

# Supporting Information

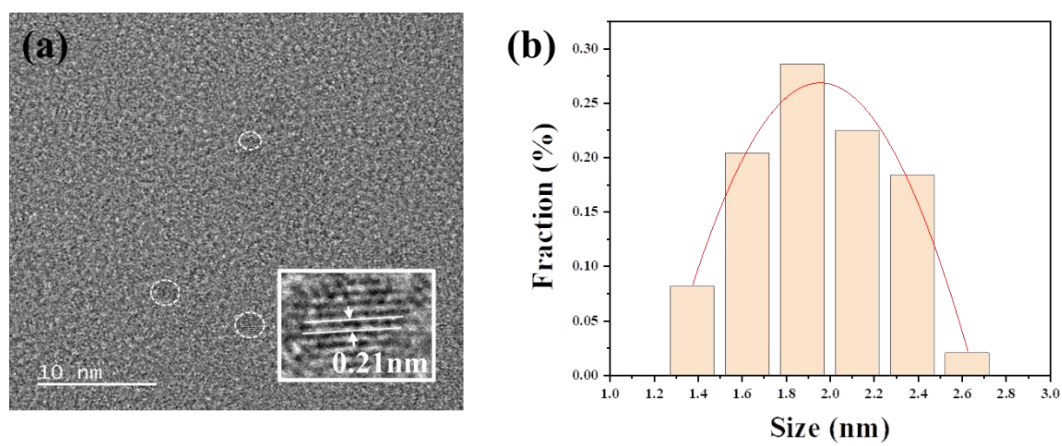
## Preparation of carbon dots@r-GO nanocomposite with an enhanced pseudo-capacitance

