Electronic Supporting Information

for

A Universal Strategy to Obtain Chiroptical Carbon Quantum Dots through the Optically Active Surface Passivation Procedure

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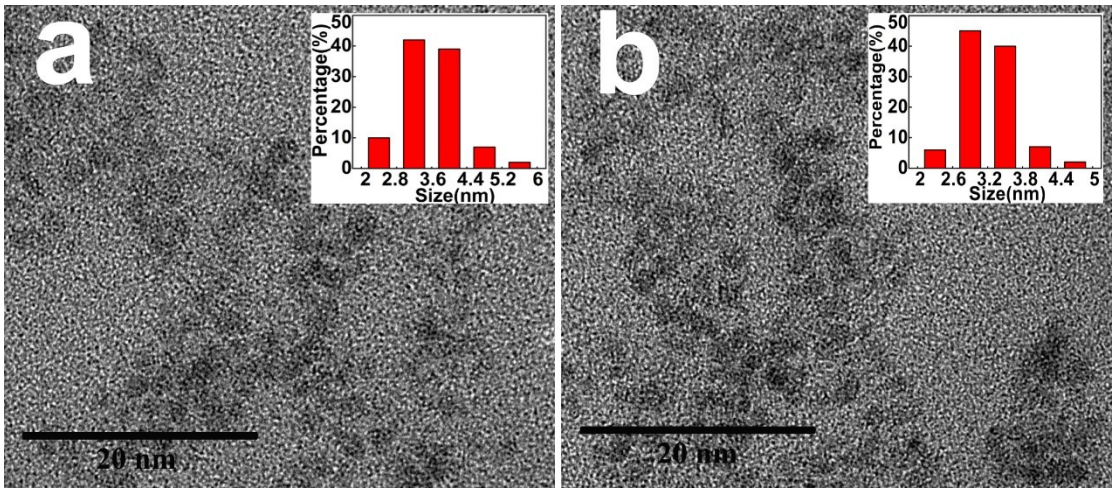

Fig.S1 TEM images of the *L*-Pen-*D*-TA CQDs (a) and *D*-Pen-*L*-TA CQDs (b), the insets display the size distribution of the *L*-Pen-*D*-TA and *D*-Pen-*L*-TA CQDs, respectively.

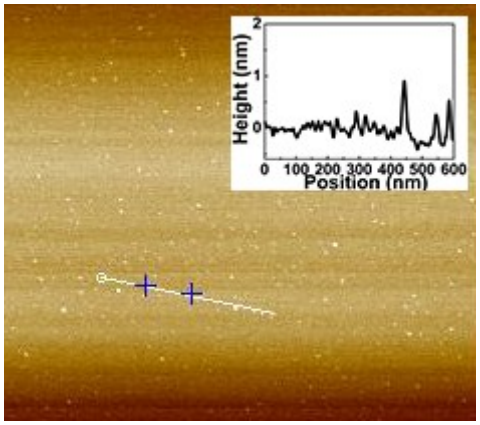

Fig.S2 The AFM image of the carbon particles prepared from the lone *D*-TA by one-step carbonization at 250°C for 10 min.

