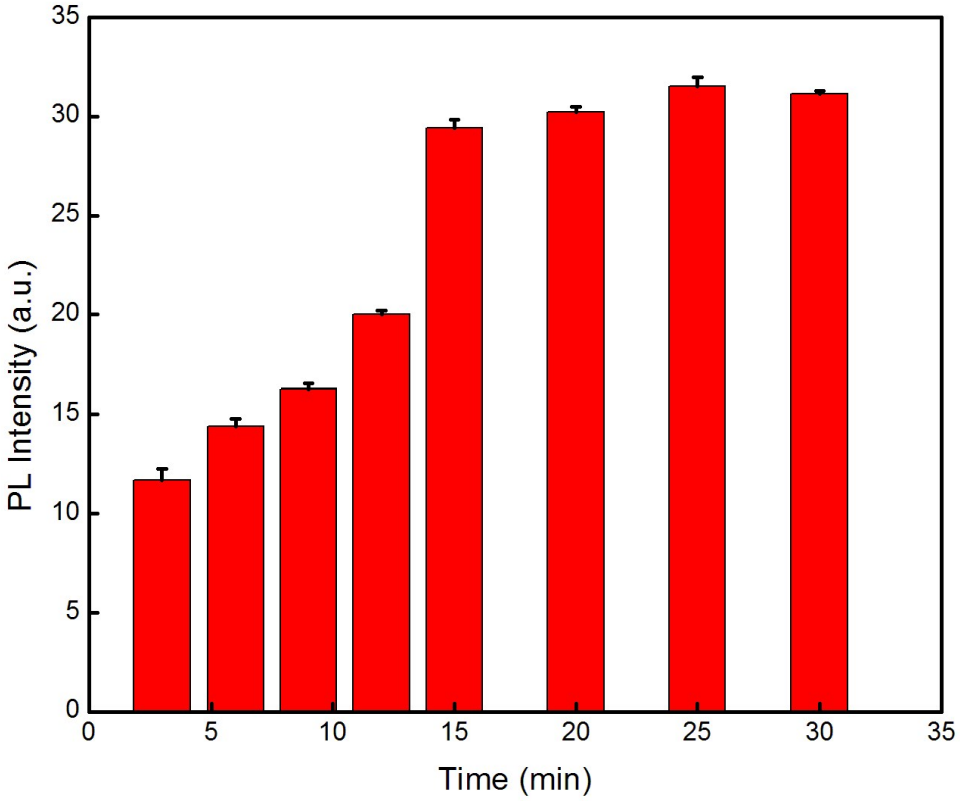

Fig. S12. Standard deviations after 3 repetitions for variation in emission intensity of probe L with time after interaction with Al^{3+} ions.

