Supporting Information

Highly Bright Carbon Quantum Dots for Flexible Anti-counterfeiting

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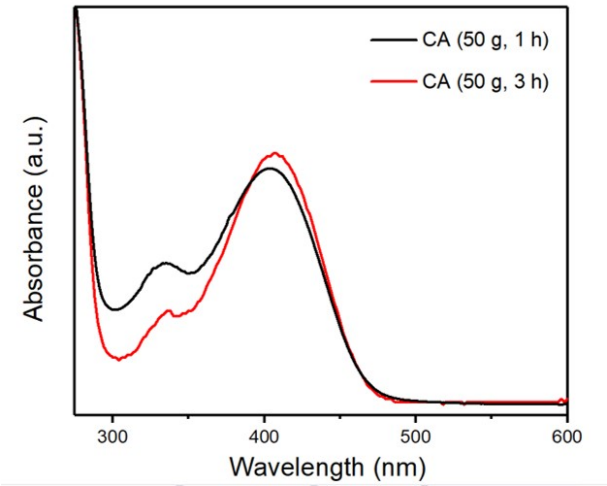

Figure S1 Absorption spectra of purified C-dots with reaction time of different time.

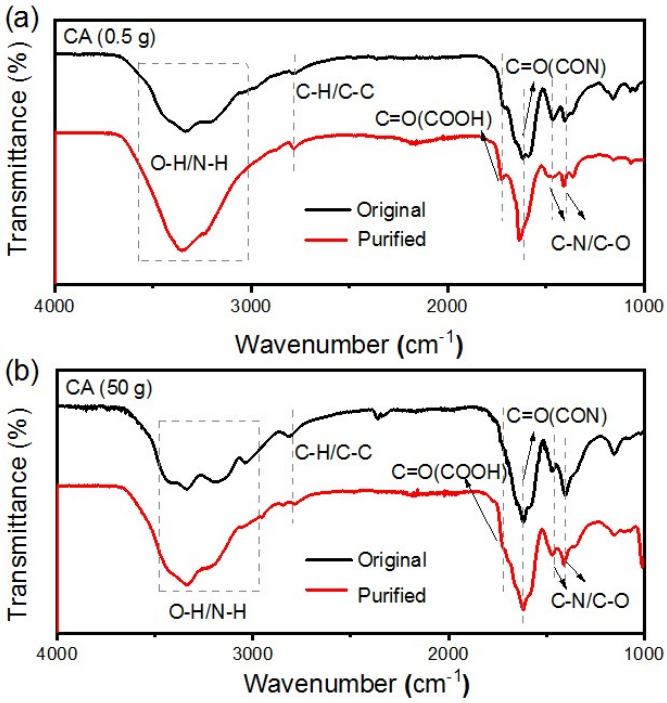

Figure S2 The FT-IR spectra of the fresh prepared (Original) C-dots and purified C-dots produced using CA of 0.5 g (a) and 50 g (b).

