

## Electronic Supplementary Information (ESI)

# In-situ Synthesis of GeO<sub>2</sub>/Reduced Graphene Oxide Composite on Ni foam Substrate as a Binder-Free Anode for High-Capacity Lithium-Ion Batteries

Heyuan Qiu,<sup>a, b</sup> Lingxing Zeng,<sup>a, b</sup> Tongbin Lan,<sup>a, b</sup> Xiaokun Ding,<sup>b</sup> and Mingdeng Wei<sup>\*a, b</sup>

<sup>a</sup> State Key Laboratory of Photocatalysis on Energy and Environment, Fuzhou University, Fuzhou, Fujian 350002, China

<sup>b</sup> Institute of Advanced Energy Materials, Fuzhou University, Fuzhou, Fujian 350002, China

\*Corresponding author: Mingdeng Wei  
Tel./fax: +86-591-83753180  
E-mail address: [wei-mingdeng@fzu.edu.cn](mailto:wei-mingdeng@fzu.edu.cn)

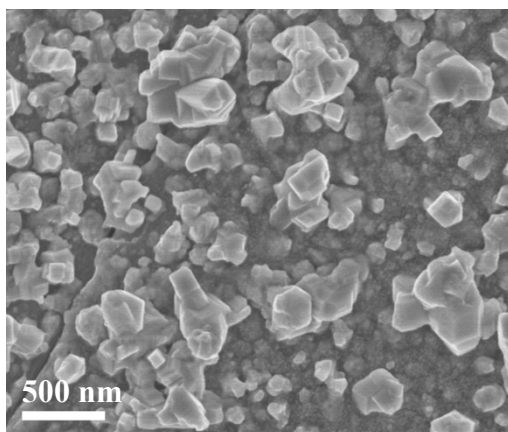


Fig. S1 SEM image of GeO<sub>2</sub> particles deposited on Ni foams in absence of RGO.

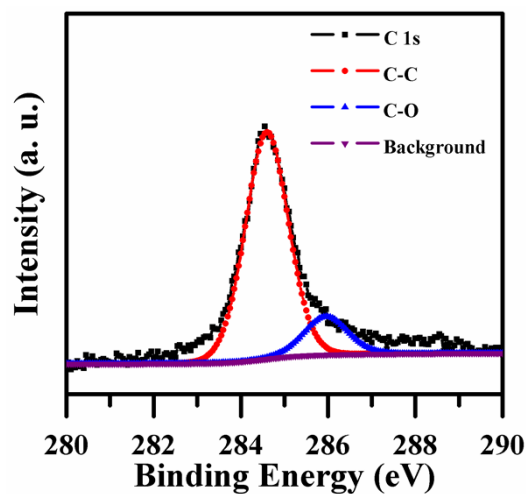


Fig. S2 XPS spectrum of C 1s for the GeO<sub>2</sub>/RGO composite.

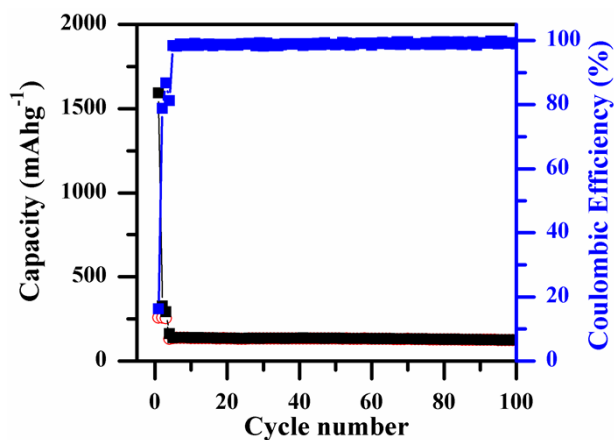


Fig. S3 Cycling performance together with Coulombic efficiency for the GeO<sub>2</sub> electrode at 0.2 A g<sup>-1</sup> in the initial three cycles and then 1 A g<sup>-1</sup> for subsequent cycles.

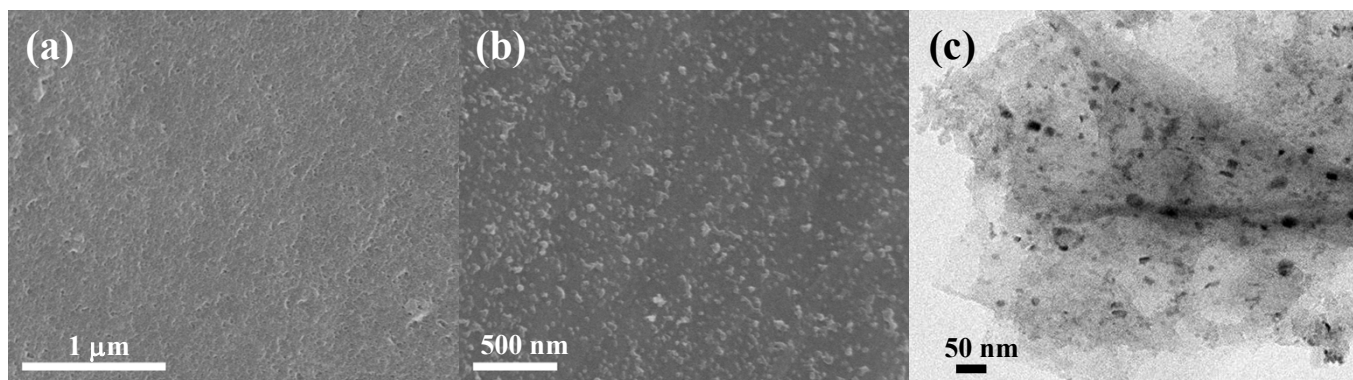


Fig. S4 (a) SEM image of the formed SEI layer, (b) SEM and (c) TEM images of the GeO<sub>2</sub>/RGO electrode with a cleaned SEI layer after cycling at 8 A g<sup>-1</sup>.