

Supplementary Material

A General Method toward Efficient Synthesis and Fluorescence Tuning of Carbon-Black-Derived Carbon Dots via Controlled Liquid OxidizationHaoran Yuan,^a Denian Li,*^a Yan Liu^b and Chuanxi Xiong^{b,c}

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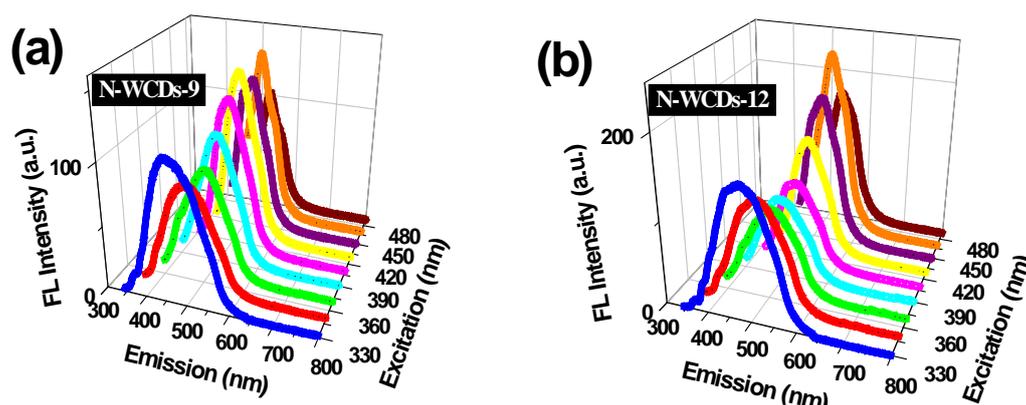


Figure S1. FL spectra of (a) N-WCDs-9 and (b) N-WCDs-12 in aqueous. Excitation wavelength increases from 330 to 490 nm.

Table S1. Parameters for calculating quantum yield of P-N-WCDs-9 at 330 nm excitation

Sample	l	A	η	ψ_{330}
Quinine Sulphate	62937.447	0.019	1.33	0.54
N-WCDs-6	806.816	0.096	1.33	0.0025
N-WCDs-9	1201.997	0.095	1.33	0.0038
N-WCDs-12	1800.139	0.098	1.33	0.0056
N-WCDs-15	2358.509	0.094	1.33	0.0076
P-N-WCDs-9	7895.222	0.080	1.33	0.0298

Note: all the absorptions are kept below 0.1 to avoid reabsorptions by the solutions themselves.