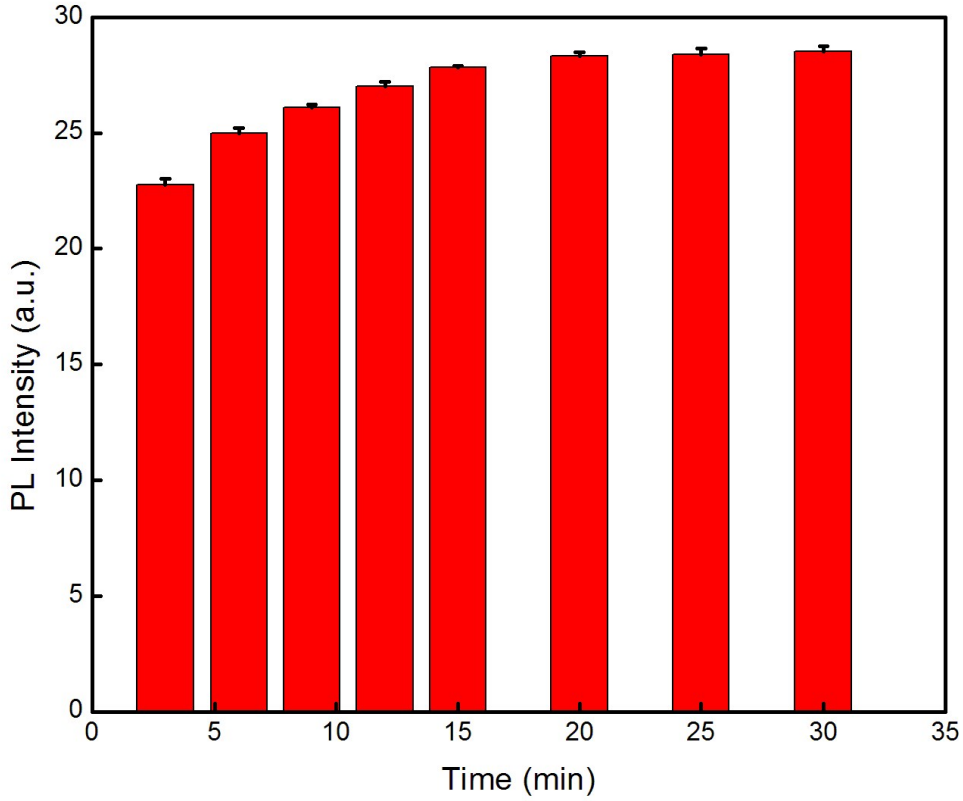

Fig. S13. Standard deviations after 3 repetitions for variation in emission intensity of probe L with time after interaction with S^{2-} ions.

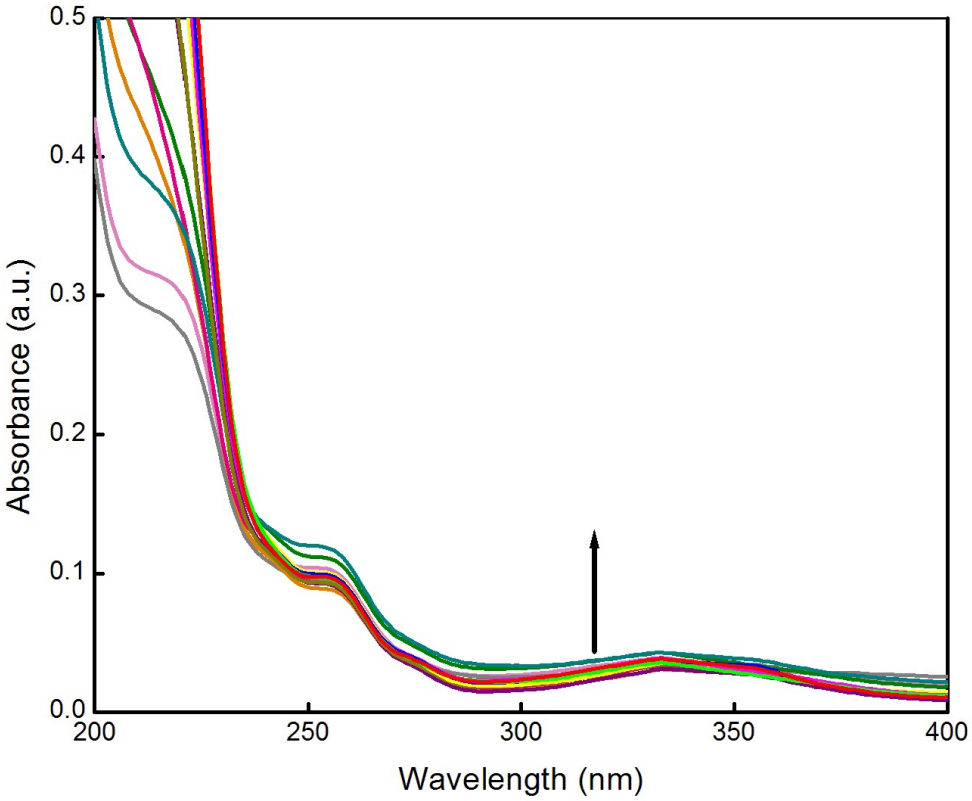

Fig. S14. UV-vis spectra of sensor L in the presence performed by adding different amounts of Al^{3+} ranging from 1 nm to 100 nm in methanol: water (v/v, 1:9) at pH ≈ 7.5.

