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Supporting Information

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A Biomineralization Strategy for "Net"-Like Interconnected TiO_2 Nanoparticles Conformably Covering Reduced Graphene Oxide with Reversible Interfacial Lithium Storage

*Qiang Zhang, Yong Yan, and Ge Chen**

Supporting Information

Title
Bio-mineralization Strategy toward “Net”-like Interconnected TiO_2 Nanoparticles Conformably Covering Reduced Graphene Oxide with Reversible Interfacial Lithium Storage

*Qiang Zhang, Yong Yan‡ and Ge Chen**

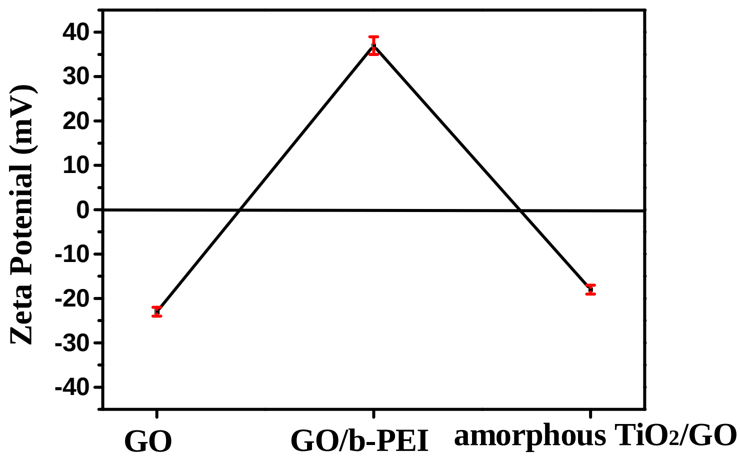


Figure S1. Zeta potentials of GO, GO/b-PEI, and amorphous TiO_2/GO composites.

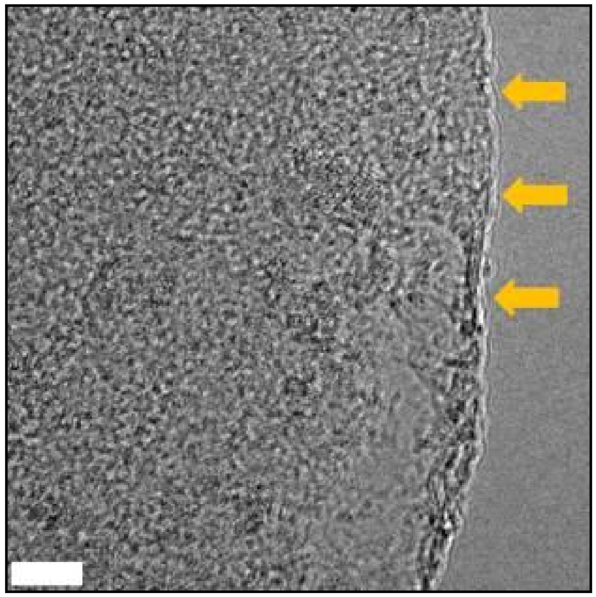


Figure S2. HRTEM image of amorphous TiO_2/GO composite; the edge of GO marked by the orange arrow indicates the ultrathin nature (3–4 layers), bar 5 nm.

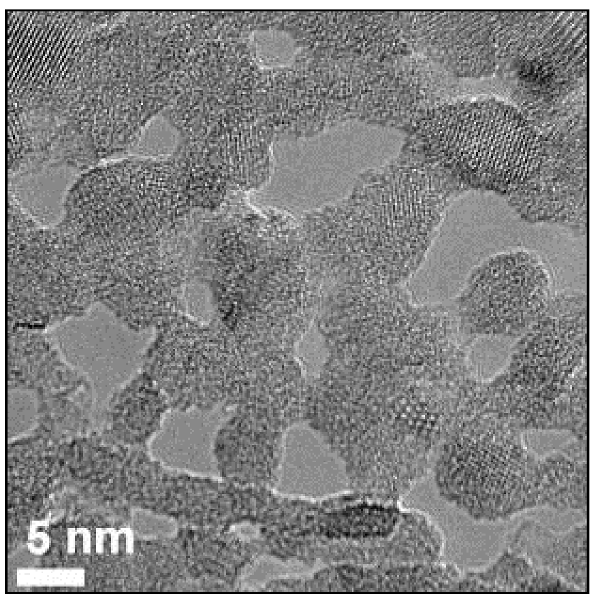


Figure S3. HRTEM image of anatase TiO_2/RGO composite, indicating the “net”-like structure of TiO_2 conformably covering RGO, bar 5 nm.

