FLUOROGENIC AND CHROMOGENIC DUAL SENSOR FOR THE DETECTION OF CYANIDE AND COPPER (II) IN WATER SAMPLE AND LIVING CELLS

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SUPPORTING INFORMATION

LIST OF FIGURES

Figure S1. FT-IR spectrum of sensor R 3041 (Ar-H), 2220 (C- N), 1597 (C=C), 1583 (C=C), 822 (Ar-H)

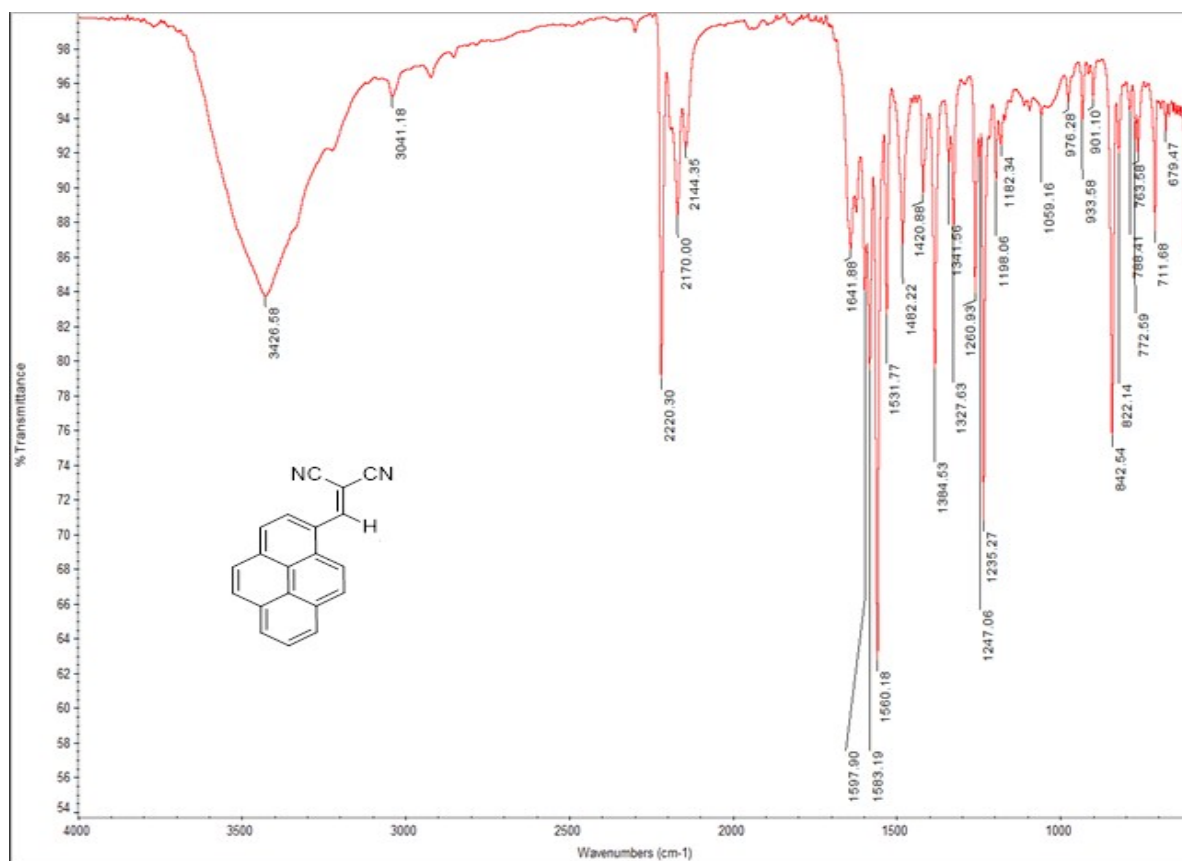**Figure S2.** ¹H NMR spectrum of sensor R (300 MHz, CDCl₃) δ (ppm): 8.93 (s, 1H, a'), 8.85 (d, 1H, b), 8.39-8.13 (m, 8H, aromatic)
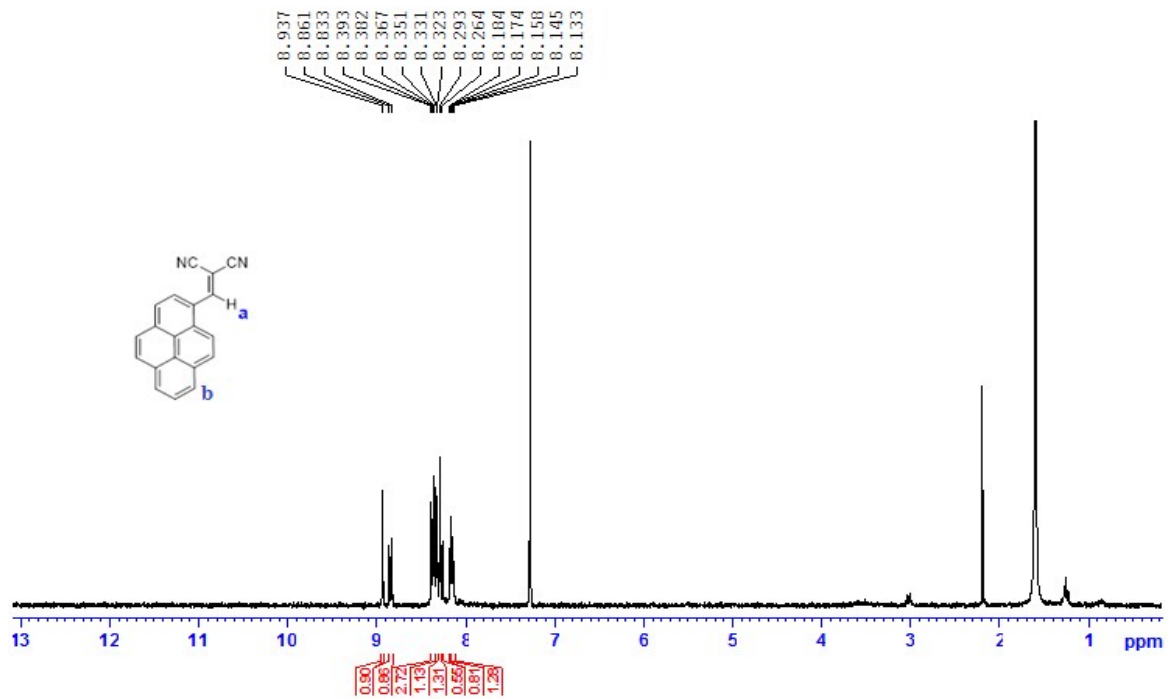
8.937
8.861
8.833
8.393
8.382
8.367
8.351
8.331
8.323
8.293
8.264
8.184
8.174
8.158
8.145
8.133

