Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information to

Photobleaching and stabilization of carbon nanodots produced by solvothermal synthesis

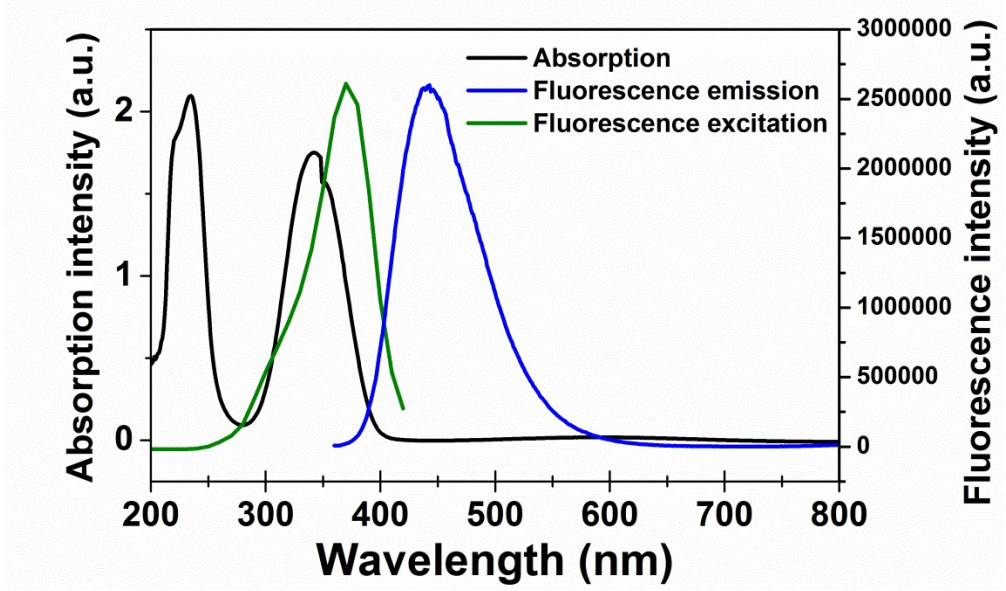

Fig. S1 Absorption (left axis) and fluorescence spectra (right axis) of CDs in aqueous solution at room temperature.

