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Supporting Information

A new salamo-based colorimetric and fluorescent turn-on sensor with aggregation induced emission for rapid and highly sensitive detection of cyanide in real samples

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† CCDC: number. 2036636 for the sensor **A1**.

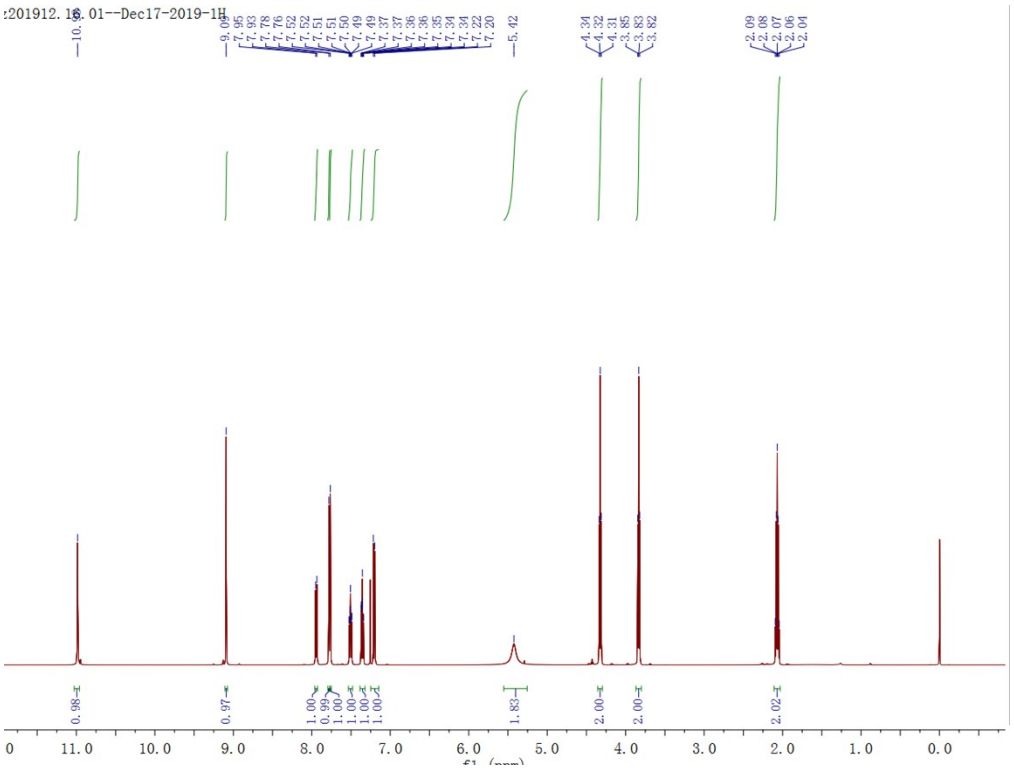


Fig. S1 ^{1}H NMR spectrum of sensor **A1** in $CDCl_3$.

