Electronic Supplementary Information

One-pot synthesis of quantum dots based molecular imprinting nanosensor for highly selective and sensitive fluorescent detection of 4-nitrophenol in environmental water

Jialuo Yu [a,b], Xiaoyan Wang [a,b,c], Qi Kang [a], Jinhua Li [b], Dazhong Shen [a,*], Lingxin Chen [b,*]

[a] *College of Chemistry, Chemical Engineering and Materials Science, Collaborative Innovation Center of Functionalized Probes for Chemical Imaging in Universities of Shandong, Key Laboratory of Molecular and Nano Probes, Ministry of Education, Shandong Provincial Key Laboratory of Clean Production of Fine Chemicals, Shandong Normal University, Jinan 250014, China*

[b] *Key Laboratory of Coastal Environmental Processes and Ecological Remediation, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, Yantai 264003, China*

[c] *School of Pharmacy, Binzhou Medical University, Yantai 264003, China*

* Corresponding authors.
E-mail addresses: dzshen@sdnu.edu.cn (D. Shen), lxchen@yic.ac.cn (L. Chen).

Contents

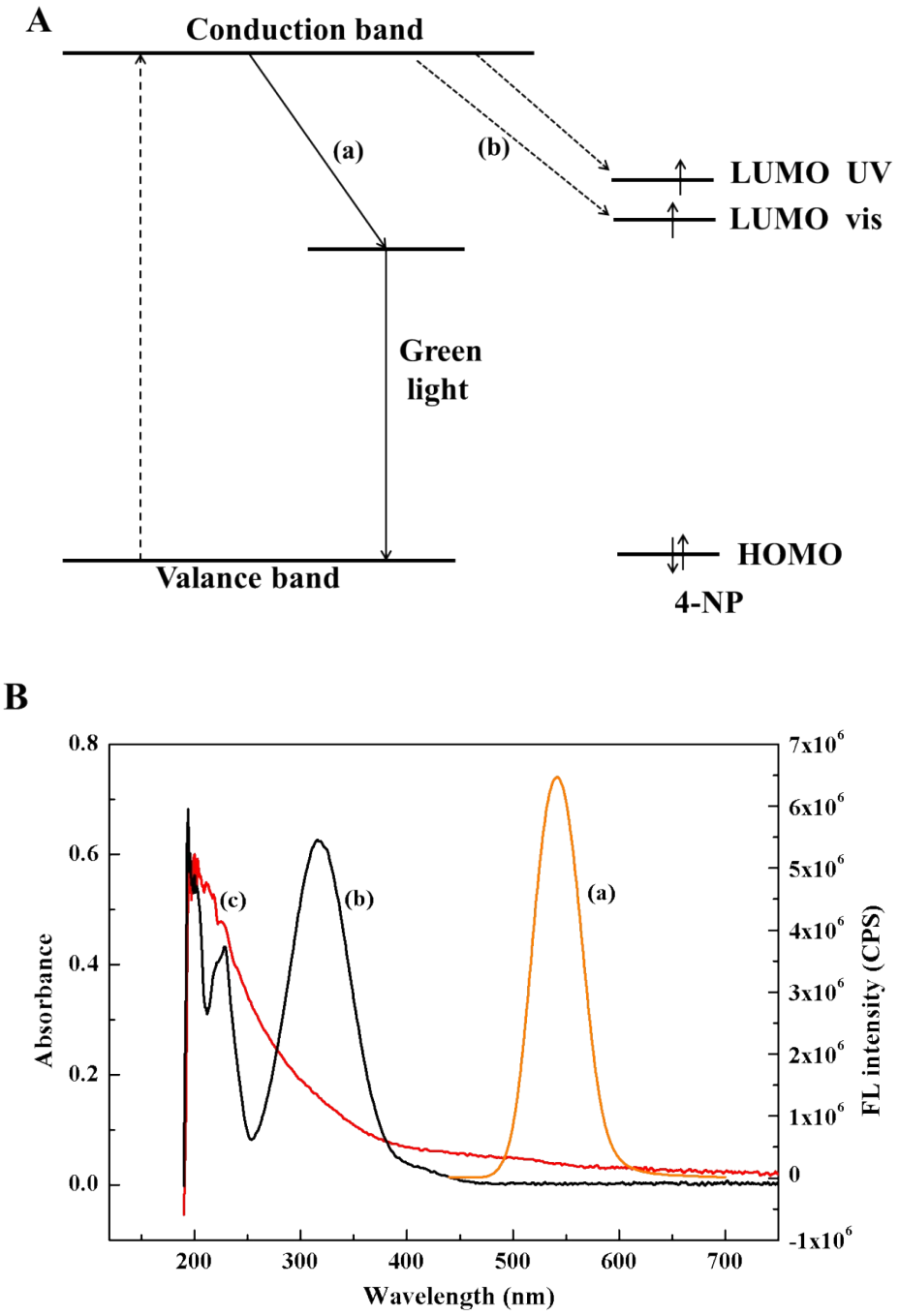

Fig. S1. (A) Schematic for the fluorescence quenching mechanism of electron transfer from CdTe QDs to 4-NP according to molecular orbital theory. (B) Fluorescence emission spectrum of CdTe QDs (a, yellow line), and absorption spectra of 4-NP (b, black line) and QD@MIPs (c, red line).