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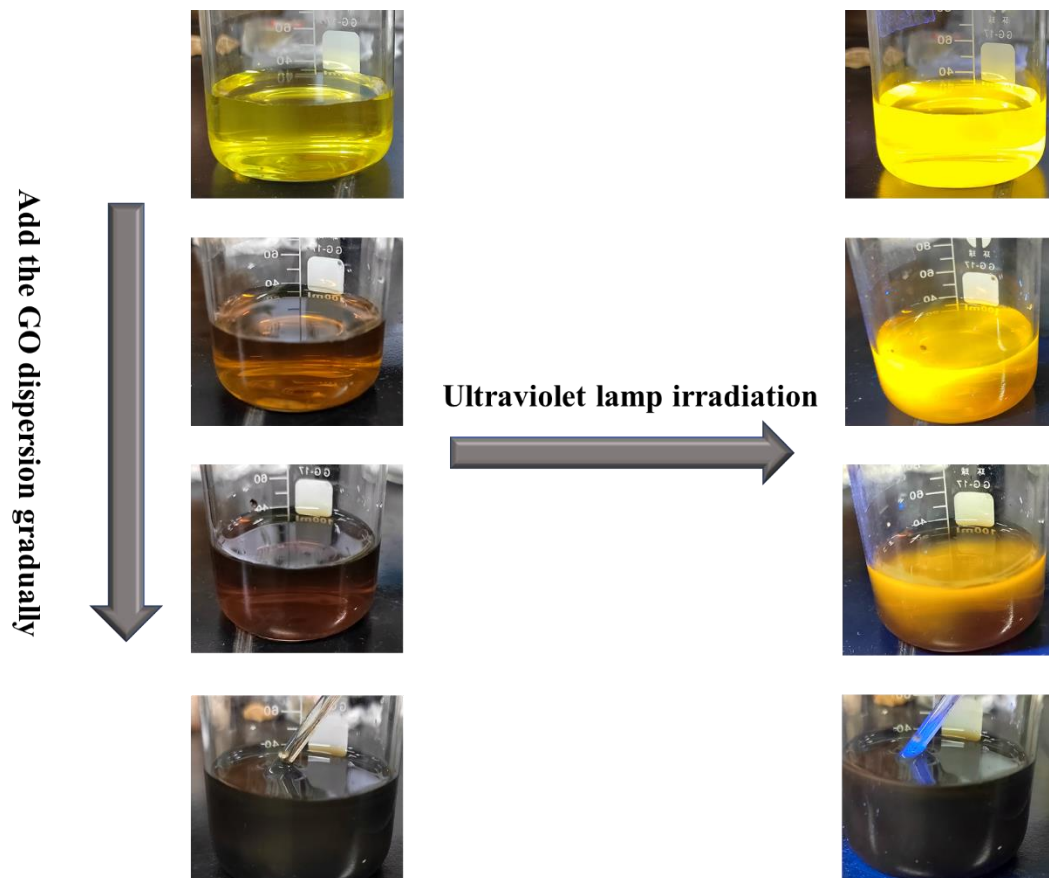
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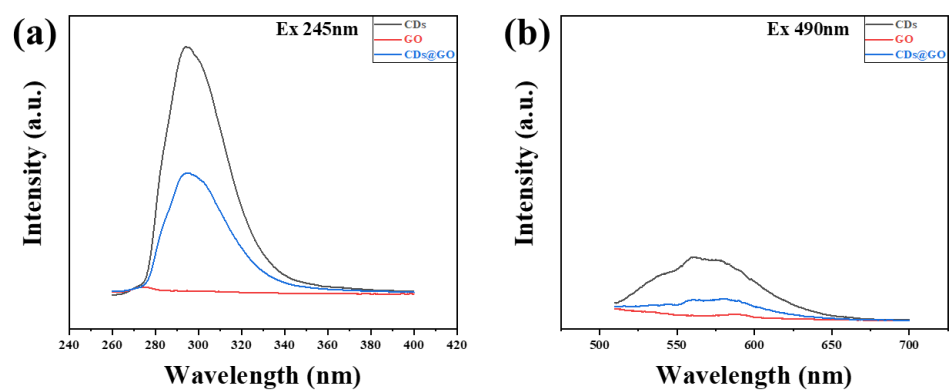
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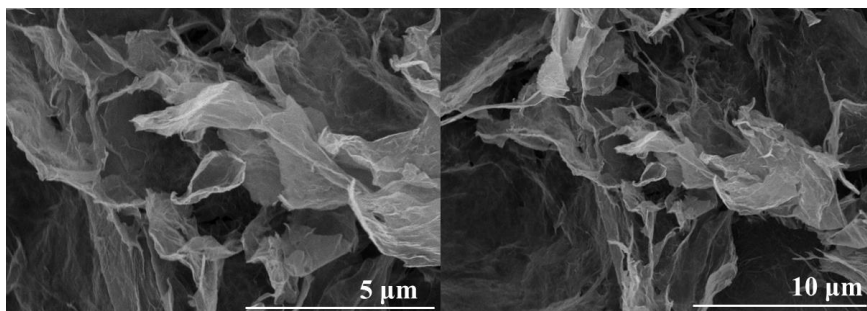
**Figure S1.** (a) High resolution TEM image and (b) the size distribution of CDs.



**Figure S2.** Photos of the solution containing the CDs under UV irradiation when gradually adding GO into the solution.



