

Nitrogen and Sulfur Co-doped Chiral Carbon Quantum Dots with Independent Photoluminescence and Chirality

Supporting Information

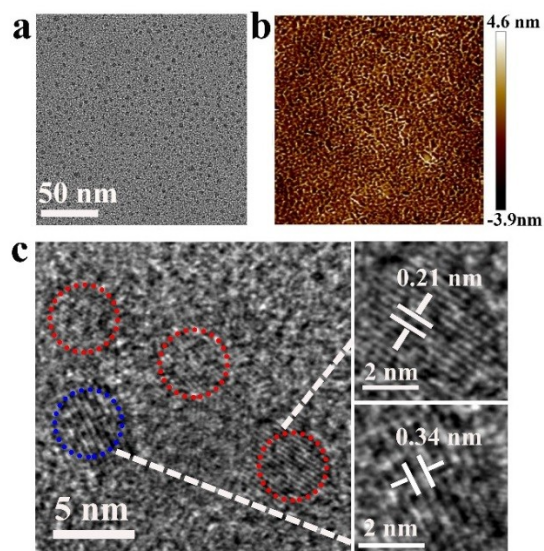


Fig. S1 TEM (a), AFM (b) and HRTEM (c) images of D-CQDs.

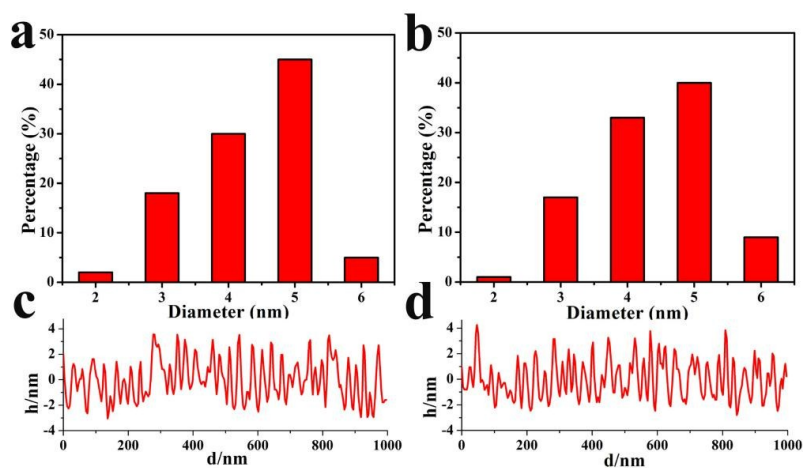


Fig. S2 Particle size histograms of L-CQDs (a) and D-CQDs (b). Height distributions of L-CQDs (c) and D-CQDs (d).

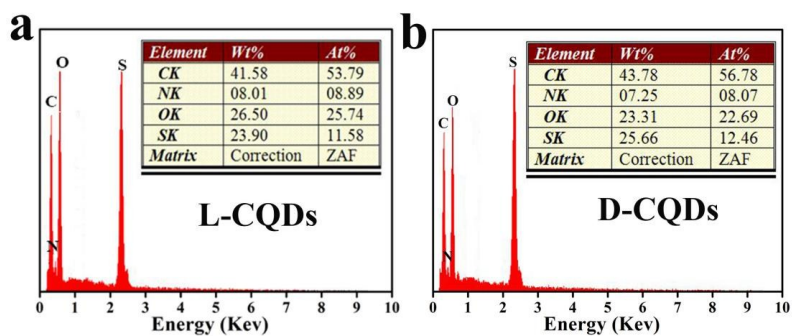


Fig. S3 EDS spectra of (a) L-CQDs and (b) D-CQDs.

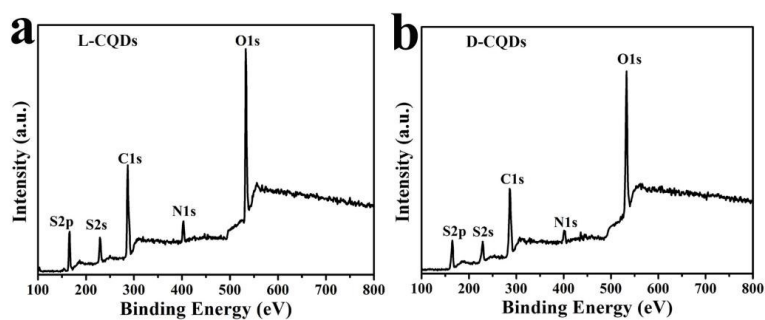


Fig. S4 Full scan XPS survey spectra of L-CQDs (a) and D-CQDs (b).

