Electronic Supporting Information (ESI)

A fluorescent sensor from oyster mushroom-carbon dots for sensing nitroarenes in aqueous solutions

Muhammad Zulfajri,[a,b] Akhtar Rasool,[c,d] and Genin Gary Huang*[,a,e,f]

[a]Department of Medicinal and Applied Chemistry, Kaohsiung Medical University, Kaohsiung 80708, Taiwan

[b]Department of Chemistry Education, Universitas Serambi Mekkah, Aceh 23245, Indonesia

[c]Toxicology Unit, Pharmacology and Toxicology Division, CSIR-Indian Institute of Chemical Technology, Hyderabad, India.

[d]Department of Environmental Sciences, Osmania University, Hyderabad 500007, India

[e]Department of Medical Research, Kaohsiung Medical University Hospital, Kaohsiung 80708, Taiwan

[f]Department of Chemistry, National Sun Yat-sen University, Kaohsiung 80424, Taiwan

*To whom correspondence should be addressed.

E-mail : genin@kmu.edu.tw

Phone : +886-7-3121101#2810.

Fax : +886-7-3125339

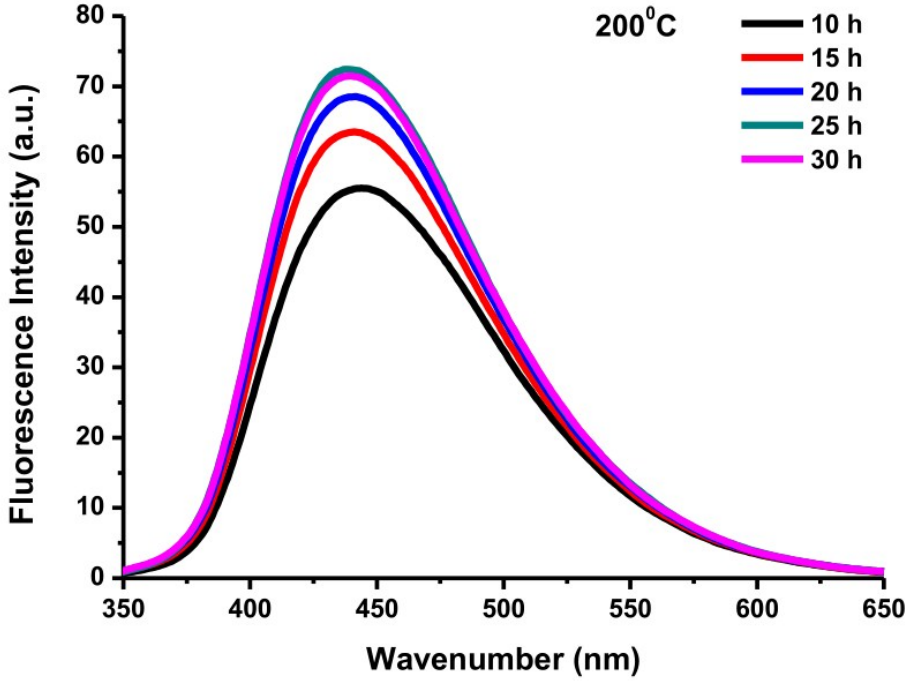

Fig. S1 The comparison of fluorescence emission intensity of OM-CDs prepared at different reaction time durations with 200˚C hydrothermal temperature (1.0 g OM powder, 15 mL ultrapure water).