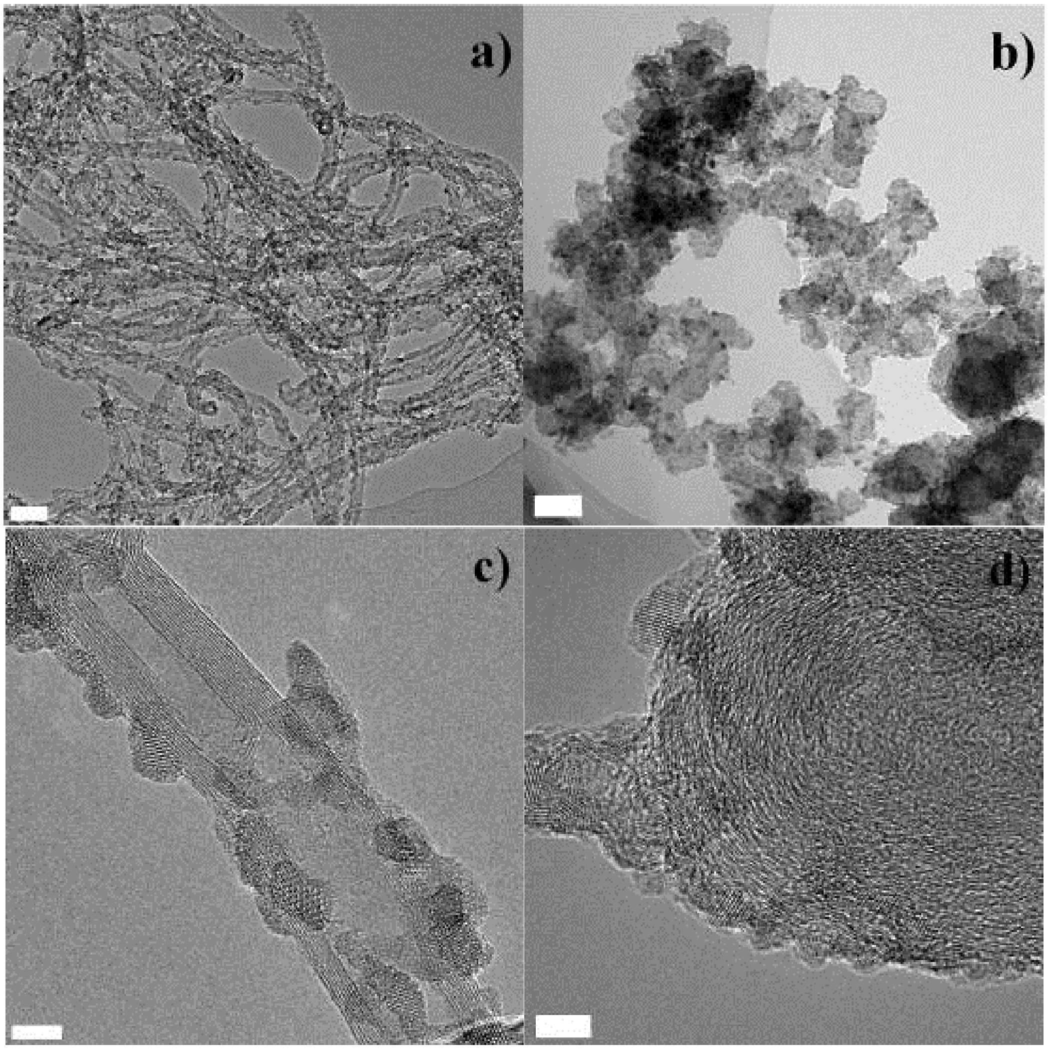


Figure S4. a) TEM image of anatase TiO_2/CNTs, bar 50 nm. b) TEM image of anatase TiO_2/carbon spheres (XC-72), bar 50 nm. c) HRTEM image of anatase TiO_2/CNTs, bar 5 nm. d) HRTEM image of anatase TiO_2/carbon spheres (XC-72), bar 5 nm.

