Supporting Information

Understanding the fast lithium storage performance of hydrogenated TiO_2 nanoparticles

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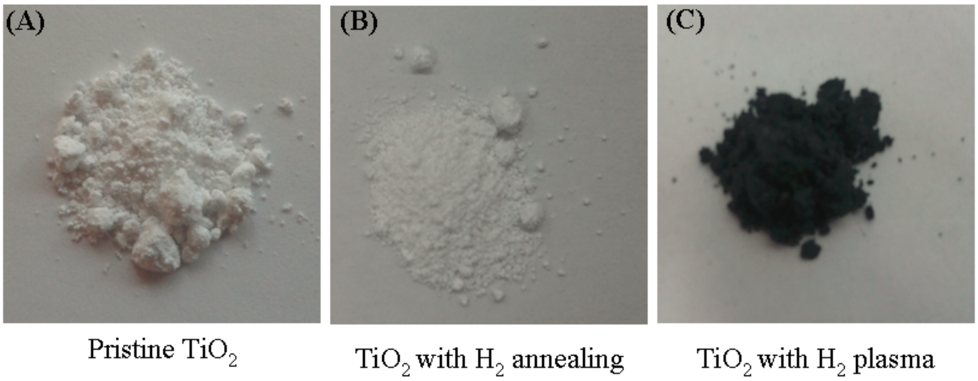


Figure S1. The photographs of TiO_2 before and after hydrogenation: (A) Pristine TiO_2. (B) TiO_2 after thermal annealing under H_2 atmosphere without plasma. (C) TiO_2 after H_2 plasma treatment.

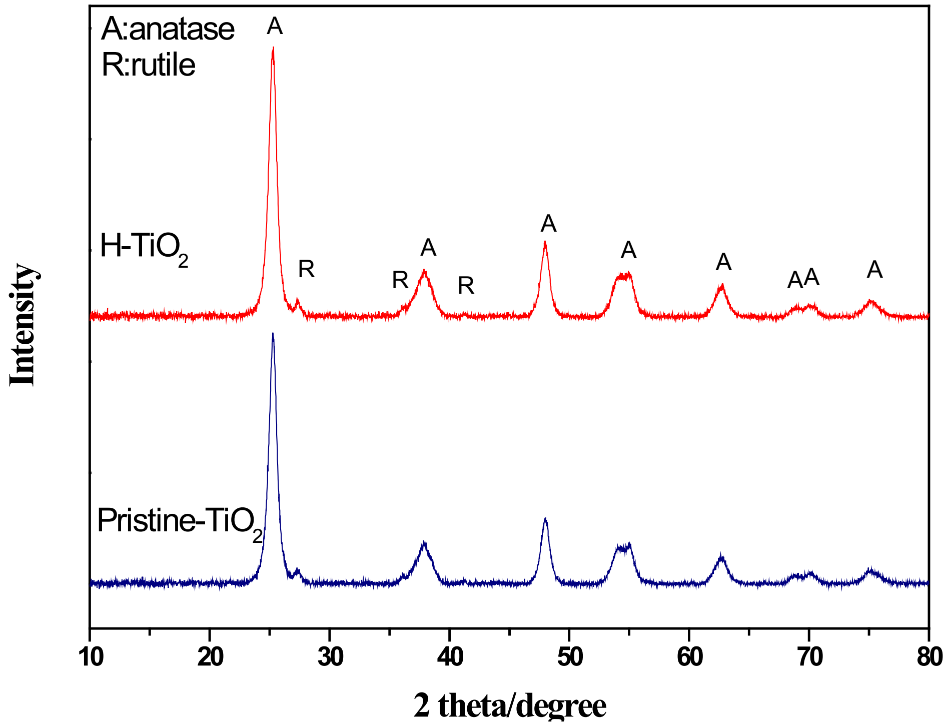


Figure S2. XRD pattern of pristine- and H-TiO_2.

