

## Electronic Supplementary Information

### Synthesis and Optical Properties of Nitrogen and Sulfur Co-doped Graphene Quantum Dots

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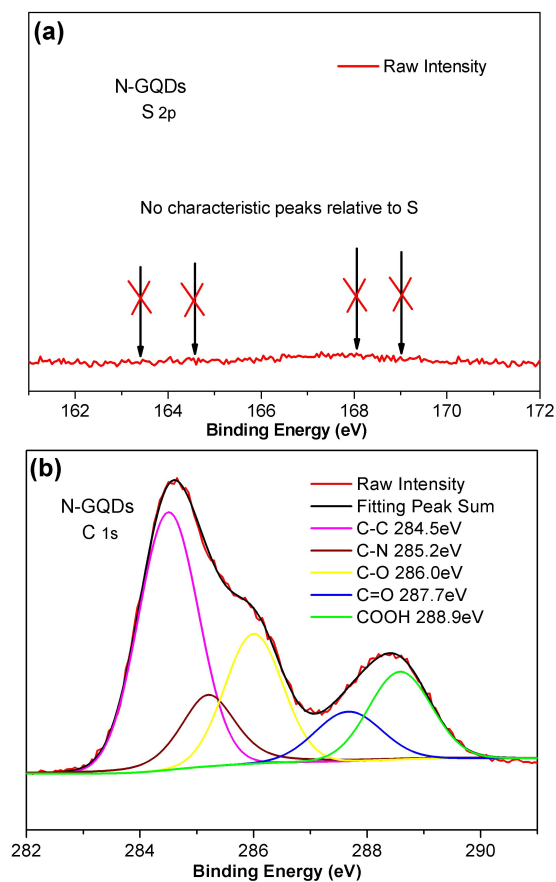


Fig. S1 The high-resolution N 1s (a) and S 2p (b) spectra of N-GQDs.

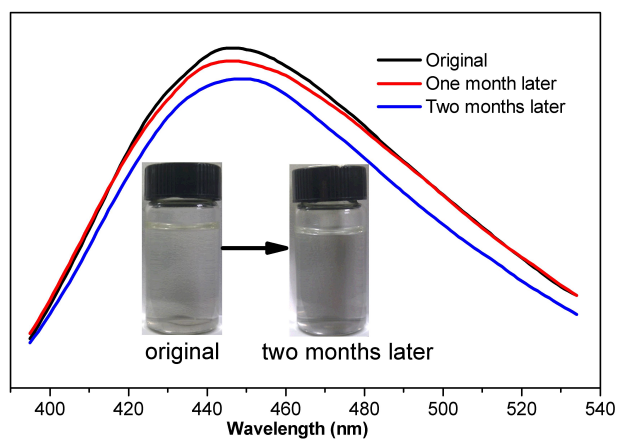


Fig. S2 Long-term stability of NS-GQDs. PL spectra were obtained at 365 nm and insets are digital photos under sunlight.

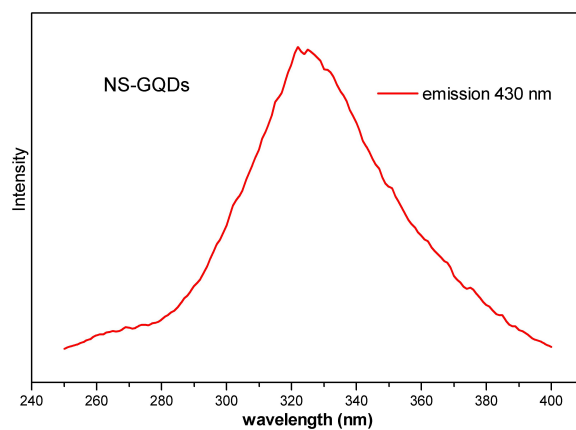


Fig. S3 PLE spectra of NS-GQDs.