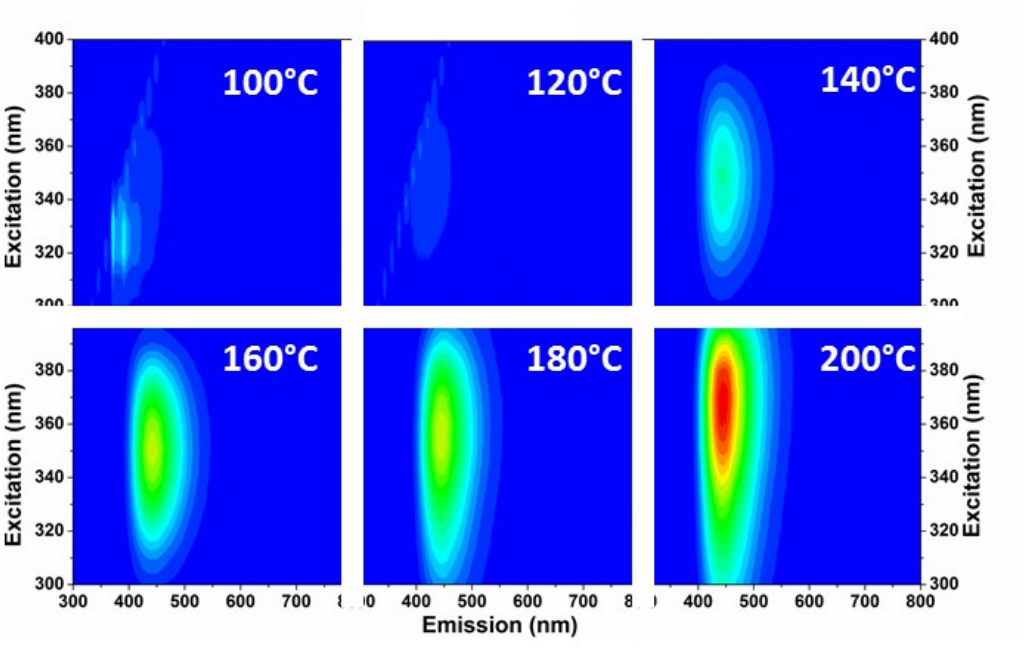

Fig. S2 3D-luminescence plot of CDs prepared by hydrothermal synthesis at different temperature.

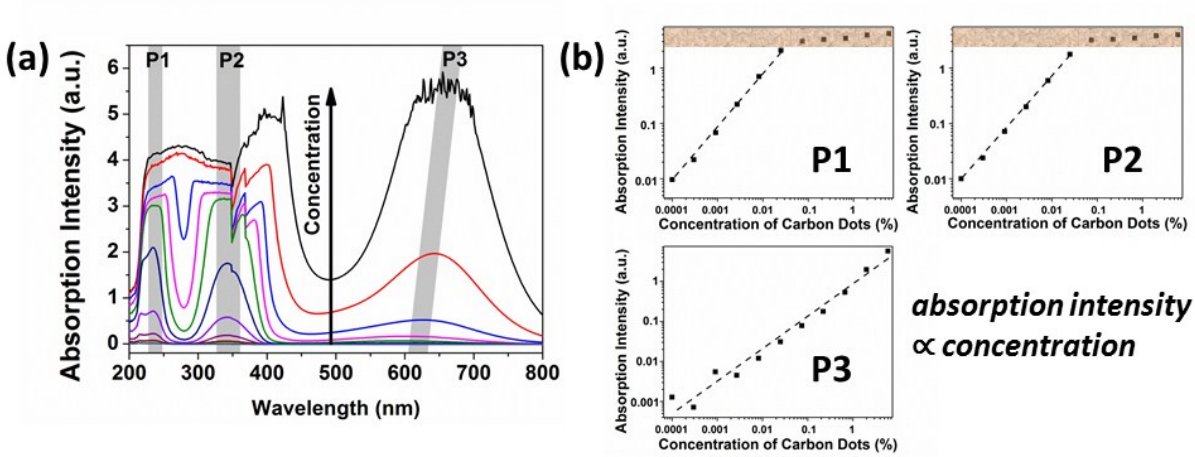

Fig. S3 (a) Absorption spectra of different concentrated aqueous CD suspensions. (b) The absorbance at the three main absorption peaks is proportional to the concentration, which means the CDs absorption follows Lambert-Beer Law.