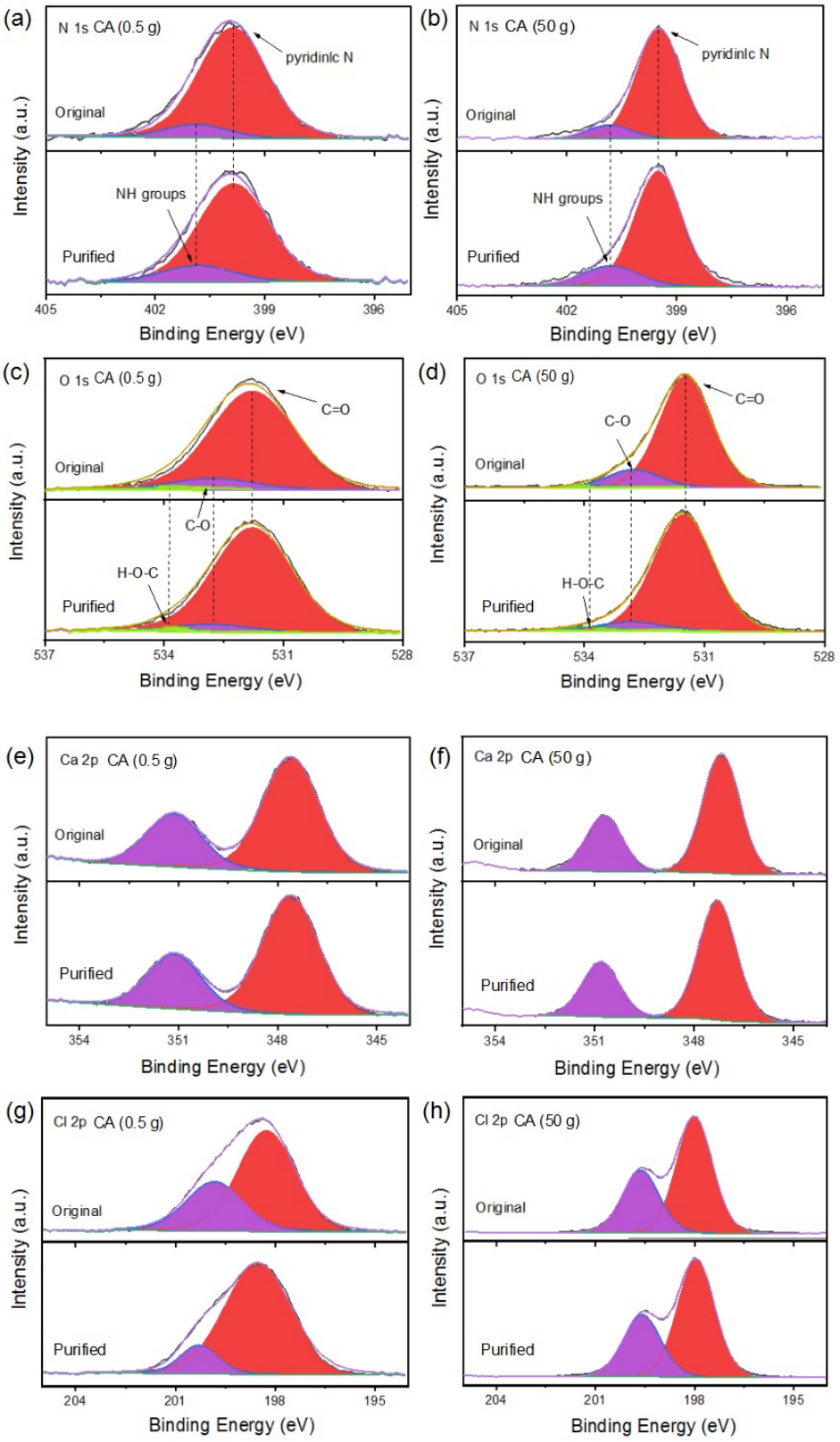

Figure S3 The high resolution XPS of N 1s (a, b), O 1s (c, d), Ca 2p (e, f), Cl 2p (g, h) spectra of the fresh prepared (Original) C-dots and purified C-dots produced using CA of 0.5 g (left) and 50 g (right).

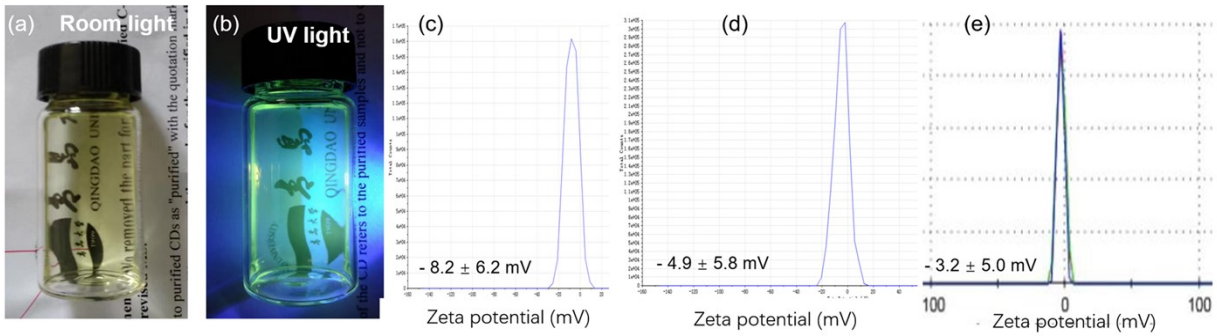

Figure S4 (a) The purified C-dots with concentration of 0.0035 mg/mL upon room light (a) and UV light (b). Zeta potential plot obtained in water suspension of the purified C-dots with concentration of (c) 0.0035 mg/mL, (d) 0.035 mg/mL and (e) 0.35 mg/mL. Three measures were carried out to obtain the average value.

