Supporting Information

AIE active sulfonyldianiline derived Schiff base for the detection of folic acid, hemoglobin and glucose

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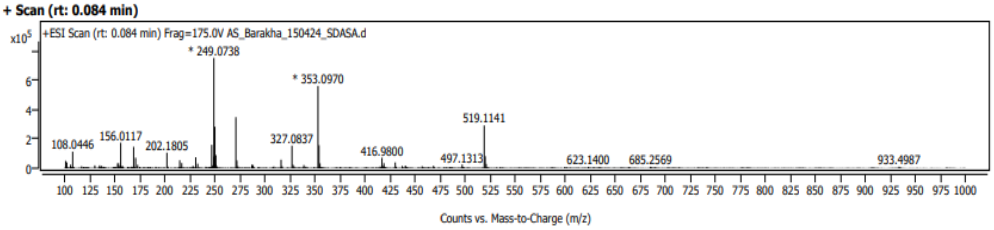
Sample Information

Name	AS_Barakha_150424_SDASA	**Data File Path**	D:\Projects\SEP_2023\Data\Apr_2024\AS_Barakha_150424_SDASA.d
Sample ID		**Acq. Time (Local)**	15-04-2024 15:22:12 (UTC+05:30)
Instrument	LCQTOF	**Method Path (Acq)**	D:\Projects\SEP_2023\Methods\POSITIVE.m
MS Type	QTOF	**Version (Acq SW)**	6200 series TOF/6500 series Q-TOF (11.0.203.0)
Inj. Vol. (ul)	2	**IRM Status**	Success
Position	P1-B2	**Method Path (DA)**	D:\Projects\INSTALLATION\Methods\IIT Roorkee.m
Plate Pos.		**Target Source Path**	
Operator	SYSTEM (SYSTEM)	**Result Summary**	1 qualified (1 targets)

Sample Spectra

+ Scan (rt: 0.084 min)

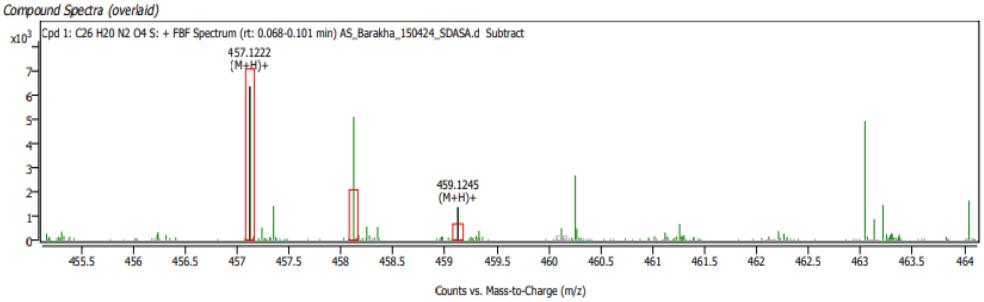


Compound Details

Cpd. 1: C26 H20 N2 O4 S

Formula	Mass	Score	Algorithm	Diff (Tgt, ppm)	Polarity
C26 H20 N2 O4 S	456.1151	57.79	FBF	1.64768286951381	Positive

Compound Spectra (overlaid)



MassHunter Qual 10.0
(End of Report)

Fig. S1. Mass spectrum of SDASA.

