Supporting Information *for*

F,N-doped carbon dot as an efficient Type I photosensitizer for photodynamic therapy

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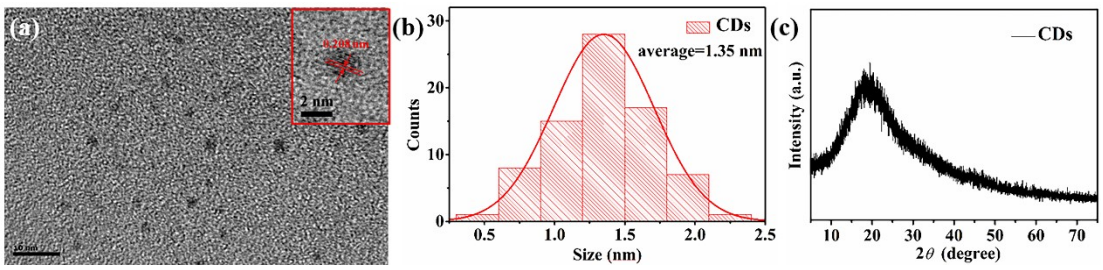


Fig. S1 (a) A typical TEM image (inset: HRTEM image) and (b) particle size distribution of the CDs. (c) XRD pattern of the CDs.

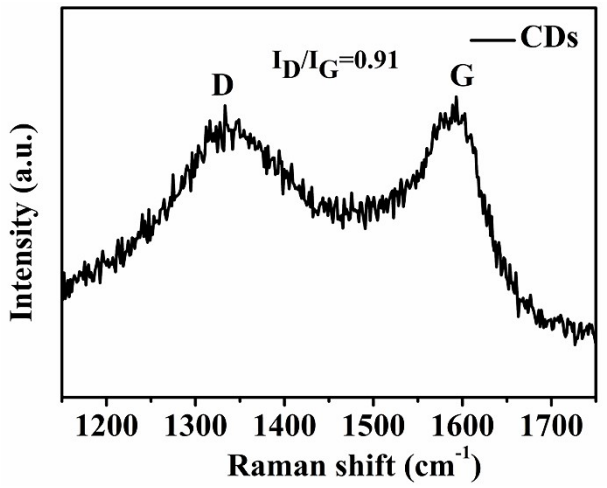


Fig. S2 Raman spectrum of the CDs (excited by a 750 nm laser).

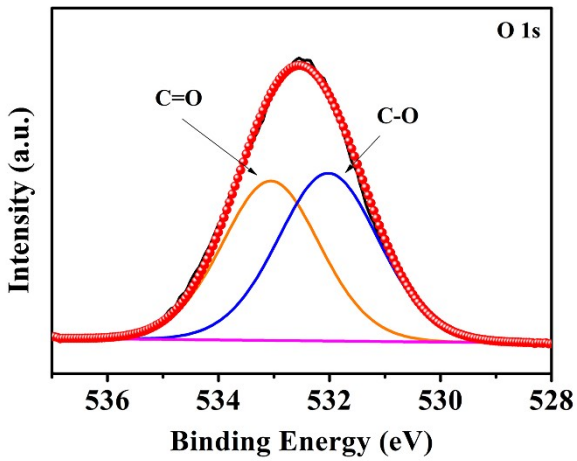
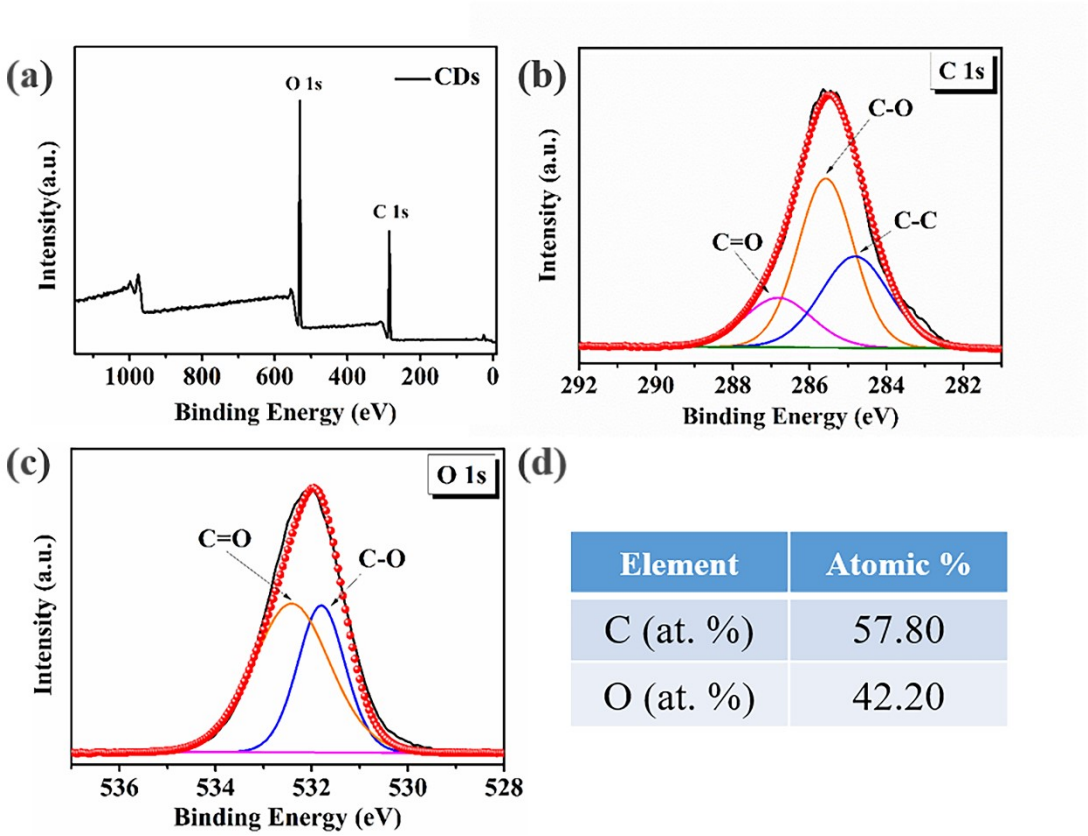


Fig. S3 High-resolution XPS O 1s spectrum of the F,NCDs.