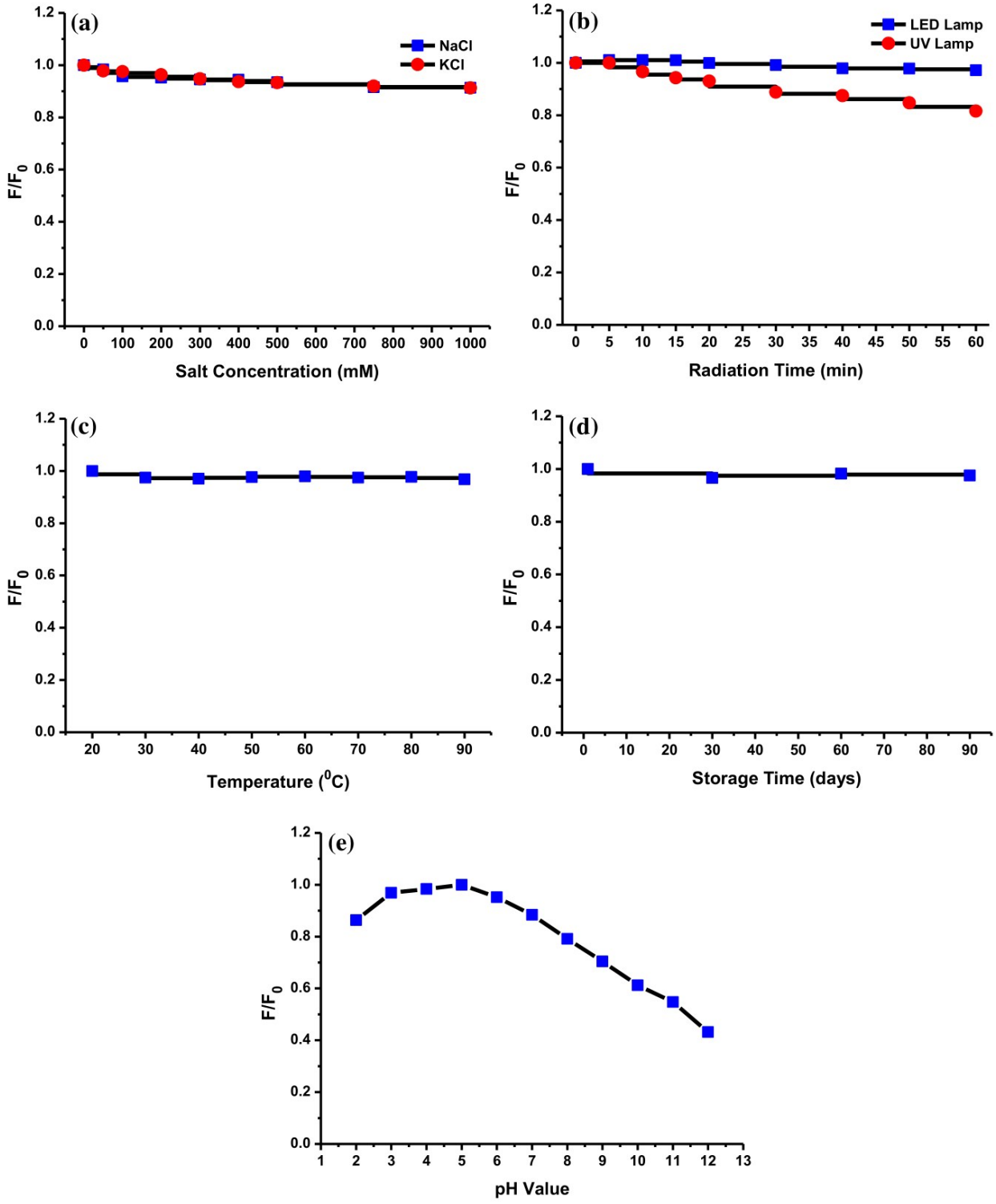

Fig. S2 The fluorescence emission spectra comparison of OM-CDs under various salt concentrations (**a**), lamp irradiation times (**b**), heating temperatures (**c**), storage times (**d**), and pH values (**e**).

