

ESI

**Tuning the Fluorescence Performance of Carbon Dots with a
Reduction Pathway**

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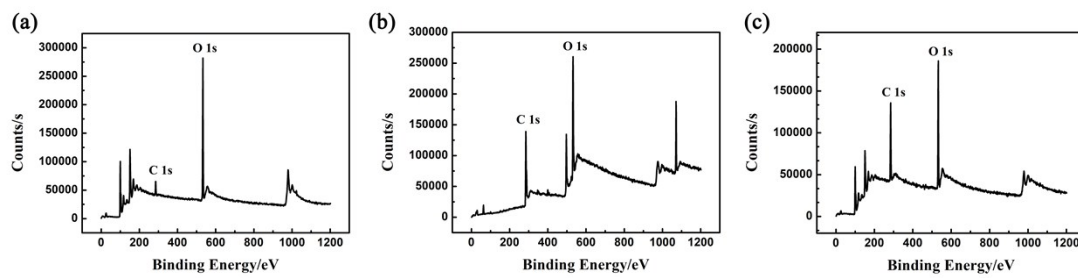


Fig. S1. XPS patterns of (a) o-CDs, (b) r-CD1s, and (c) r-CD2s

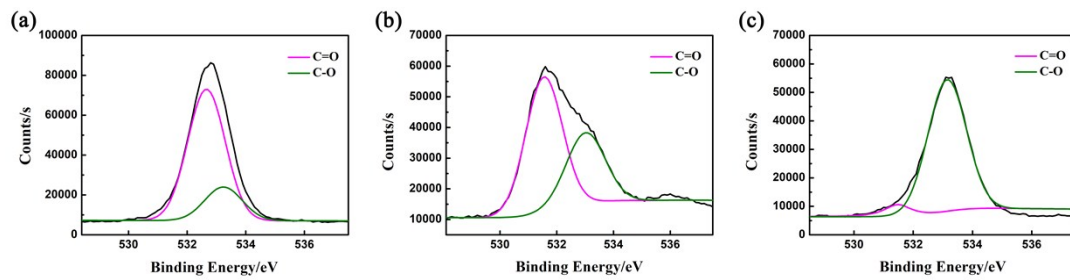


