

## Supporting Information

### Flexible, Strong, Multifunctional Graphene Oxide/Silica-based Composite Aerogels via a Double-Crosslinked Network Approach

Zheng Zheng<sup>†</sup>, Yongliang Zhao<sup>‡</sup>, Jianhua Hu<sup>\*,†</sup>, and Haitao Wang<sup>\*,†</sup>

<sup>†</sup> State Key Laboratory of Molecular Engineering of Polymers, Department of  
Macromolecular Science, Fudan University, Shanghai 200433, China

<sup>‡</sup>Shanghai Dilato Materials Co., Ltd, Shanghai 200433, China

\* Corresponding authors.

E-mail: [hujh@fudan.edu.cn](mailto:hujh@fudan.edu.cn) (J. Hu), [wanght@fudan.edu.cn](mailto:wanght@fudan.edu.cn) (H. Wang).

**Table S1** Recipes for preparation of GO/silica-based composite aerogels<sup>a</sup>

<b>run</b>	<b>mGO<sup>b</sup> (mL)</b>	<b>mass ratio of GPTMS to GO</b>	<b>GO content<sup>d</sup> (wt%)</b>
1	0	/	0
2 <sup>c</sup>	6	0	0.5
3	6	0.05	0.5
4	6	0.10	0.5
5	6	0.15	0.5
6	6	0.20	0.5
7	3	0.05	0.25
8	3	0.10	0.25
9	3	0.15	0.25
10	3	0.20	0.25
11	9	0.05	0.75
12	9	0.10	0.75
13	9	0.15	0.75
14	9	0.20	0.75
15	12	0.05	1.0
16	12	0.10	1.0
17	12	0.15	1.0
18	12	0.20	1.0

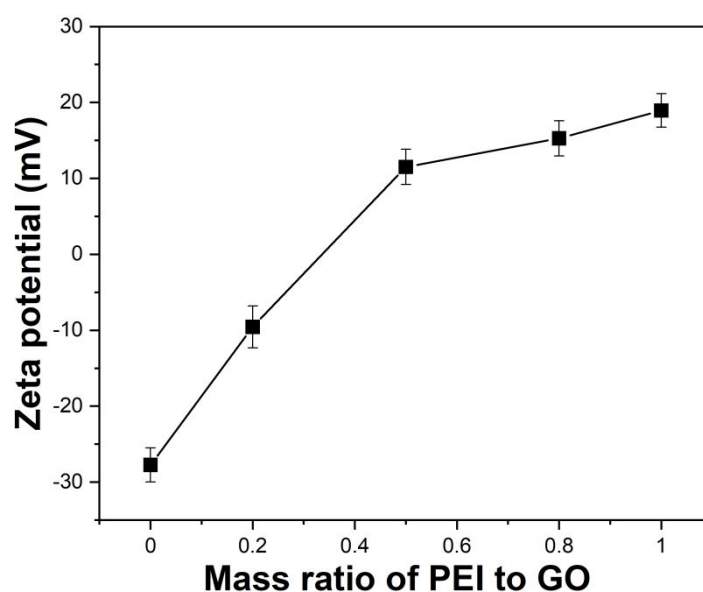
a: Mass ratio of L-ascorbic acid to GO is 1.0 and the volume of HAc (1 M) is 0.15 mL.

Unless stated otherwise, the amount of CTAC, urea, MTMS and DMDMS is kept to 0.3 g, 9.0 g, 6.6 g and 4.4 g, respectively. The total volume of the reaction mixture is kept to 48 mL.

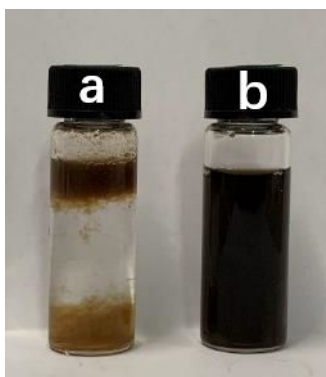
b: GO concentration is 5 mg/mL and the mass ratio of PEI to GO is 1.0.

c: The amount of CTAC is 0.8 g in sample 2.

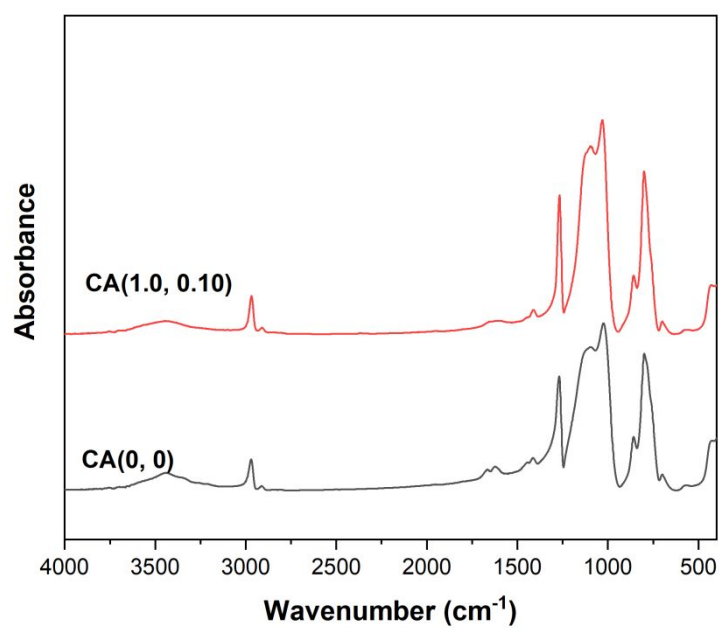
d: GO contents in composite aerogels are calculated according to the complete hydrolysis and condensation of MTMS and DMDMS.