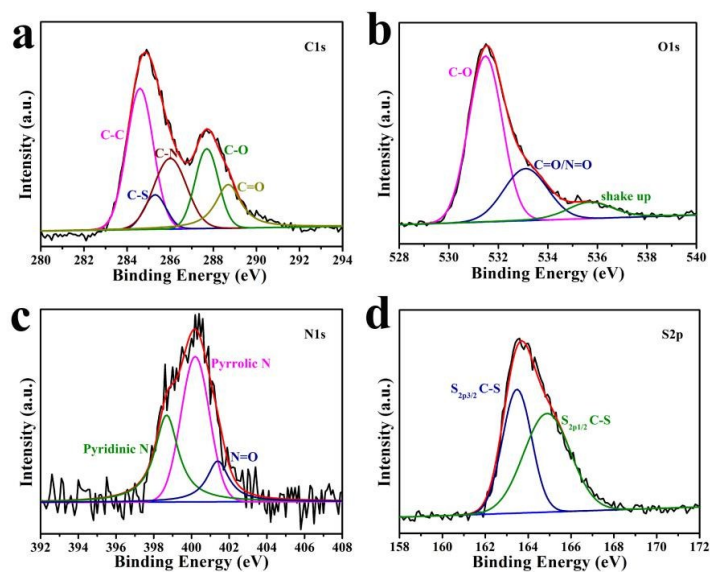


Fig. S5 High-resolution XPS spectra of (a) C 1s; (b) O 1s; (c) N 1s; (d) S 2p of D-CQDs.

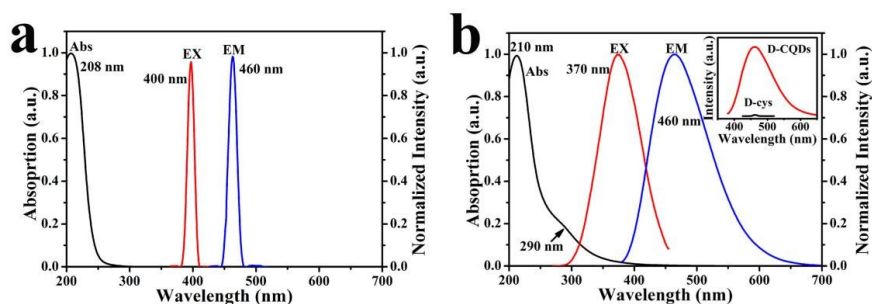


Fig. S6 (a) UV-vis absorption (black line) and PL excitation (red line) and emission (blue line) spectra of D-cys. (b) UV-vis absorption (black line) and PL excitation (red line) and emission (blue line) spectra of D-CQDs, inset is the emission spectra of D-cys and D-CQDs with excitation wavelength of 400 and 370 nm, respectively.

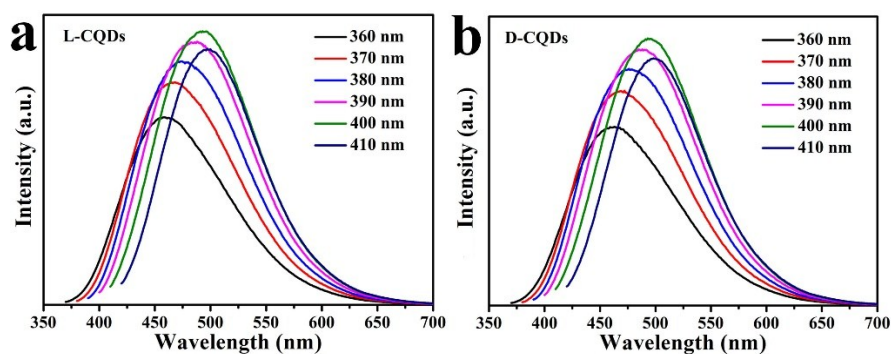


Fig. S7 PL spectra of L-CQDs (a) and D-CQDs (b) with different excitation wavelength from 360 nm to 400 nm with the increment of 10 nm.

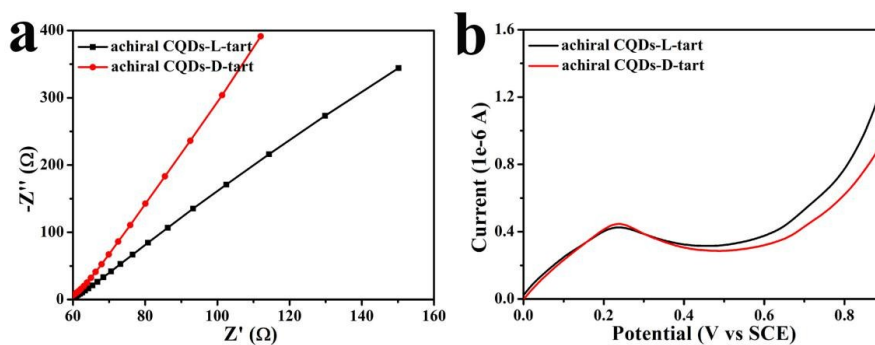


Fig. S8 (a) EIS spectra of achiral CQDs toward L-tart (black line) and D-tart (red line). (b) LSV curves for oxidation of L-tart (black line) and D-tart (red line) in Na_2SO_4 solution at the scan rate of 10 mV s^{-1} .