**Figure S3.** PL spectra of the CDs, GO and CDs@GO at the excitation wavelength of (a) 245 nm and (b) 490 nm.



**Figure S4.** Scanning electron microscope (SEM) images of r-GO obtained by sodium ascorbate reduction method.

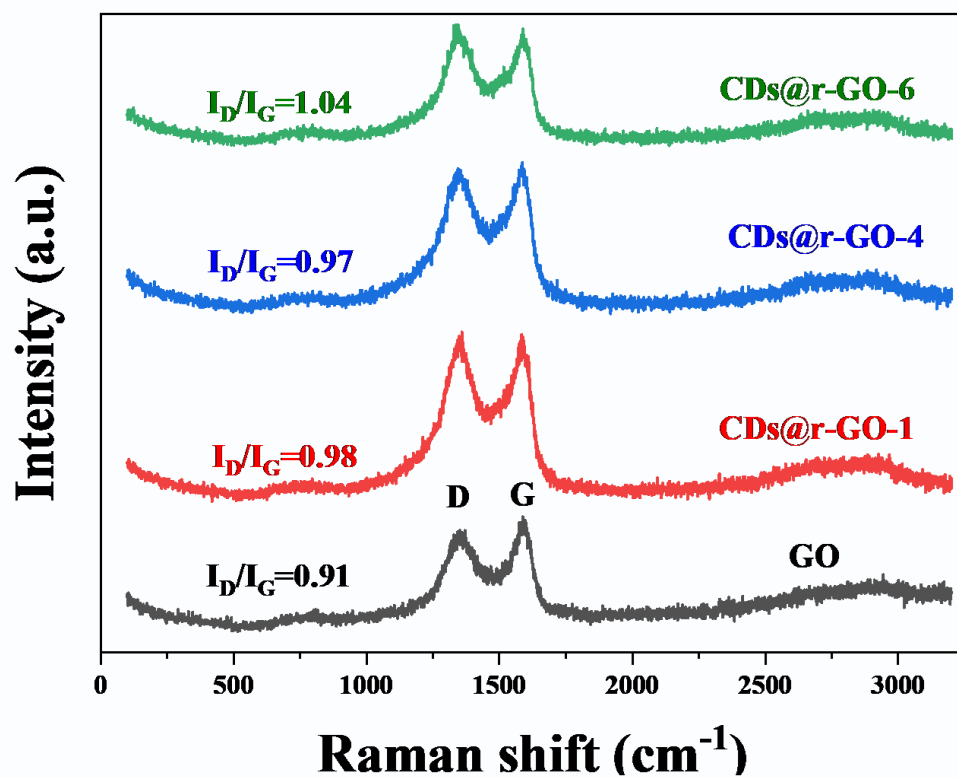
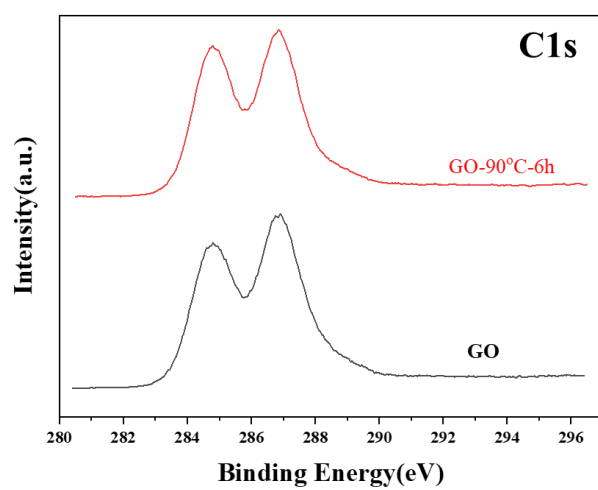
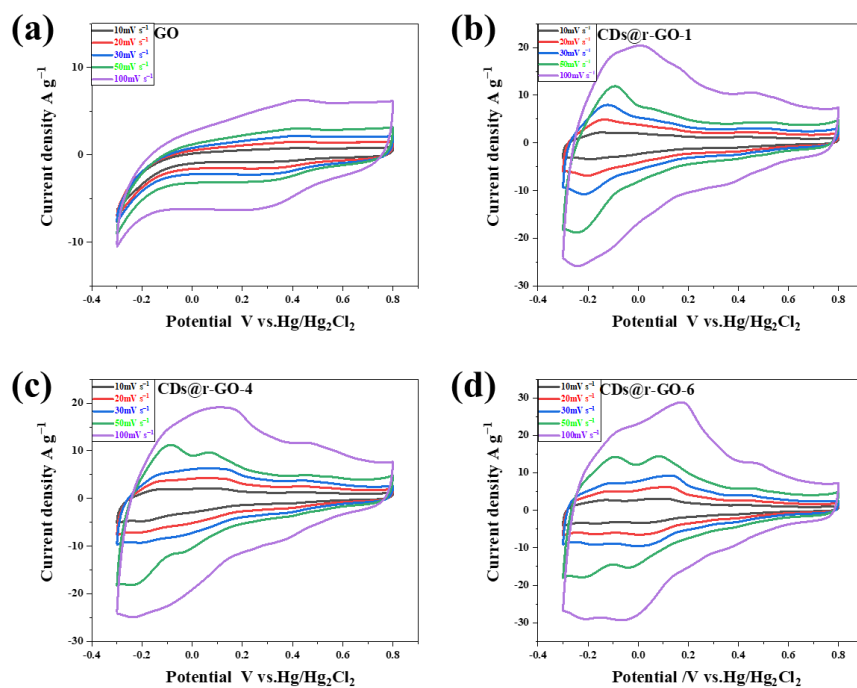


Figure S5. The Raman spectra of GO, CDs@r-GO-1, CDs@r-GO-4 and CDs@r-GO-6.

