Supporting Information

Near-Infrared Emissive Lanthanide Hybridized Carbon Quantum Dots for Bioimaging Applications

Fengshou Wu,[a,b]† Huifang Su,[c]† Xunjin Zhu,*[b] Kai Wang,[a] Zhenfeng Zhang*[c] and Wai-Kwok Wong*[b]

[a] *Key Laboratory for Green Chemical Process of the Ministry of Education, Wuhan Institute of Technology, Wuhan, P. R. China.*

[b] *Department of Chemistry, Hong Kong Baptist University, Waterloo Road, Hong Kong, P. R. China.*

[c] *State Key Laboratory of Oncology in South China, Collaborative Innovation Center for Cancer Medicine, Sun Yet-sen University Cancer Center, Guangzhou, P. R. China.*

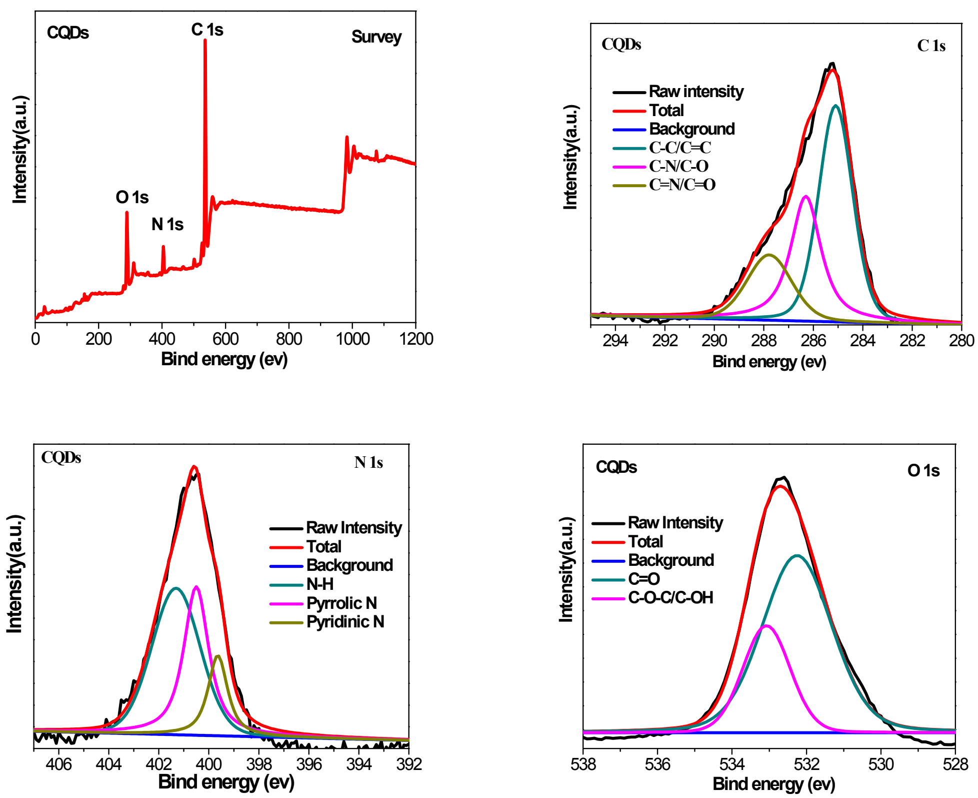