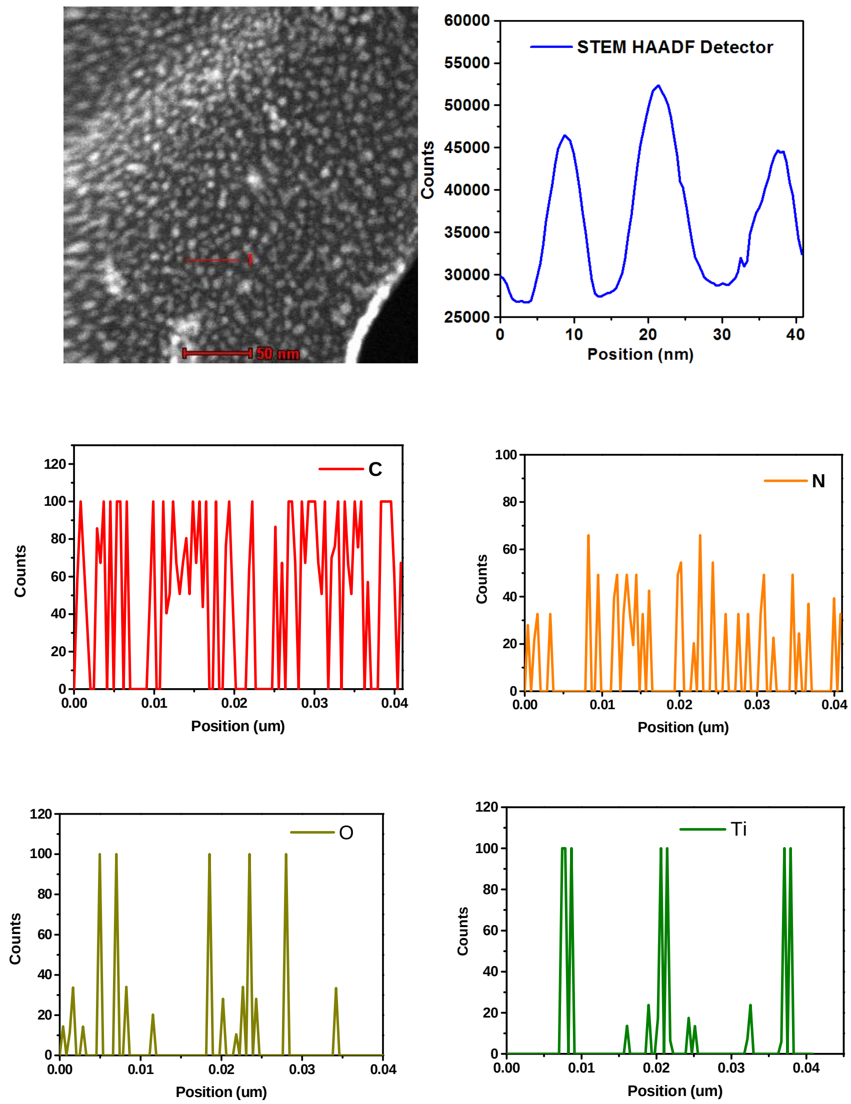


Figure S5. Energy-dispersive X-ray spectroscopy (EDS) line scan analysis based on the STEM-HADDF model demonstrating the distribution of C, N, O, and Ti species; while the Ti and O species are dispersed on the particles, the C and N species are dispersed along the line.