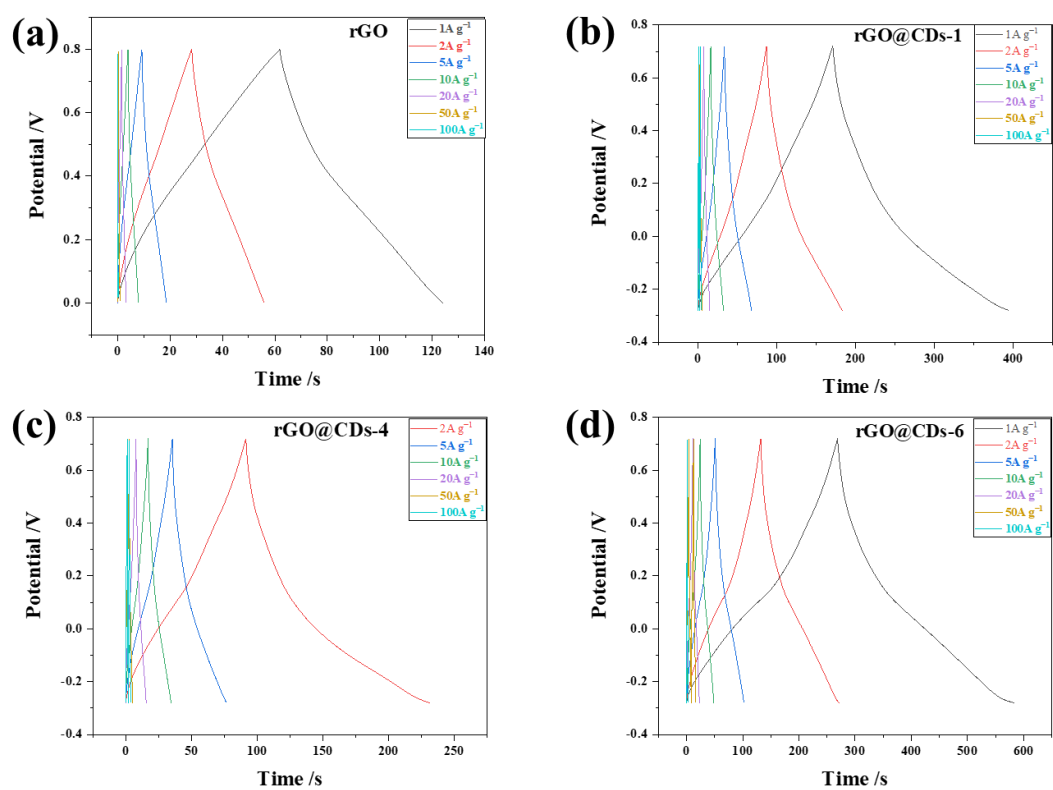


**Figure S6.** XPS C1s spectra of the GO and GO-90°C-6h.

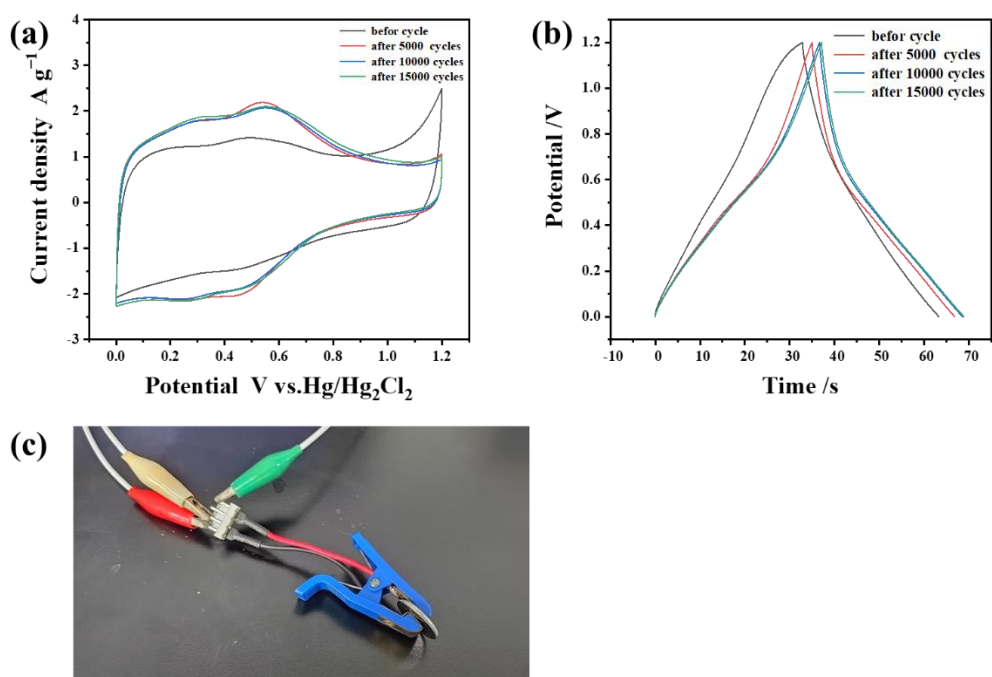


**Figure S7.** Cyclic voltammetry curves of (a) r-GO, (b) CDs@r-GO-1, (c) CDs@r-GO-4 and (d) CDs@r-GO-6 in 1 M H<sub>2</sub>SO<sub>4</sub> electrolyte with scan rates ranging from 10 to 100 mV s<sup>-1</sup>.





**Figure S8.** Constant current charge and discharge curve of (a) r-GO, (b) CDs@r-GO-1, (c) CDs@r-GO-4, and (d) CDs@r-GO-6 at current density of 1-100A g<sup>-1</sup>.



**Figure S9.** (a) Cyclic voltammetry curve of the device at a scan rate of  $50 \text{ mV s}^{-1}$ . (b) Constant current charge and discharge curve of the device at current density of  $1 \text{ A g}^{-1}$ . (c) The photo of the device fabricated.

**Table S1.** Elemental contents obtained by XPS test

Samples	C (wt.%)	O (wt.%)	N (wt.%)
GO	72.3	24.4	2.6
GO-90°C-6h	72.9	23.6	3.5
CDs	46.0	29.5	14.5

**Table S2.** Comparison with data of electrode materials in the literature

Electrode material	Electrolyte	Current density (A/g)	Specific capacitance (F/g)	Rate capability
3D-graphene hydrogel	1M H <sub>2</sub> SO <sub>4</sub>	1.0	186.0	(1-20 A/g) 70%