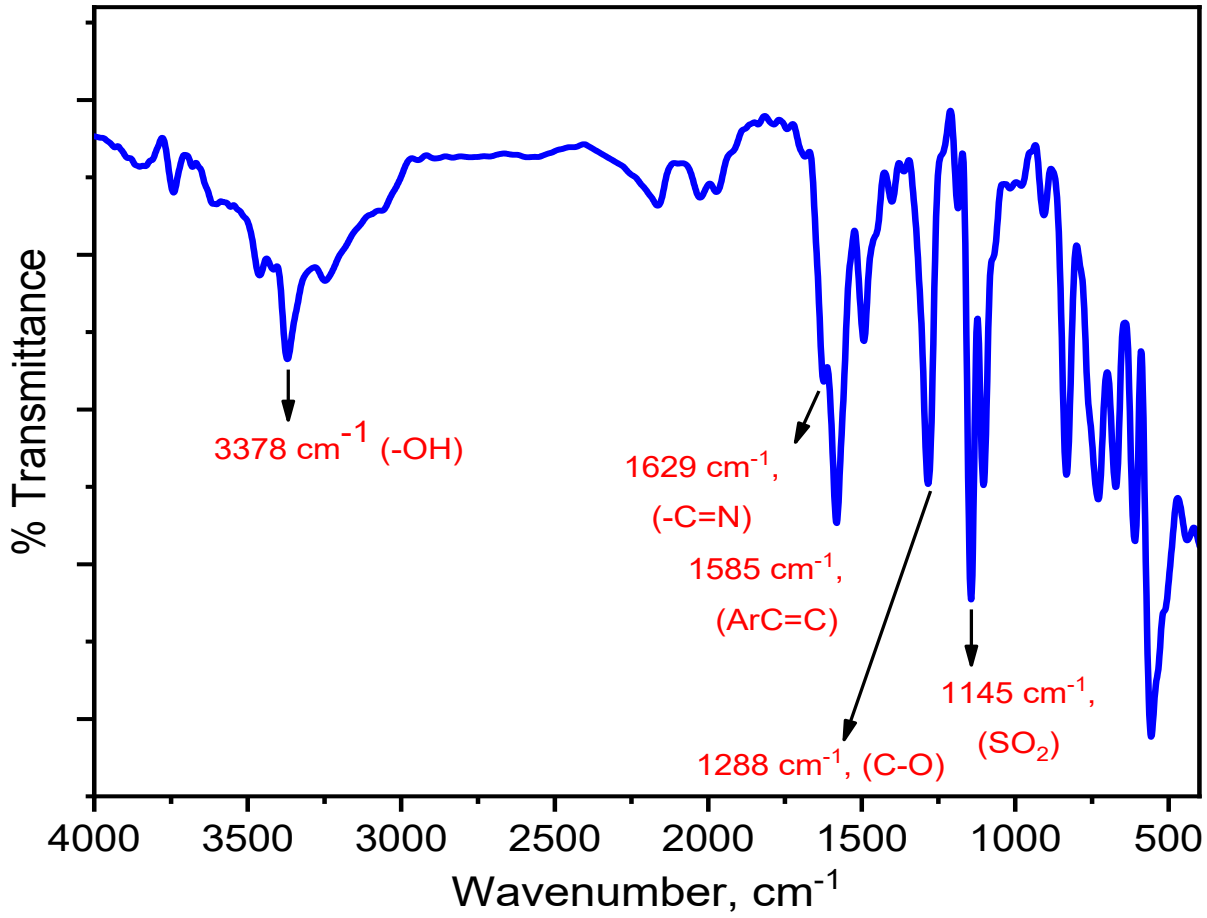


Fig. S2. FT-IR spectra of SDASA.

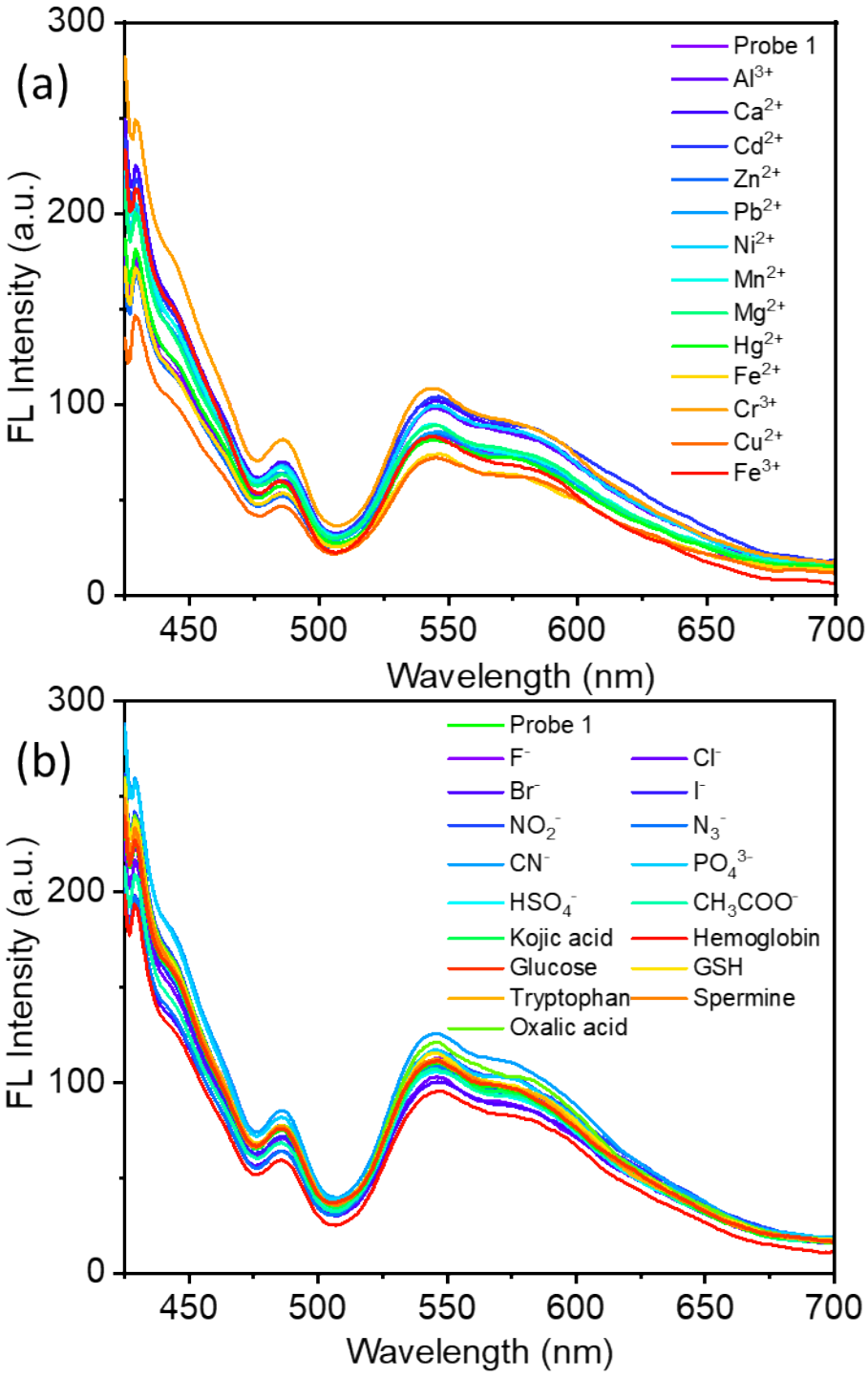


Fig. S3. The fluorescence spectral changes of Probe 1 (5×10^{-5} M) in the absence and presence of different analytes (5×10^{-5} M).

