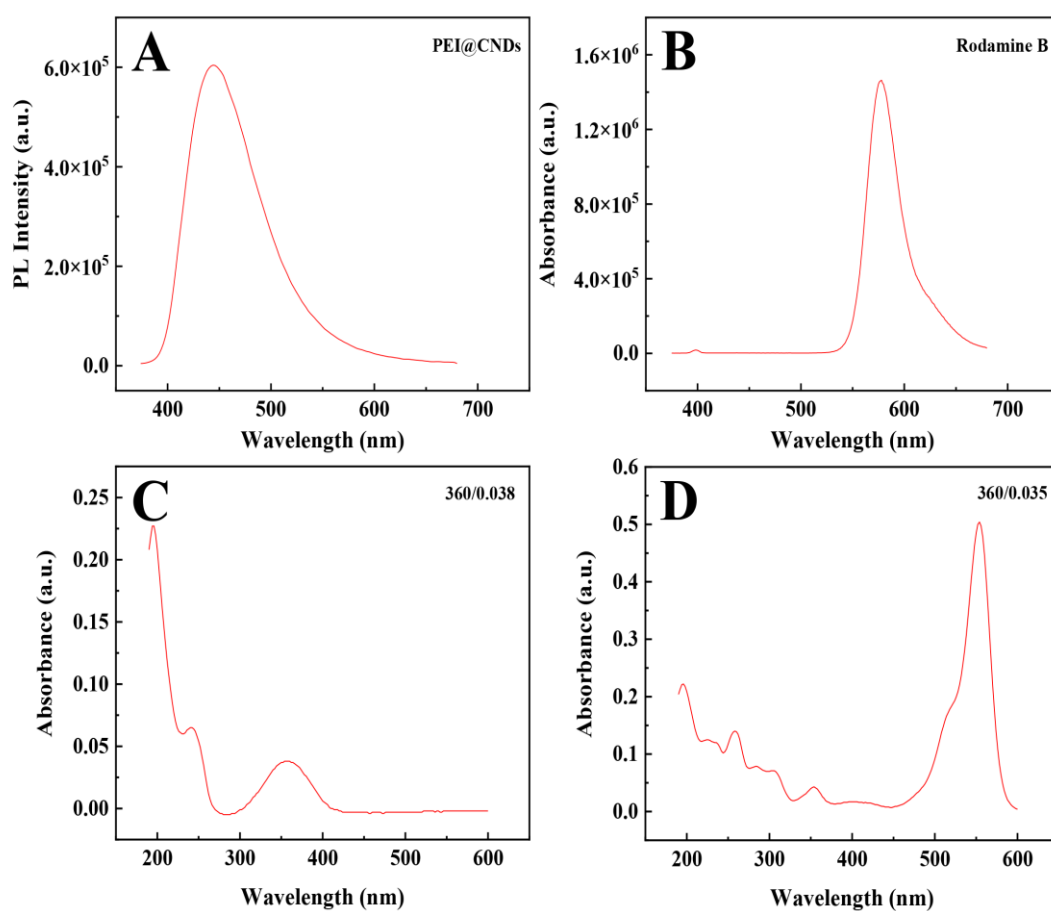


## Photophysical Properties of Bright Luminescent Polyethyleneimine@Carbon Nanodots and Its Application in White Light-emitting Diode

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**Figure S1.** (A) The PL spectrum of Rhodamine B at 360 nm excitation; (B) The UV-vis absorption of Rhodamine B; (C) The PL spectrum of PEI@CNDs at 360 nm excitation; and (D) The UV-vis absorption of PEI@CNDs.