Figure S1. XPS spectra of CQDs

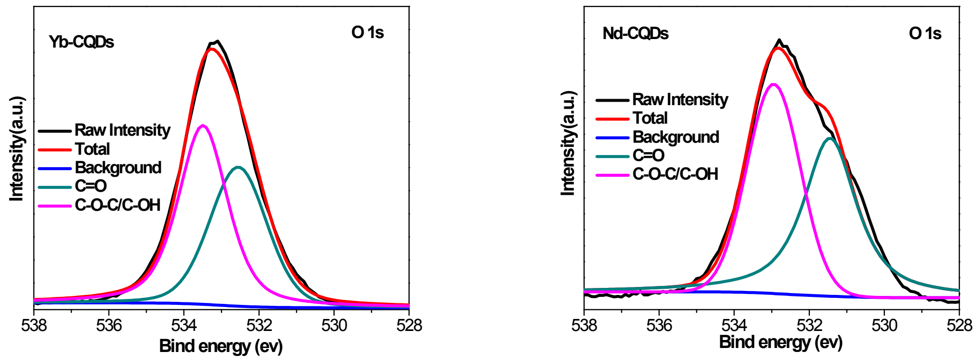

Figure S2. High-resolution XPS spectrum of O1s of Yb-CQDs and Nd-CQDs

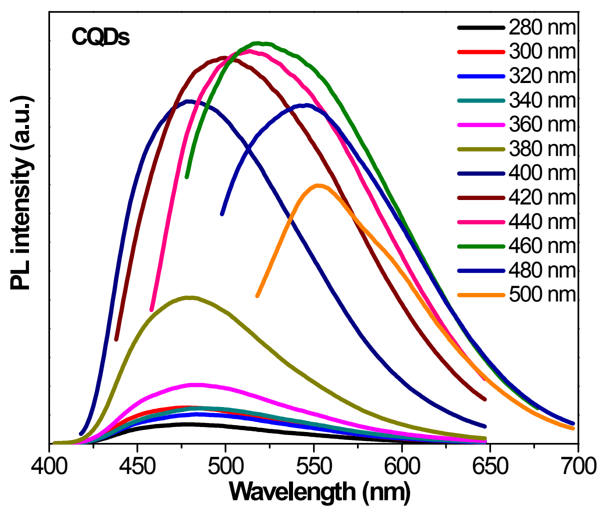

Figure S3. Fluorescence spectra of CQDs with different excitation wavelengths

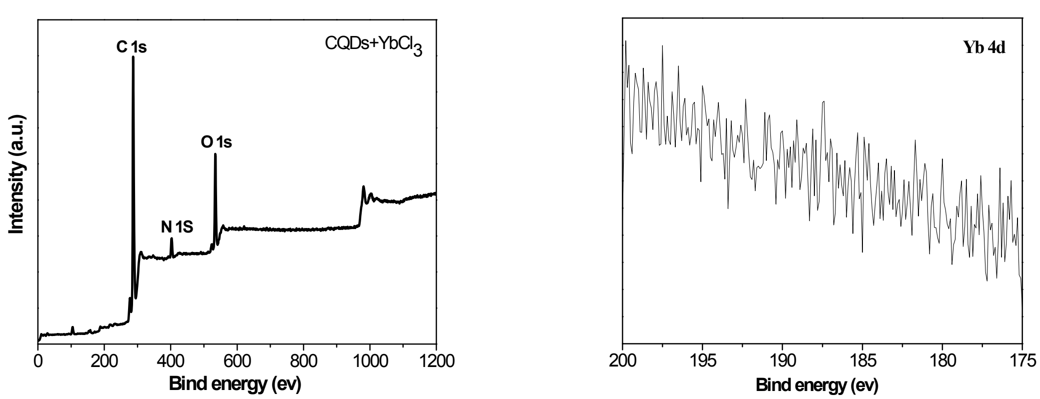

Figure S4. XPS spectra of the control sample of $YbCl_3$+CQDs after the dialysis.

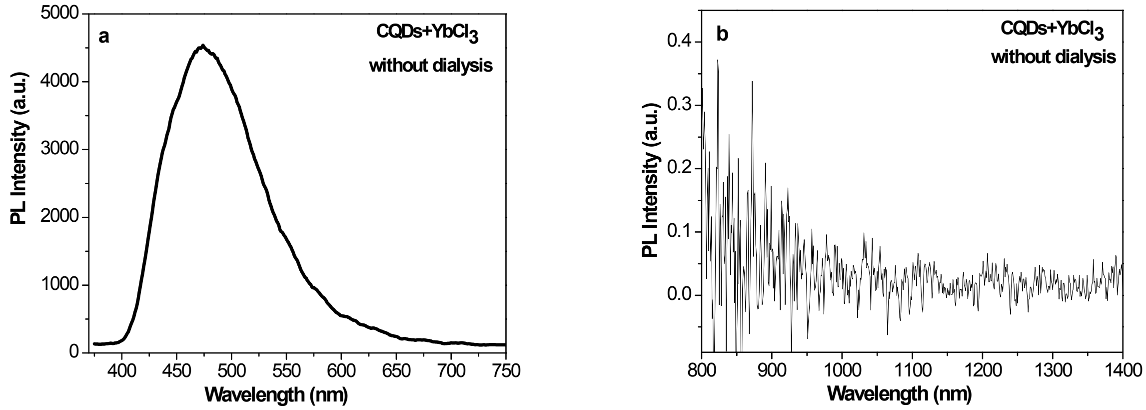

Figure S5. (a) Visible emission spectrum (λ_{ex} = 360 nm) and (b) NIR emission spectrum of the control sample by directly adding $YbCl_3$ into the CQDs solution without dialysis (CQDs+$YbCl_3$ without dialysis) (λ_{ex} = 420 nm).