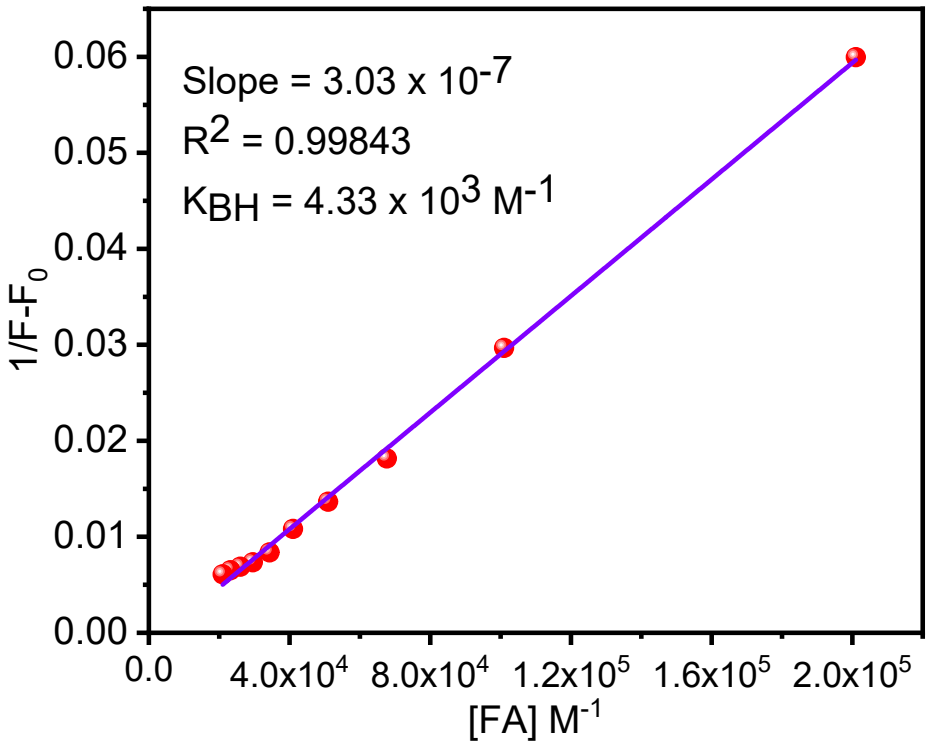


Fig. S4. The B-H plot of probe 1 with FA.

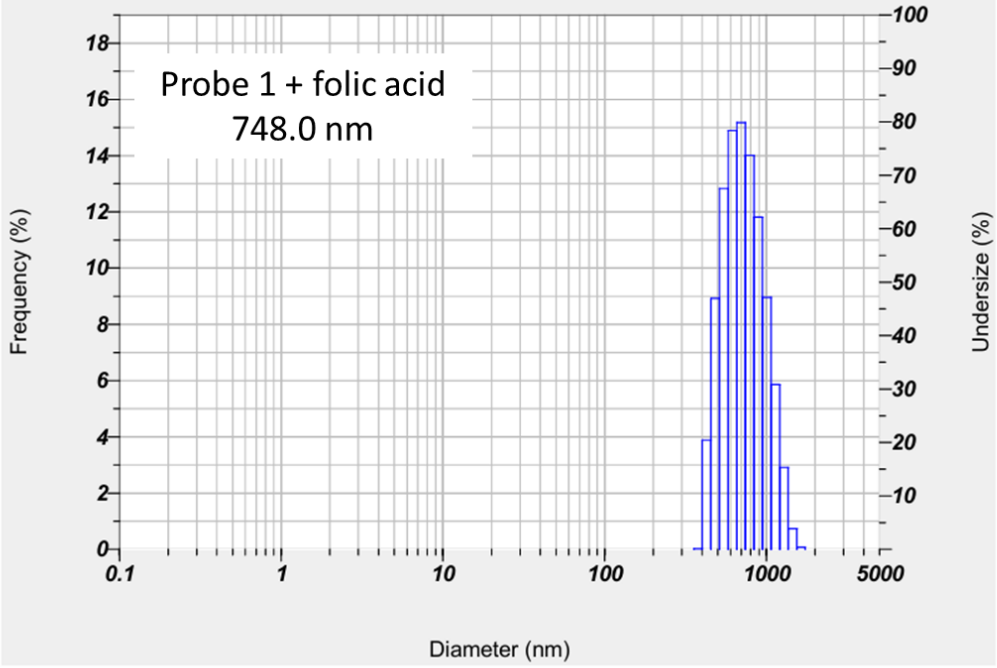


Fig. S5. DLS of probe 1 in the presence of FA.

