Electronic Supplementary Material (ESI) for Analytical Methods.

Supplementary Material

for

One-Step Hydrothermal Synthesis of nitrogen-doped carbon dots for detecting nitrite and ascorbic acid

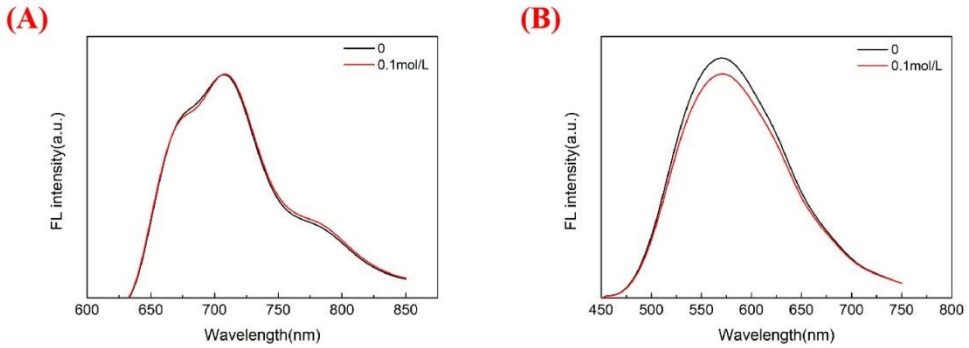

Figure S1. Fluorescence intensity of CDs before and after mixing with NaCl solution : (A), r-CDs (B), y-CDs

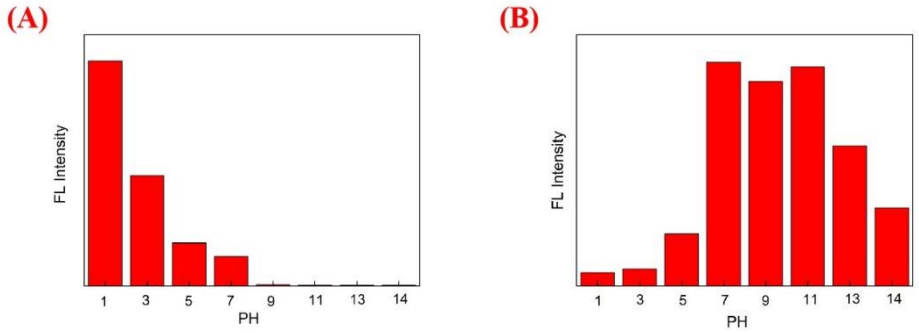

Figure S2. Fluorescence spectra of CDs with various pH : (A), r-CDs (B), y-CDs

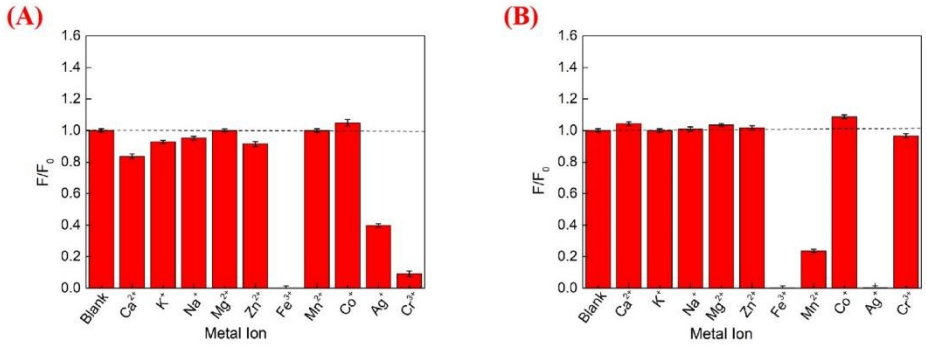

Figure S3. Fluorescence spectra of CDs with various metal ions : (A), r-CDs (B), y-CDs

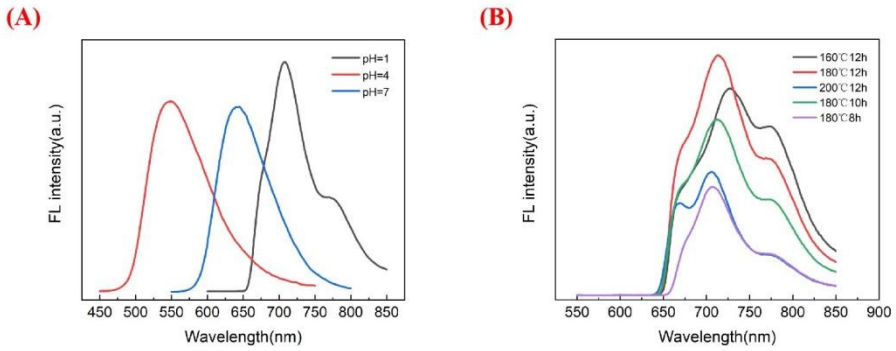

Figure S4. (A) Fluorescence spectra of CDs prepared with different pH values under excitation wavelength at 365nm; (B) r-CDs prepared at different temperatures and times under excitation wavelength at 365nm