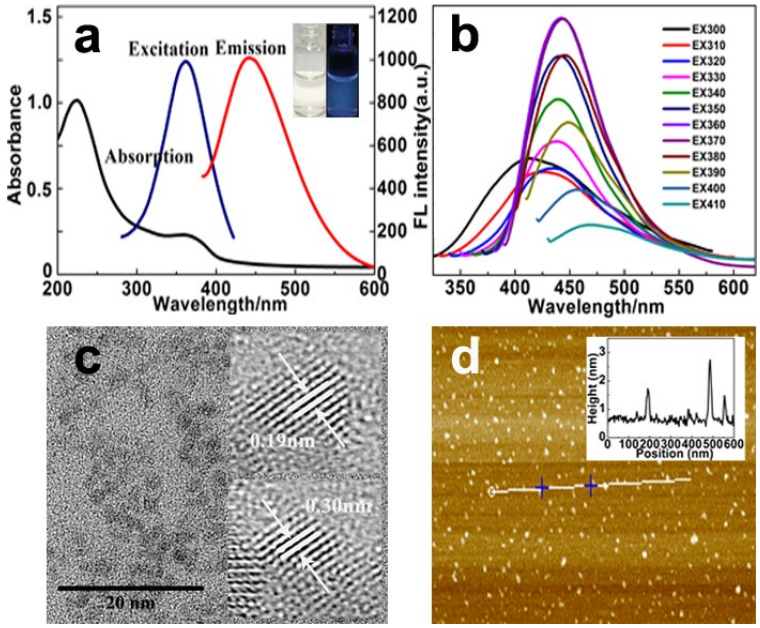

Fig.S3 Characterization of the as-prepared *D*-Pen-*L*-TA CQDs. (a) absorption and PL spectra of *D*-Pen-*L*-TA CQDs, the inset showing photographs of *D*-Pen-*L*-TA CQDs under daylight and 365 nm UV light; (b) The PL spectra of *D*-Pen-*L*-TA CQDs when the excitation wavelength is changed from 300 to 410 nm; (c) TEM images of the *D*-Pen-*L*-TA CQDs, the insets are representative lattice fringes; (d) AFM image *D*-Pen-*L*-TA CQDs, the inset showing the section analysis along the scored line.

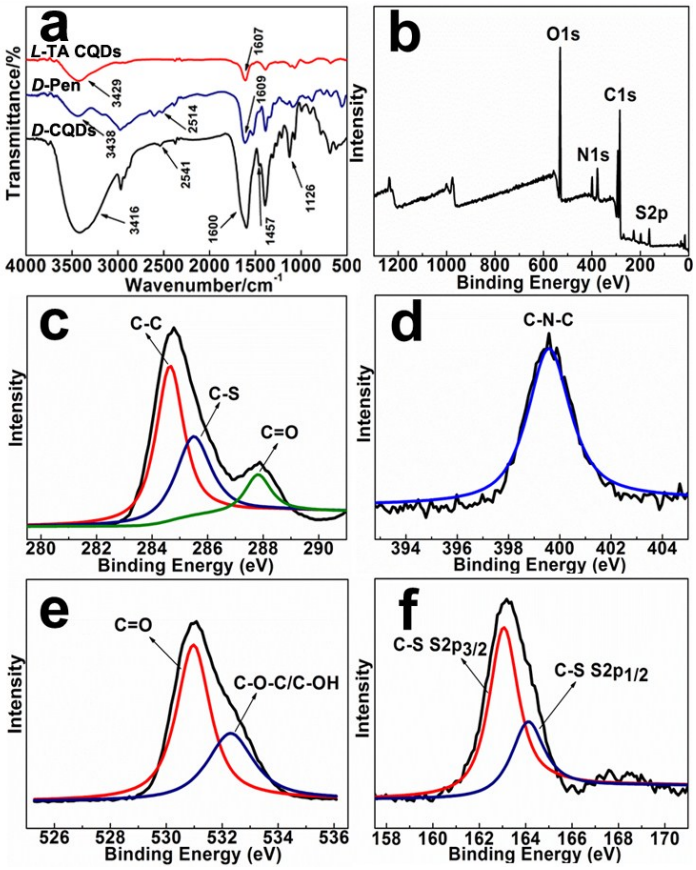

Fig. S4 FT-IR spectra of the *L*-TA carbon core, the pure *D*-Pen and the *D*-Pen-*L*-TA CQDs (a); XPS survey scan of the *D*-Pen-*L*-TA CQDs (b); High resolution XPS spectrum of C 1s (c), N 1s (d), O 1s (e), and S 2p (f) for the *D*-Pen-*L*-TA CQDs.