0.90
0.86
2.72
1.13
1.31
0.55
0.81
1.28

Figure S3. ^{13}C NMR (75 MHz, CDCl$_3$) δ (ppm) of sensor R: 156.49 (C 1), 121.13 (CN carbon), 135.83, 131.22, 131.07, 130.83, 130.31, 127.84, 127.54, 127.37, 127.05, 125.89, 125.23, 124.65, 124.10, 123.81 (aromatic carbons)
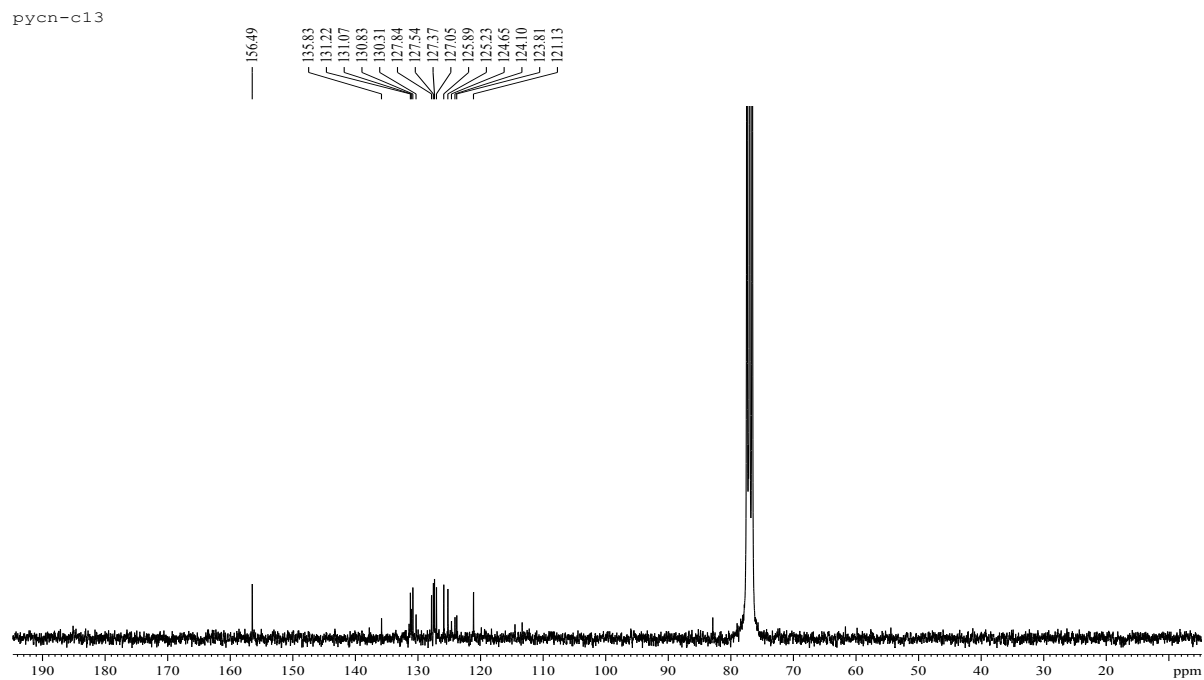
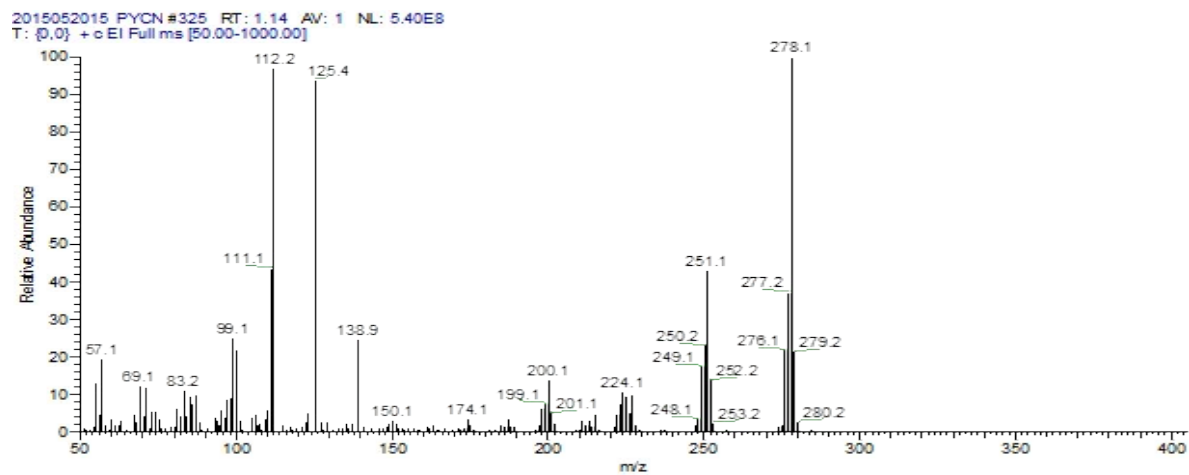**Figure S4. EI** Mass spectrum of R (Mol. Wt = 278)