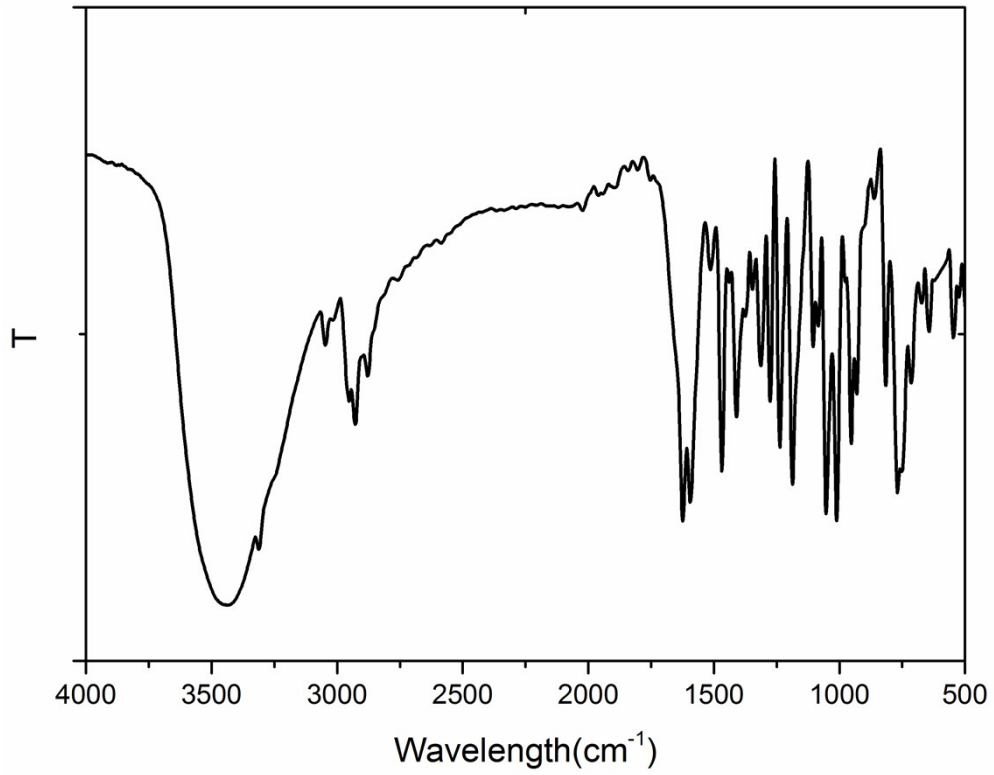


Fig. S2 FT-IR spectra of sensor **A1**.

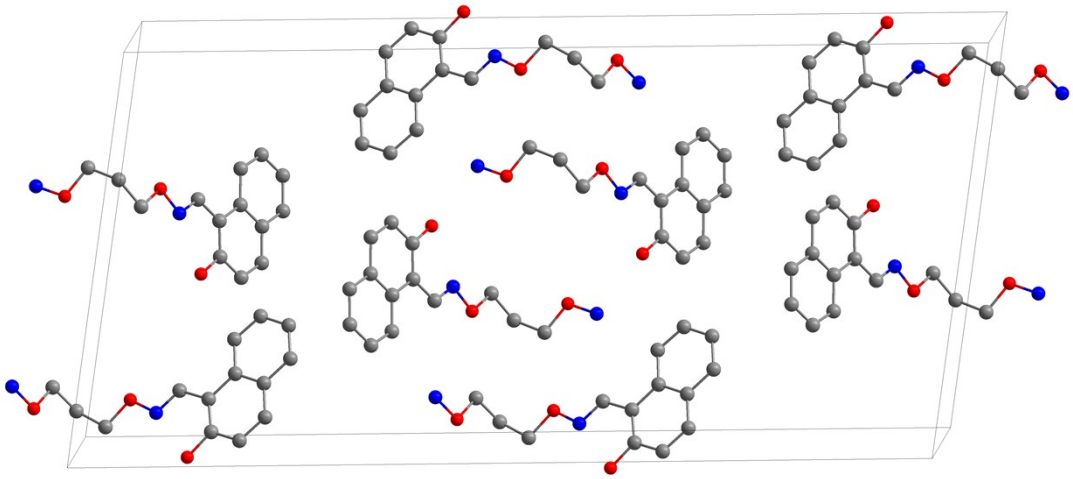


Figure. S3. The molecular weight in the whole unit cell of sensor **A1**.

