

## Supplementary information:

### *Time-efficient syntheses of nitrogen and sulfur co-doped graphene quantum dots with tunable luminescence and their sensing applications*

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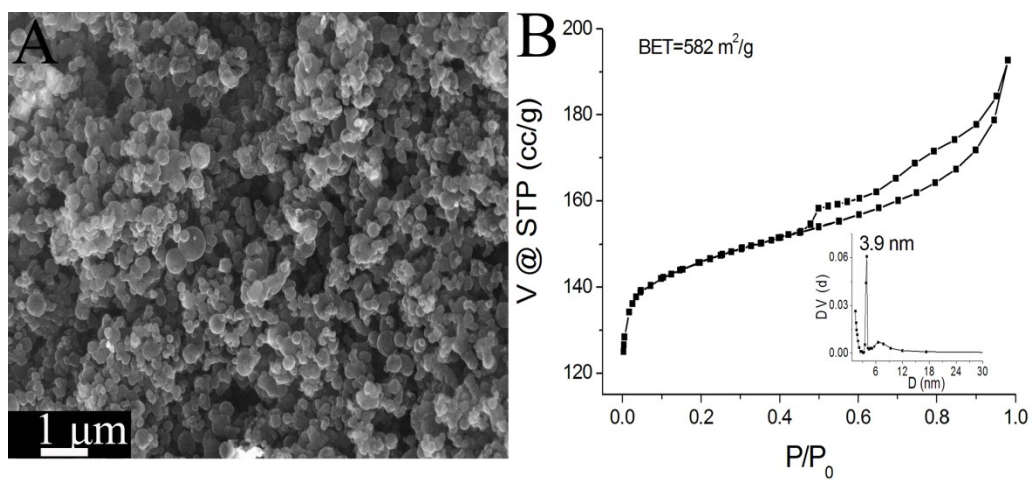
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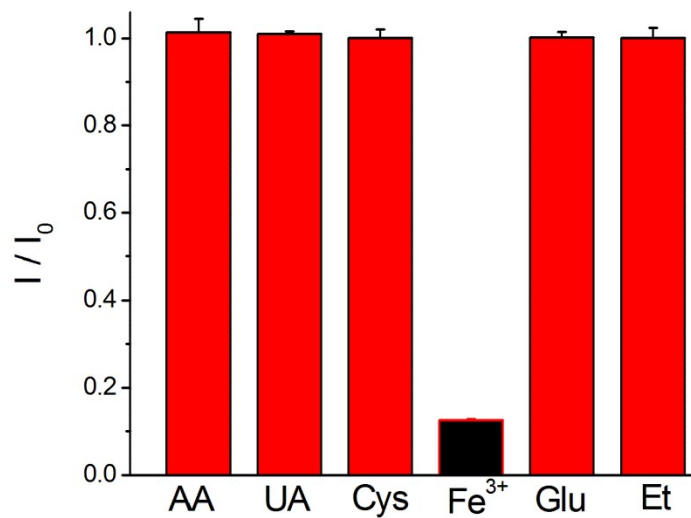
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**Figure S1.** SEM image (A), nitrogen adsorption isotherm (B) and the size distribution (inset of B) of the porous polythiophene-derived carbon precursor.



**Figure S2.** Effects of different biomolecules and  $Fe^{3+}$  on the relative fluorescence intensity of the GQDs solution. From left to right: 100  $\mu$ M ascorbic acid (AA), 100  $\mu$ M uric acid (UA), 100  $\mu$ M cysteine (Cys), 100  $\mu$ M  $Fe^{3+}$ , 4 mM glucose (Glu) and 10 mM ethanol (Et).

**Table S1.** Determination of Fe<sup>3+</sup> in tap water samples with the N,S-GQD<sub>180</sub>. (n=3)

	Detected ( $\mu\text{M}$ )	Added ( $\mu\text{M}$ )	Detected ( $\mu\text{M}$ )	Recovery (%)	RSD (%)
Sample 1	0	30	26.5	88.3%	1.9%
Sample 2	0	50	50.8	101.6%	3.0%
Sample 3	0	100	100.5	100.5%	2.8%