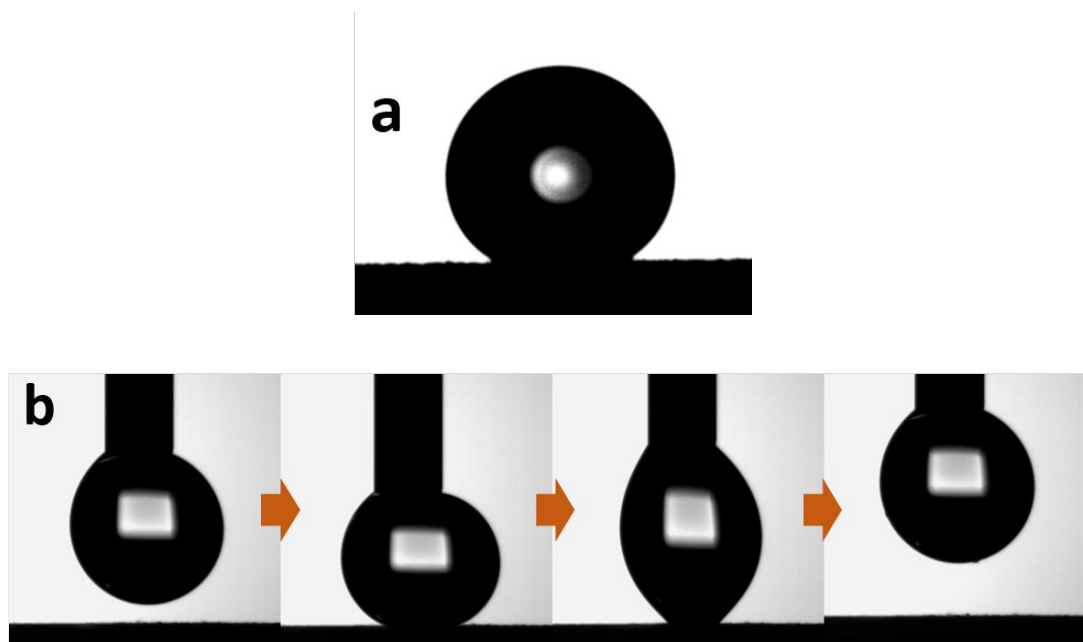
**Figure S1.** Zeta potential of GO aqueous dispersions with different mass ratio of PEI to GO.



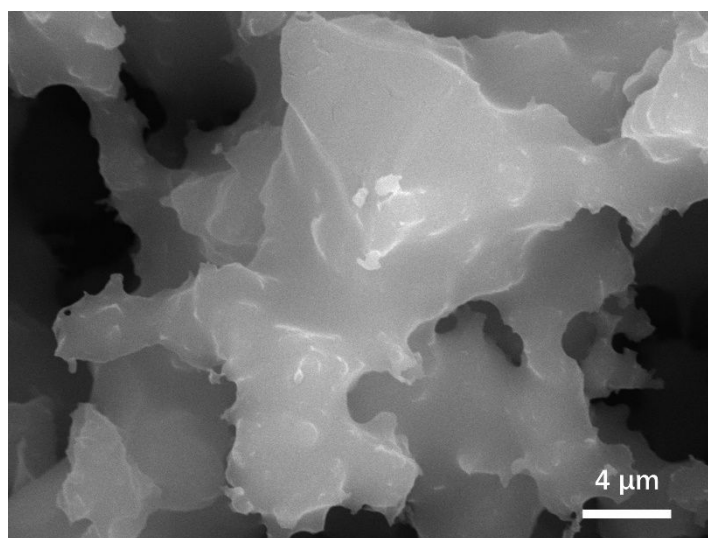
**Figure S2.** Photos of (a) GO and (b) GO-PEI-GPTMS (0.2) dispersed in CTAC and siloxane aqueous solutions.



**Figure S3.** FT-IR spectra of CA (0, 0) and CA (1.0, 0.10). In CA (x, y), x represents the mass percentage of GO in composite aerogels, and y is the mass ratio of GPTMS to GO.



**Figure S4.** Photos of (a) water contacting angle and (b) the dynamic water adhesion on the surface of CA (0.50, 0.10) with the mass percentage of GO in the composite aerogel of 0.5 % and the mass ratio of GPTMS to GO of 0.10.



**Figure S5.** SEM image of CA(1.0, 0.10) with the mass percentage of GO in the composite aerogel of 1.0 % and the mass ratio of GPTMS to GO of 0.10.