

## Dual Functional Carbonaceous Nanodots Exist in a Cup of Tea

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### Electronic Supplementary Information

Figure S1

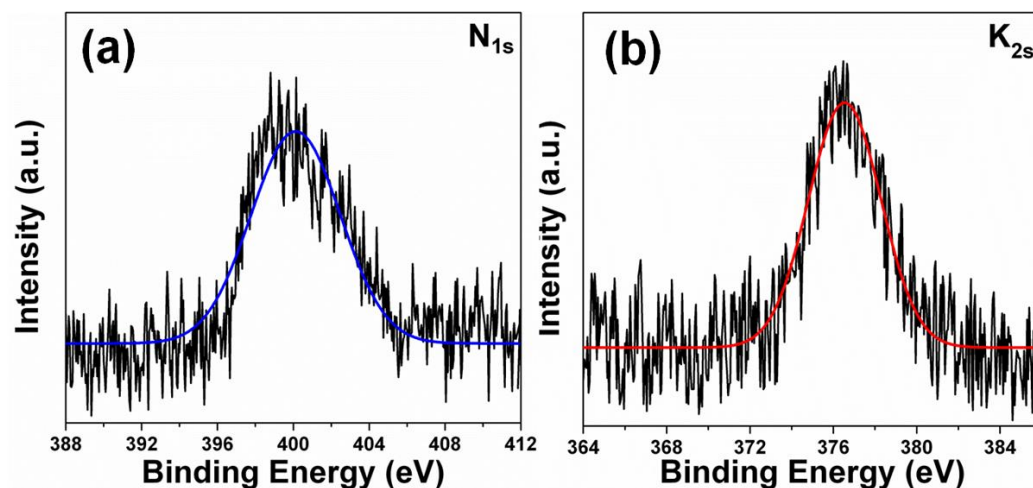


Fig. S1 The detailed N<sub>1s</sub> and K<sub>2s</sub> spectra of CNDs.

Figure S2

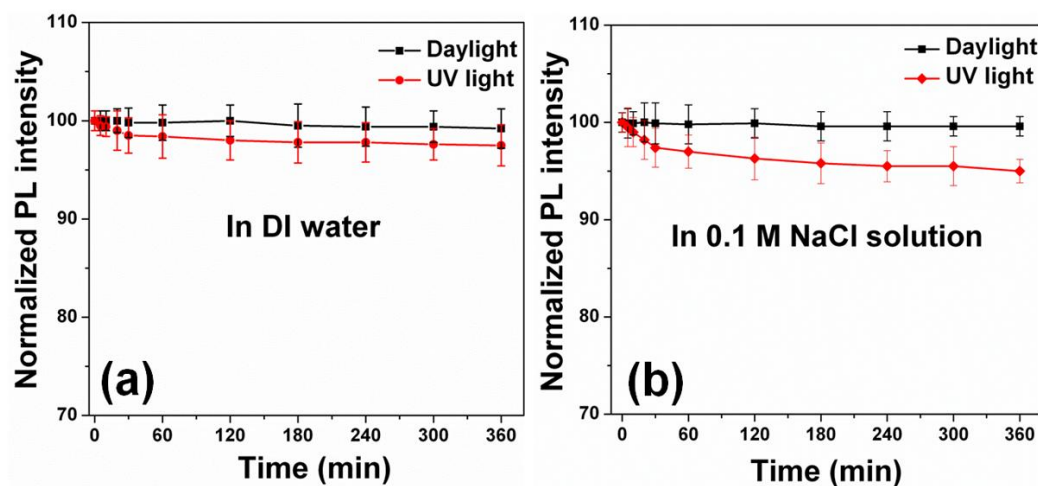


Fig. S2 The photostability of the CNDs.

Figure S3

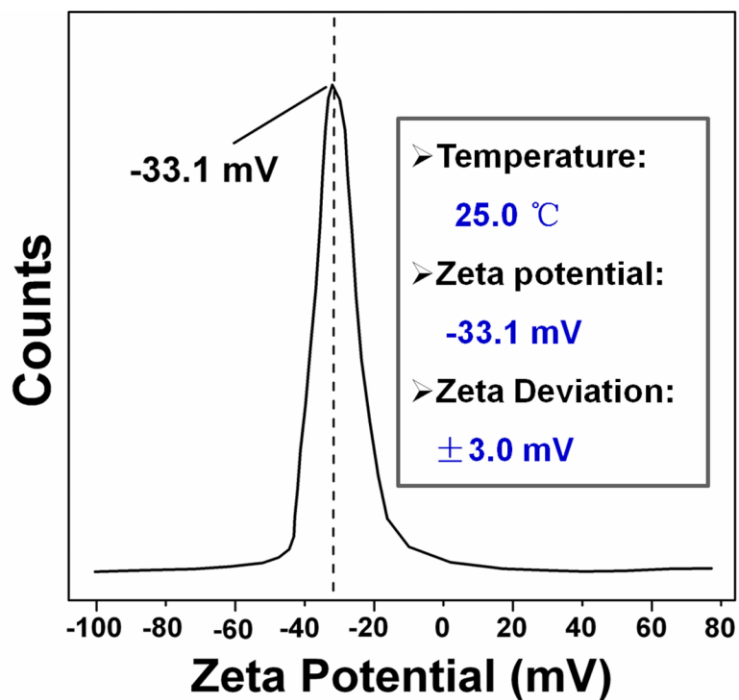


Fig. S3 Zeta potential of the CNDs.

