

Lasing behavior of surface functionalized carbon quantum dots/RhB composite

(Supporting Information)

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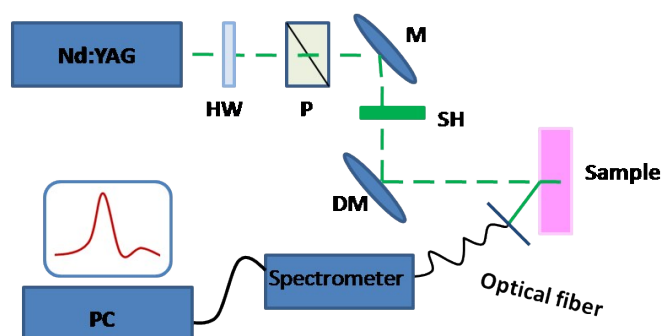


Fig. S1 Sketch of the experimental set-up used in laser emission studies. HW is a half wave plate, P a Glan-Taylor polarizer, M a mirror, SH a frequency doubling crystal, DM a dichroic mirror, N a 532 nm-notch filter connected, by means of a lens-coupled optical fiber-bundle, to the spectrometer for the luminescence detection.

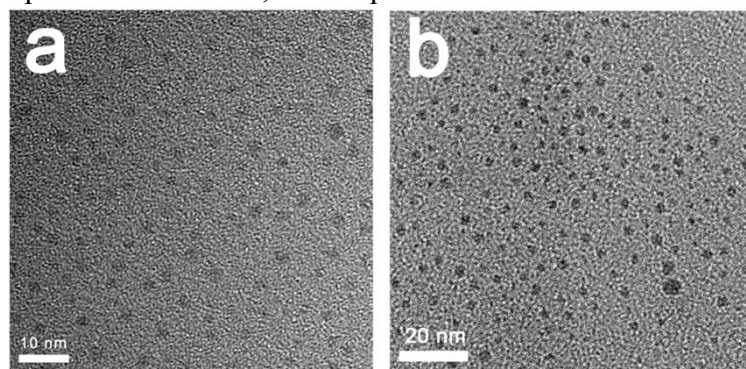


Fig. S2 TEM images of a) OH-CQDs and b) NH₂-CQDs.

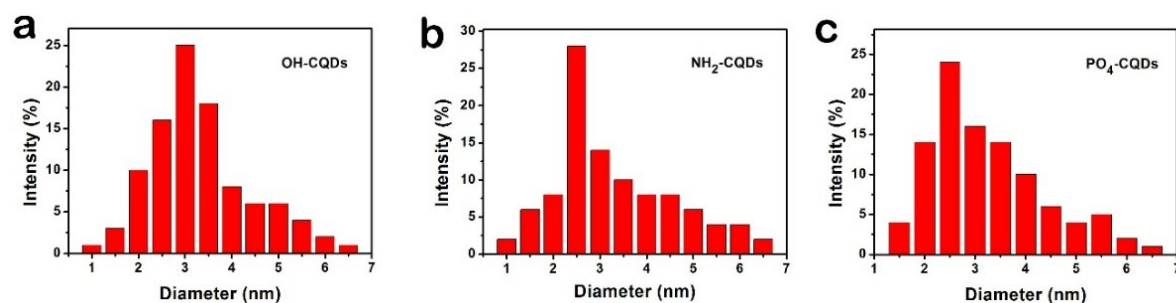


Fig. S3. Particle-size histogram of a) OH-CQDs, b) NH₂-CQDs, c) PO₄-CQDs.

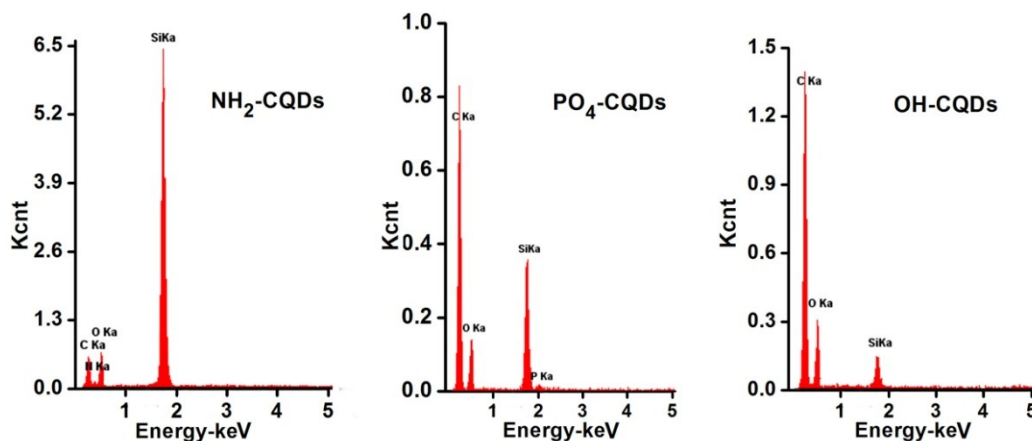


Fig. S4 The Energy Dispersive X-ray Spectroscopy (EDS) analysis of $\text{NH}_2\text{-CQDs}$, $\text{PO}_4\text{-CQDs}$ and OH-CQDs .