Figure S5.UV-vis spectrum of R (1 x 10^{-5} M, in CH$_3$CN) upon titration (0-2 eq.) with aqueous solution of CN$^-$ ions (1.5 x 10^{-3} M, in H$_2$O).
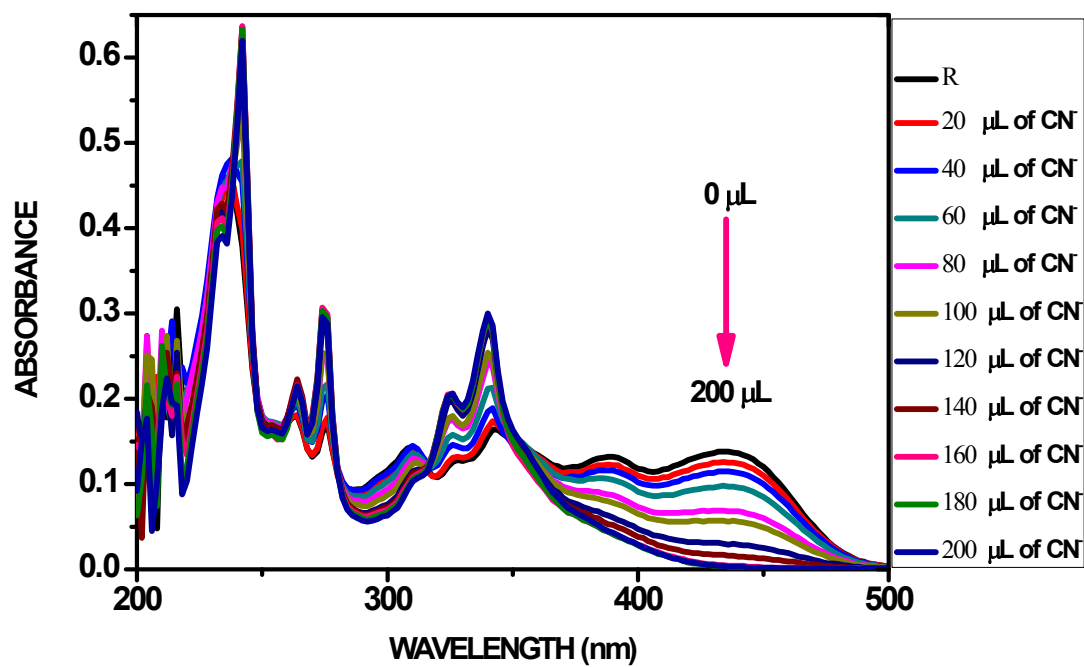
Figure S6. Effect of pH towards the sensing behaviour of R (5 x 10^{-5} M, in HEPES Buffer using ACN: H_2O 3:7) upon