Figure S4

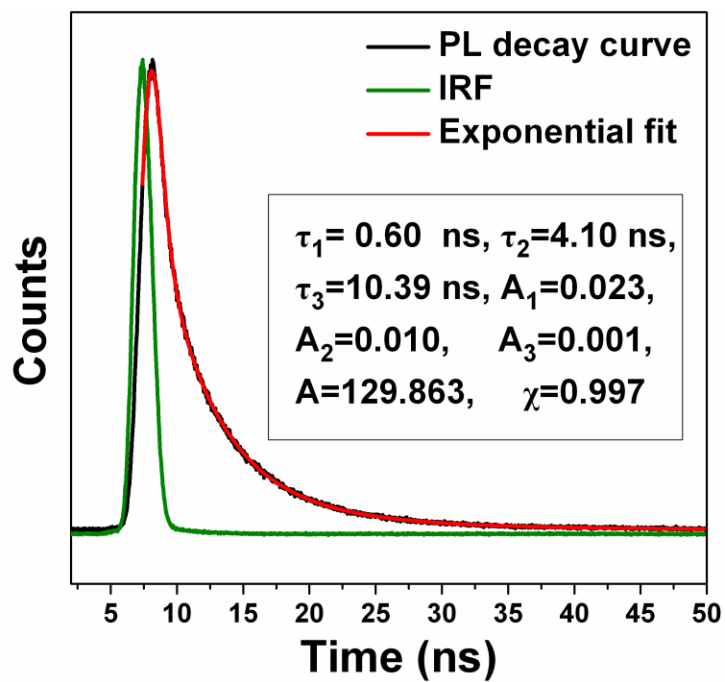


Fig. S4 The PL decay curve of the CNDs ( $\lambda_{em}=455$  nm,  $\lambda_{ex}=360$  nm).

**Figure S5**

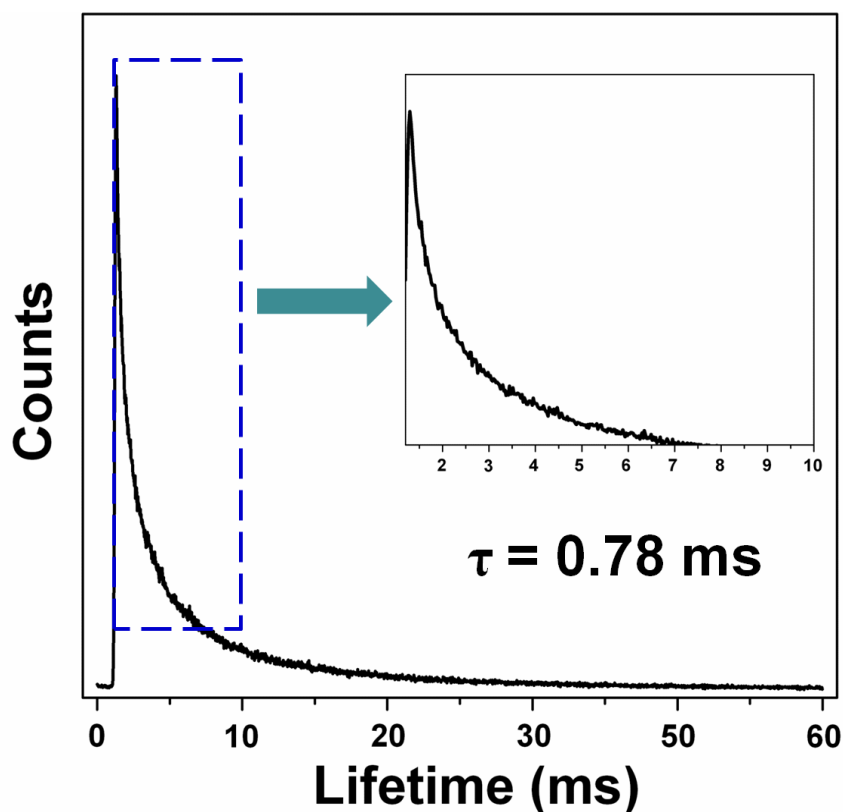


Fig. S5 The PL decay curve of the CNDs ( $\lambda_{em}=516$  nm,  $\lambda_{ex}=360$  nm).

**Table S1**

Table S1 Comparison of different photoluminescent probes for  $Hg^{2+}$  detection.

