

Supporting Information:

Carbon Dots Produced *via* Space-Confined Vacuum Heating: Keeping Efficient Luminescence in Both Dispersed and Aggregated State

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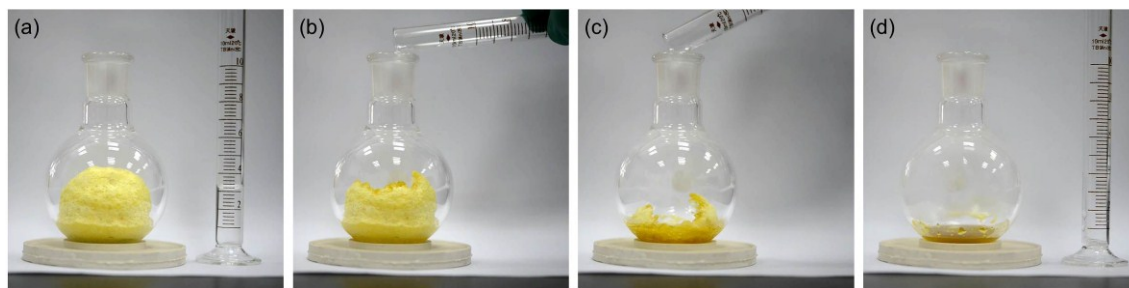


Figure S1. Dissolution of the 250°C-heated foam through addition of water. The corresponding movie is provided as Movie S1.