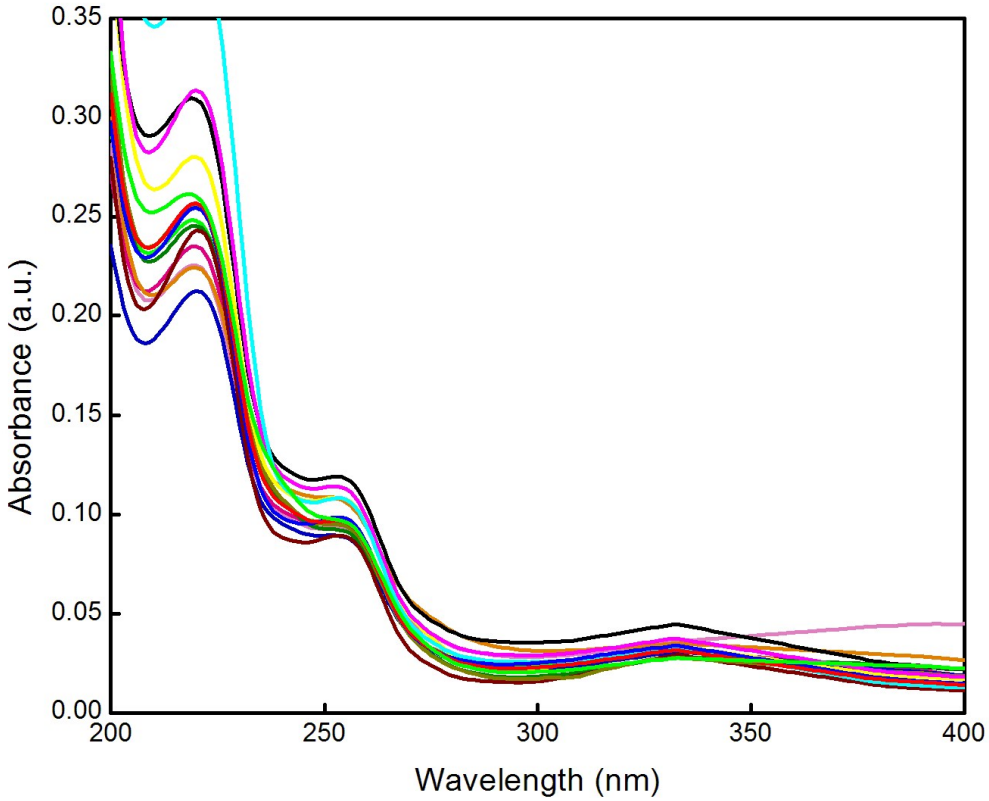

Fig. S15. UV-vis spectra of sensor L in the presence performed by adding different amounts of S^{2-} ranging from 50 nM to 50 μM in methanol: water (v/v, 1:9) at pH ≈ 7.5.

