

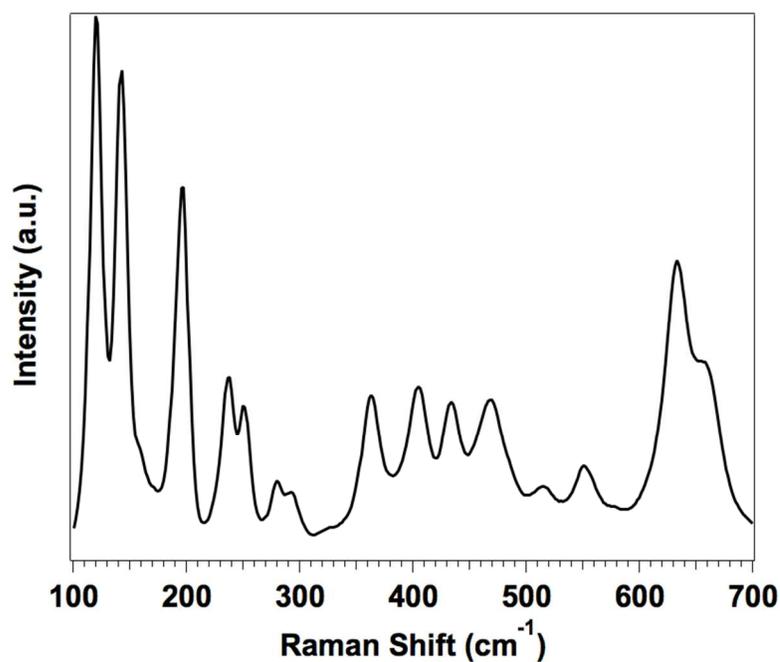
SUPPORTING INFORMATION FOR:

# Morphological Dependence of Lithium Insertion in Nanocrystalline $\text{TiO}_2(\text{B})$ Nanoparticles and Nanosheets

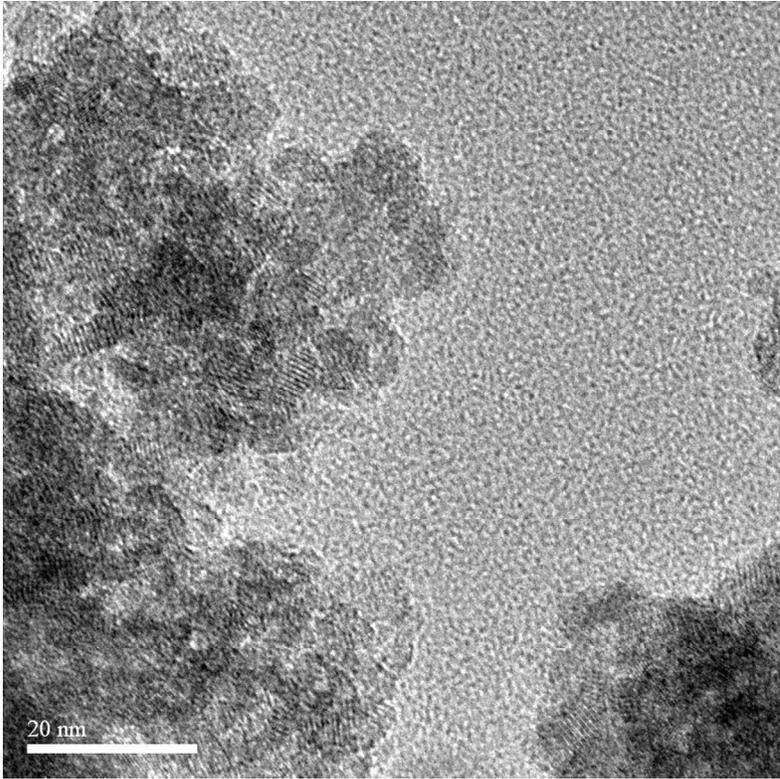
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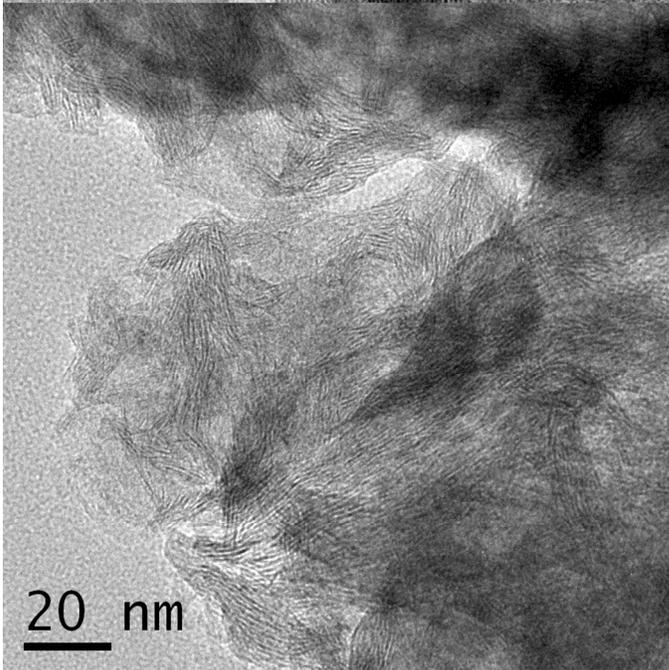
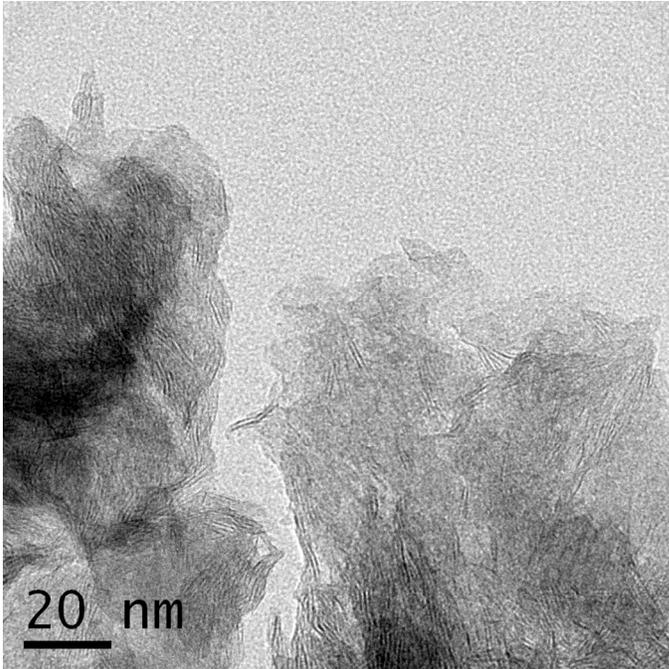
Texas, 78712, USA



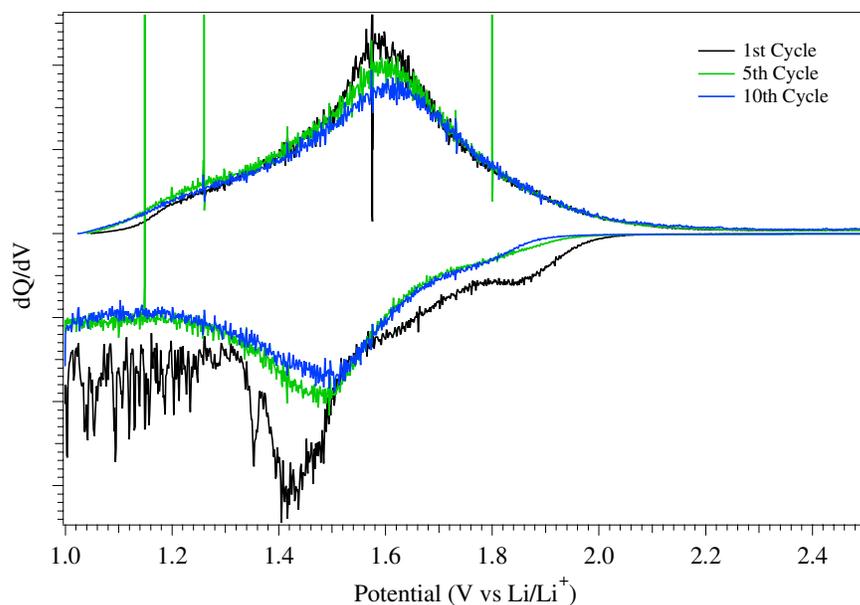
**S.I. 1.** Raman spectra of bulk  $\text{TiO}_2(\text{B})$ .