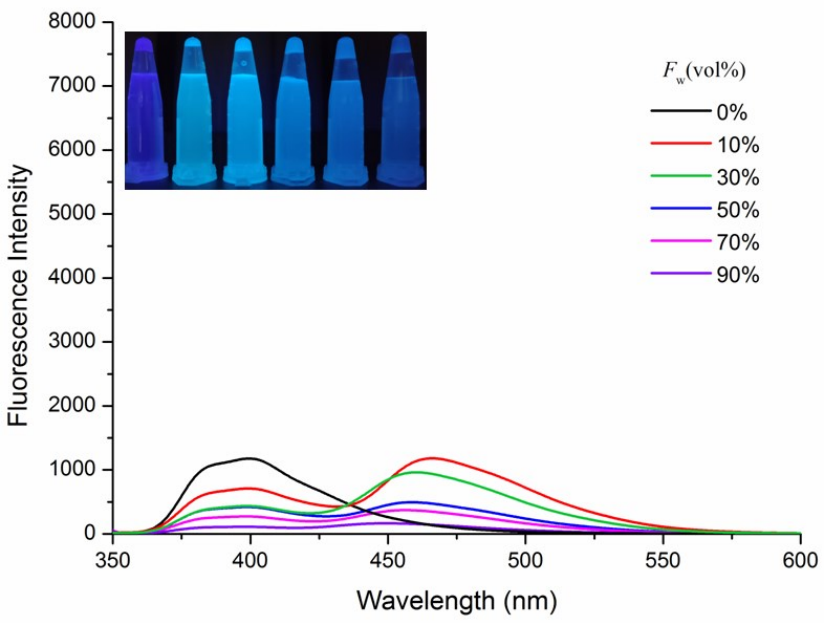


Fig. S4 The influence of water content on fluorescence emission in DMSO solution.

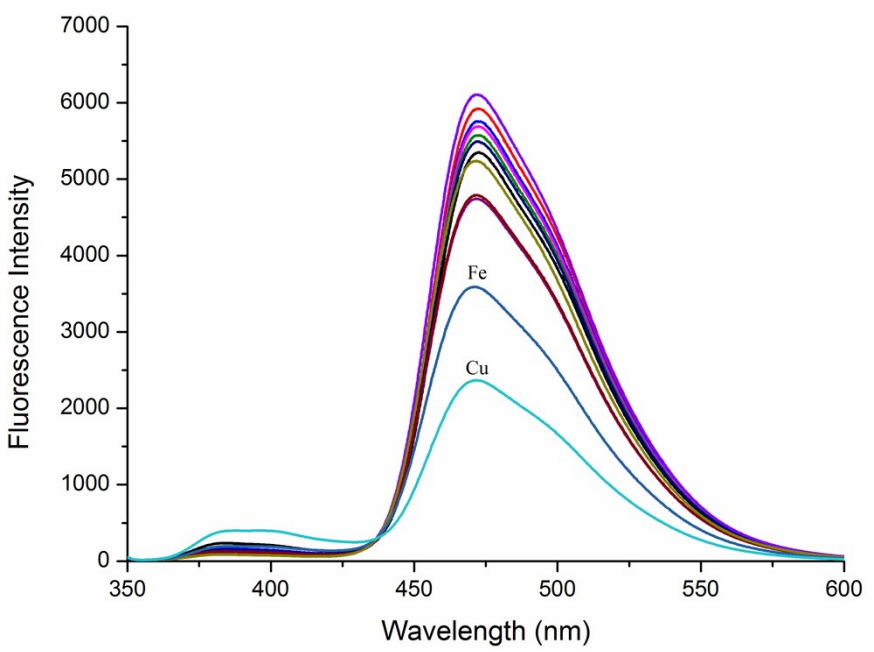


Fig. S5 The fluorescence spectrum of A1 (50μM) in the DMSO/H2O (9:1, v/v) solution with common cations (10.0 equiv.) added.