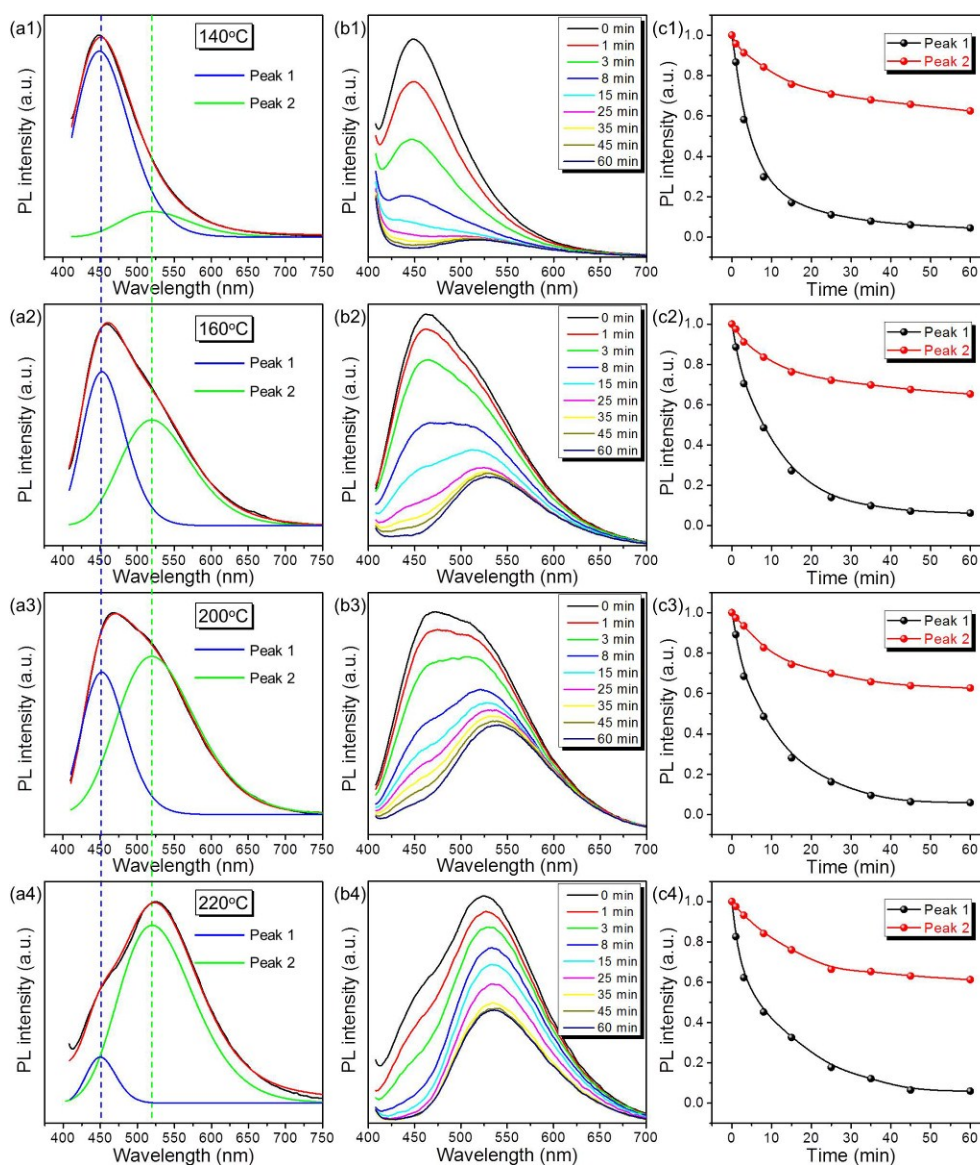


Figure S2. (a) Results of the fitting of PL emission spectra of aqueous solutions of v-CDots synthesized at different temperatures (black line: the raw spectra, red line: the sum of fits, blue and green lines: two fitted spectra centered at 450 and 520 nm, respectively). Variations of (b) their PL emission spectra and (c) the intensities of the two peaks located at 450 and 520 nm under UV light excitation (15 W mercury lamp equipped with 450 nm short wave pass filter) for different time.

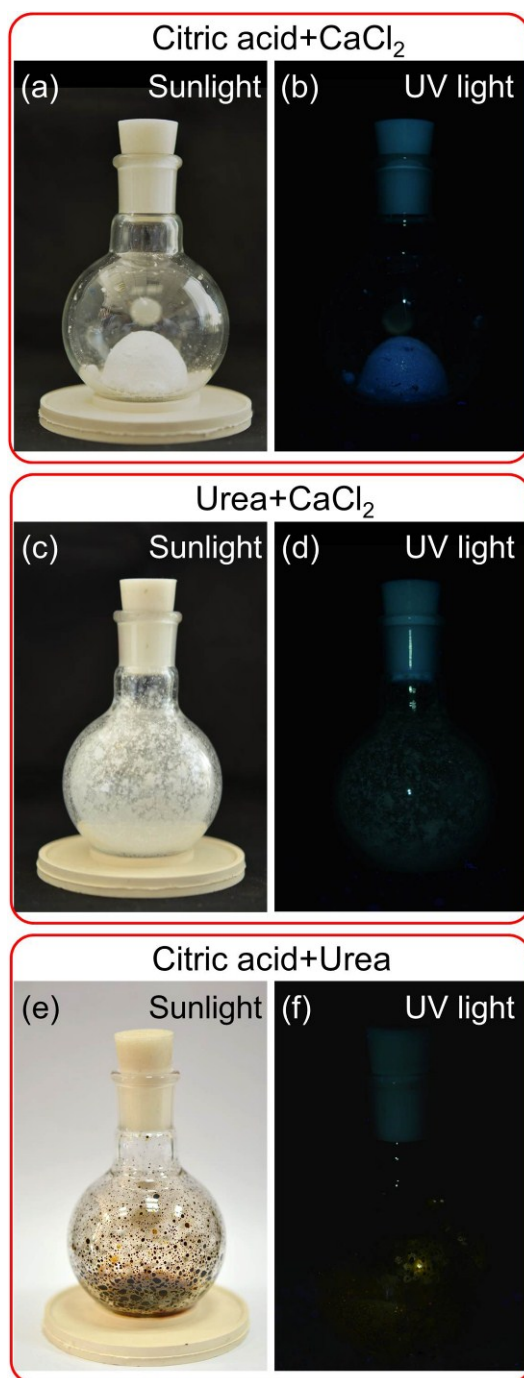


Figure S3. Failed attempts to prepare CDots from mixing (a and b) citric acid/CaCl₂, (c and d) urea/CaCl₂, and (e and f) citric acid/urea using the space-confined vacuum heating method introduced in this work. Photos are taken under sunlight (a, c, e) and under UV light excitation (b, d, f), respectively.