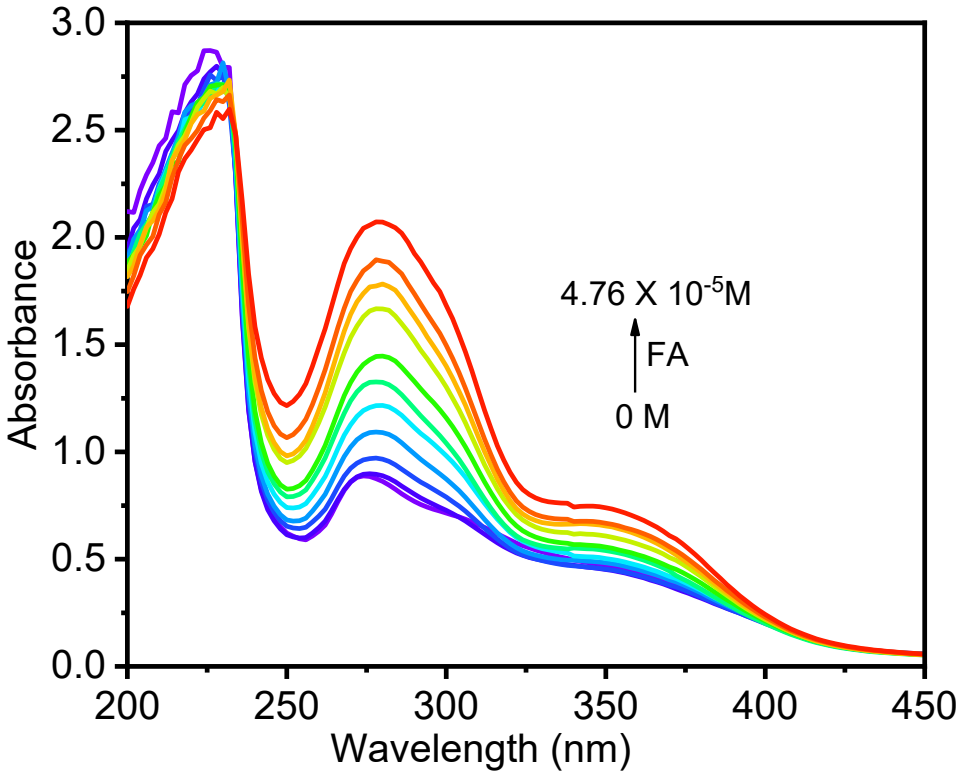


Fig. S6. UV-Vis spectral changes of probe 1 upon successive incremental addition of FA.

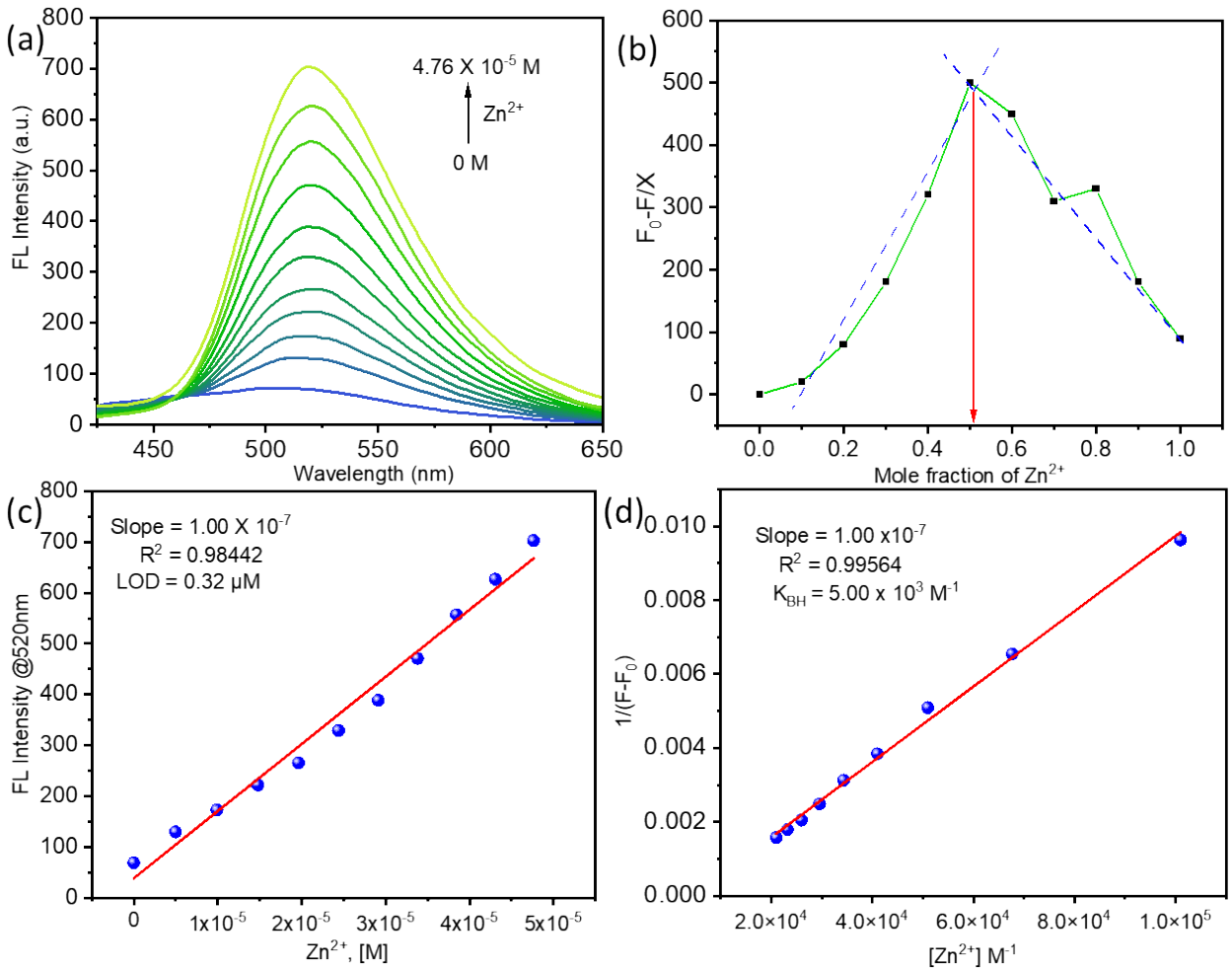


Fig. S7. (a) Fluorescence spectral changes of SDASA (5 × 10^{-5} M, DMSO) upon successive incremental addition of Zn^{2+}. (b) The calibration plot for estimation the LOD for Zn^{2+}. (c) The Job's plot of SDASA-Zn^{2+} complex at 520 nm, plotted against the mole fraction of Zn^{2+}. (d) The B-H plot for SDASA-Zn^{2+} complex.