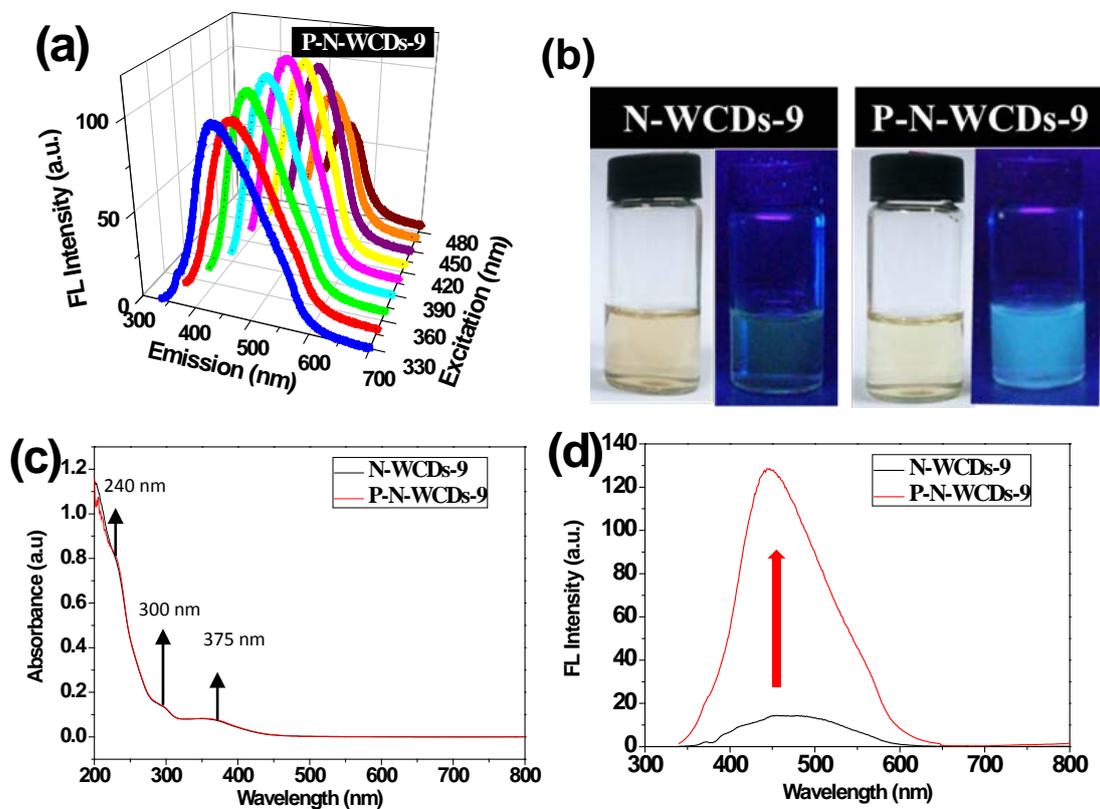


Figure S2. (a) FL spectra of (a) N-WCDs-9 and (b) N-WCDs-12 in aqueous; excitation wavelength increases from 330 to 490 nm. (b) optical appearance of N-WCDs-9 before and after surface passivation by polyethylene glycol (P-N-WCDs-9); (c, d) the UV-Vis and corresponding emission spectra under 330 nm excitation for N-WCDs-9 and P-N-WCDs-9.

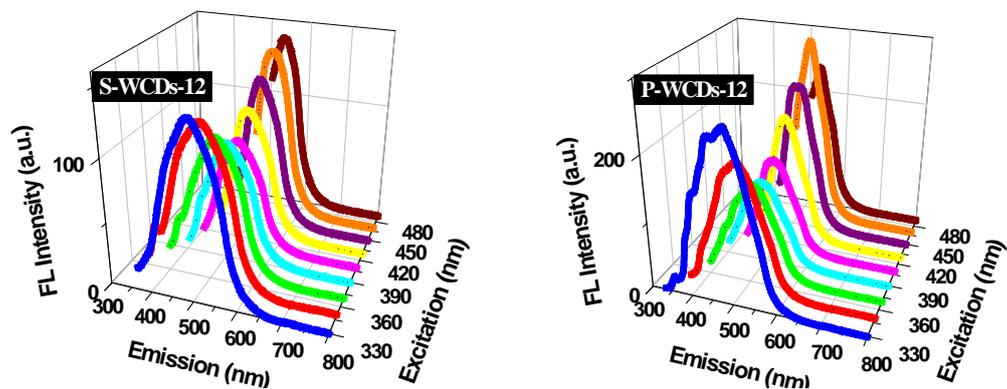


Figure S3. FL spectra of S-WCDs-12 and P-WCDs-12 in aqueous. Excitation wavelength increases from 330 to 490 nm.

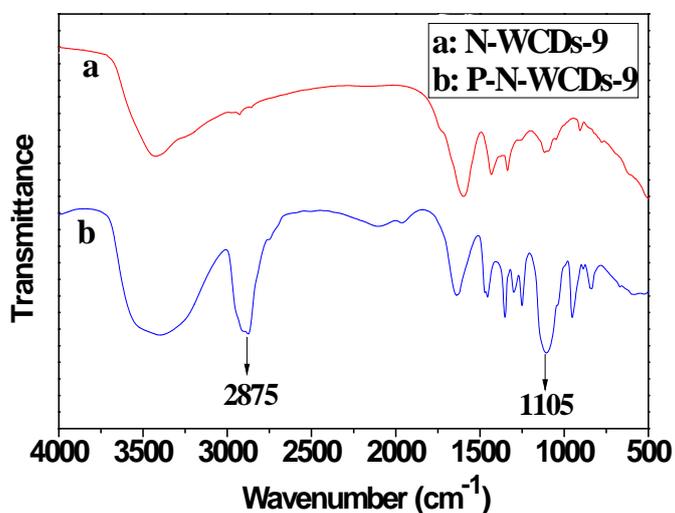


Figure S4. FT-IR spectra of N-WCDs-9 and P-N-WCDs-9.

Discussion: The curve of P-N-WCDs-9 reveals new absorption peaks at 2875 and 1105 cm^{-1} , which are assigned to the characteristic vibration of polyethylene glycol (PEG). Thus, it can be confirmed that PEG has been successfully grafted onto the N-WCDs-9.