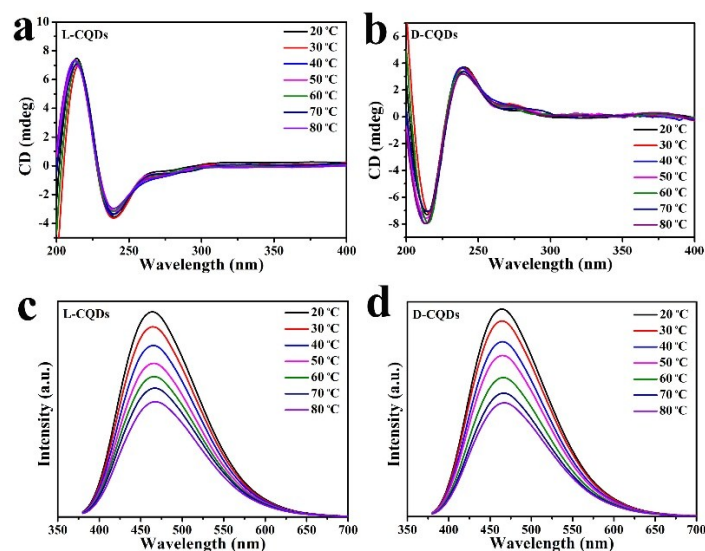


Fig. S9 CD spectra of L-CQDs (a) and D-CQDs (b) at various temperature from 20 to 80 °C with increment of 10 °C. PL spectra of L-CQDs (c) and D-CQDs (d) with excitation wavelength of 370 nm at various temperature from 20 to 80 °C with increment of 10 °C.

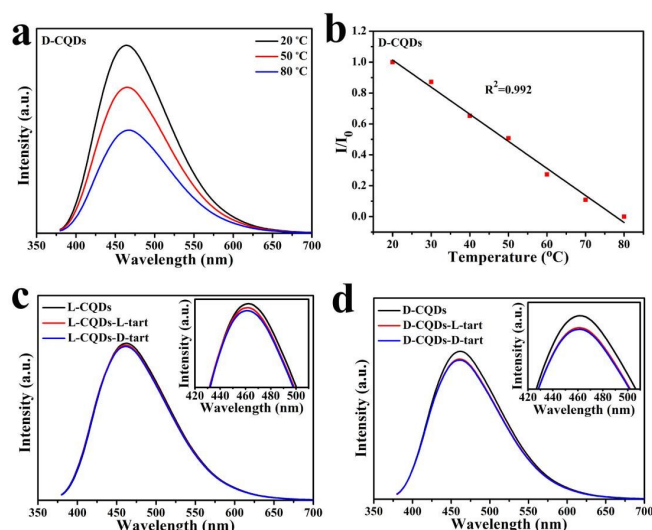


Fig. S10 (a) PL spectra of D-CQDs at different temperature (20, 50, 80 °C). (b) I/I_0 -T plots of D-CQDs. (c) PL spectra of L-CQDs in 1 mM L or D-tart with excitation wavelength of 370 nm. (d) PL spectra of D-CQDs in 1 mM L or D-tart with excitation wavelength of 370 nm.

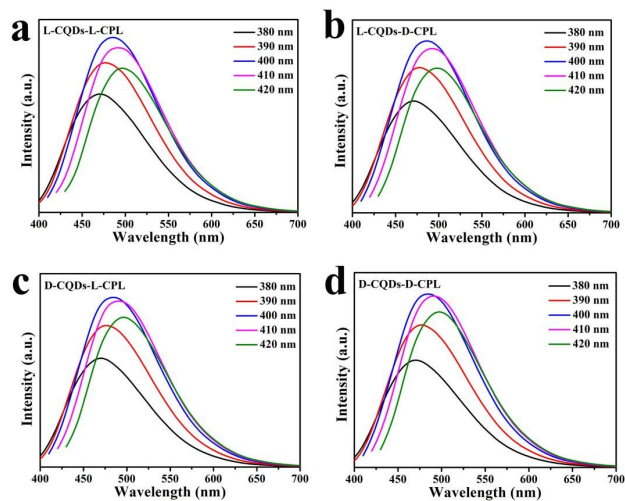


Fig. S11 PL spectra of L-CQDs excited by L-CPL (a) and D-CPL (b) with different excitation wavelength from 380 to 420 nm with increment of 10 nm. PL spectra of D-CQDs excited by L-CPL (c) and D-CPL (d) with different excitation wavelength from 380 to 420 nm with increment of 10 nm.