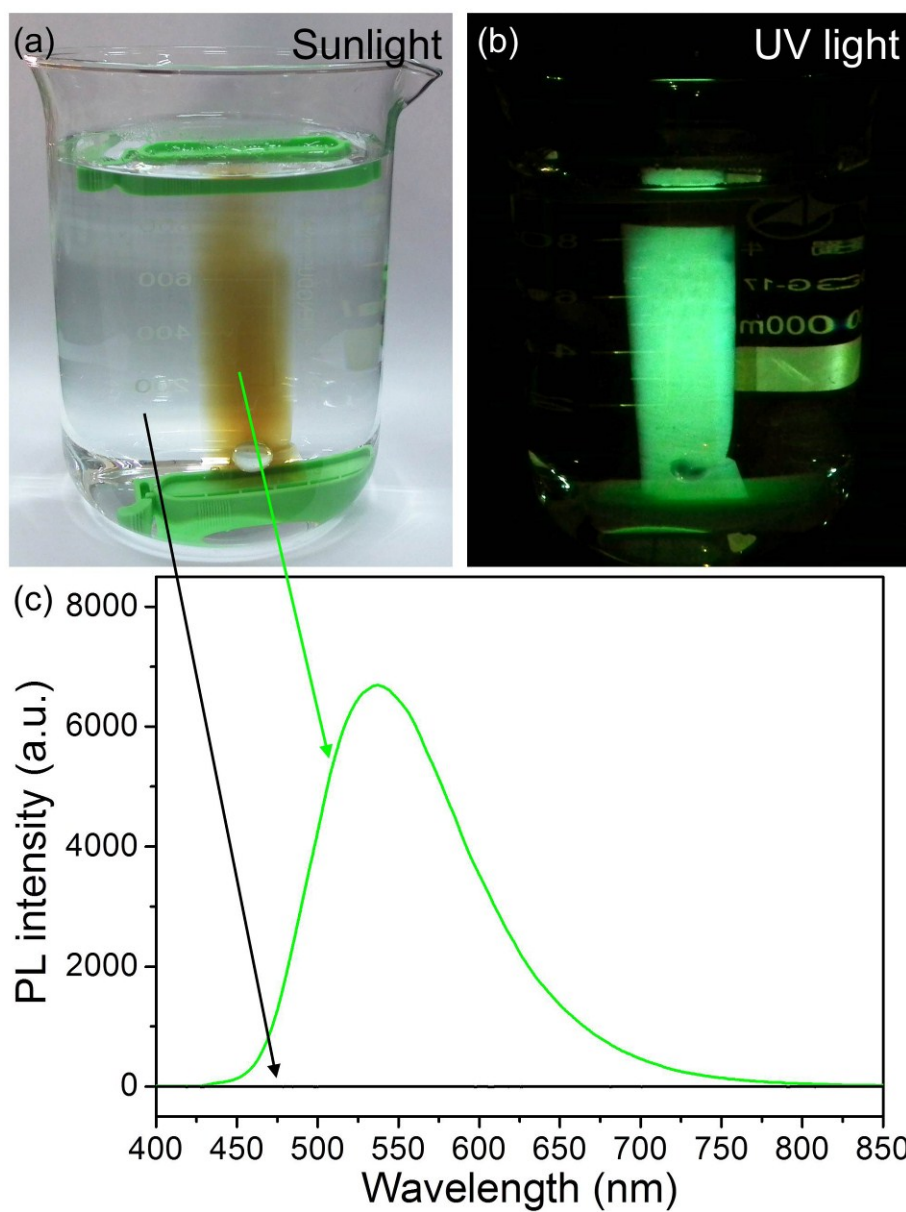


Figure S4. (a and b) Photographs of v-CDots in a dialysis tube under (a) sunlight and (b) UV light. (c) PL spectra of the aqueous solutions inside (green) and outside (black) the dialysis tube, respectively.