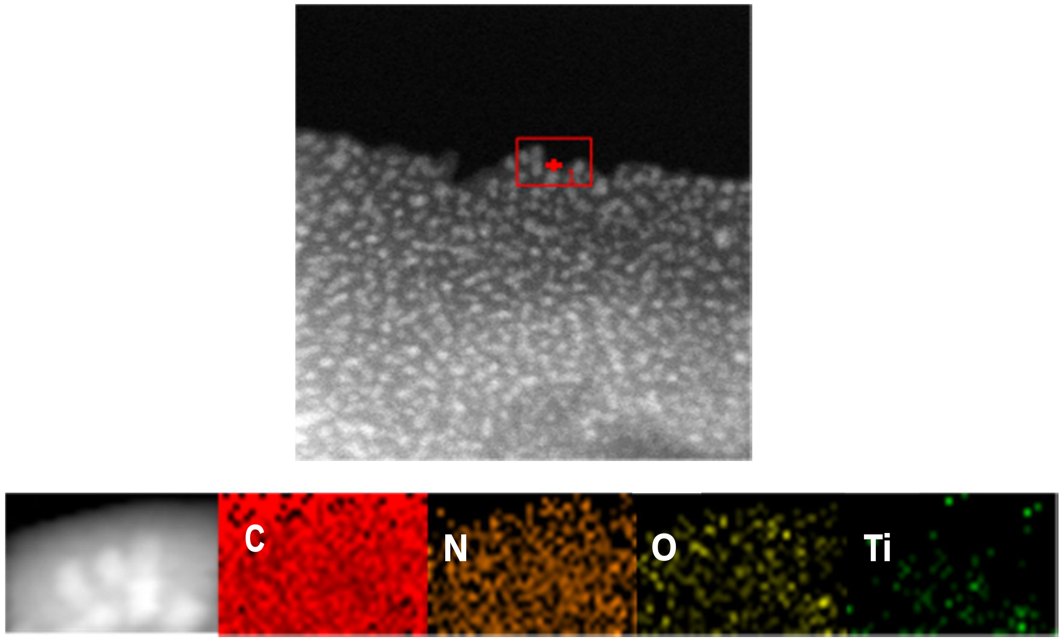


Figure S6. EDS elemental mapping of C, N, O, and Ti species for the anatase TiO_2/RGO composite.

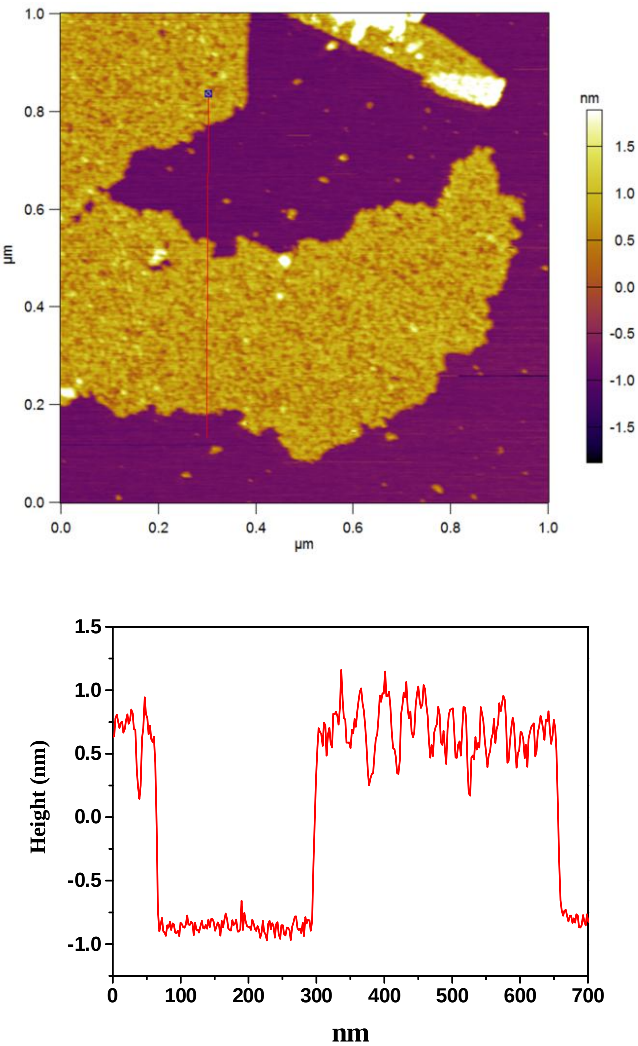


Figure S7. Topography image of GO on a mica substrate and the corresponding height-profile analysis along the line.