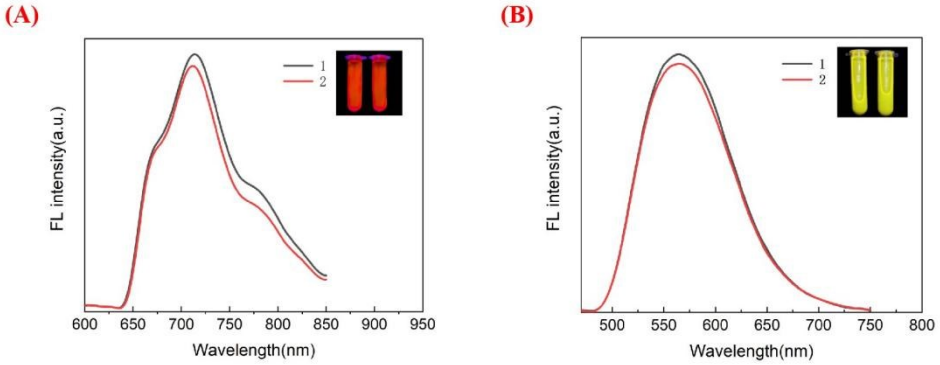

Figure S5. Fluorescence intensity of CDs placed at different times (the illustrations respectively show the fluorescence photos of CDs after 0 days and 30 days under sunlight) (A) r-CDs; (B) y-CDs

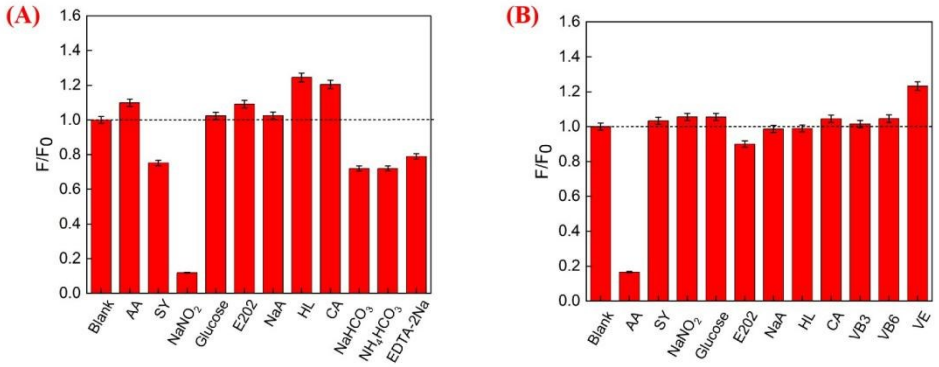

Figure S6. (A) Selectivity of r-CDs detecting NO_2^- ; (B) Selectivity of y-CDs detecting AA

Table S1. Comparison of detecting NO_2^- between the reported and current method

Detection probe	Linear range	limit of detection	Ref.

N-CDs	2-60 μM	0.35 μM	1
N, P-CDs	2-100 μM	0.55 μM	2
CQDs	0.5-1110 μM	88 nM	3
CDs	0.05-10 μM	11.6 nM	4
CQDs/Fe^{2+}	10-400 μM	480 nM	5
N-CDs	8-800 μM	21.2 μM	6
N-CDs	5~80 μM	0.47μM	This work

Table S2. Comparison of detecting AA between the reported and current method

Detection probe	Linear range	limit of detection	Ref.
CDs	0.1-100μM	83nM	7
N-CDs	$10^{-3}$to 10^{-8}M	5nM	8
CQDs/Fe^{3+}	0-350 μM	5.34 μM	9
S, N-GQDs	10-500 μM	1.22 μM	10
CDs/NO_2^-	0.1-800 μM	50 μM	6
N-CDs	0~6mM	45.1μM	This work

CDs optical properties experiment:

The same amount of CDs solution was mixed with deionized water and 0.1 mol/L NaCl solution, respectively, and the fluorescence detection of the mixed solution (EM = 365 nm) was performed after reaction for several minutes.

The same amount of CDs solution is mixed with different metal ion solutions (0.01 mol/L), and the fluorescence detection of the mixed solution (EM = 365 nm) was performed after reaction for several minutes.

Reference:

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