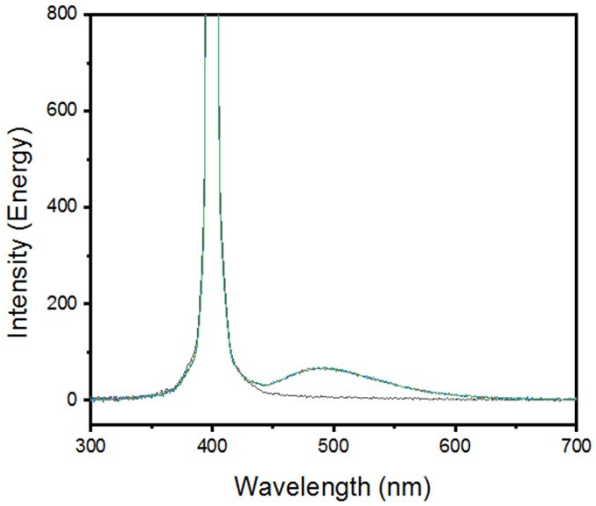

Figure S5 The measured QYs of the pattern after printing the C-dots/polymer ink on cotton fabric (green line) and the reference (gray line).

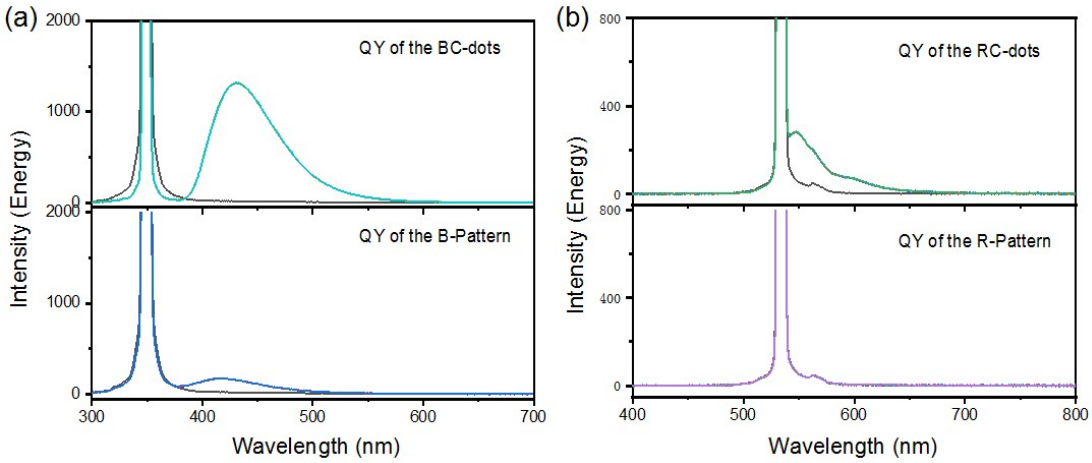

Figure S6 The measured QYs of blue (a) and red (b) C-dots before and after printing on cotton fabric. The gray lines in the figure (a-c) are the references for the QY measurement.