addition of 2 eq. with CN^- ions (1.5 x 10^{-3} M, in H_2O).
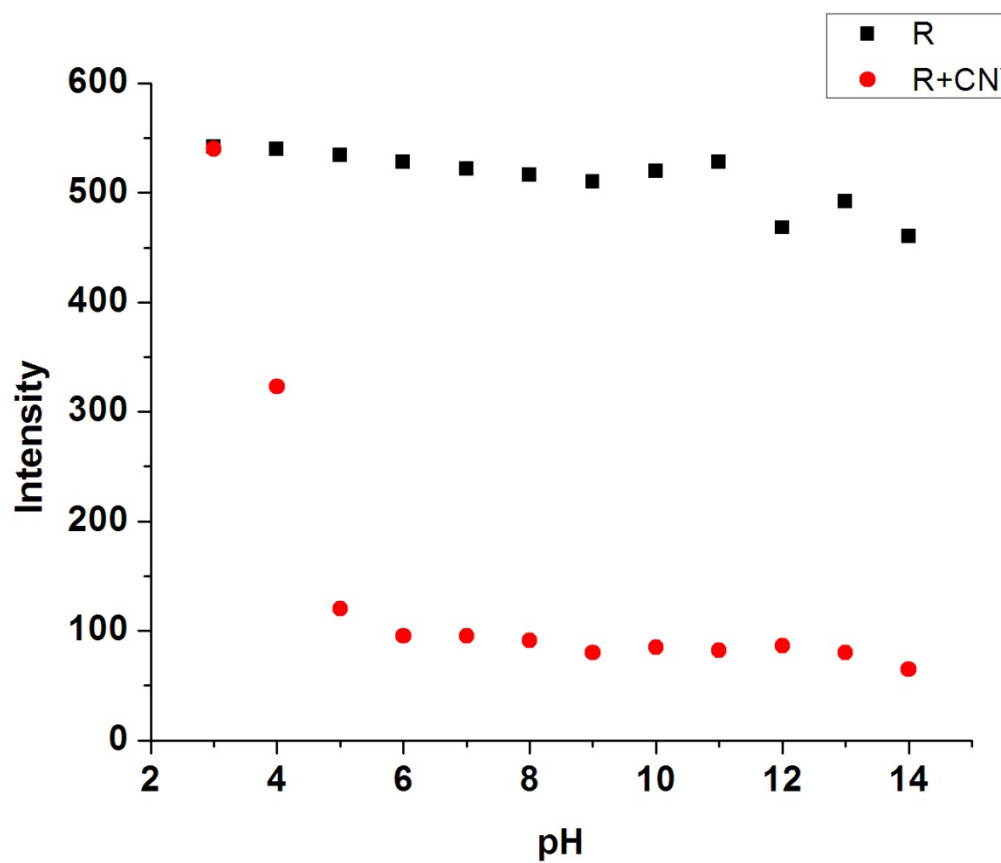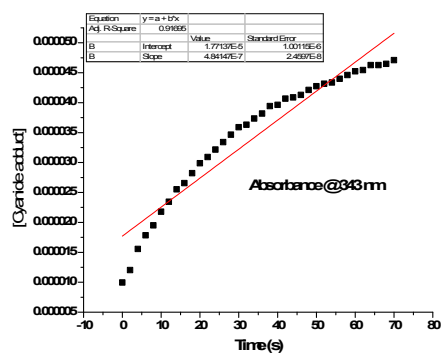
Figure S7. Rate constants determination using Integrated Rate Laws for Cyanide adduct formation (a) and Cu(II) complexation (b)
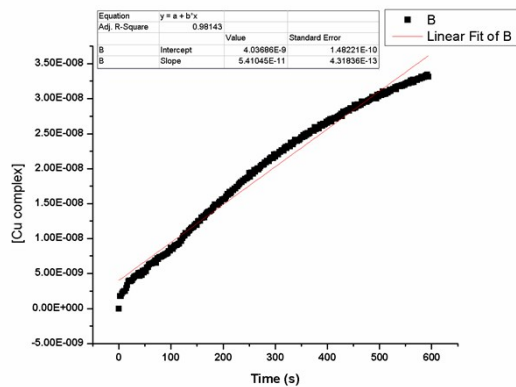
a

