

Supporting information

Synthesis and Optical Properties of CdSeTe/CdZnS/ZnS Core/Shell Nanorods

Geyu Jin ^{1,†}, Yicheng Zeng ^{1,†}, Xiao Liu ¹, Qingya Wang ^{2,3}, Jing Wei ¹, Fangze Liu ^{2,3} and Hongbo Li ^{1,*}

¹ Beijing Key Laboratory of Construction-Tailorable Advanced Functional Materials and Green Applications, Experimental Center of Advanced Materials, School of Materials Science and Engineering, Beijing Institute of Technology, Beijing 100081, China; jingeyu1998@outlook.com (G.J.); yicheng_1026@163.com (Y.Z.); 3120221066@bit.edu.cn (X.L.); weijing@bit.edu.cn (J.W.)

² Advanced Research Institute of Multidisciplinary Sciences, Beijing Institute of Technology, Zhuhai 519088, China; qingya6789@163.com (Q.W.); fliu@bit.edu.cn (F.L.)

³ Advanced Research Institute of Multidisciplinary Sciences, Beijing Institute of Technology, Beijing 100081, China

* Correspondence: hongbo.li@bit.edu.cn

† These authors have contributed equally to this work.

Table S1. Summary of reaction conditions, PL peak wavelength and FWHM of CdSeTe QDs.

Reaction temperature (°C)	Reaction time (s)	PL peak (nm)	FWHM (nm)
350	110	656	72
370	90	656	71
380	45	656	74

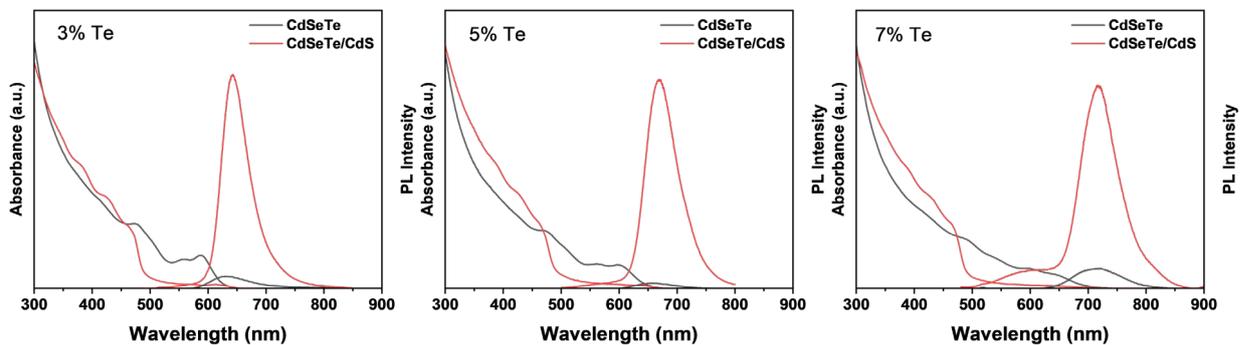


Figure S1. The absorption spectra and PL spectra ($\lambda_{ex}=450$ nm) of CdSeTe QDs and CdSeTe/CdS NRs with the (a) 3%, (b) 5% and (c) 10% of Te containing in the anion mixture.

Table S2. Biexponential fitting of CdSeTe QDs, CdSeTe/CdS NRs, CdSeTe/CdS NRs and CdSeTe/CdZnS/ZnS NRs PL lifetime results.

	A1	t1	A2	t2	Tave(ns)
CdSeTe	0.33	6.89	0.36	50.05	45.31
CdSeTe/CdS	0.27	24.01	0.60	81.61	74.83
CdSeTe/CdZnS	0.26	40.77	0.65	98.59	90.27
CdSeTe/CdZnS/ZnS	0.58	57.77	0.35	131.59	100.26

