Supporting information

Bidirectional Photochromism via Anchoring of Carbon Dots to TiO_2 Porous Films

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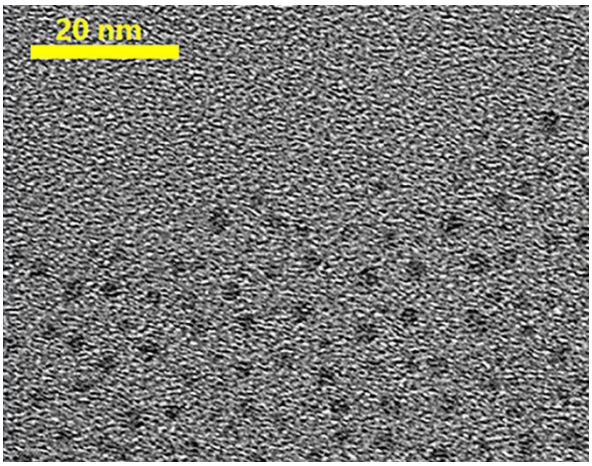

Figure S1. TEM photograph of the obtained CDs via hydrothermal synthesis route.

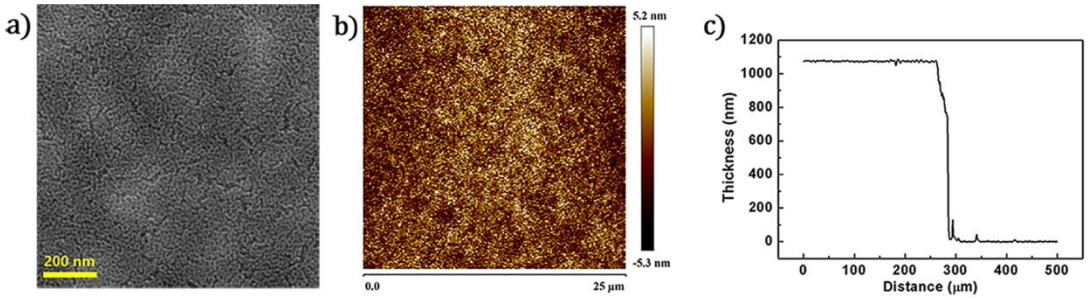

Figure S2. (a) SEM image of TiO_2 films. (b) AFM observation of surface of TiO_2 films. (c) Thickness measurement of TiO_2 films with the probe-type optical profilometer (KLA Tencor, D-100).