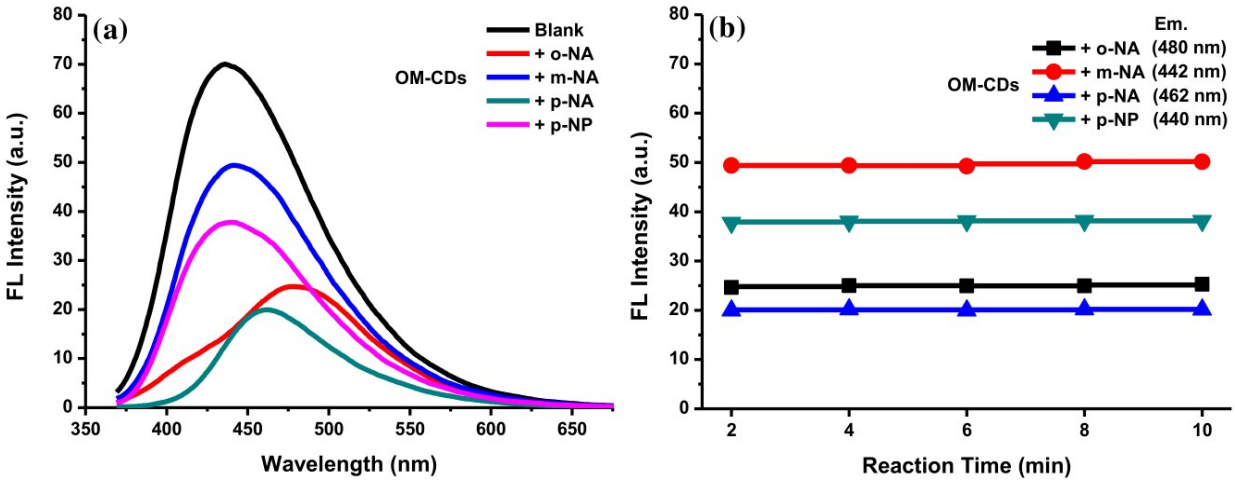

Fig. S3 FL emission intensity of OM-CDs after adding NAs at 500 μM (a) and FL emission intensity of OM-CDs/NAs with different interaction times (b).

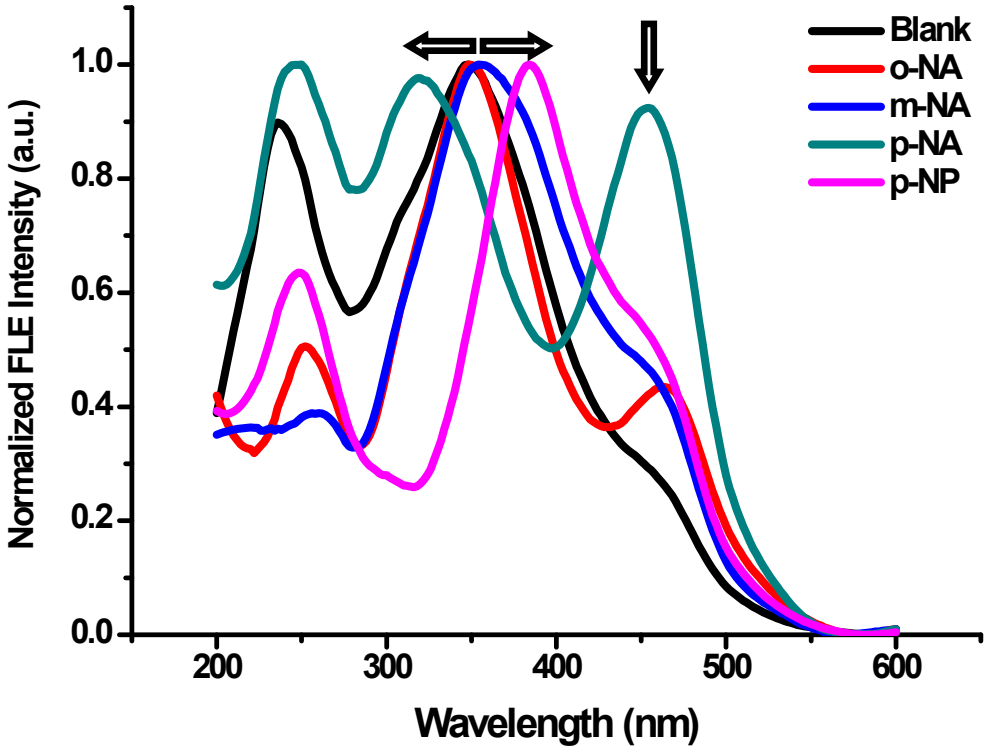

Fig. S4 The FLE spectra of OM-CDs (blank) and after the addition of NAs.