Element	Atomic %
C (at. %)	57.80
O (at. %)	42.20

Fig. S4 (a) XPS survey spectrum of the control sample of CDs. High resolution (b) C 1s and (c) O 1s spectra of the the control sample of CDs. (d) The elemental content of the the control sample of CDs.

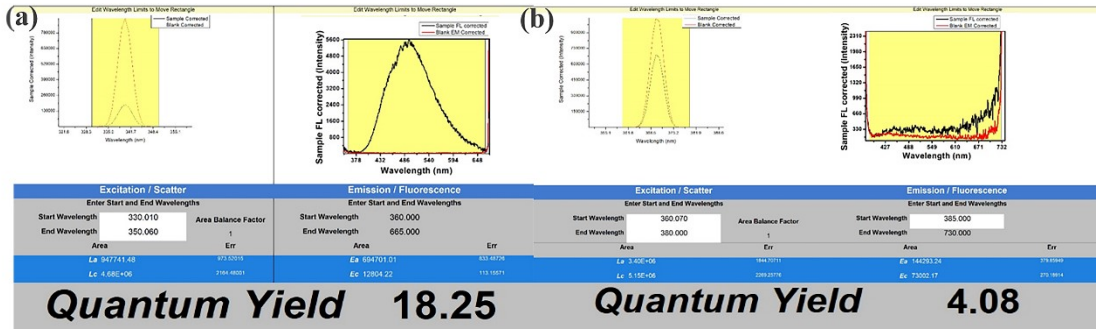


Fig. S5 Absolute fluorescence quantum yields of the (a) F,NCDs and (b) CDs.

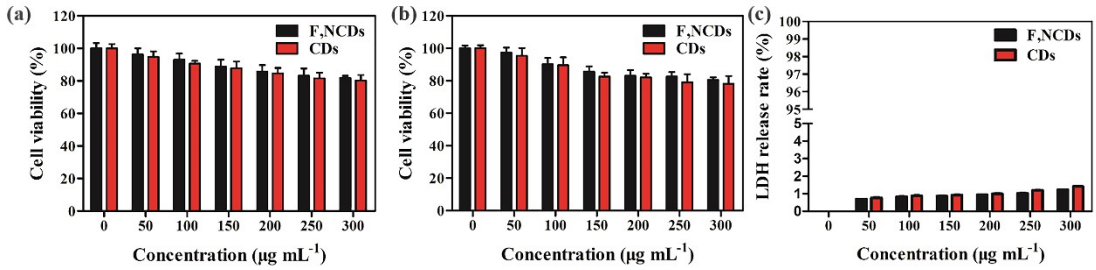


Fig. S6 (a) MTT results of HepG2 cells (a) and HUVEC cells (b) co-cultured with different concentrations of the F,NCDs and CDs for 24 h. (c) LDH release rate of HepG2 cells after co-incubation with the F,NCDs and CDs for 24 h at the different concentrations, respectively. Each group of experiments was repeated three times.

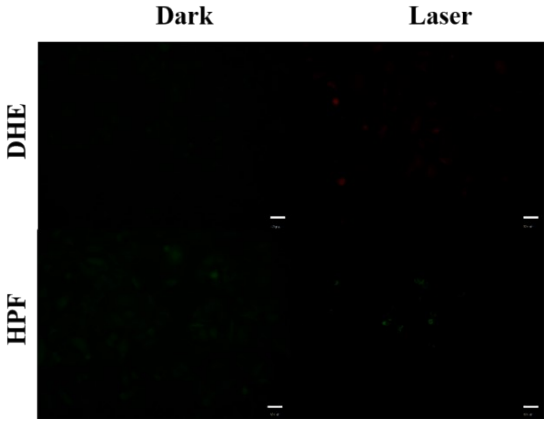


Fig. S7 Microscopy images of the CDs-treated HepG2 cells in dark or under a LED laser, using DHE and HPF as probes, respectively. Scale bar = 50 μm.

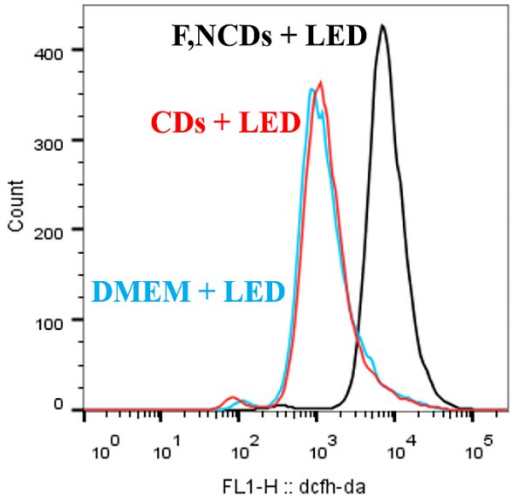


Fig. S8 HepG2 cells were co-cultured with DMEM, 250 μg mL^{-1} F,NCDs, and 250 μg mL^{-1} CDs, respectively. After being irradiated with LED light for 12 min, the fluorescence intensity of DCFH-DA in cells changed.