

Supporting Information

A new chemosensor for Ga^{3+} detection by fluorescent nitrogen-doped graphitic carbon dots

Hao Wang, Yun Wang, Jun Guo, Ying Su, Cheng Sun, Jie Zhao, Hongmei Luo, Xiao Dai, and Guifu Zou

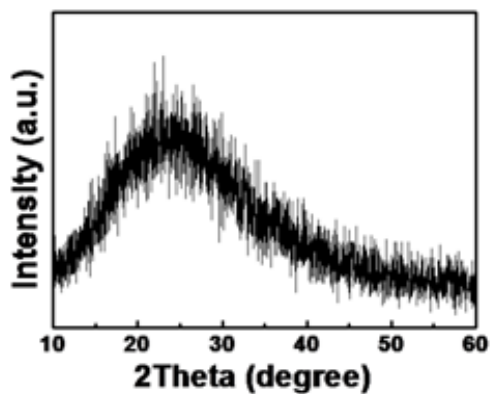


Figure S1. XRD spectrum of the NGCDs.

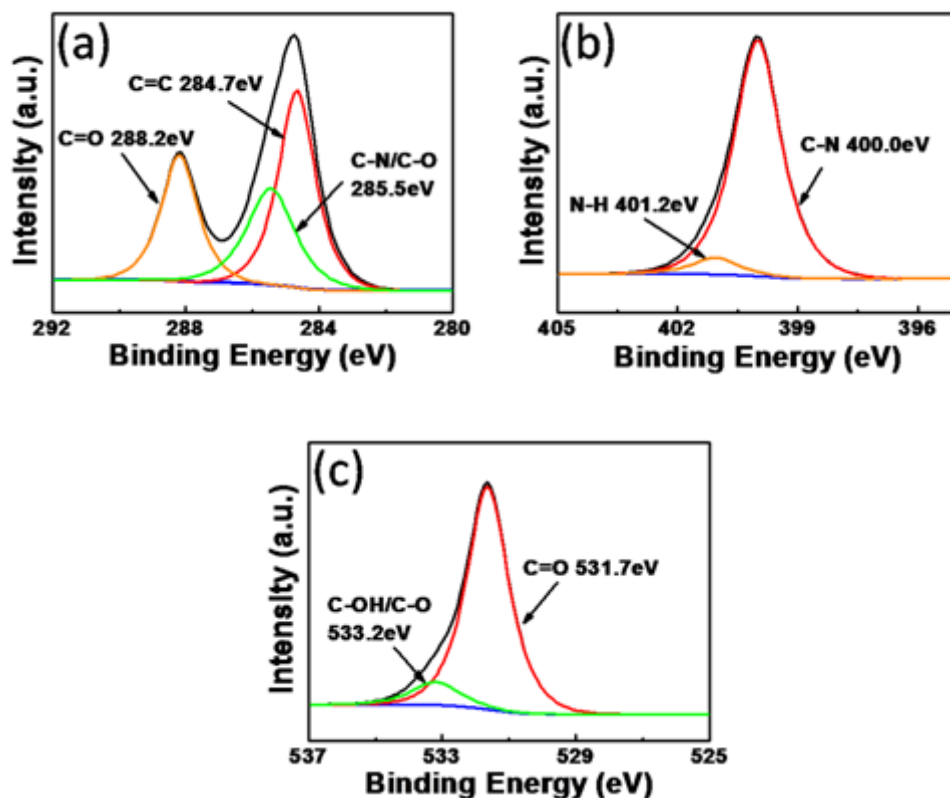


Figure S2. High-resolution XPS spectra of (a) C1s, (b) N1s, and (c) O1s for NGCDs.

Element	C	N	O
Atomic %	61.6	9.2	29.2

Table S1. Elemental analysis of the NGCDs by EDX.

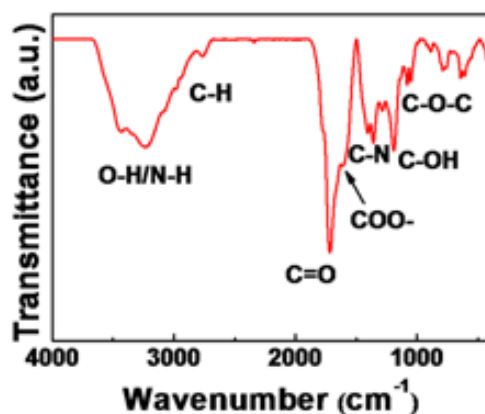


Figure S3. FTIR spectrum of NGCDs

Measurement of fluorescence quantum yields: The FLQY of the as-prepared NGCDs was measured by comparison of their wavelength integrated intensity to that of the standard quinine sulfate. The optical density was kept below 0.1 to avoid inner filter effects. The quantum yields of these oxidized products were calculated using

$$\Phi_S = \Phi_R \left(\frac{A_R}{A_S} \right) \left(\frac{I_S}{I_R} \right) \left(\frac{\eta_S^2}{\eta_R^2} \right)$$

where Φ is the quantum yield, I is the integrated intensity, A is the optical density and η is the refractive index of the solvent. The subscript S refers to the sample and R refers to the reference. Quinine sulfate was chosen as the reference, whose quantum yield is 54% in 0.1M sulfuric acid solution.

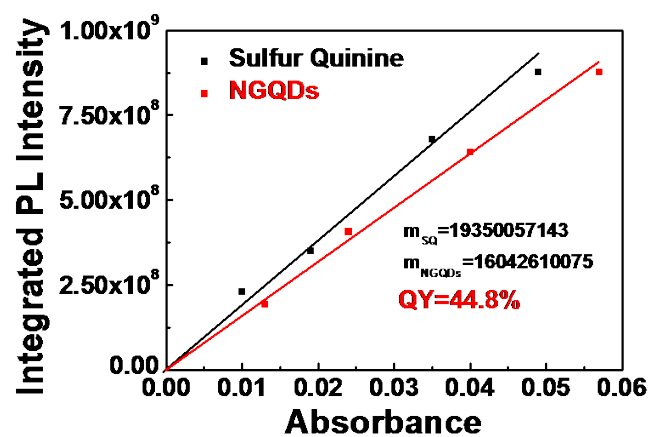


Figure S4. Integrated PL intensity of NGQDs with different absorbance. Quinine sulfate is used as a reference.

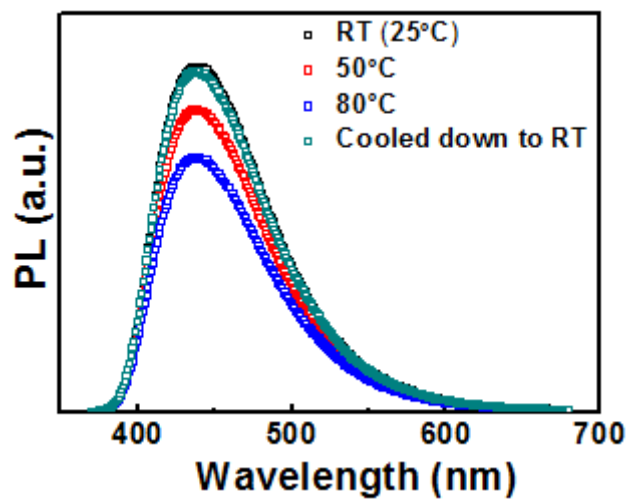


Figure S5. Emission spectra of NGQDs excited at 350nm at different temperature.