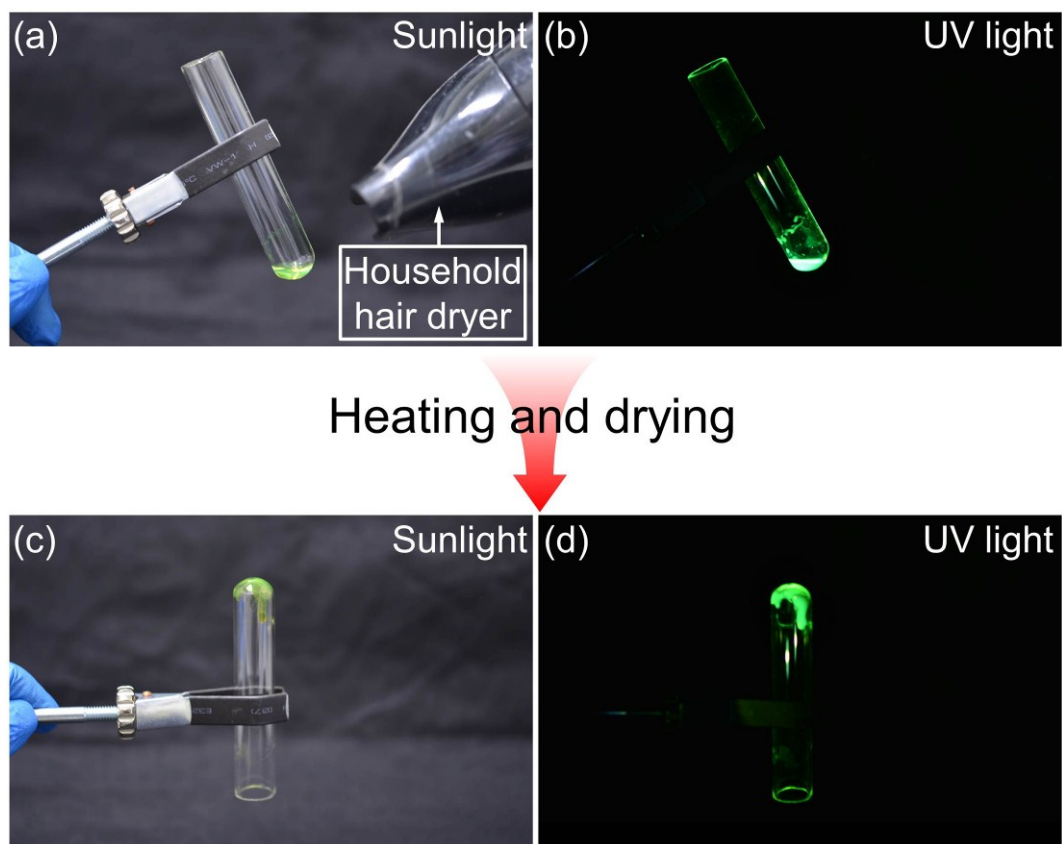


Figure S5. Drying the purified v-CDot ethanol solution in a glass tube, which is heated by a household hair dryer. The corresponding movie is provided as Movie S2.