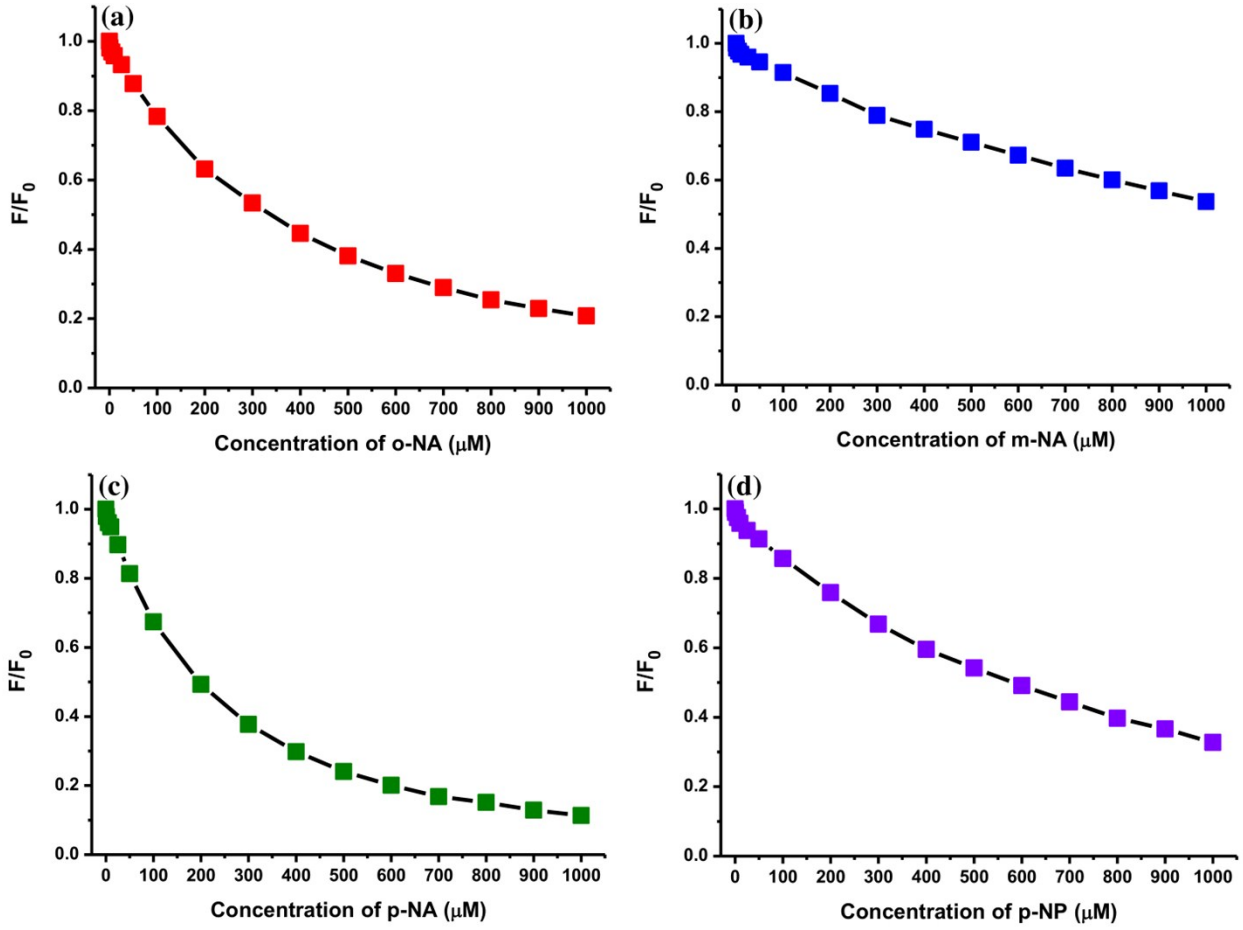

Fig. S5 Plots of F/F_0 with the concentration of NAs ranging from 1 to 1000 μM with 360 nm excitation.

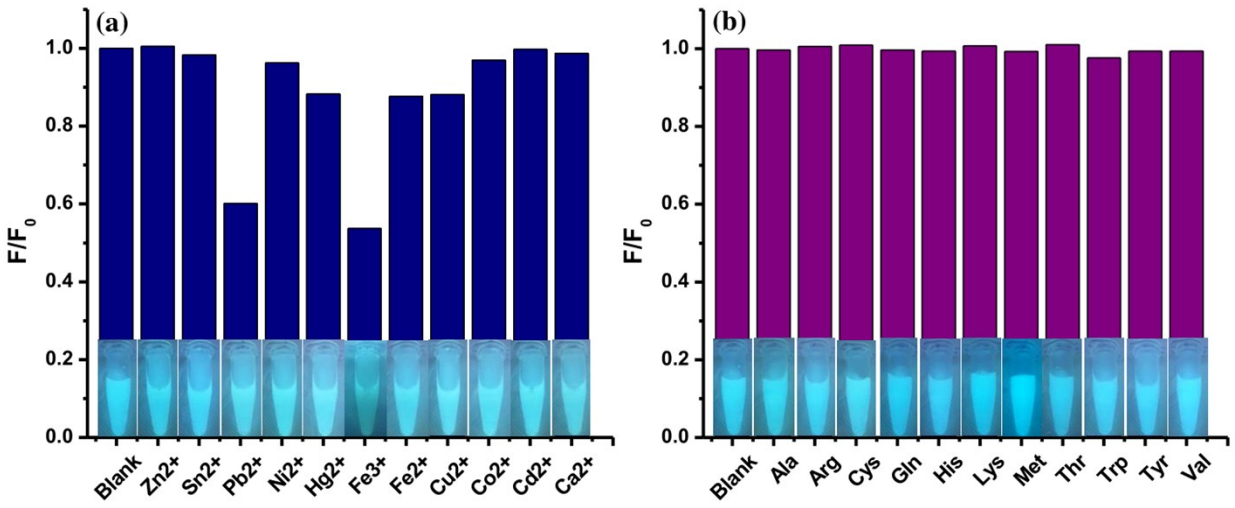

Fig. S6 Relative FL intensities (F/F_0) of OM-CDs solution in the presence of (a) metal ions and (b) amino acids.