Graphene hydrogel	1M Na <sub>2</sub> SO <sub>4</sub>	1.0	157.7	(1-10 A/g) 58.3%
AAQ (2-Aminoanthraquinone) modified SGH (self-assembled graphene hydrogel)	1M H <sub>2</sub> SO <sub>4</sub>	0.3	258.0	(0.3-90 A/g) 58.13%
Nitrogen and fluorine co-doped holey graphene hydrogel	6M KOH	1.0	345.4	(1-100 A/g) 57.29%
Reduced graphene hydrogel	6M KOH	0.5	203.9	(1-100 A/g) 59.38%
Reduced graphene oxide hydrogel/Carbon dots	1M H <sub>2</sub> SO <sub>4</sub> -PVA	1.0	264.0	(1-10 A/g) 79.54%
Reduced graphene oxide/Carbon dots	1M H <sub>2</sub> SO <sub>4</sub>	0.2	278.0/227.0	(0.2-100 A/g) 60%
N-andS-codoped graphene hydrogel	6M KOH	1.0	320.0	(1-10 A/g) 68.75%
Graphene hydrogel-graphene quantum dots	1M H <sub>2</sub> SO <sub>4</sub>	0.5	451.7	(1-20 A/g) 59.86%
Graphene quantum dots-3D graphene	1M KOH	1.17	242.0	(1-25 A/g) 26.8%
N,O co-doped CDs-graphene hydrogel	1M H <sub>2</sub> SO <sub>4</sub>	1.0	335.1	(1-20 A/g) 67.16%

g-C <sub>3</sub> N <sub>4</sub> /graphene hydrogel nanocomposites	1M KOH- PVA	0.2	243.2	None
<b>This work</b>	1M H <sub>2</sub> SO <sub>4</sub>	1.0	290.0	(1-100 A/g) 78.94%

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