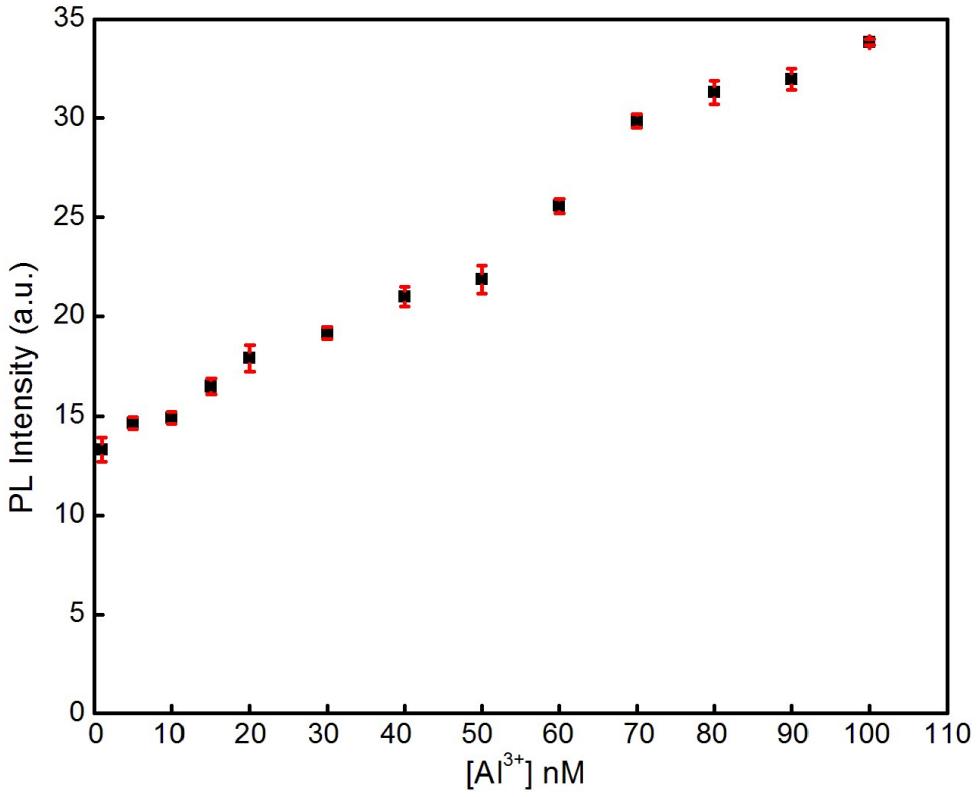

Fig. S16. Standard deviations after 3 repetitions for emission enhancement versus concentration of Al^{3+} ions (λ_{max} = 500 nm).