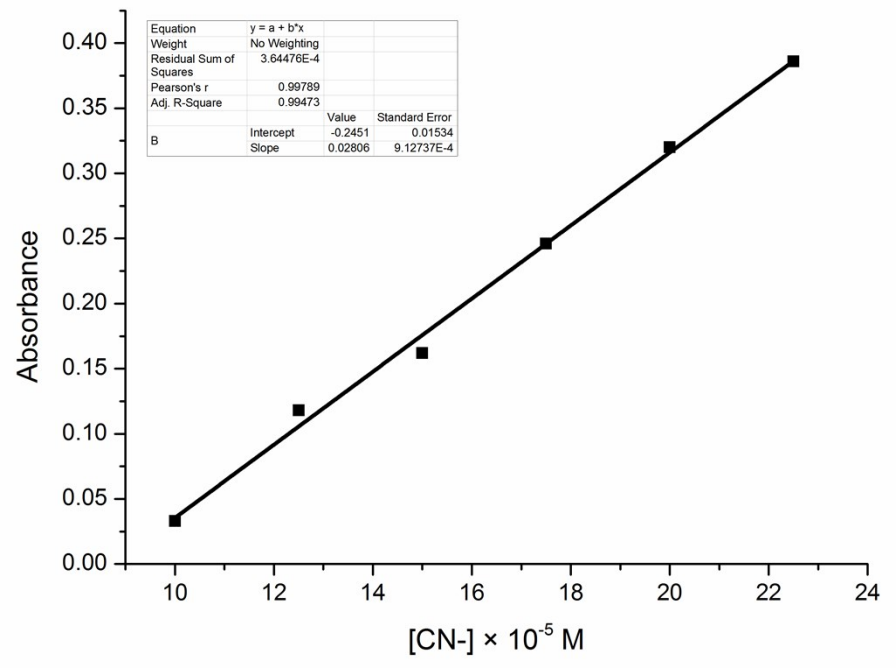


Fig. S6 The absorbance intensity showed a linear relationship with the increase of CN^- concentration.

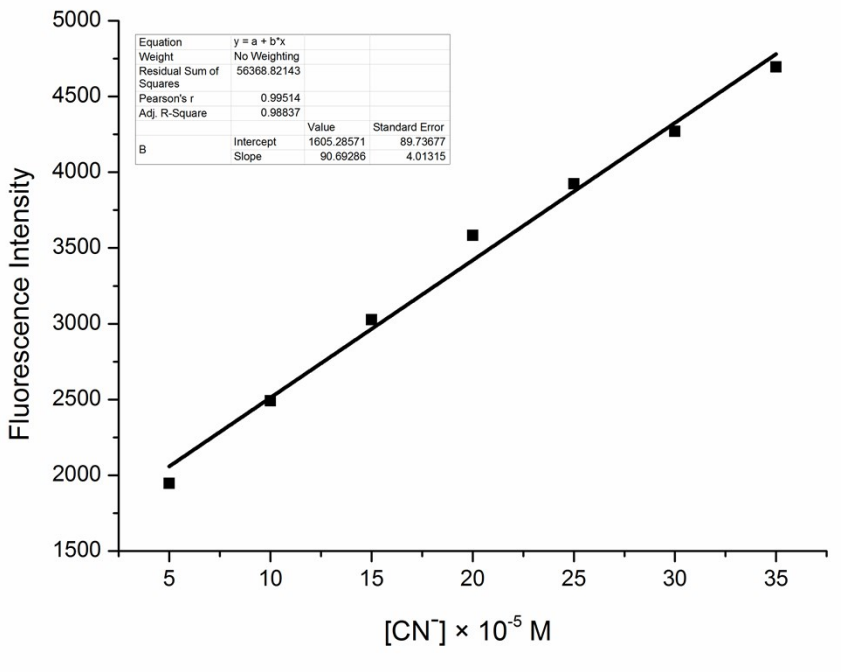
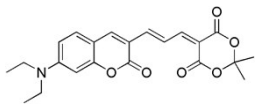
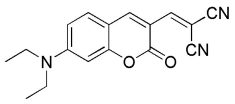
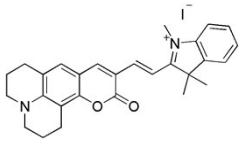
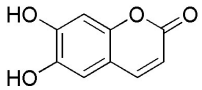
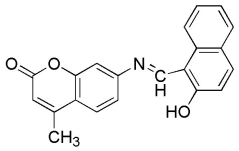
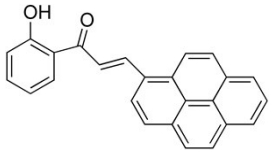
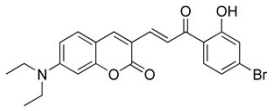
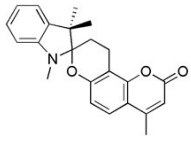
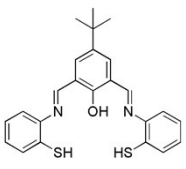