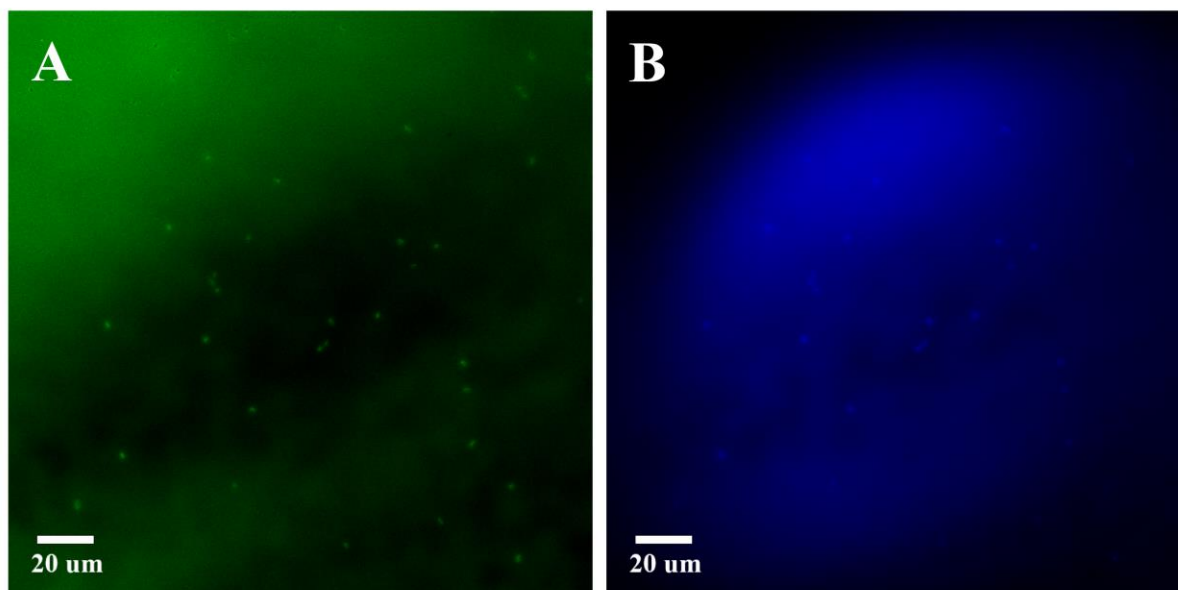
**Table S1.** The relevant data to calculate the QY of PEI@CNDs.

Excitation (nm)	As	Au	Fs	Fu
360	0.035	0.038	63383850	53602665

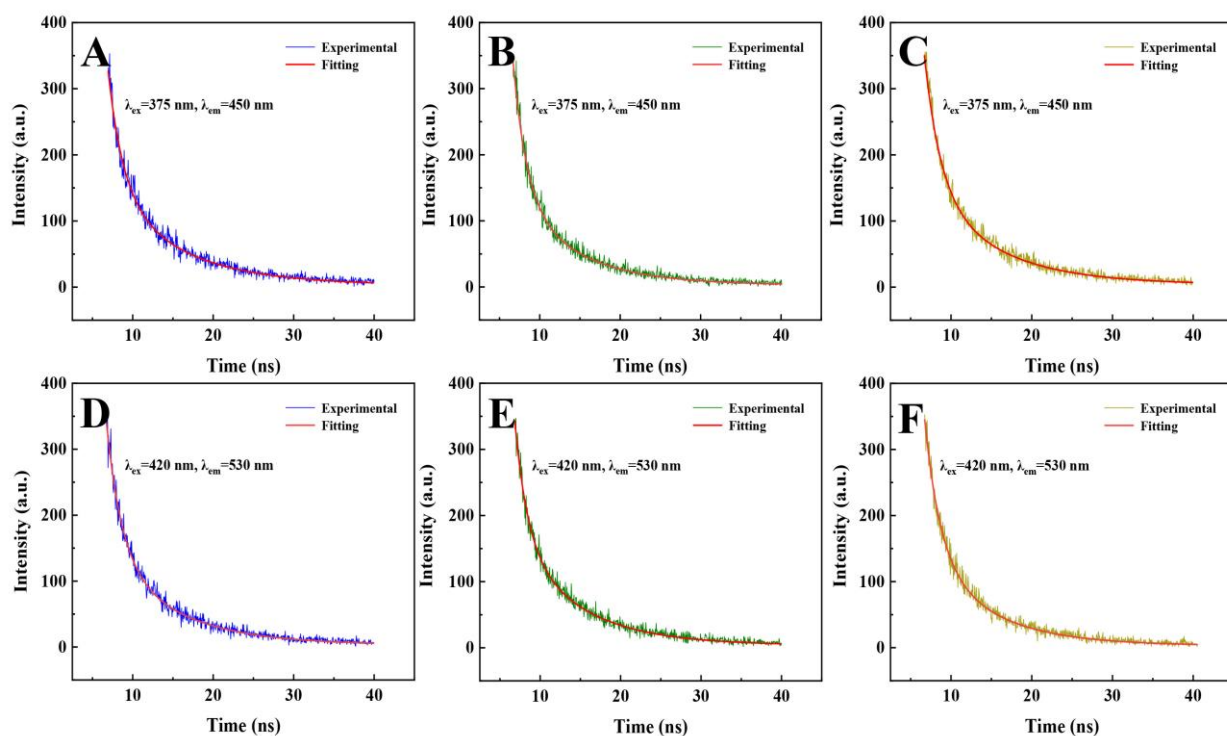
The PL quantum yields were measured using Rhodamine B in water as a standard (QY = 65%). The UV-Vis absorption spectra of the standard and the PEI@CNDs were measured (the absorbance must be less than 0.05 at 360 nm). Under excitation at 360 nm, the fluorescent spectra of PEI@CNDs and rhodamine B were obtained. The QY was calculated by the following formula,