Fig. S2. XPS patterns (O 1s spectra) of (a) o-CDs, (b) r-CD1s, and (c) r-CD2s

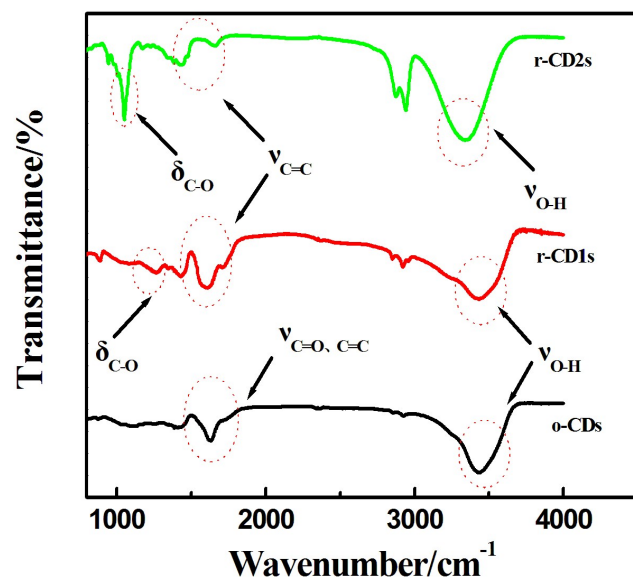


Fig. S3. FT-IR spectra of o-CDs, r-CD1s, and r-CD2s

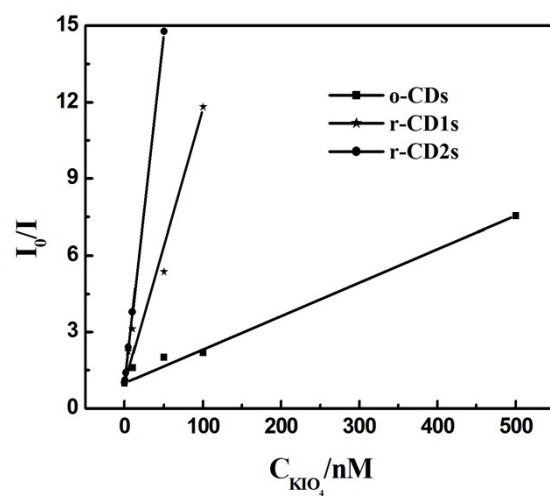
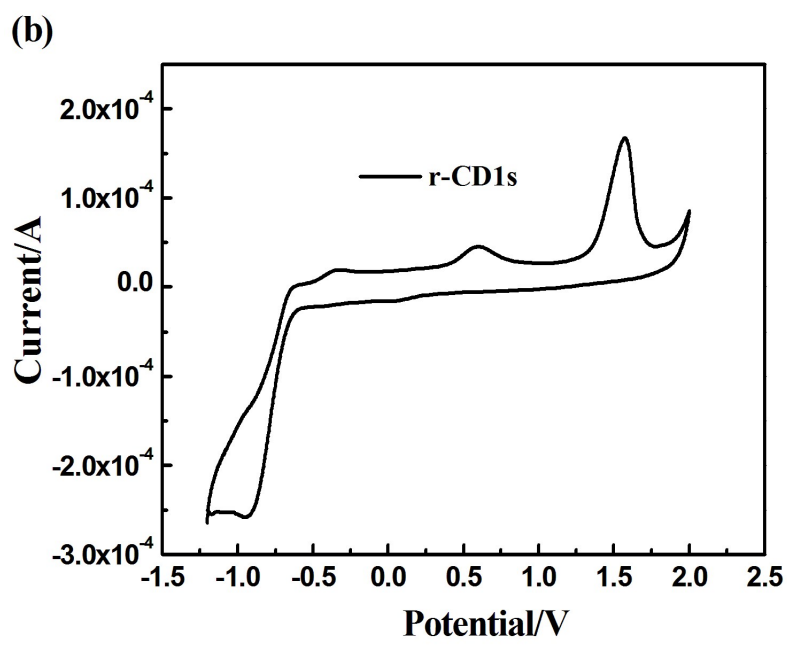
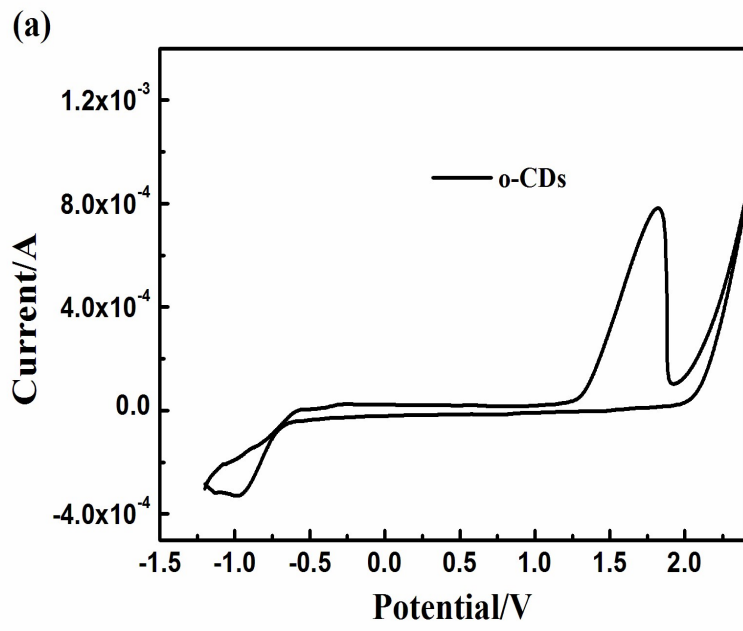