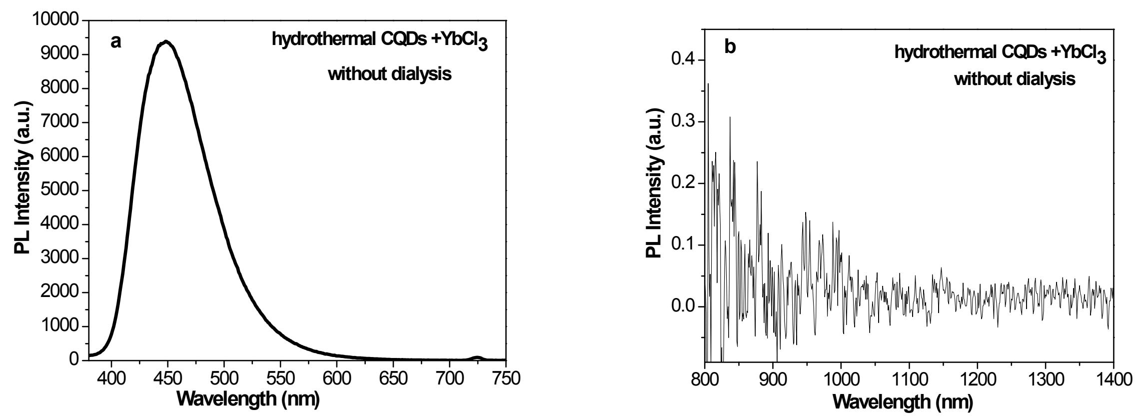

Figure S6. (a) Visible emission spectrum (λ_{ex} = 360 nm) and (b) NIR emission spectum of the control sample by hydrothermal $YbCl_3$ and CQDs solution (hydrothermal CQDs+$YbCl_3$ without dialysis) (λ_{ex} = 420 nm).

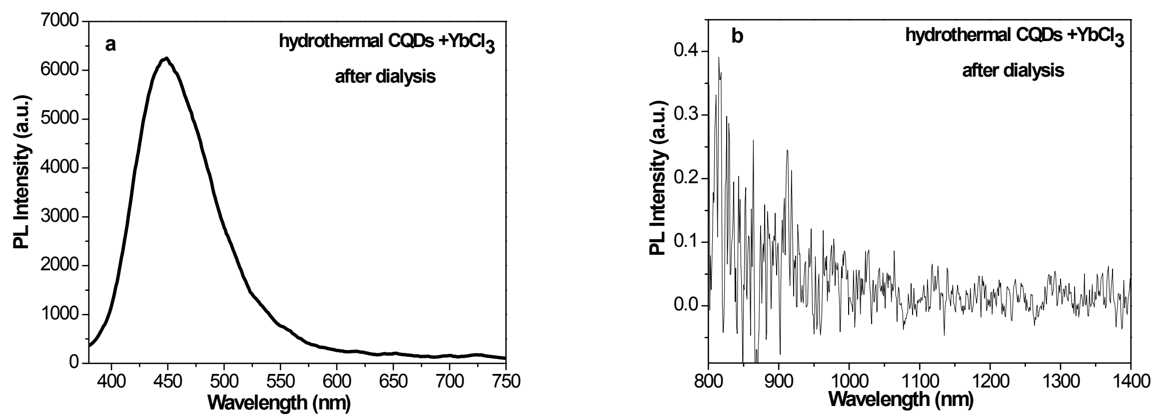

Figure S7. (a) Visible emission spectrum (λ_{ex} = 360 nm) and (b) NIR emission spectrum of the control sample by hydrothermal $YbCl_3$ and CQDs solution and then purified by dialysis (hydrothermal CQDs+$YbCl_3$ after dialysis) (λ_{ex} = 420 nm).

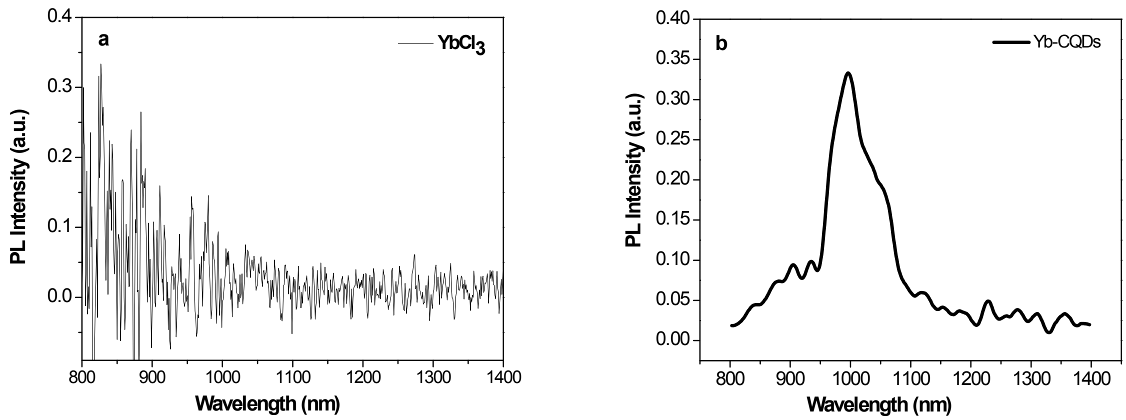

Figure S8. (a) NIR emission spectrum of $YbCl_3$ in water (λ_{ex} = 360 nm) and (b) NIR emission spectrum of Yb-CQDs under excitation of 380 nm.