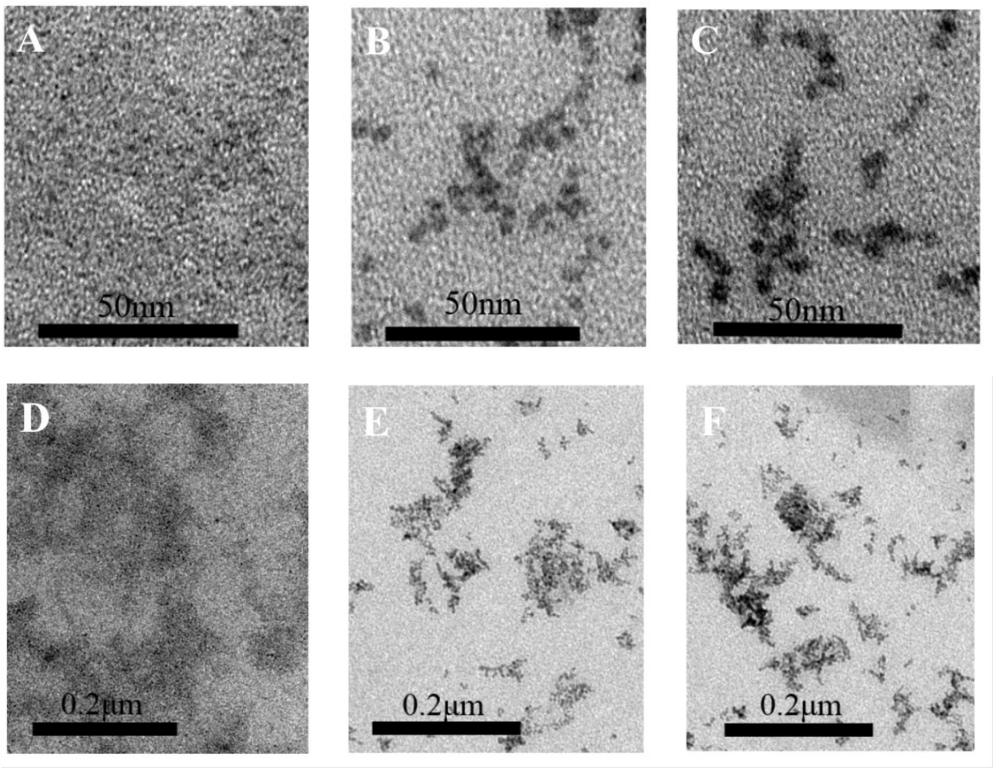

Fig. S2. TEM images of (A) QDs, (B) QD@MIPs, and (C) QD@NIPs with scale bar of 50 nm and (D) QDs, (E) QD@MIPs, and (F) QD@NIPs with scale bar of 200 nm.

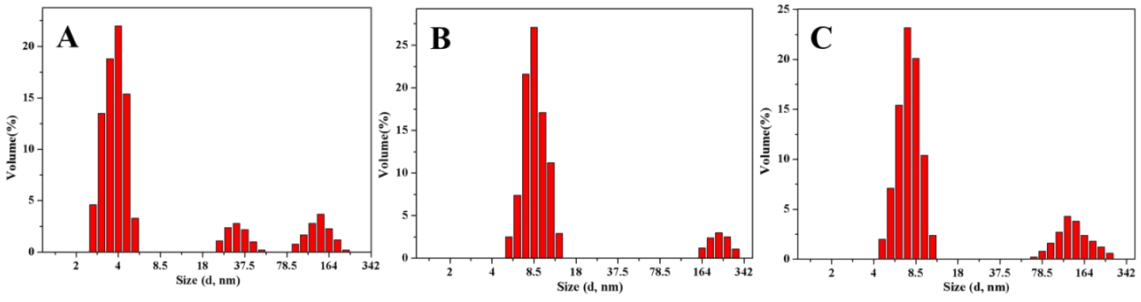

Fig. S3. Statistic hydration particle size distribution of (A) QDs, (B) QD@MIPs, and (C) QD@NIPs.