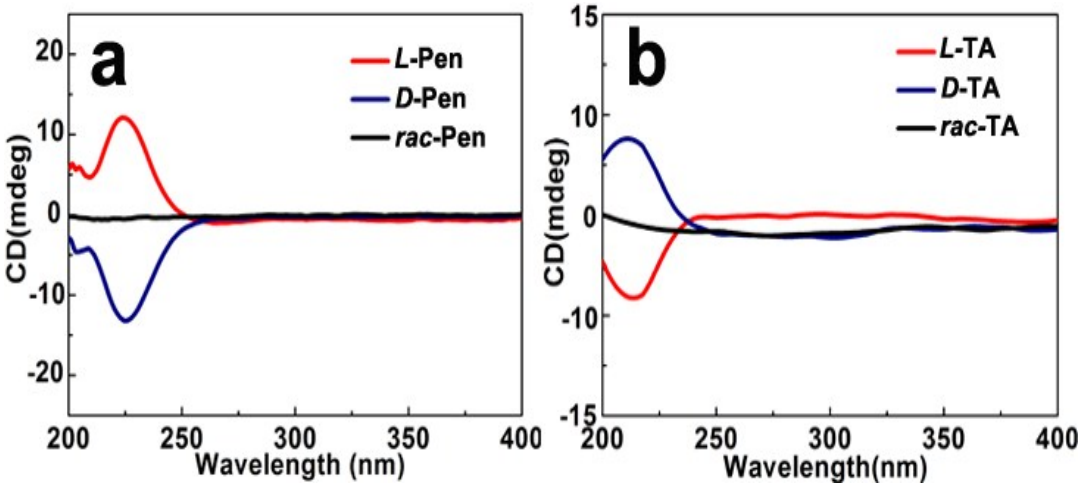

Fig.S5 (a) The CD spectra of pure *L*-Pen, *D*-Pen and *rac*-Pen; (b) the CD spectra of pure *L*-TA, *D*-TA, and *rac*-TA.

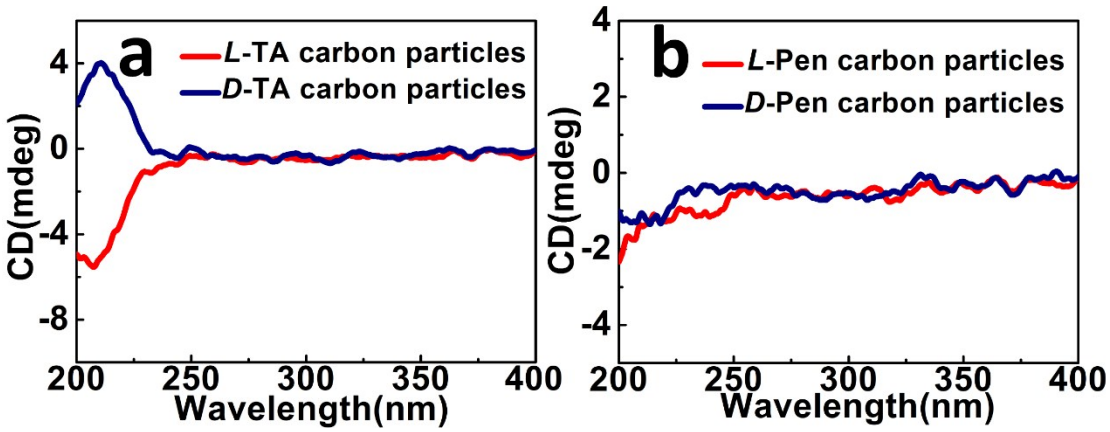

Fig.S6 (a) The CD spectra of the carbon particles prepared from the lone *D*-TA (or *L*-TA) by one-step carbonization at 250°C for 10 min; (b) the CD spectra of the carbon particles prepared from the lone *L*-Pen (or *D*-Pen) by one-step carbonization at 200°C for 8 min.