Photoluminescent probes	Detection limit (nM)	Reference
L-cysteine-coated CdSe	6	[1]
N-acetyl-L-cysteine capped ZnS	5	[2]
Thioglycollic acid-capped CdTe	1.55	[3]
Photoluminescent Au nanoparticles	5.0	[4]
Photoluminescent Ag clusters	10	[5]
Au@Ag core-shell nanoparticles	9	[6]
2,3-diaminophenazine nanoparticles	1	[7]
Photoluminescent Oligonucleotide	5	[8]
Carbon Nanoparticles	0.23	[9]
Carbon Nanodots	0.1	This work

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**Figure S6**

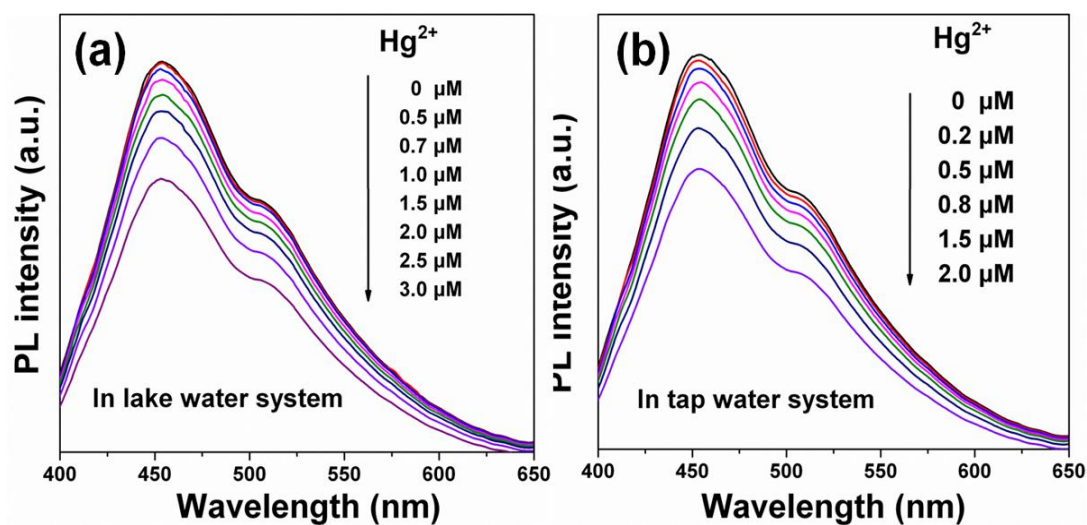


Fig. S6 The PL spectra of CNDs dispersion in the presence of different  $\text{Hg}^{2+}$  concentrations (a) in lake water, and (b) tap water.

**Figure S7**

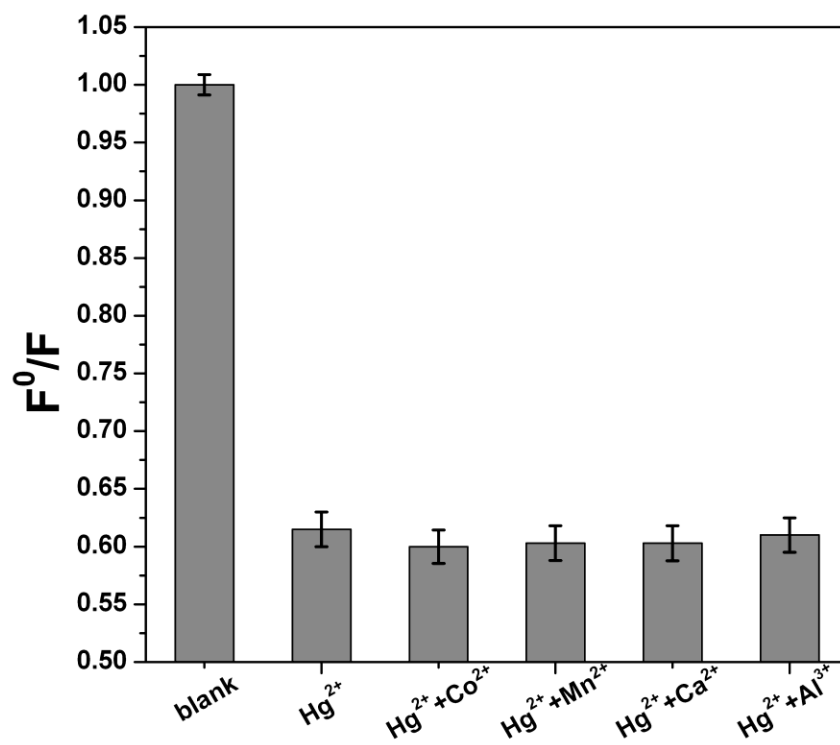


Fig. S7 The dependence of  $F^0/F$  under various conditions in detecting system ([ions]=100  $\mu$ M).