b

Figure S8. Fluorescence spectrum of sensor R (1×10^{-5} M, in CH_3CN) upon titration (0 – 2 eq.) with aqueous solution of CN^- (1.5×10^{-3} M, in H_2O)
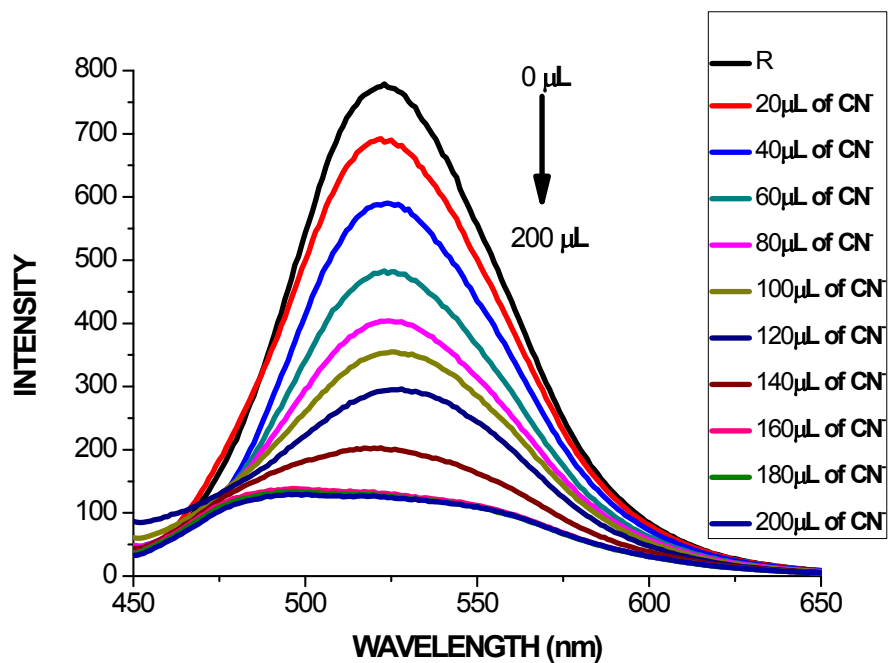
Figure S9. Detection limit plot: Intensity versus concentration of cyanide

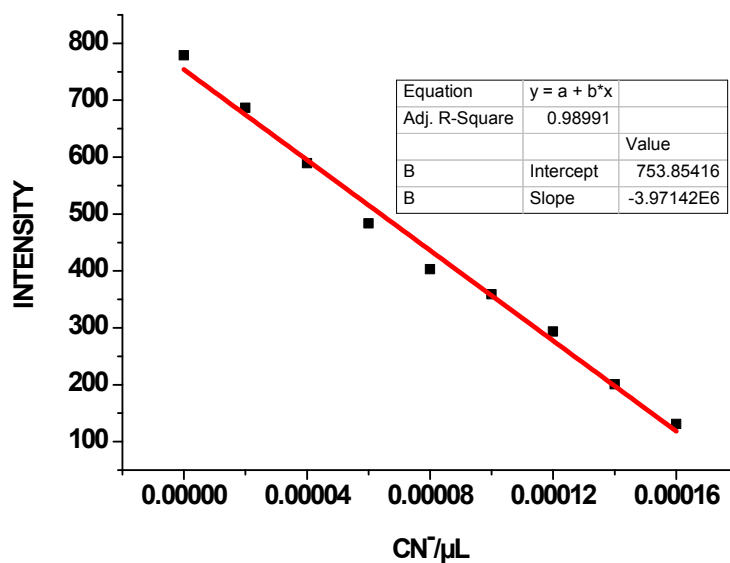| Equation	y = a + b*x	
Adj. R-Square	0.98991	
		Value
B	Intercept	753.85416
B	Slope	-3.97142E6

Figure S10. Job's plot for sensor R with cyanide