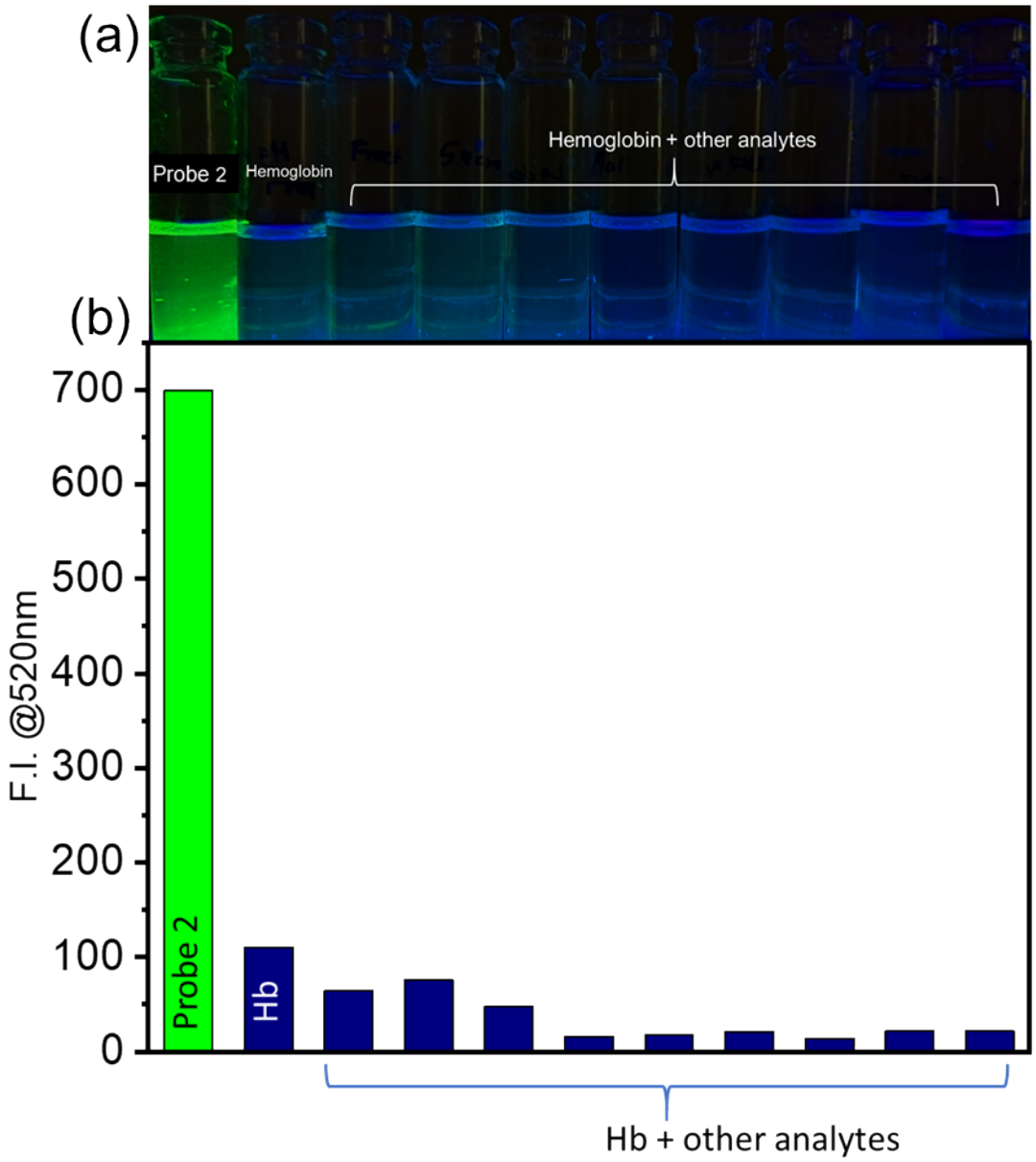


Fig. S8. Fluorescence colour (a) and spectral (b) changes of probe 2 (5×10^{-5} M) in the presence of Hb (2.5×10^{-5} M) and an equimolar amount of other analytes.

