## **Electronic Supplementary Information for**

# Dual anion colorimetric and fluorometric sensing of arsenite and cyanide ions

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- Fig. S19: Limit of detection (LOD) for CN<sup>-</sup> ion by fluorescence emission spectra.
- **Fig. S20:** Limit of detection (LOD) for  $AsO_2^-$  ion by fluorescence emission spectra.



Fig. S1: FTIR spectra of probe L.



Fig. S2: UV-Visible spectra of probe L.



**Fig. S3**: <sup>1</sup>H NMR spectra of probe **L**.



Fig. S4: <sup>13</sup>C NMR spectra of probe L.



Fig. S5: UV-Vis titration of Probe L ( $40\mu M$ ) with Arsenite ion.



Fig. S6: UV-Vis titration of Probe L ( $40\mu$ M) with Cyanide ion.



Fig. S7: Cyclic Voltammogram of Probe L.



Fig. S8: Cyclic Voltammogram of Probe L with Arsenite ion.



Fig. S9: Cyclic Voltammogram of Probe L with Cyanide ion.



**Fig S10**: Calibration plot between change in fluorescence intensity of the probe **L** at 363 nm *vs* arsenite ion for the quantitative analysis of arsenite ion in water.



**Fig. S11**: Calibration plot between change in fluorescence intensity of the probe **L** at 363 nm *vs* cyanide ion for the quantitative analysis of cyanide ion in water.



Fig. S12: Interference study of probe L with foregin metal ion the presence of Arsenite ion. Blue bar shows the L+ metal ion and red bar represents L+metal ion +  $AsO_2^-$ .



**Fig. S13:** Interference study of probe **L** with cyanide ion in the presence of foregin metal ion. Blue bar shows the L+ metal ion and red bar represents L+metal ion + CN<sup>-</sup>.

### Electrospray ionisation -MS

#### WATERS Q-TOF Premier-HAB213



SS-02 12 (0.258) AM (Cen,4, 100.00, Ar,8500.0,556.28,1.00,LS 10); Sm (SG, 2x5.00); Sb (10,1.00 ); Cm (10:19-1:3) 100 79.0177

Fig. S14: ESI-MS spectra of L.

## Electrospray ionisation -MS

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## WATERS Q-TOF Premier-HAB213





## Electrospray ionisation -MS

### WATERS Q-TOF Premier-HAB213



SS-024 18 (0.388) AM (Cen,4, 100.00, Ar,8500.0,556.28,1.00,LS 10); Sm (SG, 2x5.00); Sb (10,1.00 ); Cm (18:23-1:3) 100 7 9.0191

**Fig. S16:** ESI-MS of L with  $AsO_2^-$ .



**Fig. S17:** Fluorescence emission titration of probe **L** with different concentration of cyanide ion at 363 nm excitation wavelength in DMF:H<sub>2</sub>O (9:1, v/v solution). Inset shows the B-H plot of cyanide ion.



**Fig. S18:** Fluorescence emission titration of probe **L** with different concentration of arsenite ion at 363 nm excitation wavelength DMF:H<sub>2</sub>O (9:1, v/v solution). Inset shows the B-H plot of arsenite ion.



Fig. S19: Limit of detection (LOD) for CN<sup>-</sup> ion by fluorescence emission spectra.



Fig. S20: Limit of detection (LOD) for AsO<sub>2</sub> ion by fluorescence emission spectra.