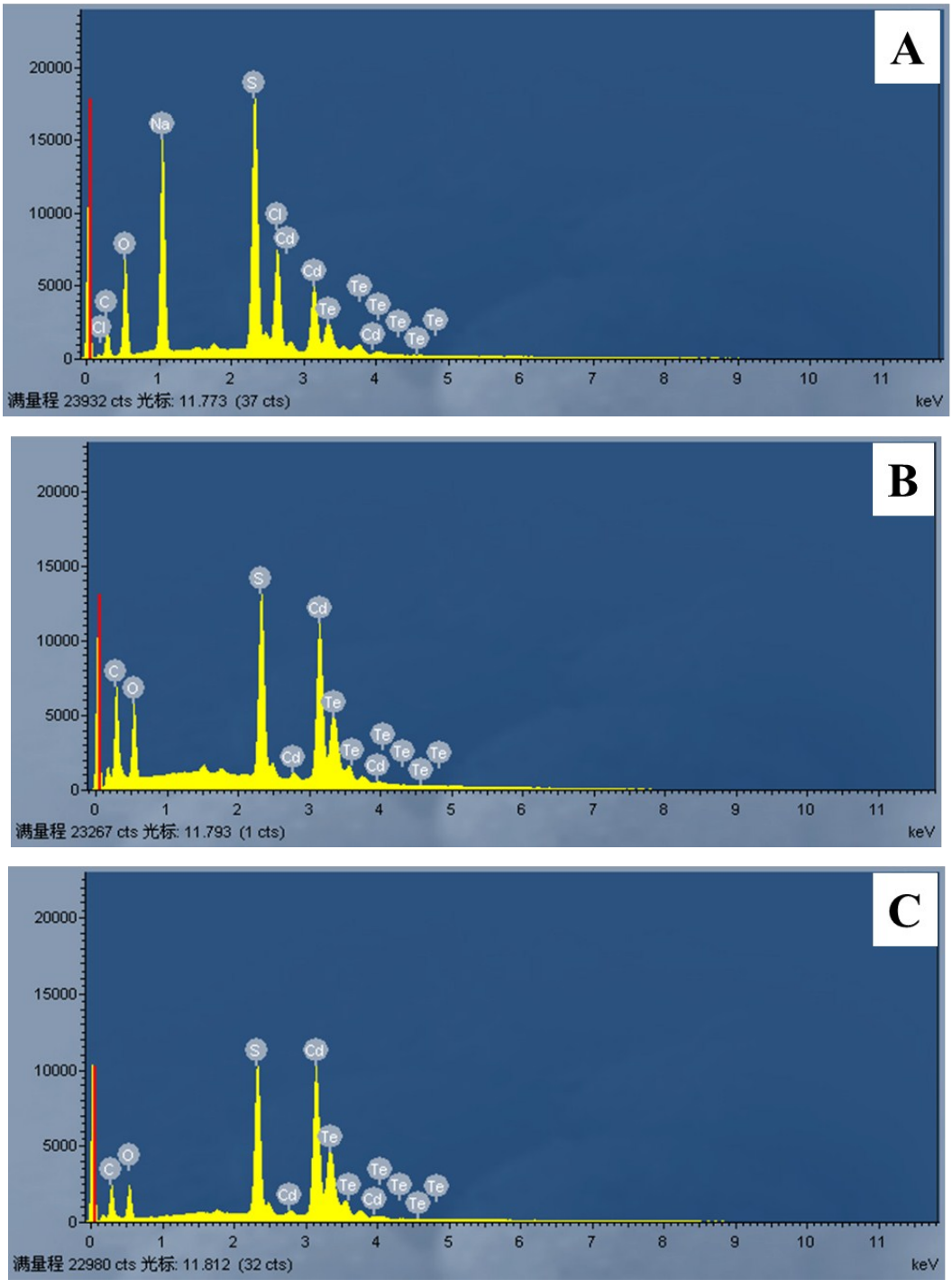

Fig. S4. EDS spectra of the (A) QDs, (B) QD@MIPs, and (C) QD@NIPs.

Table S1. Atomic composition ratios (%) of the QDs, QD@MIPs and QD@NIPs from EDS.

	QDs		QD@MIPs		QD@NIPs	
Element	Weight %	Atomic %	Weight %	Atomic %	Weight %	Atomic %
C	18.04	33.19	23.75	46.34	13.47	35.56
O	23.44	32.37	24.81	36.35	17.41	34.50
S	16.62	11.45	12.65	9.25	14.87	14.70
Cd	16.70	3.28	37.94	7.91	52.15	14.71
Te	2.14	0.37	0.84	0.15	2.11	0.52
Na	14.66	14.09				
Cl	8.40	5.24				