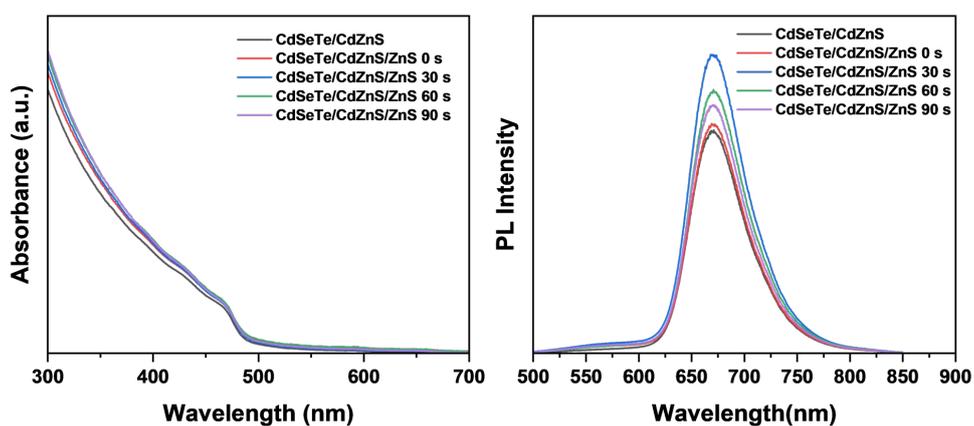


Figure S2. The absorption spectra (a) and PL spectra ($\lambda_{\text{ex}}=450$ nm) (b) of CdSeTe/CdZnS/ZnS NRs during the ZnS coating with the extension of reaction time.

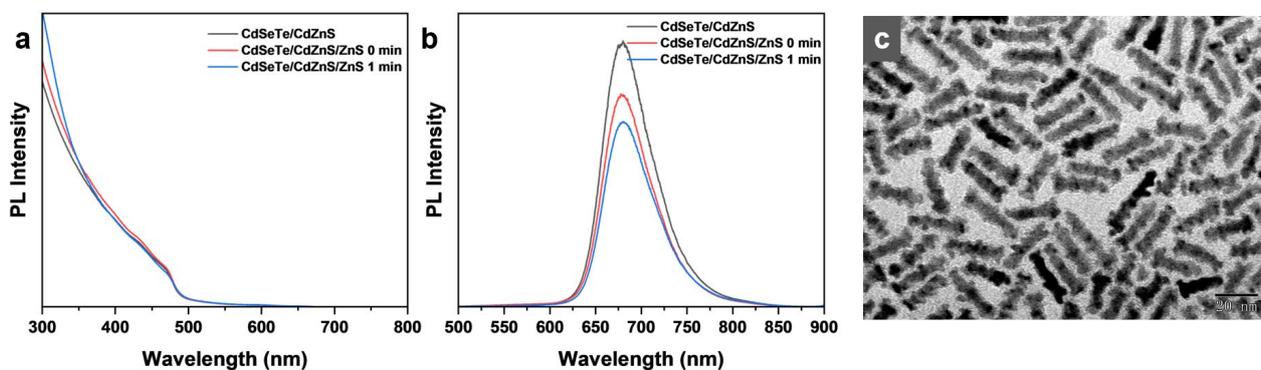


Figure S3. The (a) absorption spectra and (b) PL spectra showing the effects of excessive Zn and S precursor on CdSeTe/CdZnS/ZnS NRs. (c) TEM image of the CdSeTe/CdZnS/ZnS NRs synthesized with excessive Zn and S precursor during the ZnS shelling procedure.

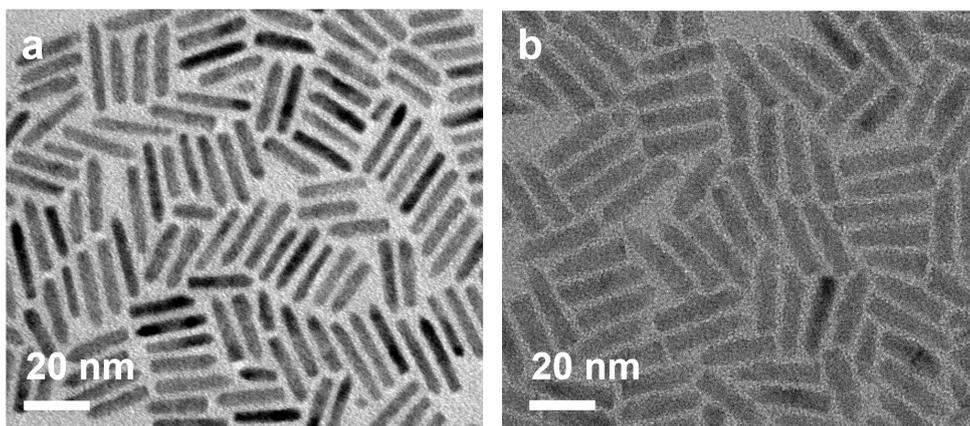


Figure S4. The TEM image of (a) CdSeTe/CdS NRs and (b) CdSeTe/CdZnS NRs.