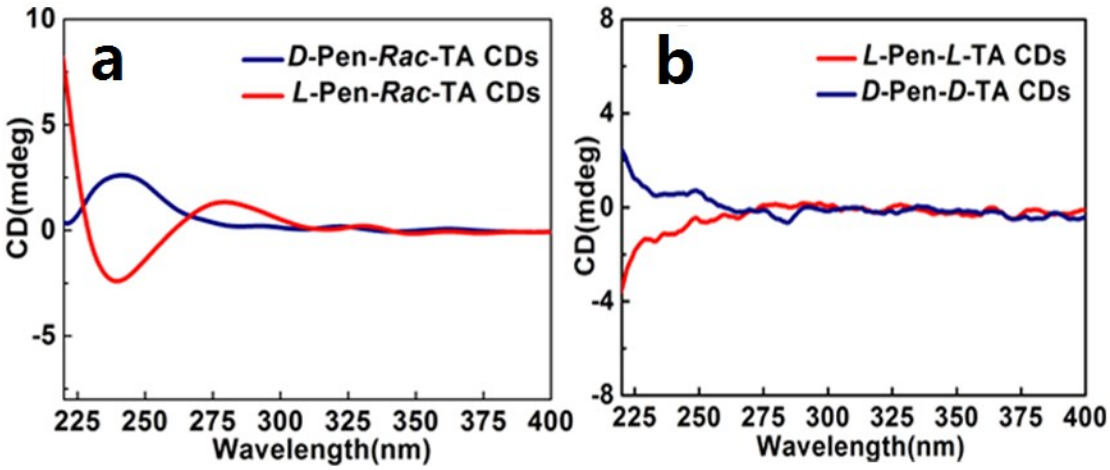

Fig.S7 (a) The CD spectra of *D*-Pen-*Rac*-TA and *L*-Pen-*Rac*-TA CQDs; (b) the CD spectra of *L*-Pen-*L*-TA and *D*-Pen-*D*-TA CQDs.

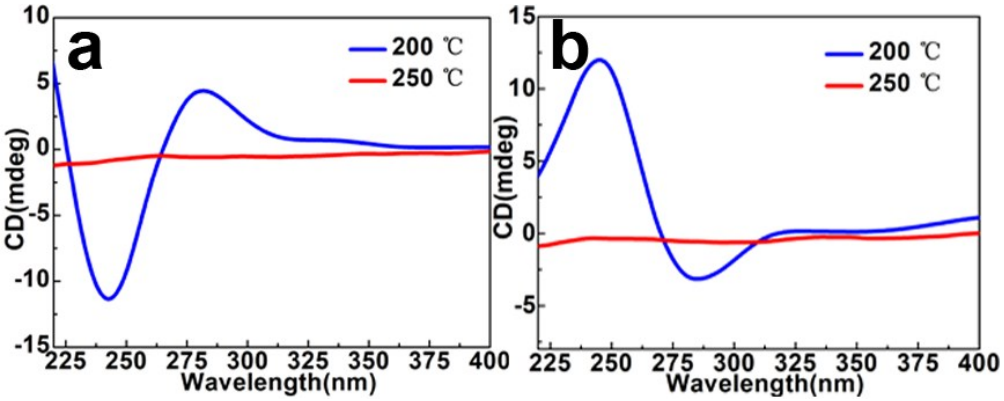

Fig.S8 (a) Influence of the second pyrolytic reaction temperature on the chiroptical behaviour of the obtained *L*-Pen-*D*-TA CQDs; (b) influence of the second pyrolytic reaction temperature on the chiroptical behaviour of the obtained *D*-Pen-*L*-TA CQDs;