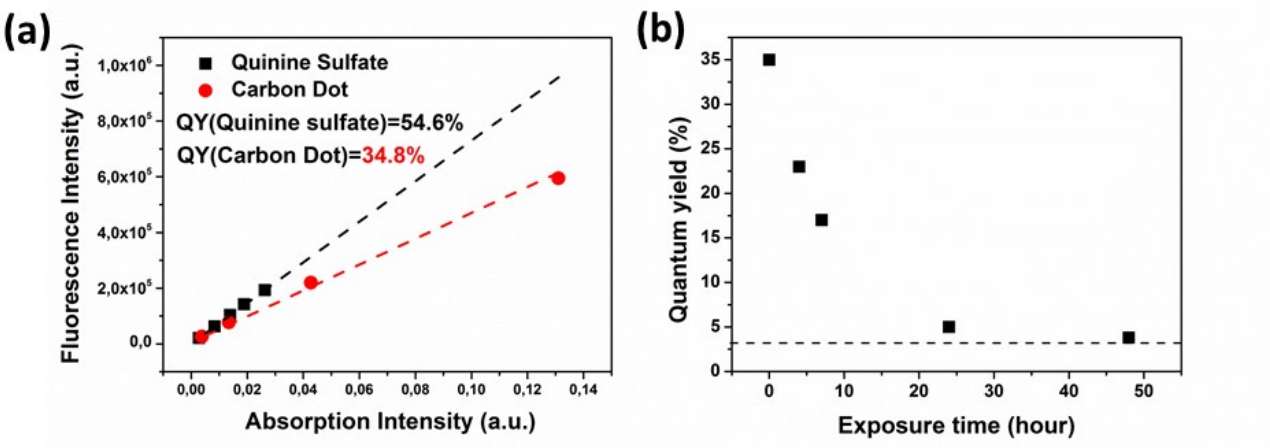

Fig. S4 (a) Integrated fluorescence intensity versus absorbance for quinine sulfate (standard). The quantum yield of CDs at low concentrations is about 35%. (b) The quantum yield of CDs decreases during the exposure process to UV light, but even after long exposure time a quantum yield of about 3% is maintained.

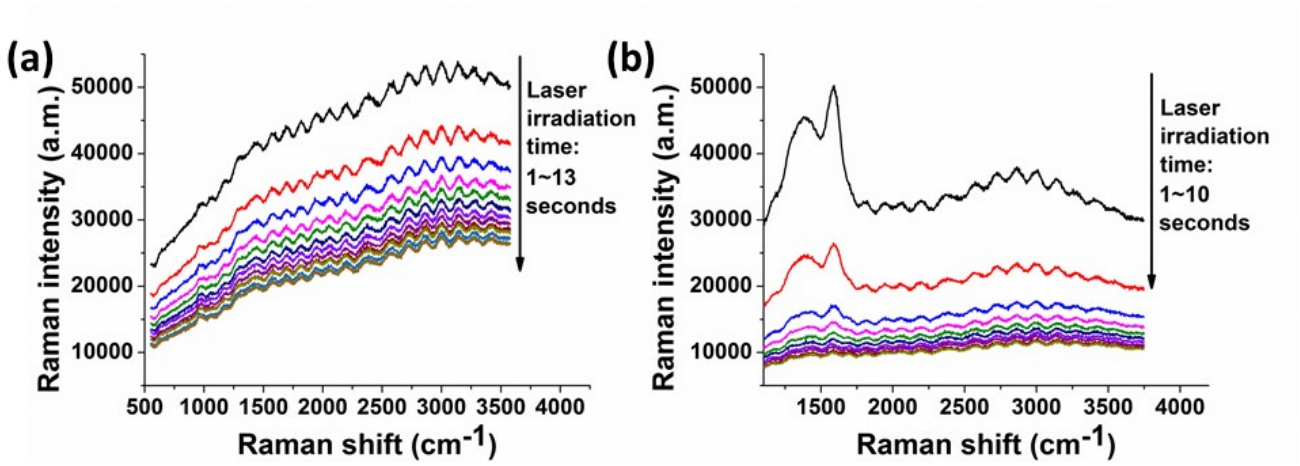

Fig. S5 (a) The Raman spectra of CDs under 1.68 mW laser irradiation at different time. (b) The Raman spectra of CDs under 16.8 mW laser irradiation at different time.