Fig. S4. Quenching effects of KIO_4 on o-CDs, r-CD1s, and r-CD2s



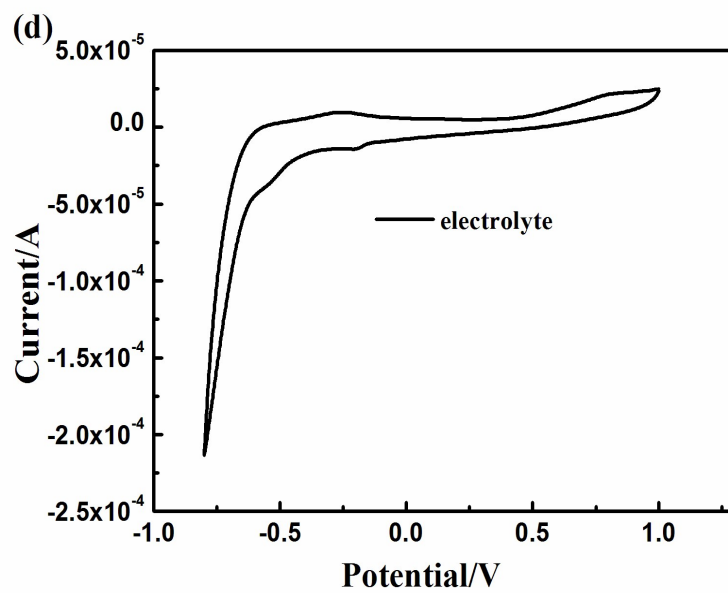
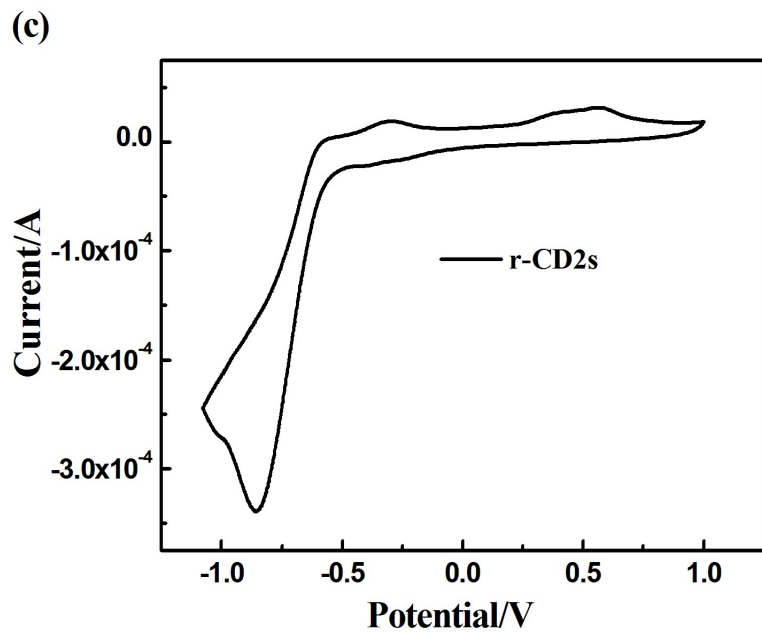


Fig. S5. CVs of (a) o-CDs, (b) r-CD1s, (c) r-CD2s, and (d) the electrolyte

Table S1. Fluorescent characteristics of o-CDs, r-CD1s, and r-CD2s prepared with graphite oxide and candle soot.

Precursors of CDs	Emission of o-CDs	Emission of r-CD1s	Emission of r-CD2s	QY of o-CDs	QY of r-CD1s	QY of r-CD2s
Graphite oxide	510 nm	450 nm	385 nm	1.3%	11.7%	15.2%
Candle soot	525 nm	465 nm	365 nm	0.95%	7.0%	9.1%

The carbon dots were prepared by treating graphite oxide or candle soot under reflux in nitric acid according to previous reports^{S1, 2}.

Table S2. Response equations of the o-CDs, r-CD1s, and r-CD2s for KIO₄

Samples	Linear equation	R
o-CDs	$y = 1.31 \times 10^7 x + 1$	0.994
r-CD1s	$y = 1.05 \times 10^8 x + 1$	0.988
r-CD2s	$y = 2.75 \times 10^8 x + 1$	0.999

Reference

- S1. Q. L. Wang, H. Z. Zheng, Y. J. Long, L. Y. Zhang, M. Gao, W. J. Bai, Microwave-hydrothermal synthesis of fluorescent carbon dots from graphite oxide. *Carbon*, 2011, 49, 3134-3140.
- S2. X. J. Mao, H. Z. Zheng, Y. J. Long, J. Du, J. Y. Hao, L. L. Wang, D. B. Zhou, Study on the fluorescence characteristics of carbon dots. *Spectrochim. Acta A*, 2010, 75, 553-557.