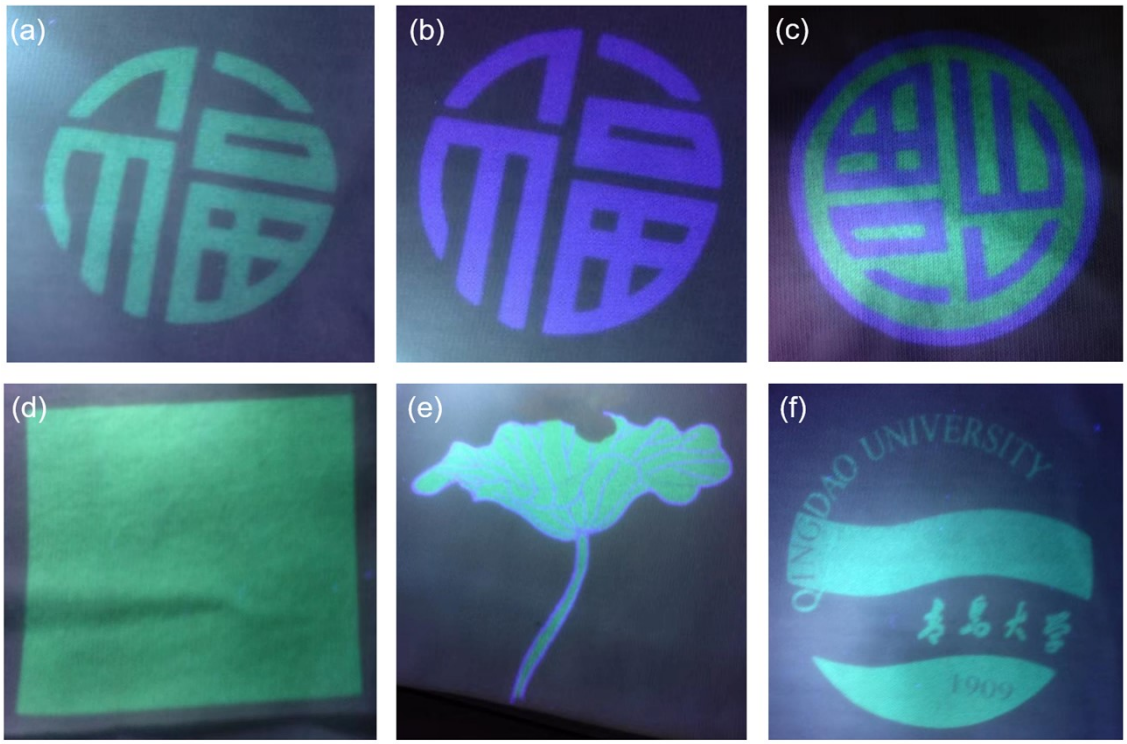

Figure S7 The printed anti-counterfeit patterns on cotton fabric upon 365 nm illumination: Chinese character indicating "Blessing" using (a) green C-dots, (b) blue C-dots, (c) green and blue C-dots, full printed image using green C-dots (d), lotus leaf using green and blue C-dots (e), and the logo of Qingdao University using green C-dots. For all images, the size is 4 ×4 cm^2.

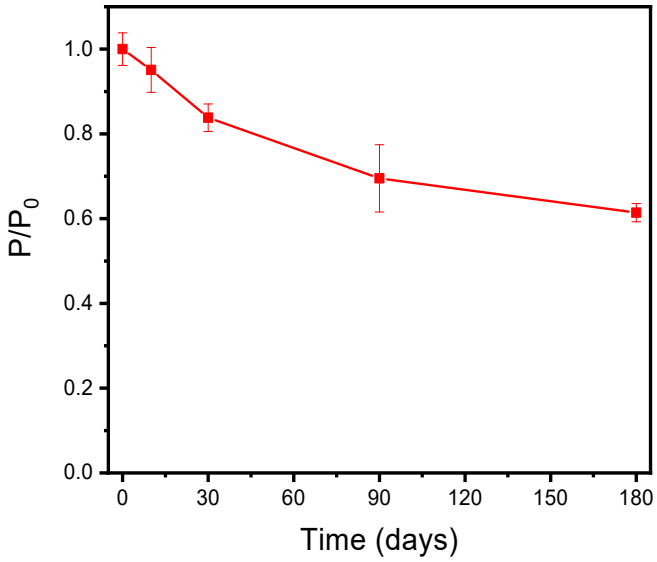

Figure S8 The PL intensity ratio (P/P_0) of the anti-counterfeit code as a function of storage time.

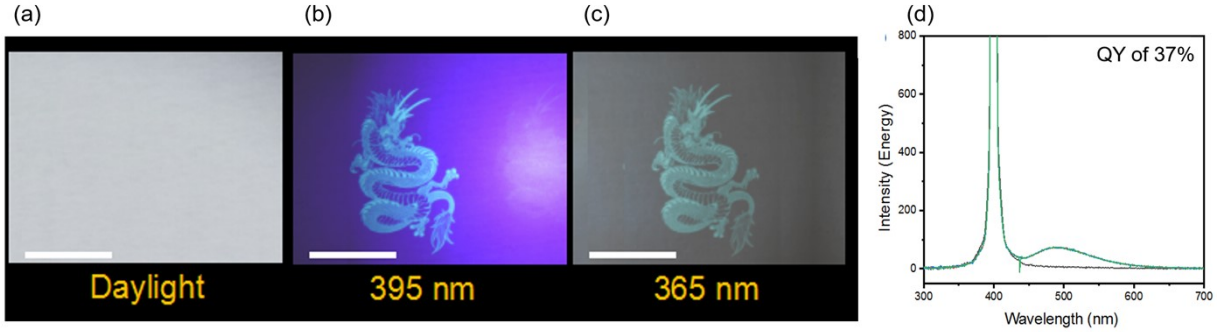

Figure S9 The designed and printed anti-counterfeit patterns on cotton fabric upon room light and illumination of 395 and 365 nm. The unpurified C-dots were used with the concentration of 0.0035 mg/mL. (d) The measured QYs of the pattern after printing the unpurified C-dots/polymer ink on cotton fabric (green line) and the reference (gray line).