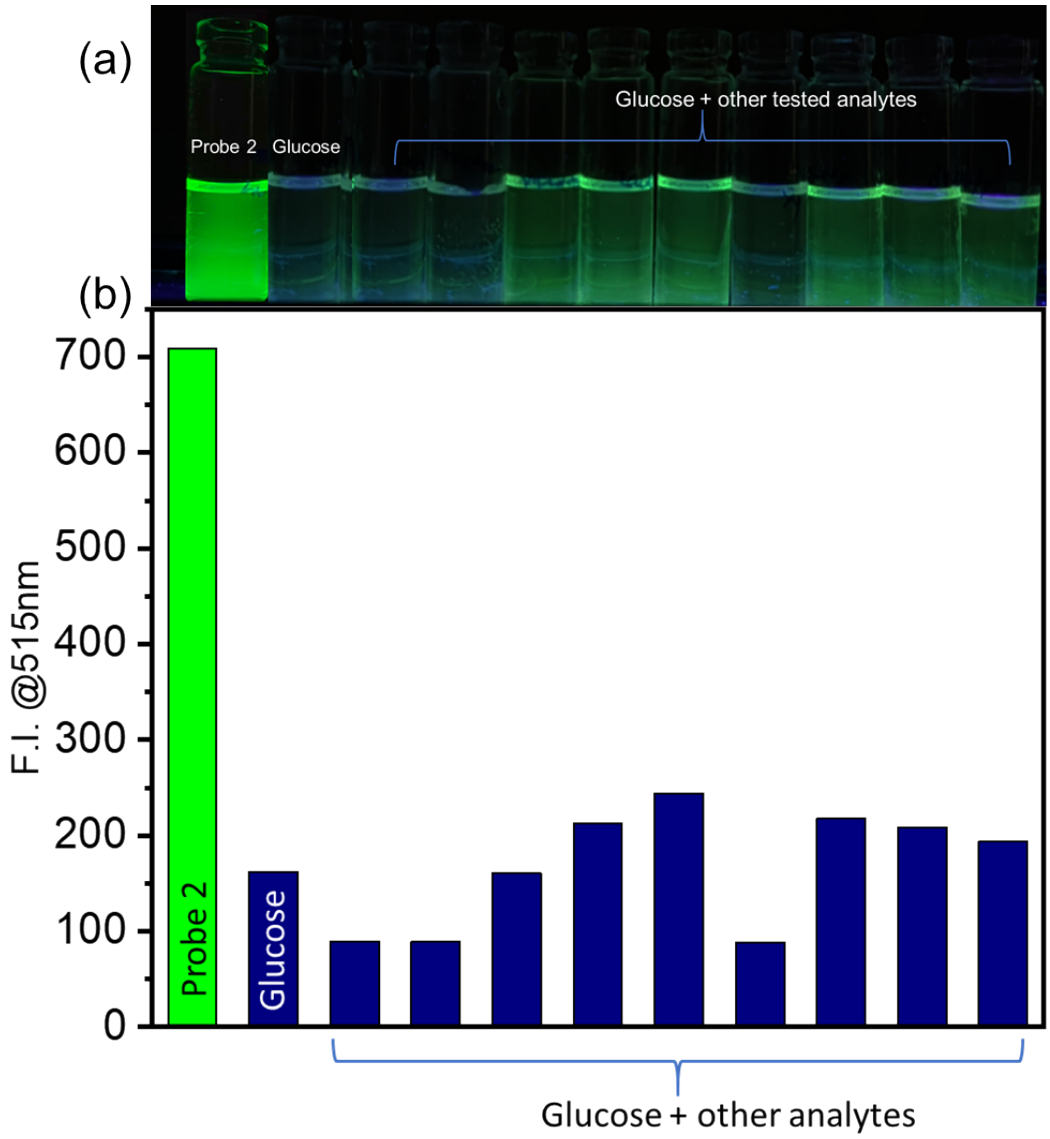


Fig. S9. Fluorescence colour (a) and spectral (b) changes of probe 2 (5×10^{-5} M) in the presence of glucose (2.5×10^{-5} M) and an equimolar amount of other analytes.

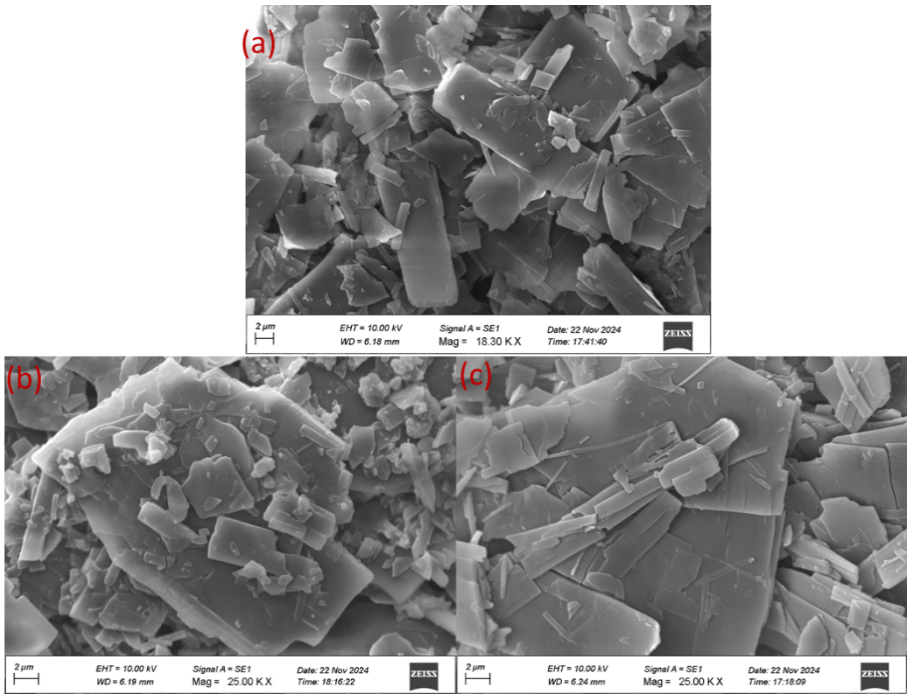


Fig. S10. The SEM images of probe 2 in the absence (a) and presence of hemoglobin (b) and glucose (c).

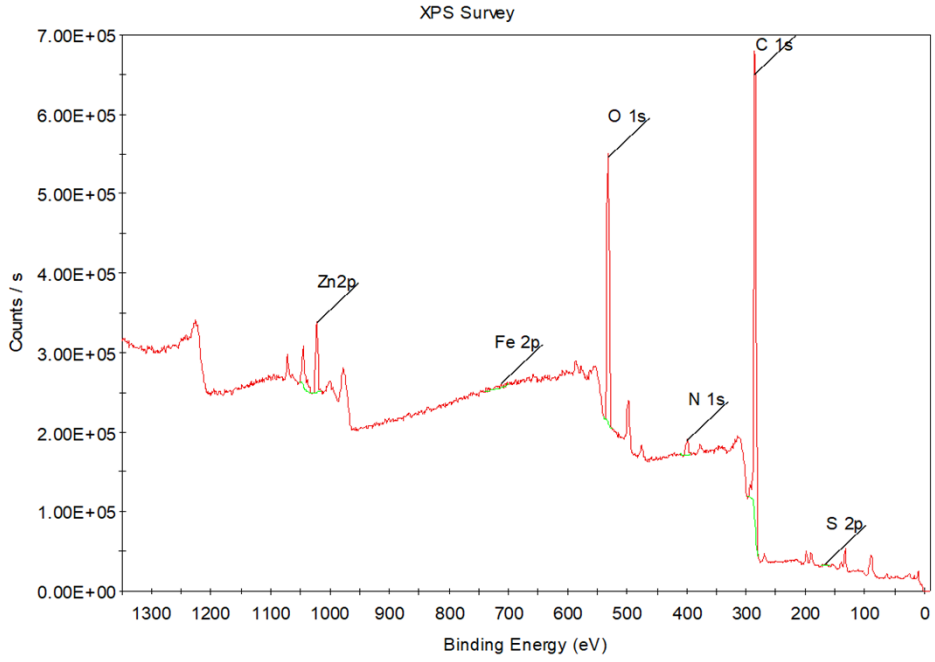


Fig. S11. XPS survey scan of probe 2 with hemoglobin.

