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.
(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 \textit{L}-Pen-\textit{D}-TA CQDs; (b) influence of the second pyrolytic reaction temperature on the chiroptical behaviour of the obtained \textit{D}-Pen-\textit{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.