Fig. S7 The fluorescence emission intensity showed a linear relationship with the increase of CN^- concentration.

Table S1. Comparison of reported fluorescent probes for CN^- with **A1**.

Probe	LOD (μM)	Sensing method	Response time	solvent	Ref
	0.027	Ratiometric fluorescence	30 s	Tris-HCl, 10%DMSO	1
	0.8	Ratiometric fluorescence	17 min	THF-HEPES, 1:1, pH = 7.04	2
	0.066	Fluorescence turn-on	100 s	MeOH-HEPES, 1:1	3
	5.77	Fluorescence turn-on	30s	DMSO-water, 1:99	4
	0.0772	Fluorescence turn-on	< 60 s	DMSO:H_2O, 8:2	5
	0.8	fluorescence turn-on	8.0 h	CH_3CN	6
	0.00032	fluorescence turn-off	12 min	DMSO:PBS (4:1, v/v, pH = 7.4)	7
	1.0	Fluorescence turn-on	3 min	Buffer water-CH_3CN, 7:3,	8
	0.96	Ratiometric fluorescence	< 3S	DMSO:H_2O, 2:8	9

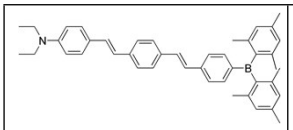
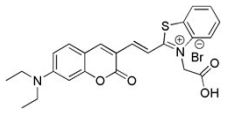
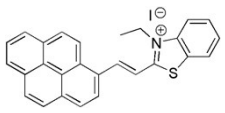
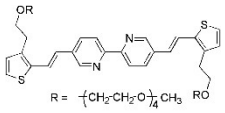
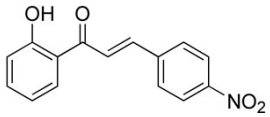
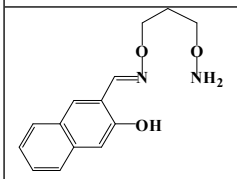
	------	Ratiometric fluorescence	< 10 s	THF	10
	0.64	Ratiometric fluorescence	2 min	CH_3CN-H_2O, 9:1	11
	0.28	Ratiometric fluorescence	15min	DMSO-HEPES, 1:1	12
	------	Ratiometric fluorescence	------	CH_3CN-HEPES, 4:1	13
	7.2	fluorescence turn-on	130 min	CH_3CN-H_2O, 1:1	14
	0.216	Ratiometric fluorescence turn-on	< 3S	DMSO-H2O, 9:1	This Work

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Table S2 Summary of crystal data of sensor **A1.**

Parameter	**A1**
Empirical formula	$C_{14}H_{16}N_2O_3$
Formula weight [g mol^{-1}]	260.29
Crystal system	Monoclinic
Space group	*C 2/c*
a [Å]	33.7978(18)
b [Å]	4.4776(3)
c [Å]	16.8590(10)
α [°]	90
β [°]	100.713(4)
γ [°]	90
Volume [Å^3]	2506.9(3)
Z	8
Density, calcd [gm^{-3}]	1.250
Temperature [K]	173(2)
Unique reflns	2683
Obsd reflns	5381
Parameters	181
R_{int}	0.074
$R[I>2\sigma(I)]^a$	0.0724
W[all data]R^b	0.2028
GOF on F^2	1.14