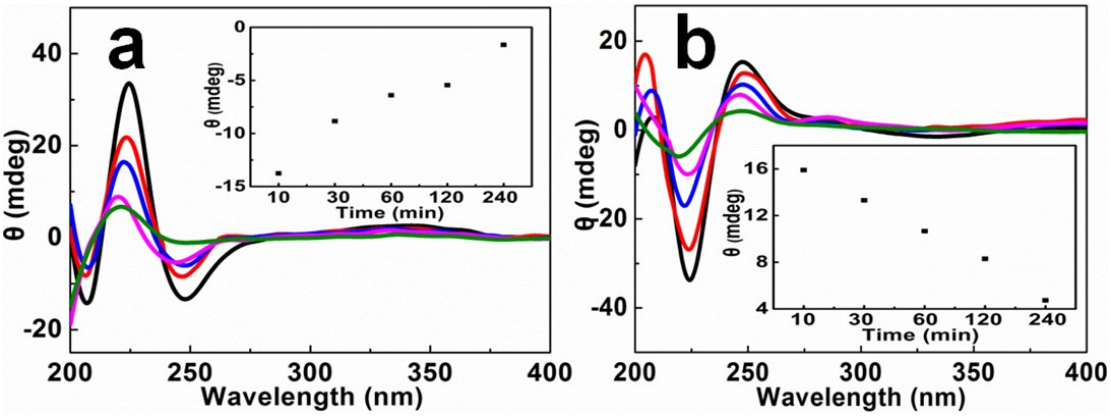

Fig.S9 Influence of the second pyrolytic reaction time on the chiroptical behaviour of the obtained CQDs. The CD spectra of *L*-Pen-CA CQDs (a) and *D*-Pen-CA CQDs (b) at different reaction time (black line, 10 min; red line, 30 min; blue line, 1h; pink line, 2h; green line, 4h). The insets show that the CD signals of both L-Pen-CA CQDs and D-Pen-CA CQDs at 247 nm gradually decrease with prolonging the time of reaction, respectively.

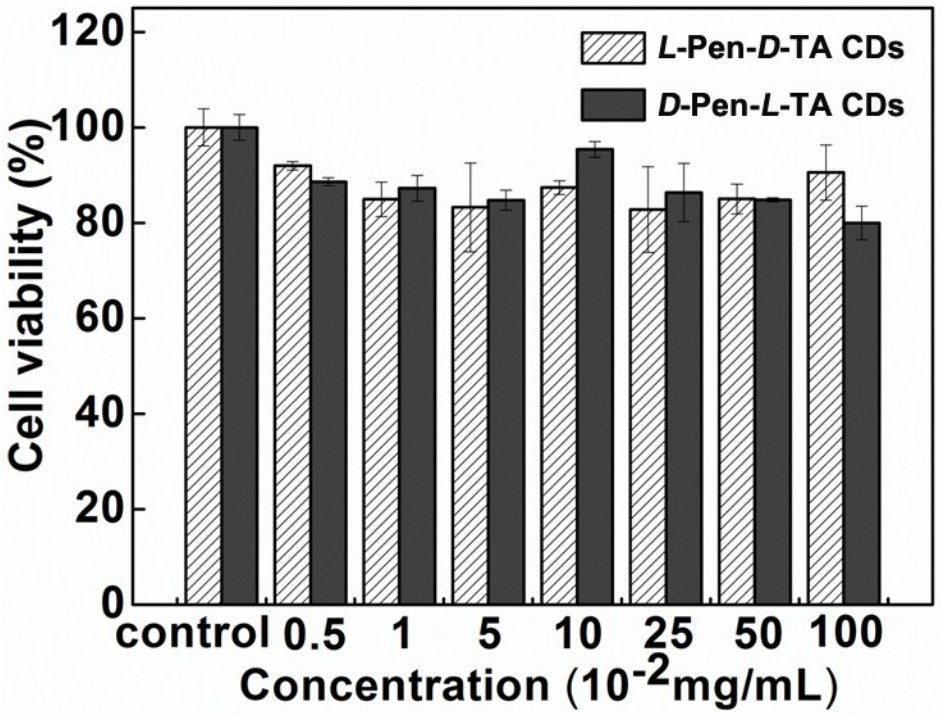

Fig.S10 Hep-2 cell growth inhibition assays of the *L*-Pen-*D*-TA and *D*-Pen-*L*-TA CQDs. The cells were treated for 24 h with the *L*-Pen-*D*-TA and *D*-Pen-*L*-TA CQDs at the different concentrations, respectively. All data are collected from three measurements, and the error bars indicate the standard deviation.