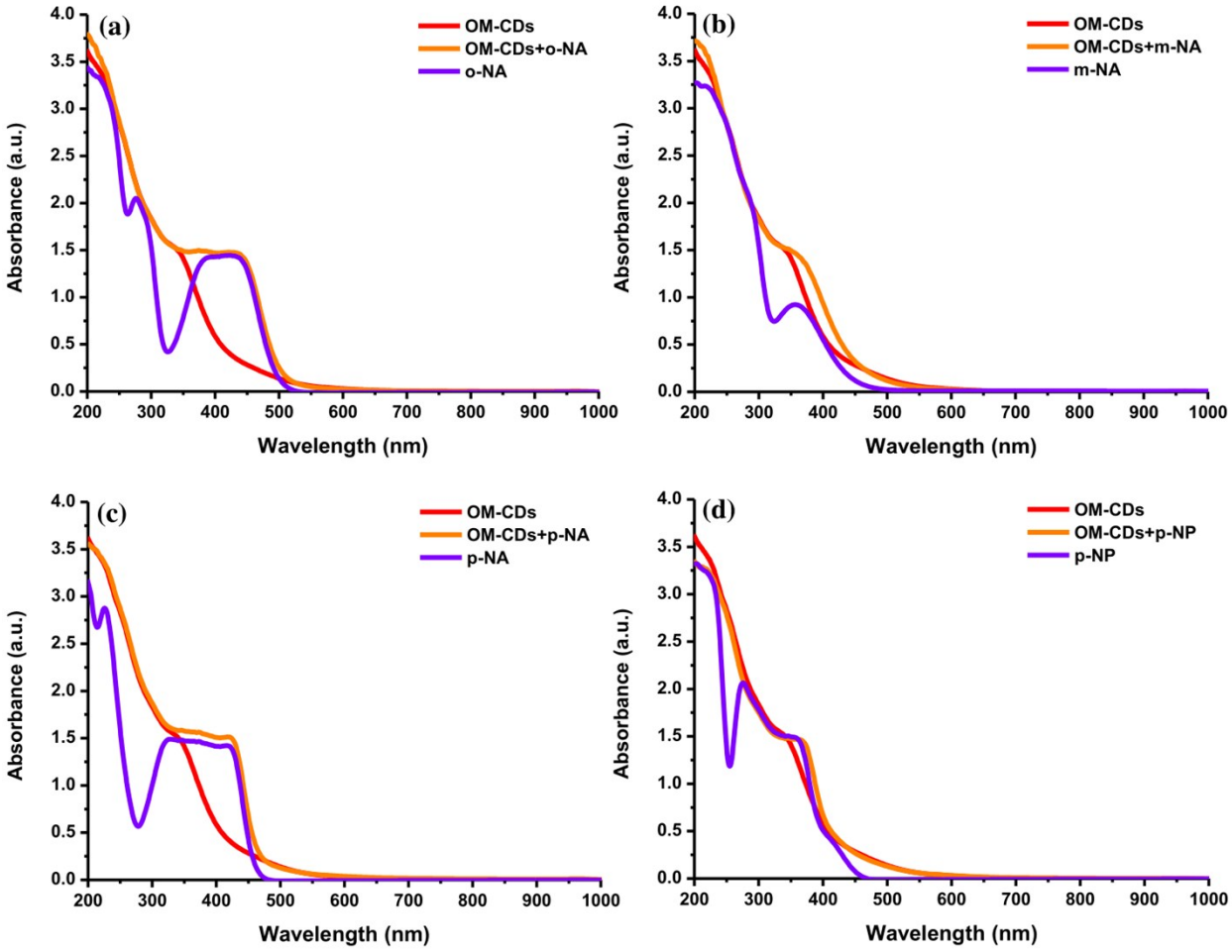

Fig. S7 UV-Vis absorption spectra of OM-CDs, NAs, and OM-CDs + NAs system.