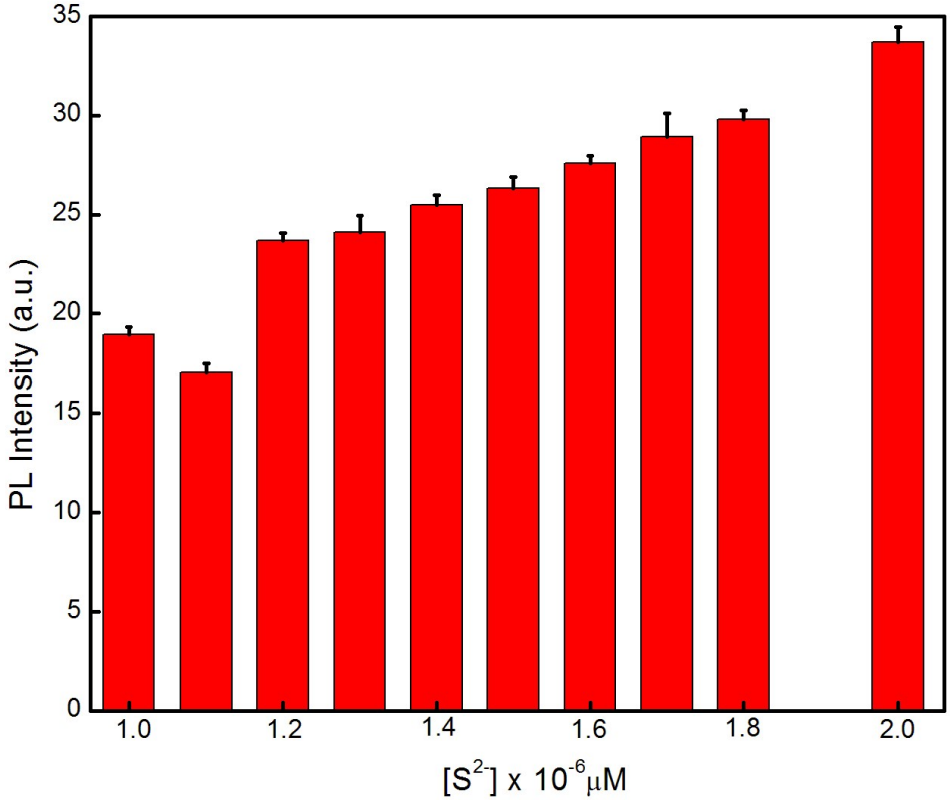

Fig. S17. Standard deviations after 3 repetitions for emission enhancement versus concentration of S^{2-} ions (λ_{max} = 500 nm).