$$Y_u = Y_s(F_u/F_s)(A_s/A_u)$$

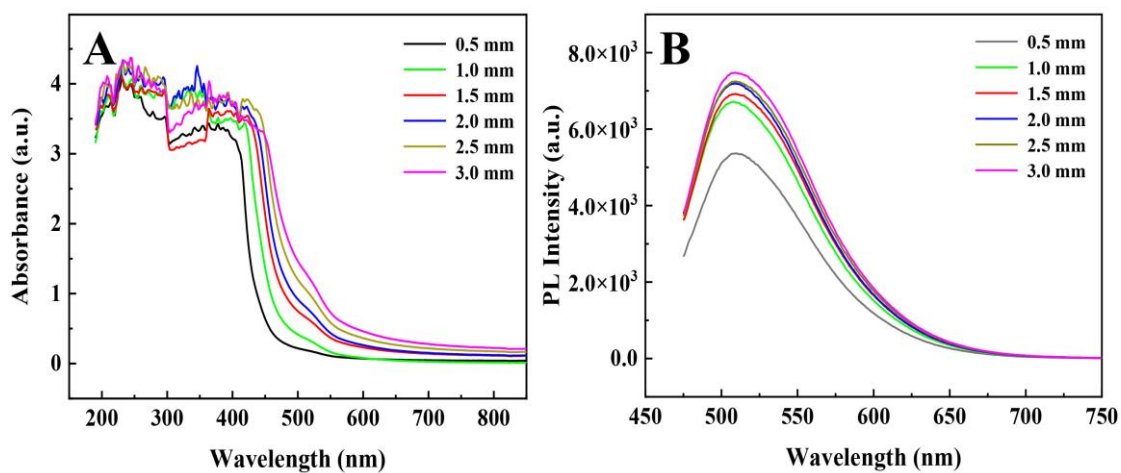
in which, the subscript u and s stand for the sample and the reference substance; F is the integral area of the fluorescence emission spectrum in the range of 375–680 nm; and A is the absorbance.



**Figure S2.** 1.0 mg/mL PEI@CNDs solutions fluorescence images under confocal laser microscope. (A) with 405 nm laser excitation, and (B) 488 nm laser excitation.



**Figure S3.** Time-resolved PL decay curves of (A and D) 0.1, (B and E) 1.0 and (C and F) 10.0 mg/mL PEI@CNDs solutions.



**Figure S4.** (A) UV-vis absorption spectra and (B) PL spectra of fluorescent films with thicknesses of 0.5, 1.0, 1.5, 2.0, 2.5, and 3.0 mm.