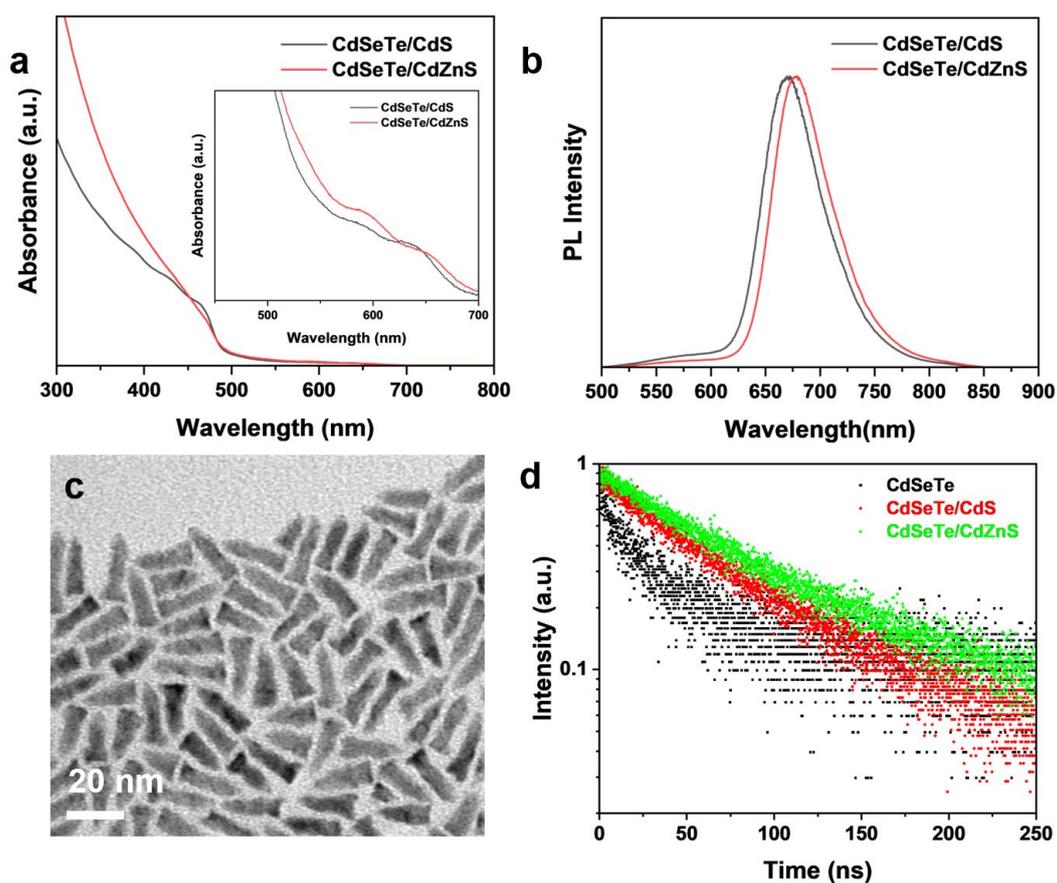


Figure S5. The (a) absorption spectra and (b) PL spectra ($\lambda_{\text{ex}}=450$ nm) showing the effects of excessive Zn-OA on CdSeTe/CdZnS NRs. (c) TEM image of the CdSeTe/CdZnS NRs synthesized with excessive Zn-OA during the CdZnS shelling procedure. (d) PL decay of CdSeTe QDs, CdSeTe/CdS NRs and CdSeTe/CdZnS NRs. Inset: results of the biexponential fitting.