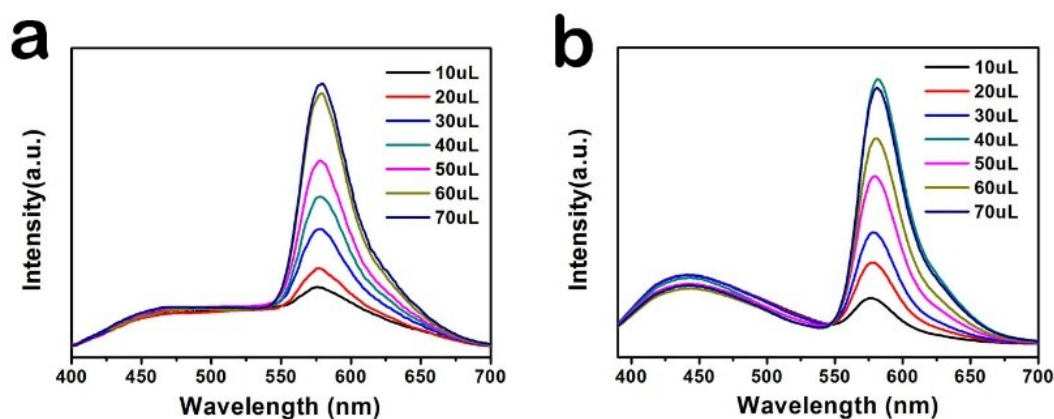


Fig. S4. Partical-size histogram of a) OH-CQDs , b) $\text{NH}_2\text{-CQDs}$, c) $\text{PO}_4\text{-CQDs}$. Fluorescence spectra of different amount of 0.5 mg/mL RhB solution in OH-CQDs solution and b) in $\text{NH}_2\text{-CQDs}$ solution with the excitation wavelength of 365 nm.

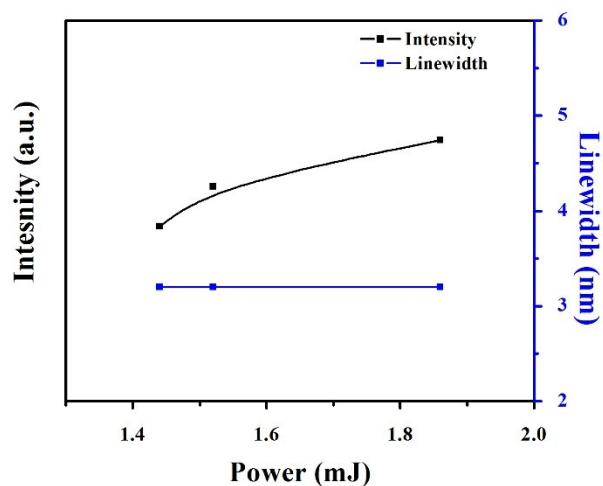


Fig. S5. The relationship of fluorescence intensity and linewidth of b) $\text{PO}_4\text{-CQDs/RhB}$ composite with the input energy of 1.42, 1.52 and 1.68 mJ

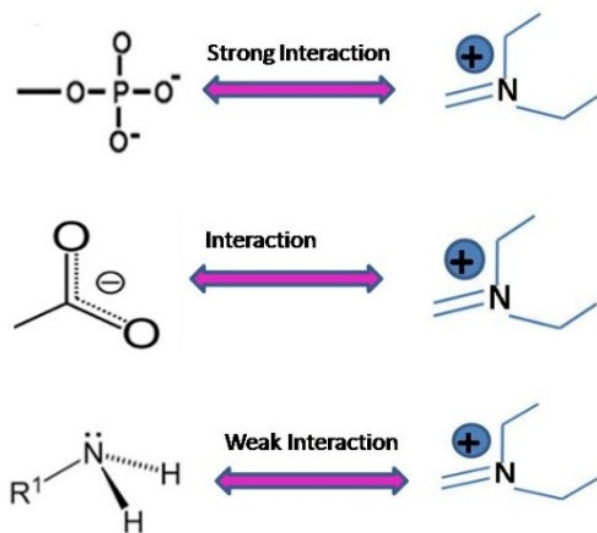


Fig. S6. Scheme of interaction between RhB dye molecules and CQDs.