

Supplemental Material

Reliable detection of *o*-nitrophenol and *p*-nitrophenol based on carbon nanotubes covalently functionalized with ferrocene as an inner reference

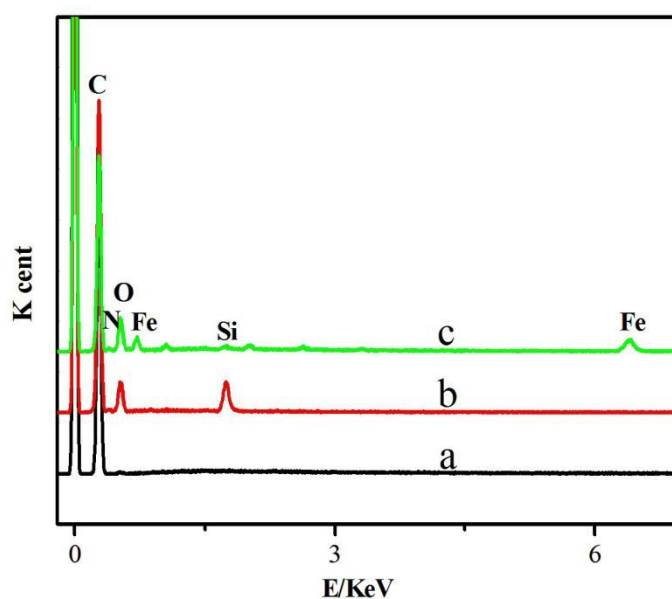


Fig. S1 EDS of MWNTs (a), APTES modified MWNTs (b), and Fc-MWNTs (c)

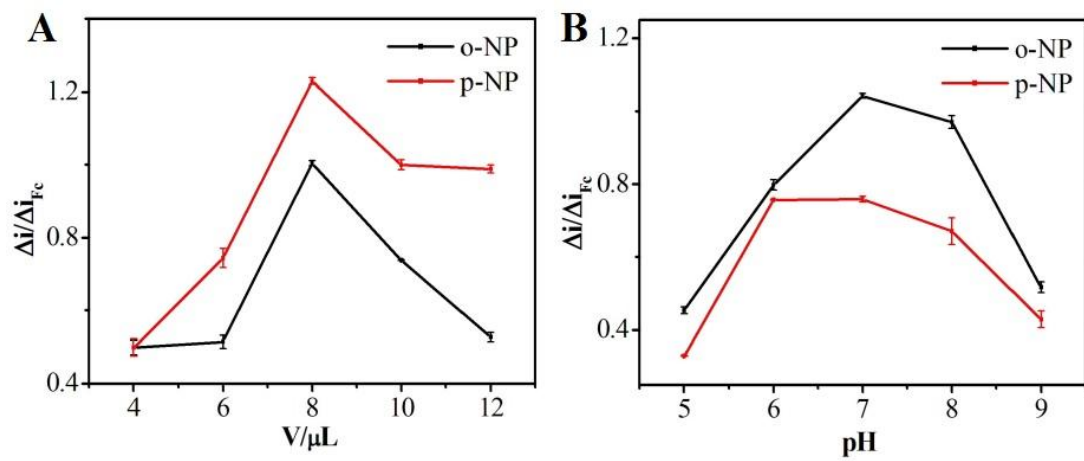


Fig. S2 (A) Effect of the amount of Fc-MWNTs, (B) Effect of pH value of the detection solution.

Table S1 Comparison the analytical performances of different electrochemical sensors for o-NP and p-NP detection.

Electrochemical sensors	Linear range ($\mu\text{mol/L}$)		LOD ($\mu\text{mol/L}$)		References
	o-NP	p-NP	o-NP	p-NP	
nano-Au/GCE	10–1000	10–1000	8	8	1
meso-ZnCo ₂ O ₄ / GCE	1–4000	1–4000	0.3	0.3	2
CD-RGO/GCE	7.2–64.7	7.2–72.0	0.14	0.36	3
OMCs/GCE	0.5–90	2–90	0.08	0.1	4
MWNTs/GCE	4–2000	2–4000	0.5	0.4	5
Dual -CD-SiC/GCE	0.01–150	0.01–150	0.019	0.023	6
CD-SBA/CPE DPV	0.2-1.4	0.2-1.4	0.01	0.01	7
Polyfurfural film/GCE	5-100	0.75-100	0.3	0.04	8
FMC-AMWCNTs/GCE	0.1-100	0.1-100	0.069	0.073	This work

References

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Table S2 Results for the determination of o-NP and p-NP in real water samples by Fc-MWNTs/GCE.

Samples	Added (μM)	Detected content ^a (μM)	Recovery (%)	RSD (%)
Changjiang River water	-	-	-	-
	0.1	0.10	102.4	4.3
	1.0	1.01	101.0	5.0
	10.0	9.75	97.5	4.9
	50.0	51.4	102.7	0.6
	100.0	94.3	94.3	1.5
	-	-	-	-
	0.1	0.10	103.4	5.6
	1.0	1.04	104.4	4.8
	10.0	9.86	98.6	4.7
Jinghu Lake water	50.0	53.1	106.2	2.2
	100.0	9.63	96.3	2.9
	-	-	-	-
	0.1	0.10	102.1	5.5
	1.0	1.04	104.0	5.7
	10.0	9.37	93.7	4.1
	50.0	51.4	102.8	0.6
	100.0	94.8	94.8	1.1
	-	-	-	-
	0.1	0.10	100.0	3.1
Huajin River water	1.0	1.06	106.0	2.2
	10.0	10.2	100.2	5.1
	50.0	52.4	104.9	0.8
	100.0	94.7	94.7	0.6
	-	-	-	-
	0.1	0.10	103.1	4.7
	1.0	1.00	100.4	4.0
	10.0	10.2	101.9	4.1
	50.0	50.6	101.2	4.5
	100.0	94.5	94.5	1.5
-	-	-	-	
0.1	0.10	103.4	5.4	
1.0	1.02	102.1	3.9	
10.0	10.5	104.8	2.4	
50.0	53.3	106.6	1.8	
100.0	100.5	100.6	5.8	

^aAverage value of three determinations.