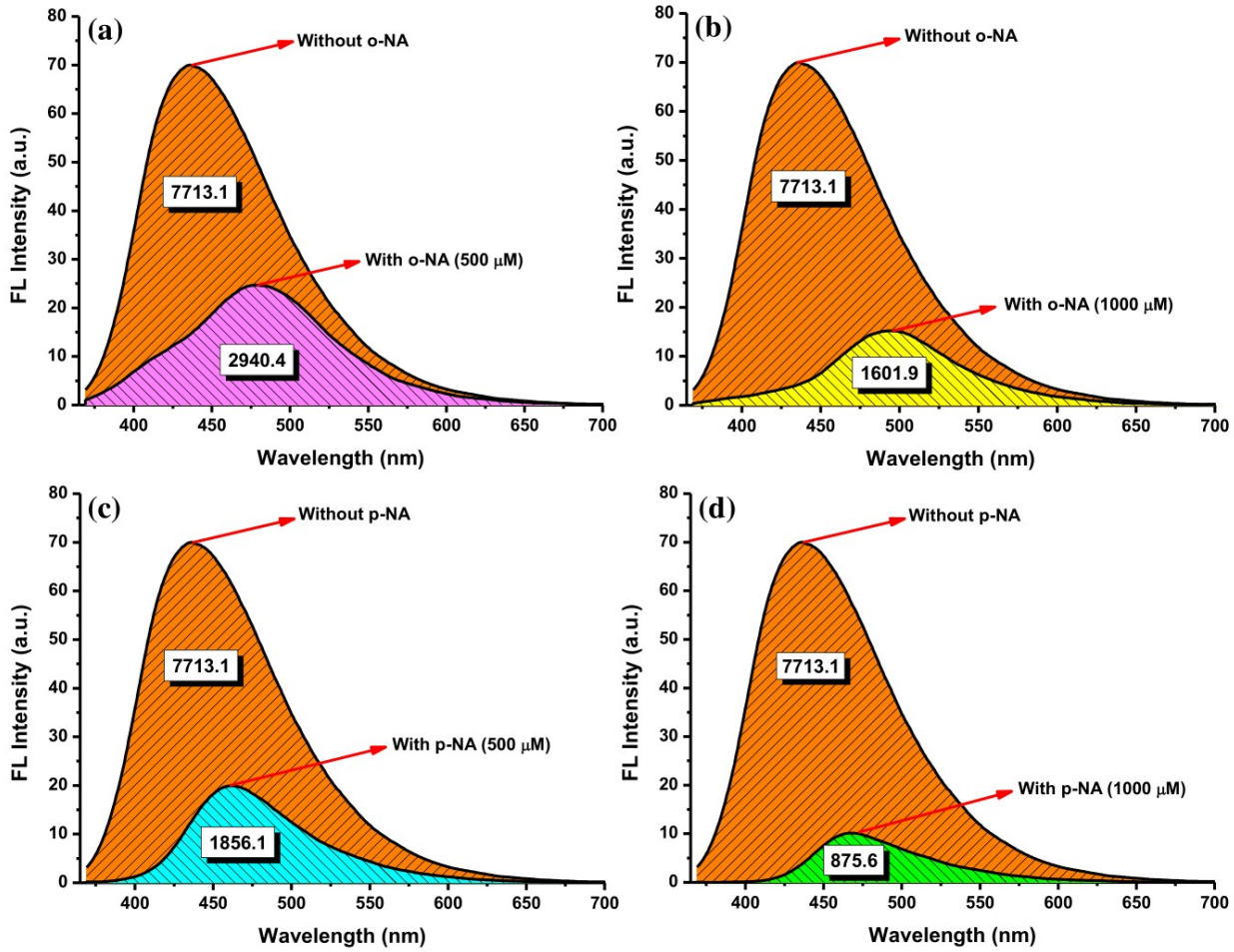

Fig. S8 FRET efficiency at the excitation wavelength at 360 nm. The integrated FL intensity was calculated from 360 nm to 700 nm with (a) 500 μM o-NA, (b) 1000 μM o-NA, (c) 500 μM m-NA, and (d) 1000 μM m-NA.