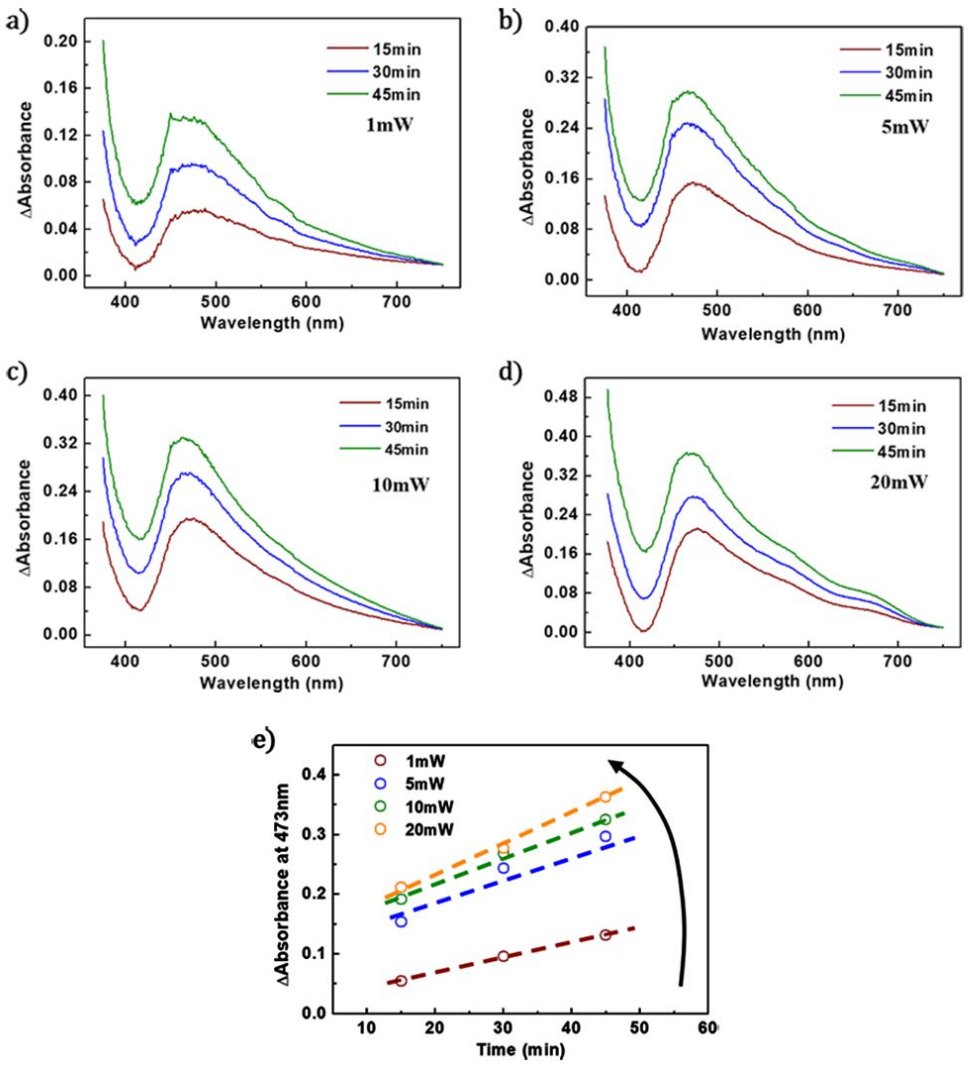

Figure S3. Differential absorption spectra of the DA-CDs/TiO_2 film irradiated by the laser beam (473 nm) with the power of (a) 1 mW, (b) 5 mW, (c) 10 mW and (d) 20 mW. (e) Absorbance value at 473 nm versus exposure time under the excitation light with different powers (1 mW, 5 mW, 10 mW and 20 mW).