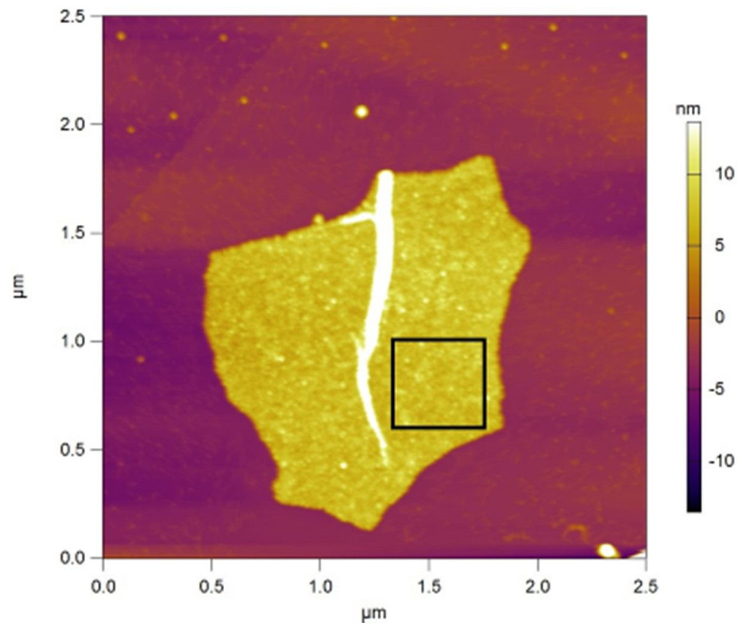


Figure S8. Topography image of anatase TiO_2/RGO on the HOPG substrate; the black square region is ready for current image collecting.

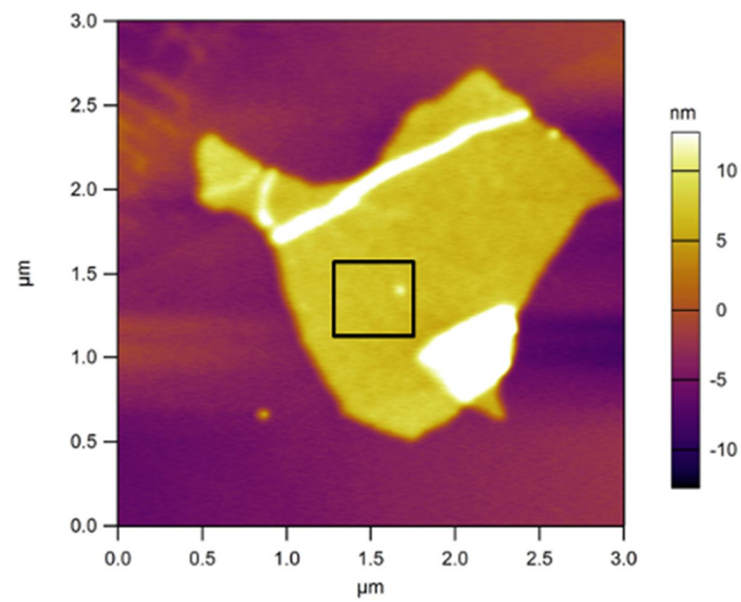


Figure S9. Topography image of amorphous TiO_2/GO on the HOPG substrate; the black square region is ready for current image collecting.

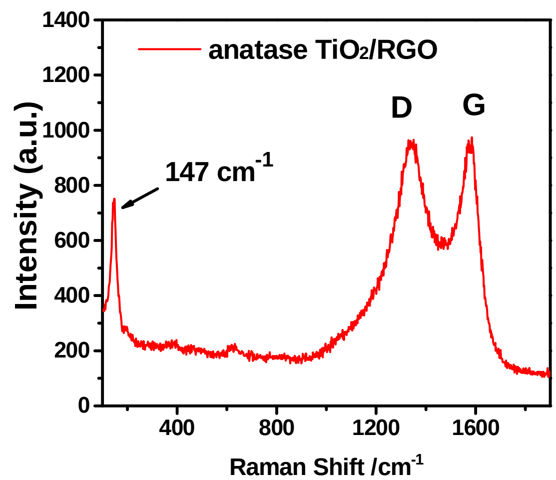


Figure S10. Raman spectrum of the anatase TiO_2/RGO composite.