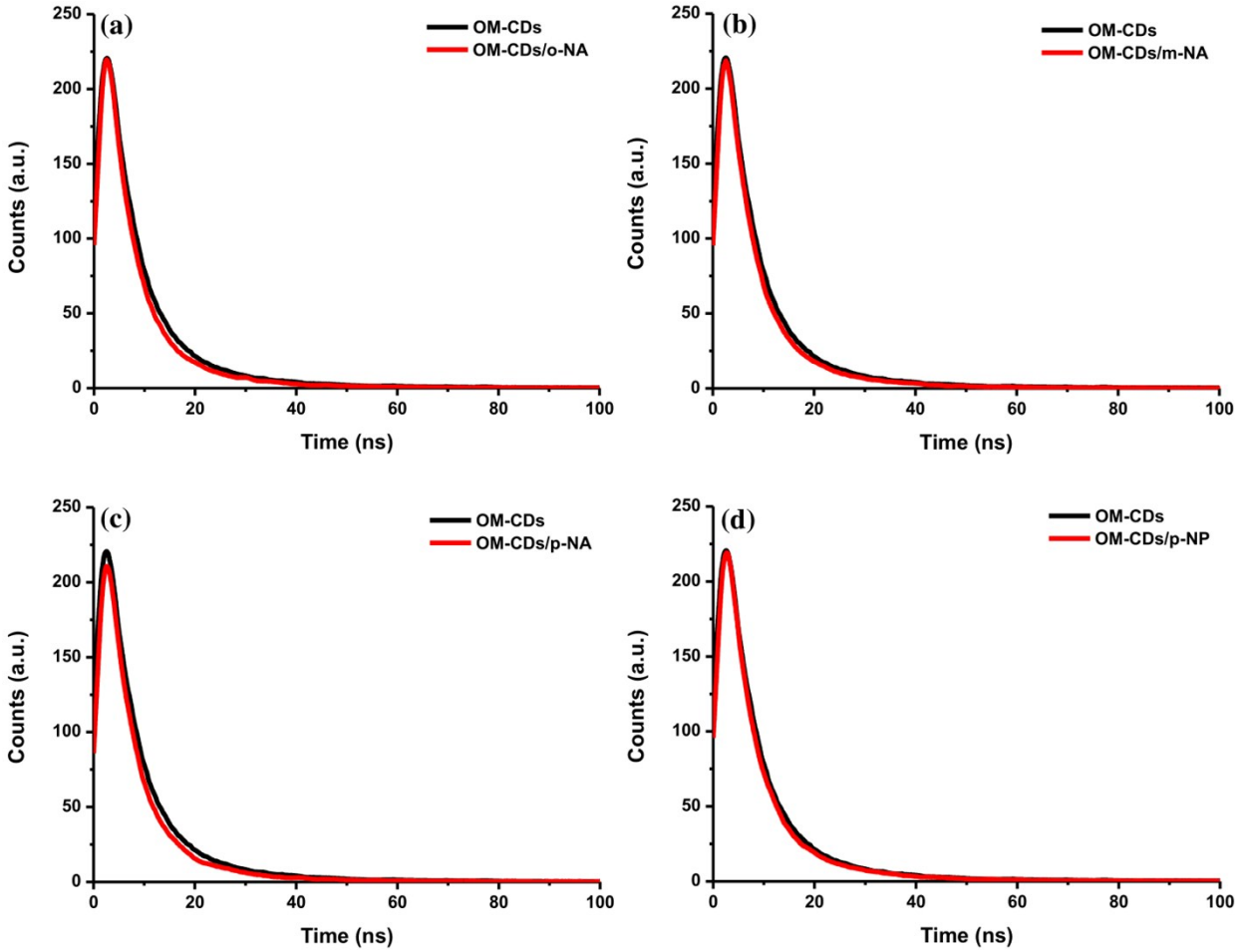

Fig. S10 The FL decay profiles of OM-CDs solution before (black) and after (red) addition of (a) o-NA, (b) m-NA, (c) p-NA, and (d) p-NP.