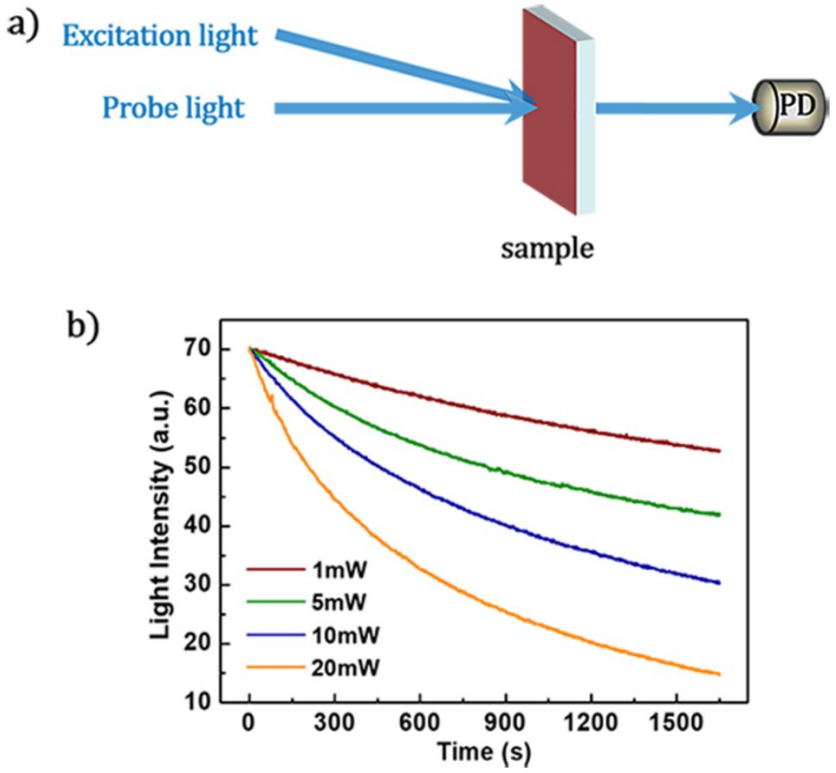

Figure S4. (a) Optical setup for monitoring transmittance of probe light (473 nm, 10 μW). (b) The transmittance of probe light for the DA-CDs/TiO_2 film under the excitation light with different powers (1 mW, 5 mW, 10 mW and 20 mW) versus exposure time. (PD, photodiode).

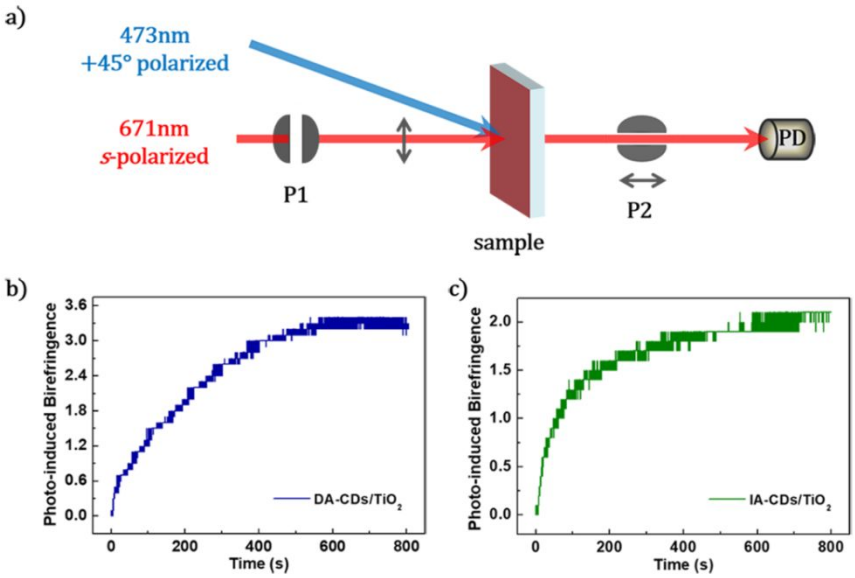

Figure S5. (a) Optical setup for photoinduced birefringence. Photoinduced birefringence versus exposure time for (b) DA-CDs/TiO_2 films and (c) IA-CDs/TiO_2 films. (P, polarizer; PD, photodiode).

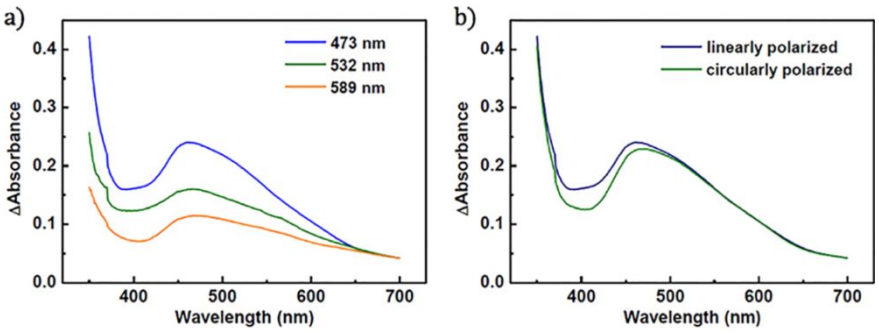

Figure S6. (a) Differential absorption spectra of the DA-CDs/TiO_2 film irradiated by the laser beam with the wavelength of 473 nm, 532 nm and 589 nm (all 5 mW). (b) Differential absorption spectra of the DA-CDs/TiO_2 film irradiated by linearly and circularly polarized blue light (both 473 nm, 5 mW).