Electronic Supplementary Material (ESI) for Analyst.
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Supporting information

In situ fabrication of hollow ZnO@NC polyhedra from ZIF-8 for the determination of trace Cd (Ⅱ)

Xueping Zhang,[a,b] Qingqing Wang,[a] Jing Li,[a] Liang Huang,[a,c] Dengbin Yu,[a] and Shaojun Dong*,[a,b]

[a]State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, P. R. China

[b]University of Chinese Academy of Sciences, Beijing 100049, P. R. China

[c]University of Science and Technology of China, Hefei, Anhui 230026, P. R. China

E-mail: dongsj@ciac.ac.cn

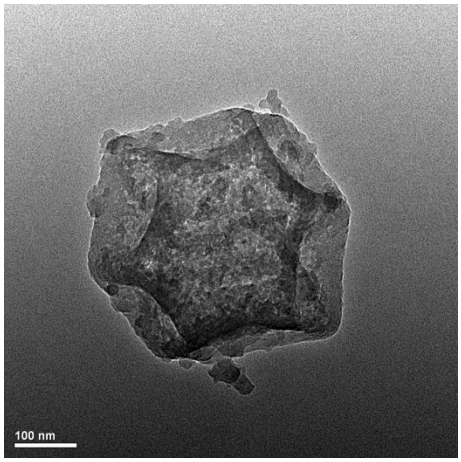

Fig. S1 TEM image of S-ZnO@NC.

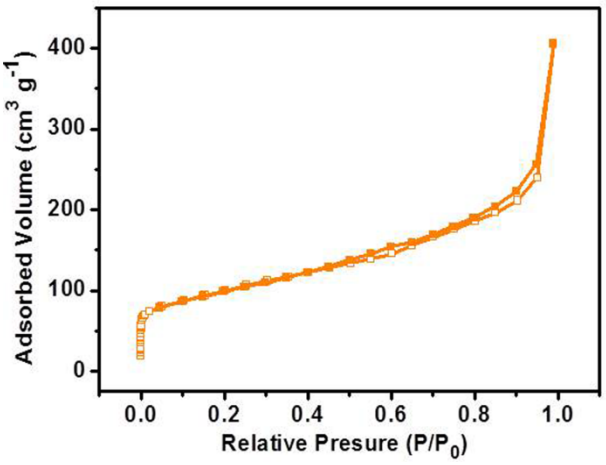

Fig. S2 Nitrogen-sorption isotherm curves of H-ZnO@NC.

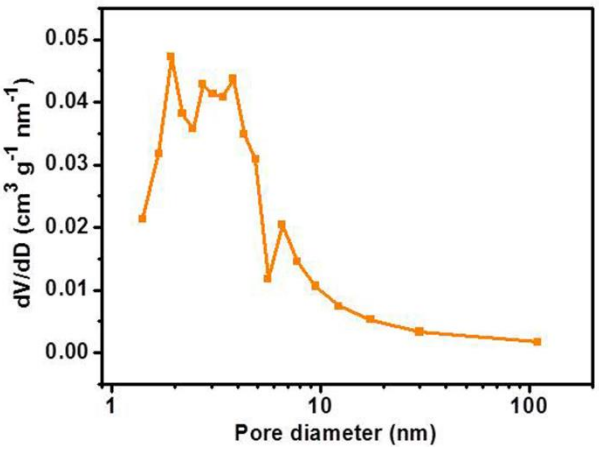

Fig. S3 BJH pore distribution of H-ZnO@NC.

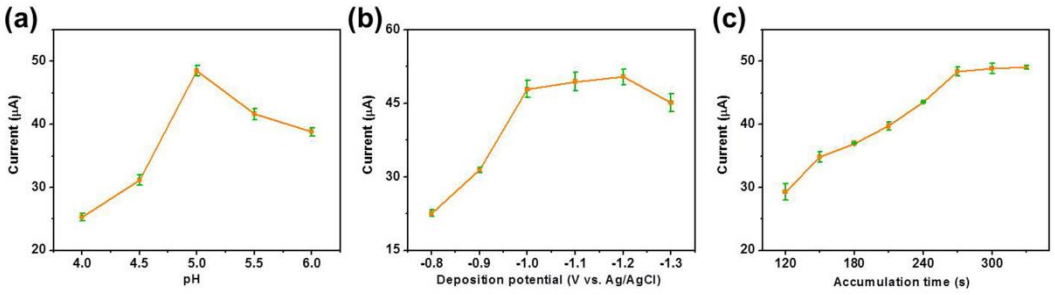

Fig. S4 Experimental parameters optimization. Influence of (a) pH value, (b) accumulation potential, and (c) accumulation time on the voltammetric response of the H-ZnO@NC/GCE. Data were obtained by DPASV for 100 μg L^{-1} Cd (Ⅱ).