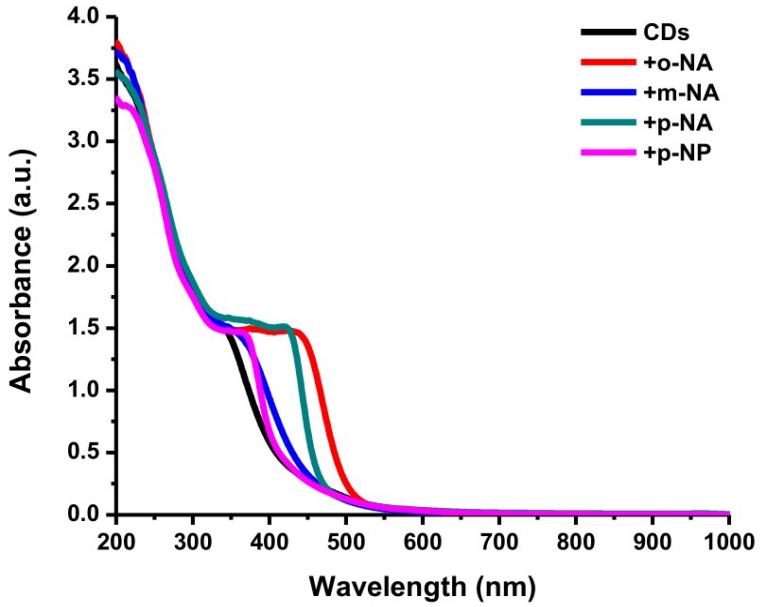

Fig. S10 The UV-vis spectra of OM-CDs in the addition of NAs at the concentration of 1000 μM.

Table S1. Comparisons of this method with other methods for the sensing of o-NA, m-NA, p-NA, and p-NP.

No	Method	Target	Conc. Range (μM)	LOD (μM)	Ref.
1	Anthracene-MOF		0-652	0.75	1
2	LS-SVM with CPE		0.72-109	0.36	2
3	PMME - HPLC	o-NA	0.72-1000	0.13	3
4	Opt. Membrane (DNAL/PPP)		0.4-400	0.10	4
5	OM-CDs		1-100	0.78	This work
6	LS-SVM with CPE		1.45-145	0.58	2
7	PMME - HPLC		0.36-7.24	0.06	3
8	CZE-AD	m-NA	0.045-1810	0.01	5
9	CEC-AD		-	1.46	6
10	OM-CDs		10-300	2.29	This work
11	LS-SVM with CPE		0.72-123	0.43	2
12	TPA-[Zn(bpba)(NO_3)] (1)		0-40	0.72	7
13	Eu-MOF	p-NA	10-140	0.72	8
14	TPDC-DB		0-60	3.29	9
15	OM-CDs		1-100	0.50	This work
16	Zn-MOF		0-35	4.74	10
17	CHT/ZnO NDs-electrode		0.5-400.6	0.23	11
18	Ag NCs-PEI	p-NP	5-140	1.28	12
19	β-CD@ZnO QDs		1-40	0.34	13
20	OM-CDs		10-300	1.56	This work

Stands for abbreviations:
Anthracene-MOF : anthracene-based metal–organic framework
LS-SVM with CPE : Least-squares support vector machines after cloud point extraction
PMME – HPLC : Polymer monolith microextraction coupled with HPLC
Opt. Membrane (DNAL/PPP) : Optical membrane (1,2-di(1-naphthyl)acetate/polymer poly(p-phenylene ethynylene)
CZE-AD : Capillary zone electrophoresis with amperometric detection
CEC-AD : Cation-exchange chromatography with amperometric detection
TPA-[Zn(bpba)(NO_3)] (1) : triphenylamine- functionalized material [Zn(bpba)(NO3)] (1) (Hbpba = 4-(bis(4-(pyridin-4-yl)phenyl)amino)benzoic acid)
Eu-MOF : Eu-based metal-organic framework
TPDC-DB : tetraphenyl-5,5-dioctylcyclopentadiene
Zn-MOF : Zn(II)-based metal-organic framework
CHT/ZnO NDs-electrode : Chitosan/zinc oxide nanoneedles modified electrode
Ag NCs-PEI : Ag nanoclusters templated by hyperbranched polyethyleneimine
β-CD@ZnO QDs : β- cyclodextrin-capped ZnO quantum dots
OM-CDs : oyster mushroom-carbon dots

Table S2. The determination of NAs in underground water samples (n = 3).

Target	Added (μM)	Found (μM)	Recovery (%)	RSD (%)
o-NA	25	24.73	98.92	0.46
	50	48.63	97.26	0.38
	75	73.68	98.23	0.40
	100	97.53	97.53	0.74
	150	145.81	97.20	0.72
m-NA	25	25.10	100.42	0.71
	50	50.03	100.06	0.44
	75	75.75	101.00	0.45
	100	101.75	101.75	0.85
	150	153.12	102.08	0.39
p-NA	25	25.39	101.54	0.62
	50	49.90	99.81	0.51
	75	75.95	101.26	0.56
	100	102.60	102.60	0.80
	150	149.23	99.48	1.20
p-NP	25	24.86	99.43	0.23
	50	49.84	99.69	0.22
	75	74.47	99.29	0.36
	100	99.91	99.91	0.62
	150	151.13	100.75	0.49

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