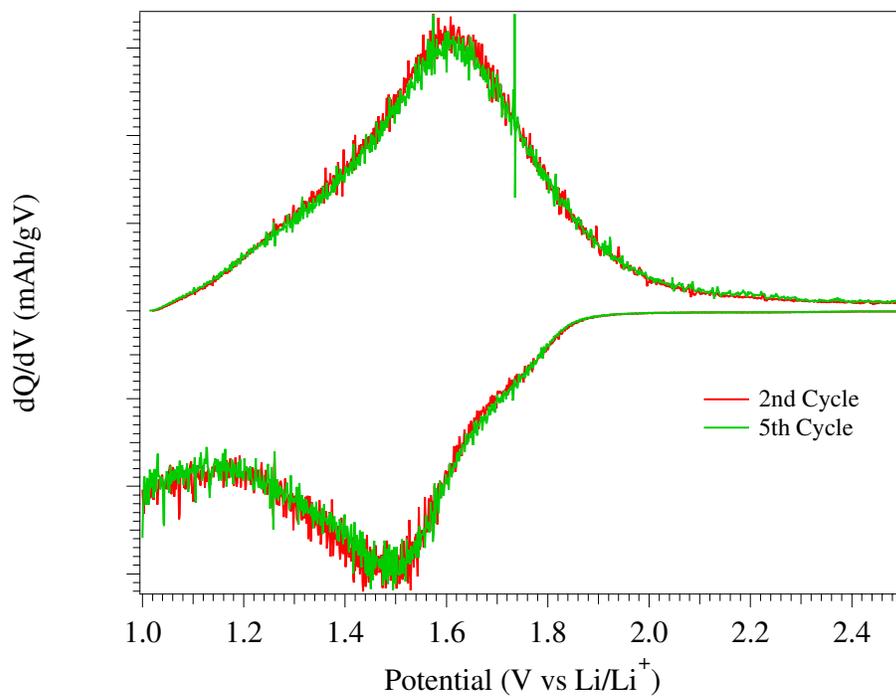
**S.I. 2.** TEM of TiO<sub>2</sub>(B) nanoparticles.



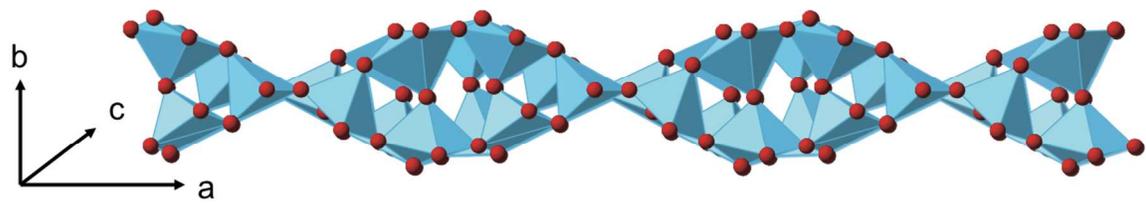
**S.I. 3.** TEM of TiO<sub>2</sub>(B) nanosheets.



**S.I. 4.** Differential capacity plots for multiple lithiation cycles of TiO<sub>2</sub>(B) nanosheets. These dQ/dV plots were derived from galvanostatic charging experiments on an independent synthesis of TiO<sub>2</sub>(B) nanosheets from that reported in the Letter and was run at a charge rate of 25 mA/g. The additional redox behavior observed upon first reduction cycle (lithiation) is likely due to surface-electrolyte interactions.



**S.I. 5.** Differential capacity plots for multiple lithiation cycles of TiO<sub>2</sub>(B) nanosheets cycled at a faster rate of 200 mA/g (~0.6 C).



**S.I. 5.** Side view of TiO<sub>2</sub>(B) NS calculated structure.

TiO <sub>2</sub> (B) structure	$a$ (Å)	$b$ (Å)	$c$ (Å)	$\beta$ (°)
Bulk (DFT+U)	12.53	3.88	6.62	107.18
Nanosheet (DFT+U)	13.60	N/A	6.28	108.35
Bulk (HSE)	12.16	3.76	6.44	107.18
Experiment	12.18	3.74	6.52	107.05

**S.I. 6.** Calculated cell parameters for TiO<sub>2</sub>(B)-NP and NS.