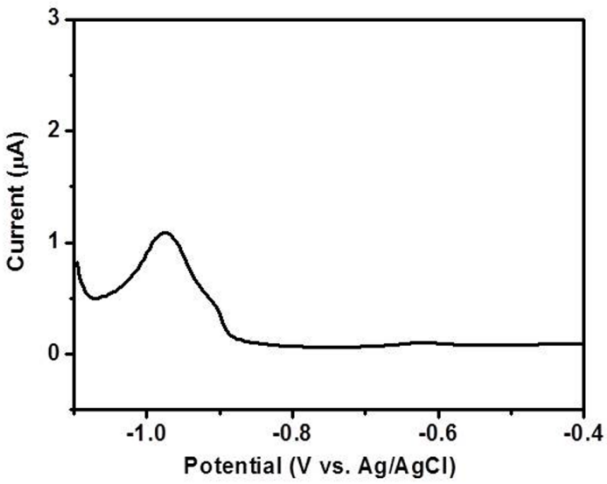

Fig. S5 The DPASV curves of H-ZnO@NC/GCE in 0.1 M acetate buffer (pH =5.0). The accumulation process was performed at -1.0 V for 270 s.

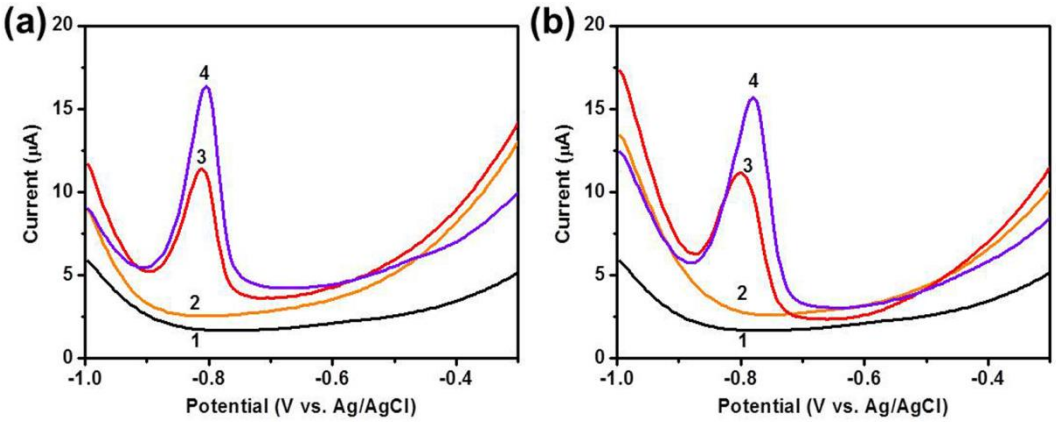

Fig. S6 Water samples: (a) Tap water, (b) South Lake water. The DPASV curves of H-ZnO@NC/GCE for supporting electrolyte solution (curve 1), after addition of water samples (curve 2), and after consecutive standard addition of Cd (Ⅱ) (10 μg L^{-1}, and 20 μg L^{-1}, curves 4 and 5, respectively).

Table S1 Comparision of the analytical performances of different Cd (Ⅱ) sensors.

Sensors	Linear range ($\mu g\ L^{-1}$)	Detection limit ($\mu g\ L^{-1}$)	Ref.
ZnO NF/GCE	0.5-14.6, 14.6-146	0.2	28
RGO/Bi/GCE	20-120	2.8	18
Nafion/Bi/NMC/GCE	2-10, 10-100	1.5	19
UiO-66-NH_2@PANI/GCE	0.5-600	0.3	4
SWCNT-Cys/GCE	1.0-300	0.3	11
Bi/poly(p-ABSA)/GCE	1-110	0.6	20
CNF-Nafion/GCE	2-100	0.38	38
(C-Bi) nanocomposite/CPE	1-100	0.6	24
H-ZnO@NC	0.3-300	0.1	This work

NF: nanofiber; NMC: nitrogen doped microporous carbon; PANI: polyaniline; SWCNT: single-walled carbon nanotubes; Cys: cysteine; p-ABSA: p-aminobenzene sulfonic acid; CNF: carbon nanofiber

Table S2 Interferences of some metal ions on the stripping peak currents of Cd ions.

Interfering ions	Concentration ($\mu g\ L^{-1}$)	Signal change (%)
Ag^{+}	50	-2.5
Co^{2+}	50	+3.9
Mn^{2+}	50	+5.6
Cr^{3+}	50	+2.1
Pb^{2+}	10	-14.3
Cu^{2+}	10	-14.1
Hg^{2+}	10	+10.6