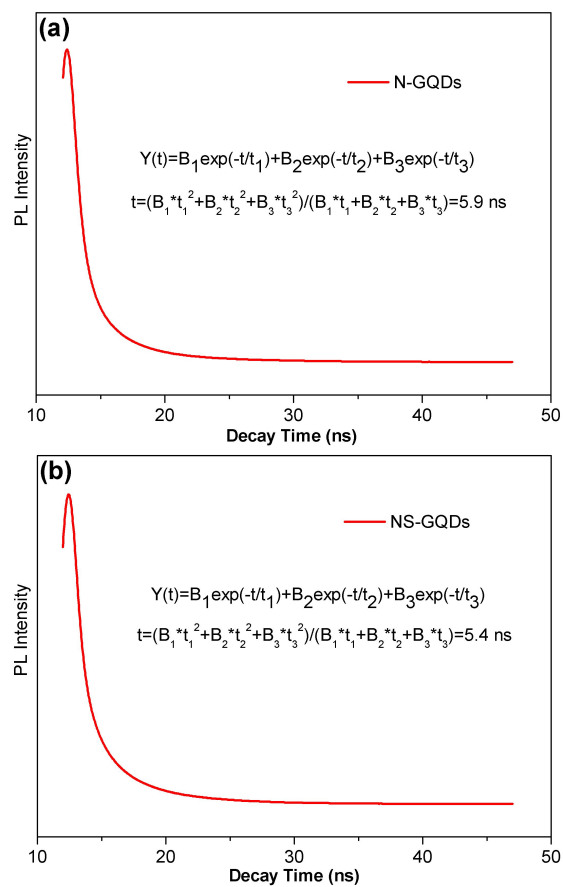


Fig. S4 Decay time of N-GQDs (a) and NS-GQDs (b).

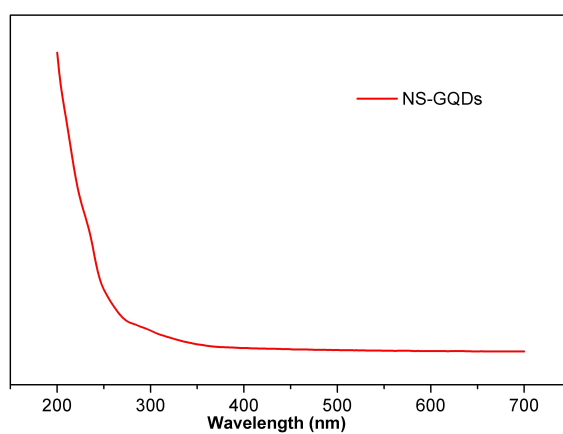


Fig. S5 Absorption curve of NS-GQDs.

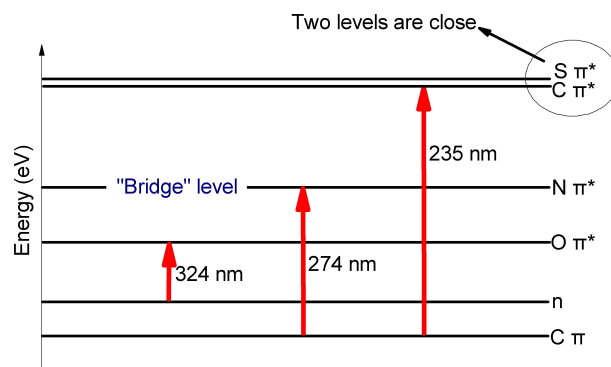


Fig. S6 A schematic illustrating the energy levels of the NS-GQDs.

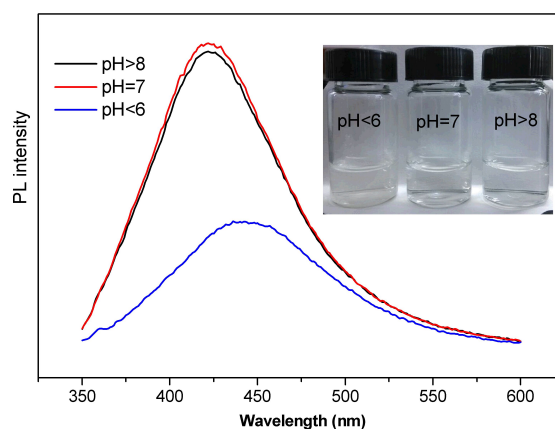


Fig. S7 PL spectra of the NS-GQDs solution with different pH conditions under 320 nm excitation. Insets are digital photos of NS-GQDs solution with different pH under sunlight.

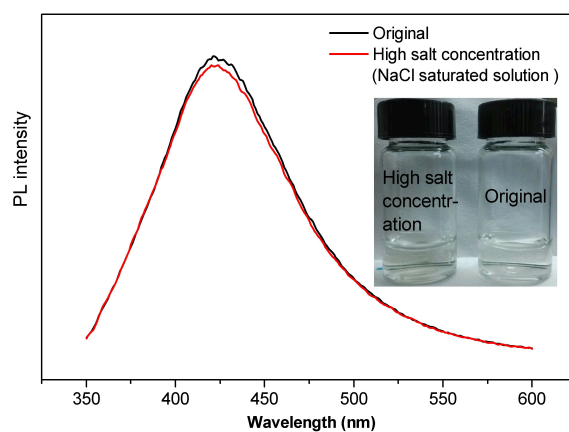


Fig. S8 Salt effect of NS-GQDs. PL spectra of NS-GQDs at the presence and absence of high concentration NaCl solution excited at 320nm. Insets are digital photos of NS-GQDs solution under sunlight.