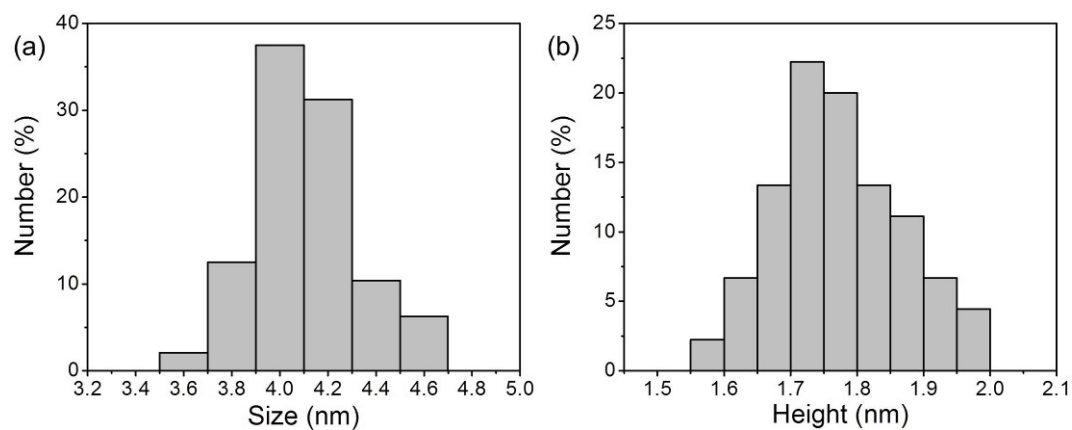


Figure S6. (a) Size and (b) height histograms of purified v-CDots, which are obtained from more than 200 particles observed in HRTEM (a) and AFM (b).

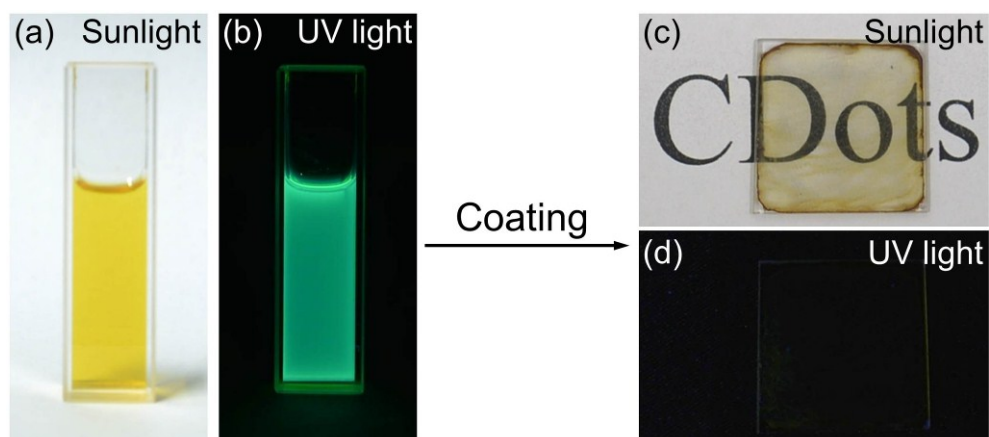


Figure S7. Photographs of m-CDots solution (a and b) and film (c and d) are taken under sunlight (a and c) and UV light (b and d), respectively.