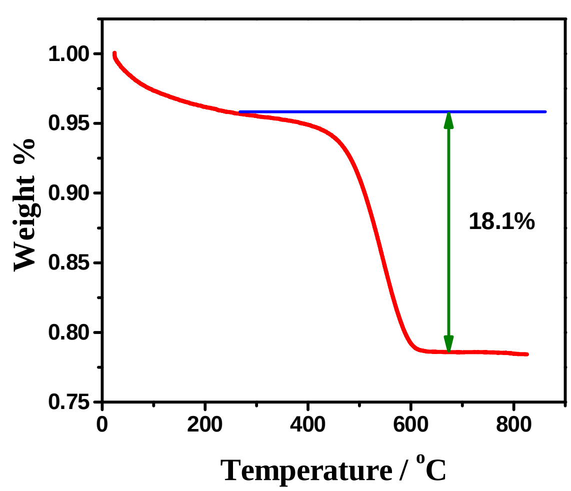
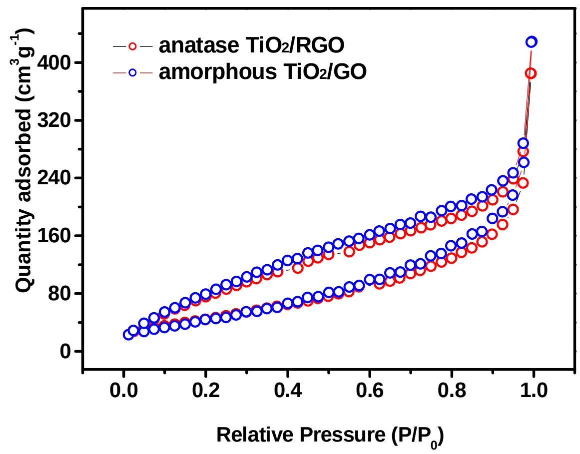


Figure S11. TGA analysis of the anatase TiO_2/RGO composite in air.



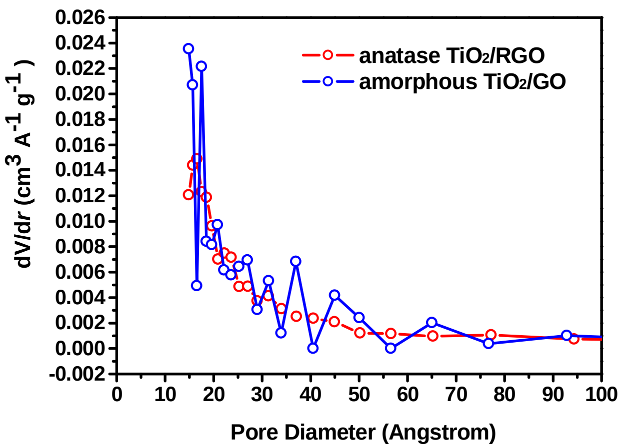


Figure S12. N_2 adsorption/desorption isotherms of amorphous TiO_2/GO and anatase TiO_2/RGO composites and corresponding pore size distribution results analyzed by the BJH method.

Table S1 Comparison of electrochemical performance of obtained anatase TiO_2/RGO with other relative anodes materials.

Materials	Discharge density	Capacity (mAh g^{-1})	Cycle numbers	Reference
Anatase TiO_2/RGO	5C	151	50	Current study
Anatase TiO_2-FGS	1C	160	100	[9]
TiO_2-RGO	5C	175	30	[11]
TiO_2-RGO	5.9C	143	35	[16]
TiO_2/GAs	5.9C	130	40	[18]
Graphene-TiO_2	5C	130	100	[10]
TiO_2-RGO	5C	152	100	[71]
TiO_2 −GNS –CNT	10C	111	100	[72]
Graphene-TiO_2-C	0.59C	95	20	[73]