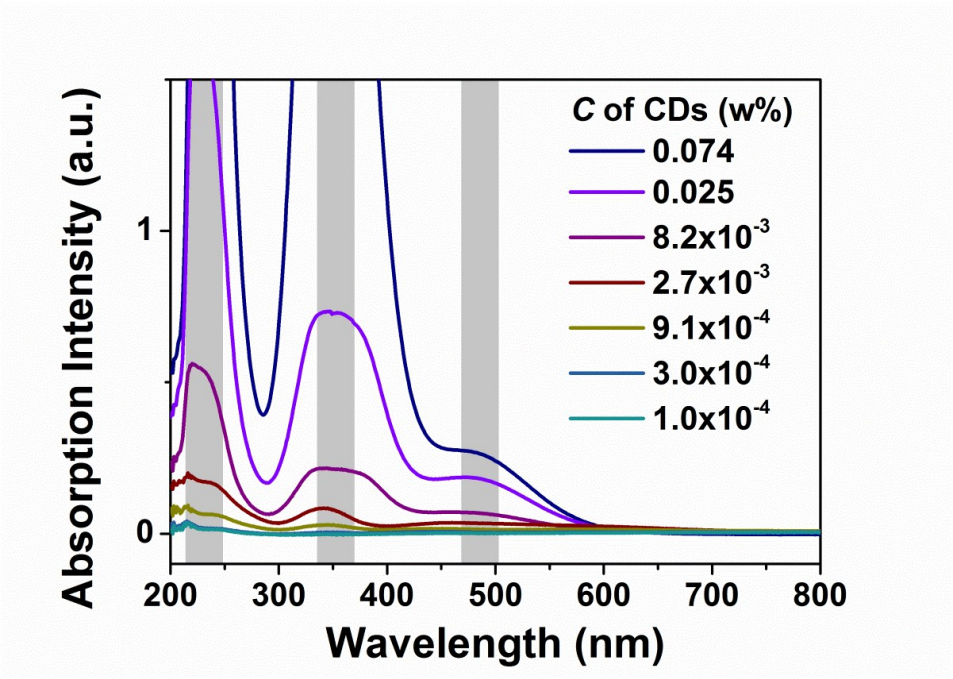

Fig. S6 The absorption spectra of exposed CDs. The grey areas represent the three typical absorption peaks.