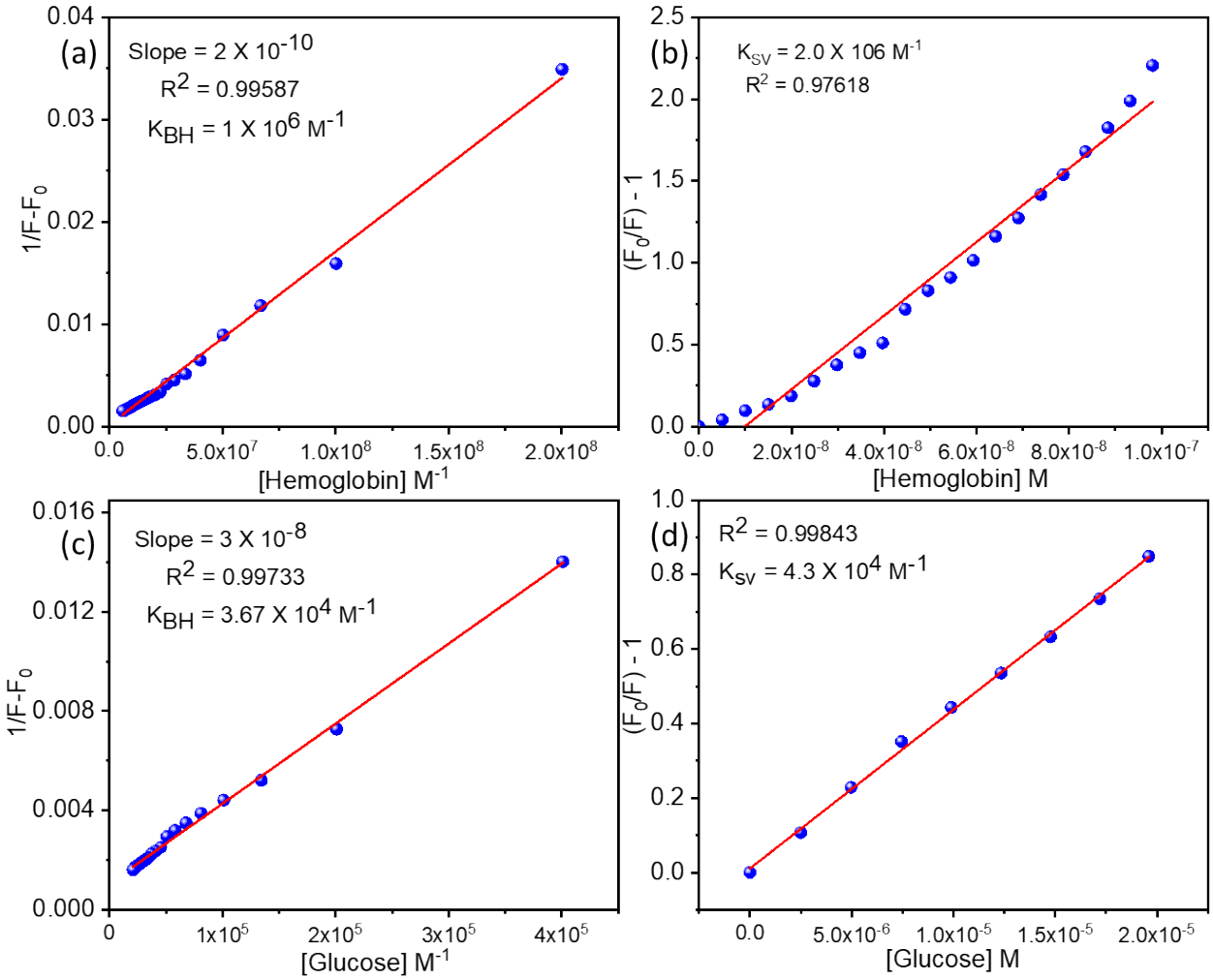


Fig. S12. The B-H plot of probe 2 with Hb (a) and glucose (c). The Stern-Volmer plot for the fluorescence quenching of probe 2 by Hb (b) and glucose (d).