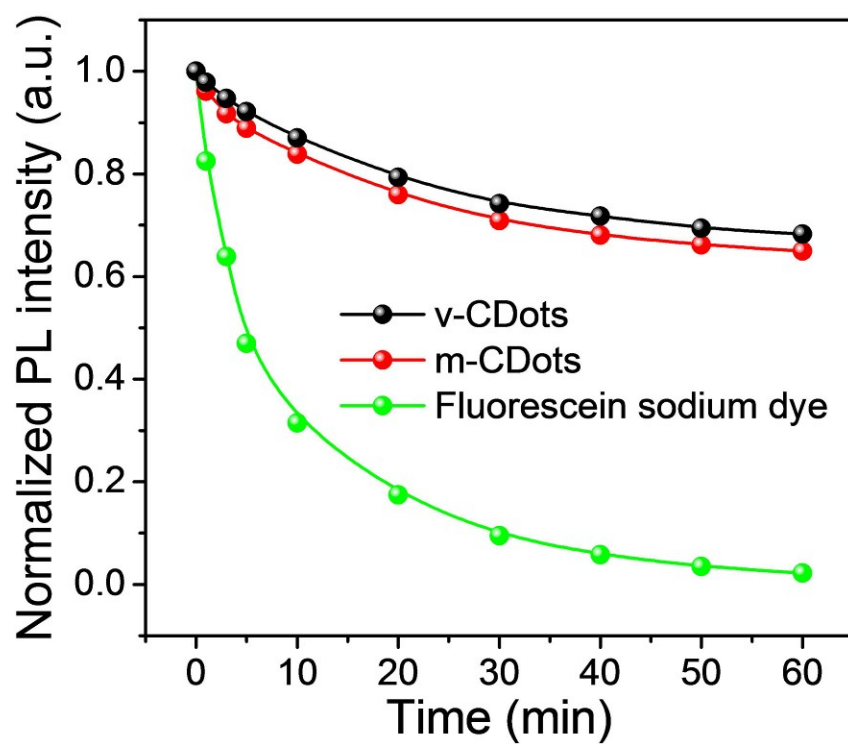


Figure S8. PL intensity decay curves of v-CDots (black), m-CDots (red), and fluorescein sodium dye (green) under UV light (15 W mercury lamp equipped with 450 nm short wave pass filter).

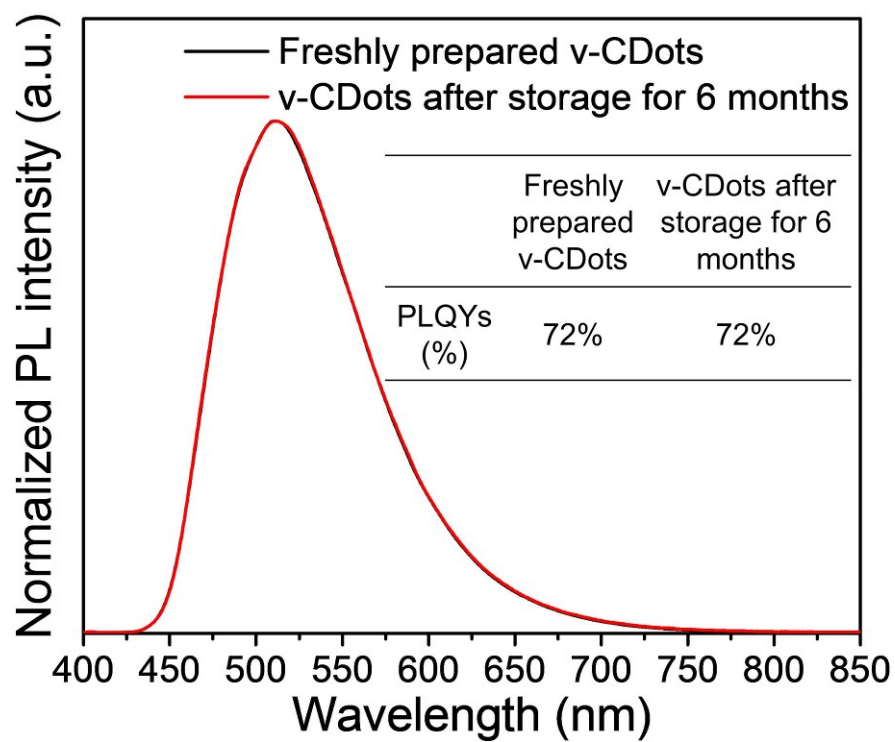


Figure S9. PL spectra of the freshly prepared v-CDots in ethanol solution (black), and the same v-CDots after storage for 6 months (red). PLQYs values of the two samples are also given.