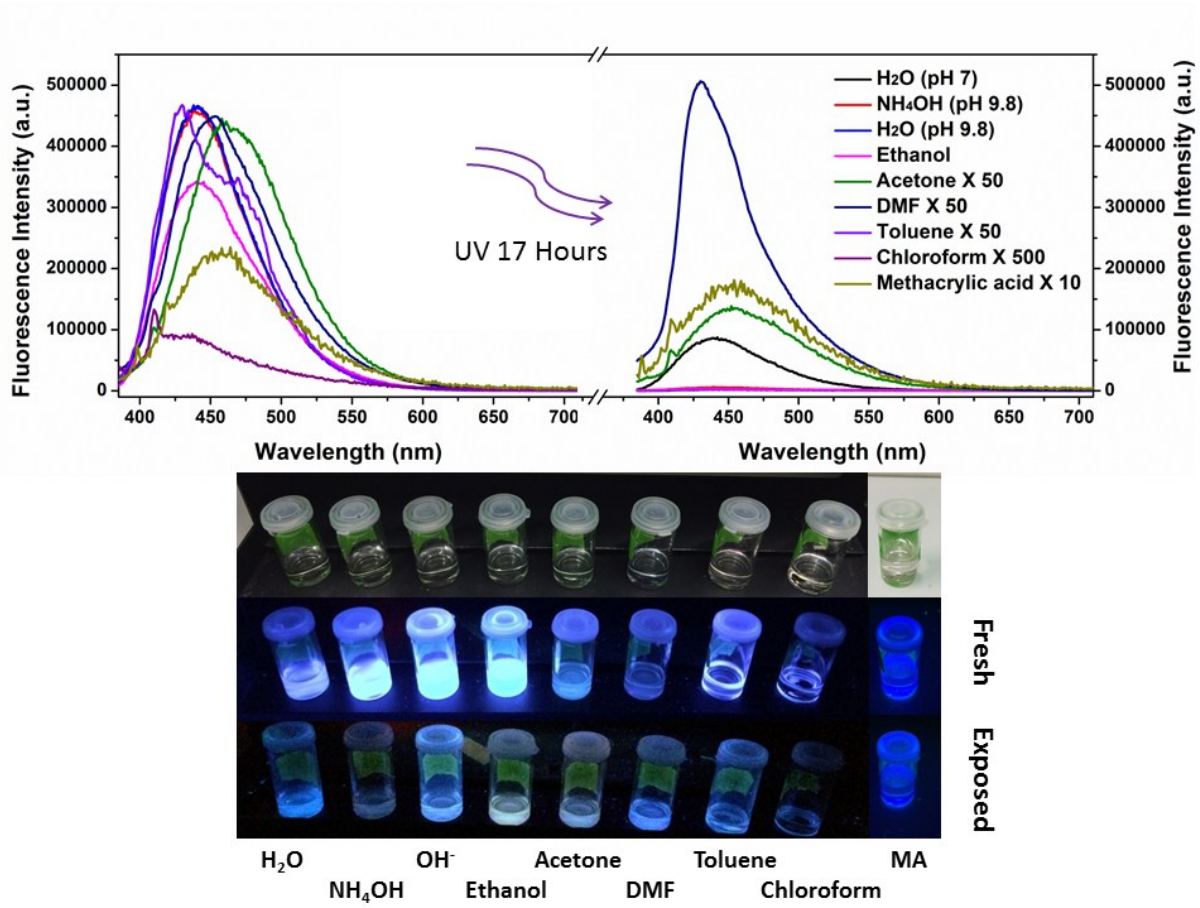

Fig. S7 The fluorescence spectra and photos of CDs in different solvents before and after photobleaching.

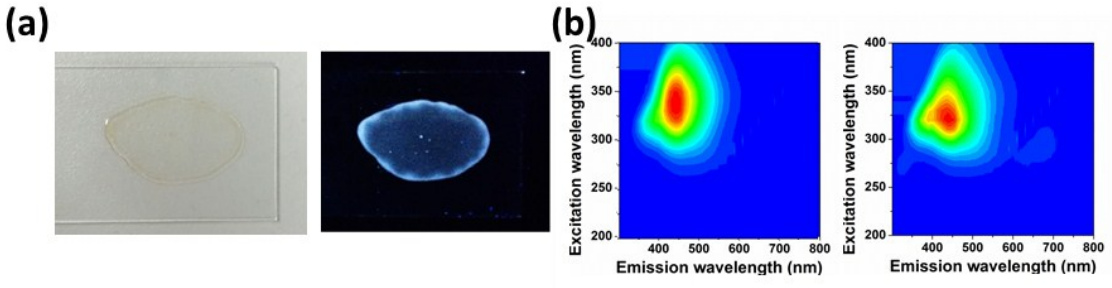

Fig. S8 (a) the camera photo of CDs@PMMA on glass substrate. (b) The comparison of the 3D-luminescence plot of CDs@PMMA before and after UV exposure.

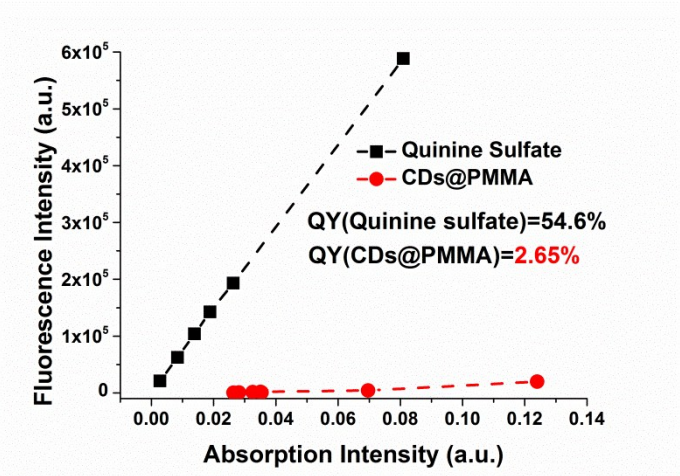

Fig. S9 Integrated fluorescence intensity versus absorbance for quinine sulfate (standard). The quantum yield of CDs@PMMA is about 2.65% (the refractive index is considered to be 1.49).