One-pot synthesis of highly luminescent N-acetyl-L-cysteine-capped CdTe quantum dots and their size effect on detection of glutathione

Jing Wang, Daquan Li, Xinyue Liu, Yu Qiu, Xiao Peng, Liang Huang, Huimin Wen and Jun Hu*

School of Chemical Engineering, Zhejiang University of Technology, Hangzhou, Zhejiang, 310000, China E-mail: hjzjut@zjut.edu.cn

Table S1. Optical properties of NAC-capped CdTe with different ratios of NAC to Cd

NAC/Cd	λem/nm	FWHM/nm	PLQY (%)
1.2 : 1	570	55	10.33
1.5 : 1	572	56	12.08
1.8 : 1	574	53	25.88
2.1 : 1	573	53	28.16
2.4 : 1	570	52	16.23

Table S2. Optical properties of NAC-capped CdTe with different ratios of Cd to Te

Cd/Te	λem/nm	FWHM/nm	PLQY (%)
2 : 1	574	55	14.12
5 : 1	571	53	28.16
10 : 1	582	53	26.03
15 : 1	581	53	27.65
20 : 1	581	51	27.55

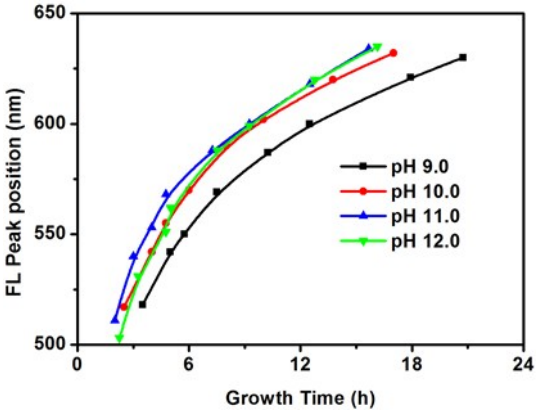

Fig. S1 Temporal evolution of FL emitting wavelength of CdTe QDs growth under varied pH values of 9.0, 10.0, 11.0, 12.0.

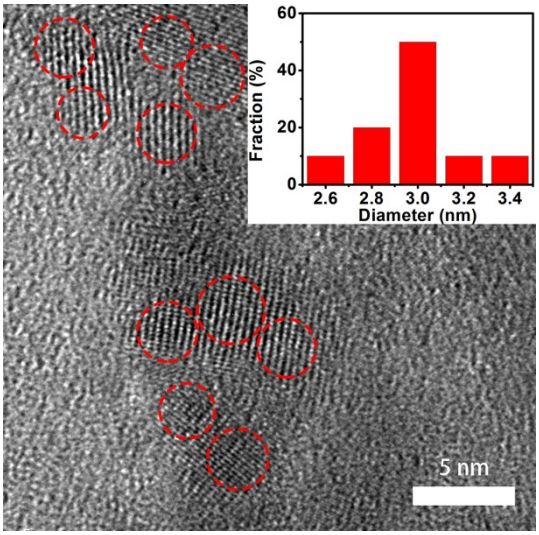

Fig. S2 TEM image of as-synthesized CdTe QDs with the highest PLQY, inset is the size distribution of CdTe QDs

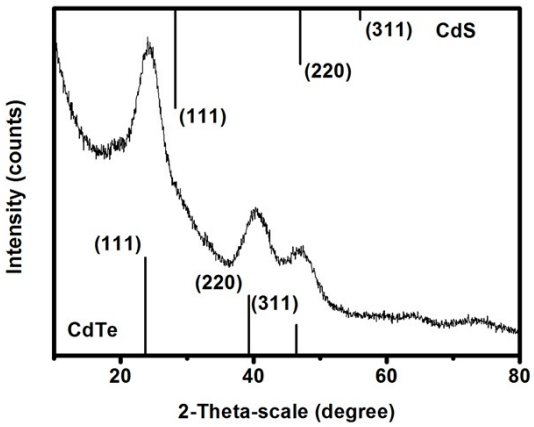

Fig. S3 XRD pattern of CdTe QDs with the highest PLQY

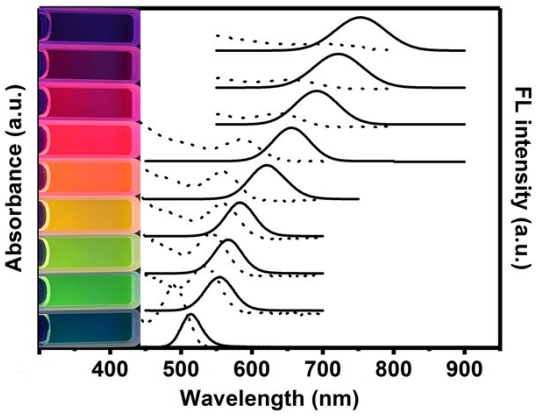

Fig. S4 Temporal evolution of absorption and FL spectra of CdTe QDs (The reaction condition is NAC/Cd/Te = 2.1/1/0.05 and pH is 12.0). Inset is the photograph of CdTe QDs under UV light

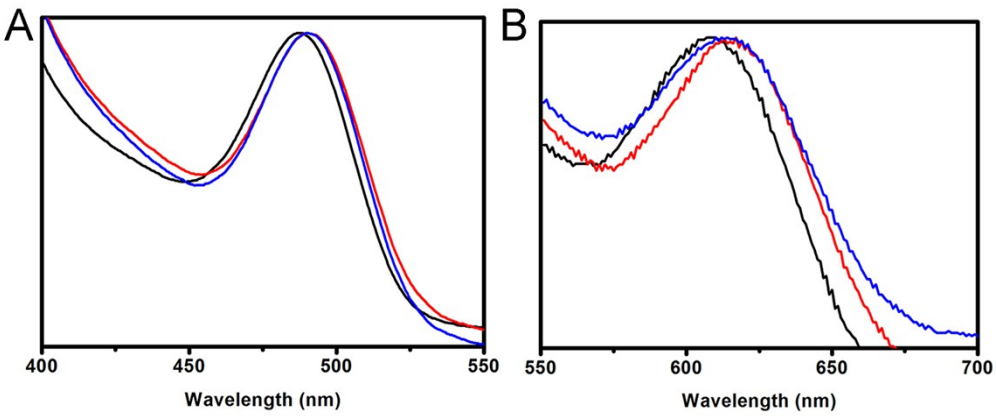

Fig. S5 UV-vis absorption spectra of CdTe QDs (A: the green QDs, B: the red QDs) in the absence of Hg^{2+} (black line) and the presence of Hg^{2+} (red line) and FL restoration of the QDs-Hg^{2+} system in the presence of GSH (blue line)