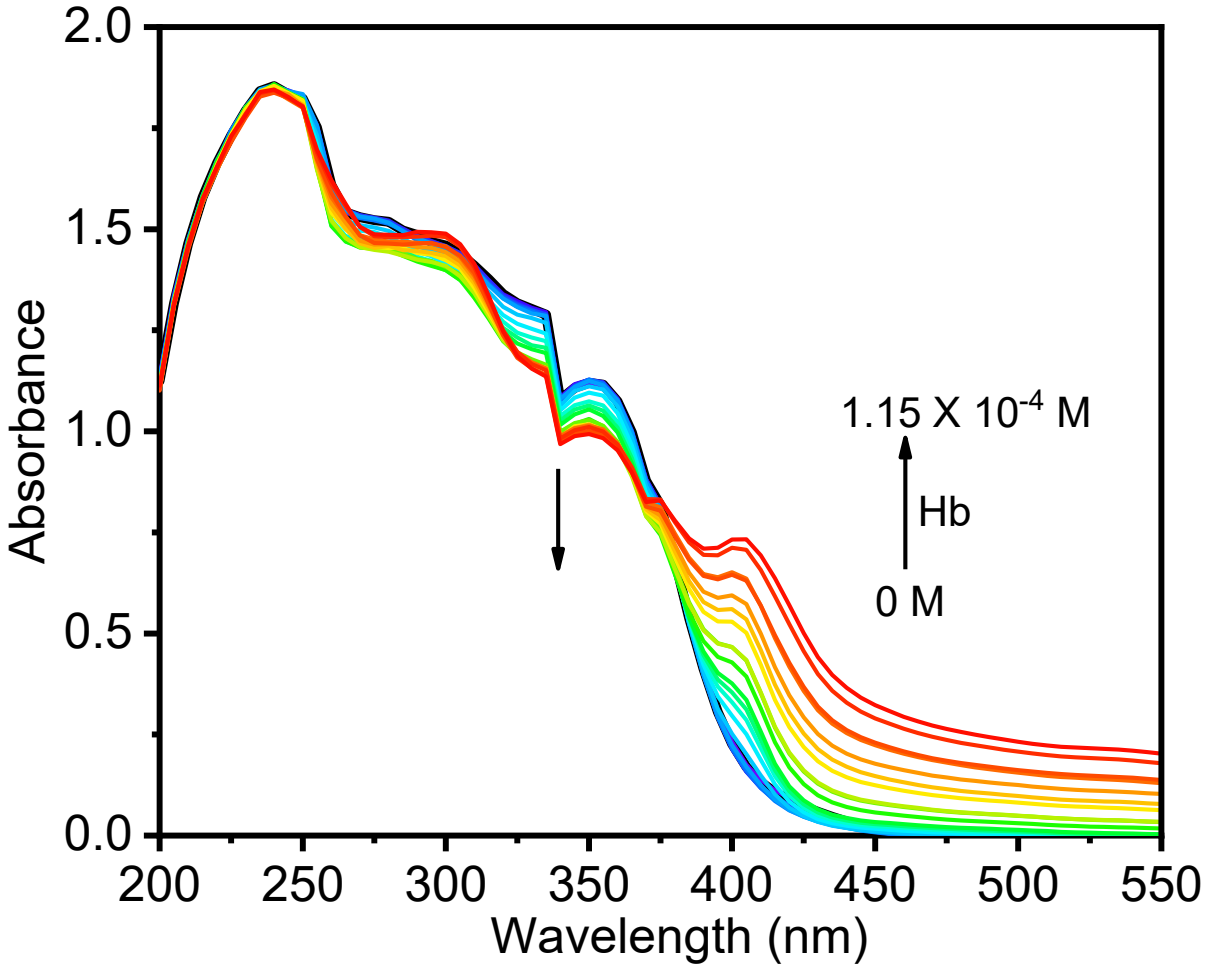


Fig. S13. UV-visible spectral changes of probe 2 with the gradual incremental addition of Hb.

Table S1. Fluorescence lifetime decay parameters of probe 1 and probe 1 with FA.

	τ^1 (ns)	τ^2 (ns)	τ^3 (ns)	Average τ (ns)
Probe 1	0.20 ns	0.50 ns	2.62 ns	1.10 ns
Probe 1+ FA	1.30 ns	0.40 ns	2.30 ns	1.33 ns

Table S2. Calculated atomic percentage of different elements of probe 2 in the presence of hemoglobin from the XPS scan.

Name	Start BE	Peak BE	End BE	Height CPS	FWHM eV	Area (P) CPS.eV	Area (N) TPP-2M	Atomic %
S 2p	175	166.61	157	2034.56	7.157	18532.78	0.01	0.31
C 1s	298	284.7	279.3	574852.32	3.559	2321461.02	3.69	76.69
N 1s	410	399.22	392	18238.74	4.866	98829.92	0.1	2.07
O 1s	539.34	531.87	525	334040.45	4.202	1478233.23	0.94	19.43
Fe 2p	740	712.02	700	4466.61	1.46	68909.89	0.01	0.21
Zn2p	1052	1022.29	1015	88234.94	4.049	710086.12	0.06	1.3

Table S3. Fluorescence lifetime decay parameters of probe 2 and probe 2 with glucose.

	τ^1 (ns)	τ^2 (ns)	τ^3 (ns)	Average τ (ns)
Probe 2	0.67 ns	1.34 ns	2.68 ns	1.56 ns
Probe 2+ Glucose	0.80 ns	1.61 ns	3.22 ns	1.87 ns

Table S4. Real sample analysis of folic acid using probe 1.

Sample	Folic acid			
	Added, M	**Found, M**	**Recovery, %**	**RSD, %**
Serum	4.97×10^{-6}	4.50×10^{-6}	90.54 %	1.20
	1.23×10^{-5}	1.15×10^{-5}	93.49 %	2.16
	1.47×10^{-5}	1.42×10^{-5}	97.93 %	0.68

Table S5. Real sample analysis of hemoglobin using probe 2.

Sample	Hemoglobin			
	Added, M	**Found, M**	**Recovery, %**	**RSD, %**
Serum	7.38×10^{-8}	7.34×10^{-8}	99.45%	0.13

	7.87×10^{-8}	7.52×10^{-8}	95.55 %	0.42
	8.35×10^{-8}	7.93×10^{-8}	94.97 %	0.20

Table S6. Real sample analysis of glucose using probe 2.

Sample	**Glucose**			
	Added, M	**Found, M**	**Recovery, %**	**RSD, %**
Serum	3.14×10^{-5}	3.05×10^{-5}	97.13 %	1.91
	3.38×10^{-5}	3.15×10^{-5}	93.19 %	0.69
	3.61×10^{-5}	3.33×10^{-5}	92.24 %	0.64

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