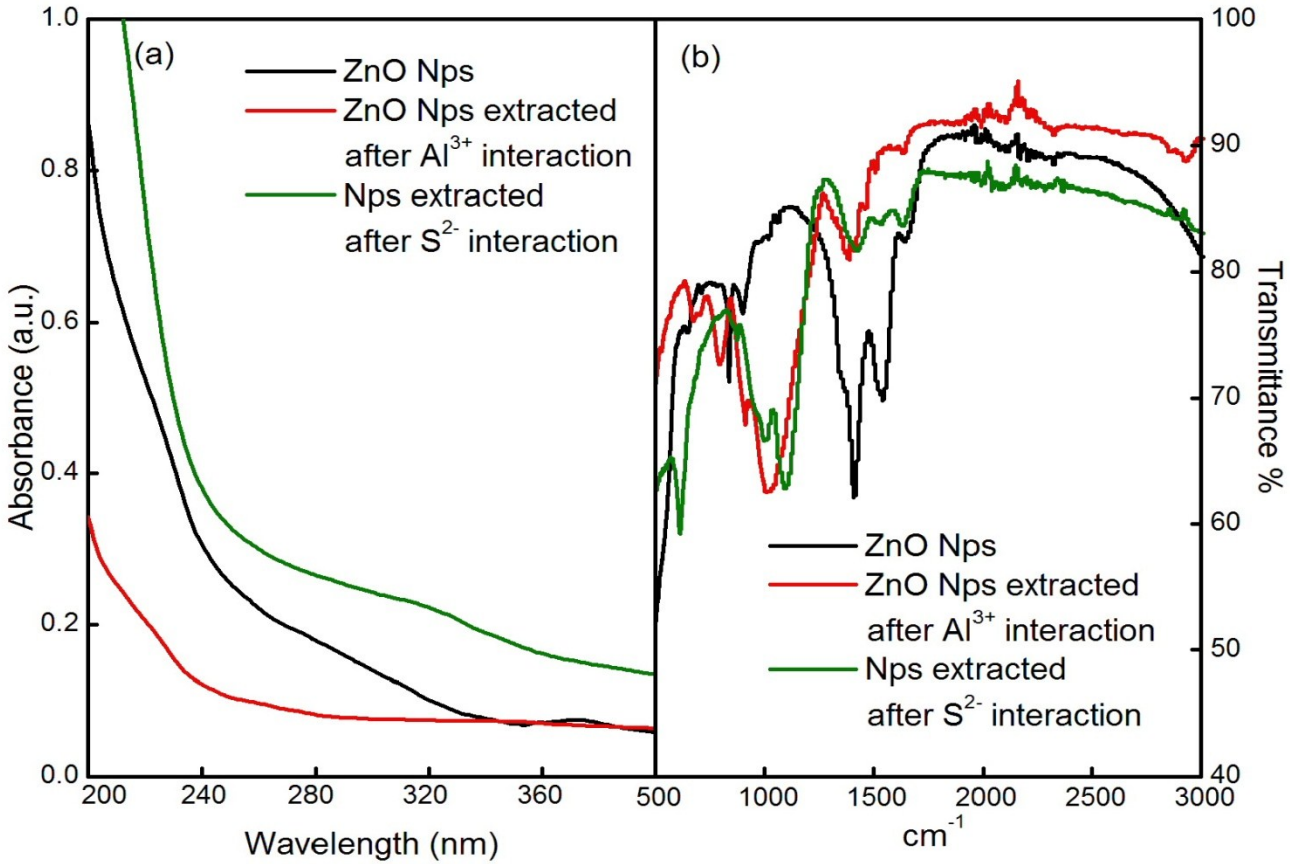

Fig. S18. UV-vis (a) and IR (b) spectra of ZnO NPs before and after interaction with Al^{3+} and S^{2-} ions.

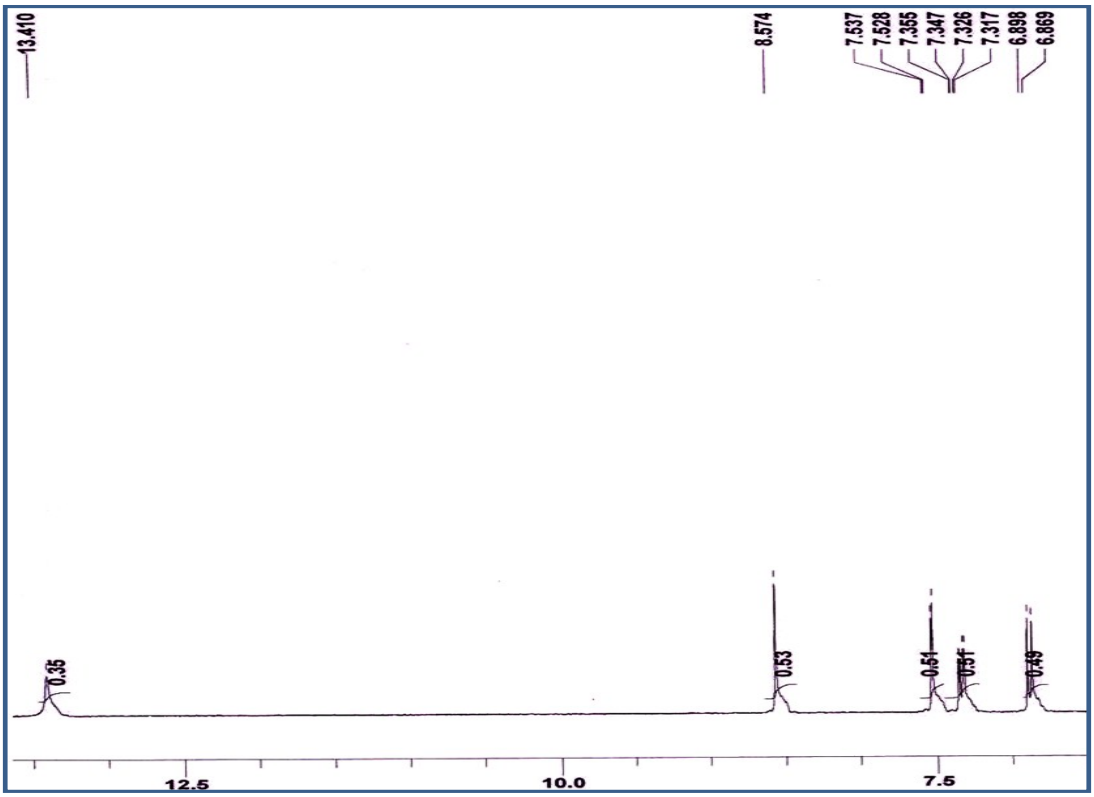

Fig. S19. ^{1}H NMR spectrum in DMSO-d_6 for SB.

Table S1. Elemental analysis data for compound SB

	Nitrogen	**Carbon**	**Hydrogen**
Precentage % (Found/Required)	7.92/8.2	56.82/56.63	4.12/ 4.71