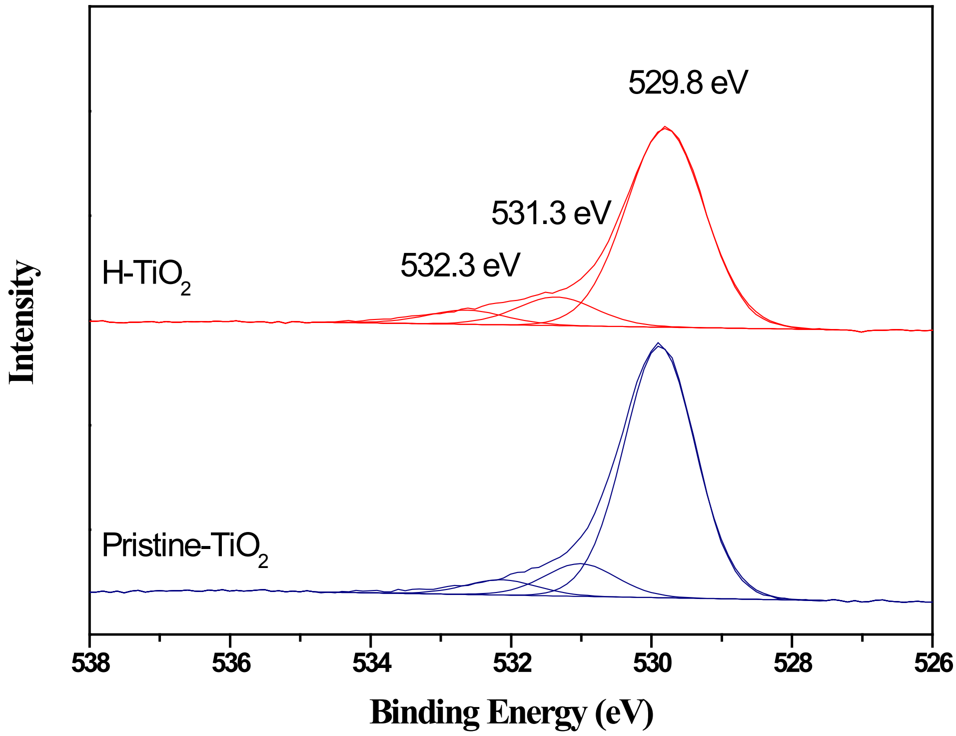


Figure S3. XPS O 1s core level spectrum of pristine- and H-TiO_2.

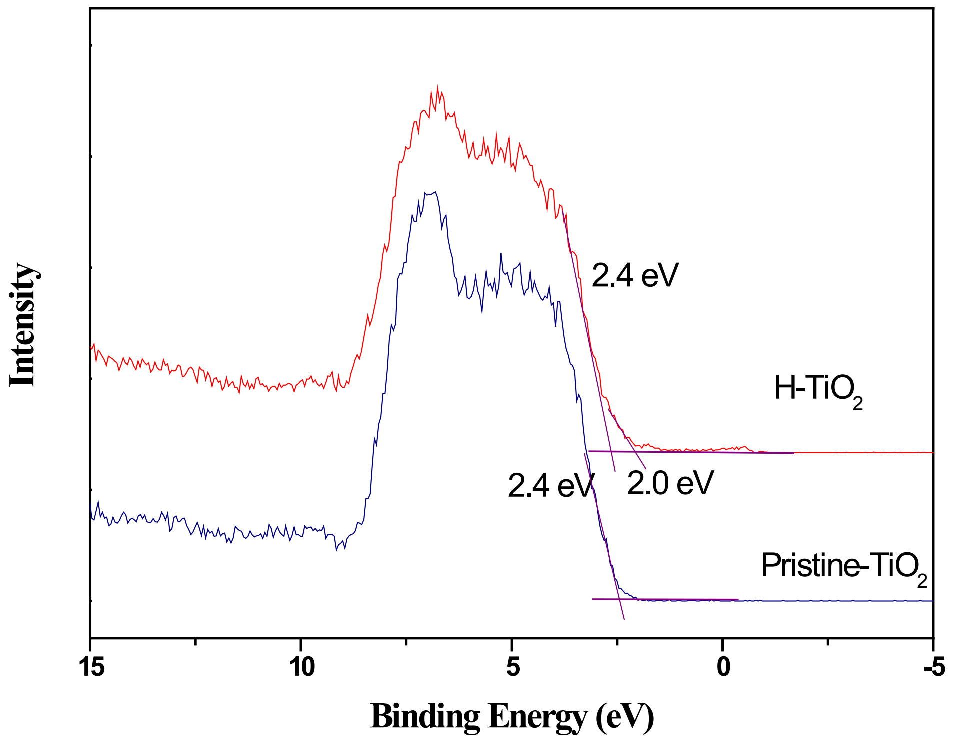


Figure S4. XPS valence band spectra of pristine- and H-TiO_2.

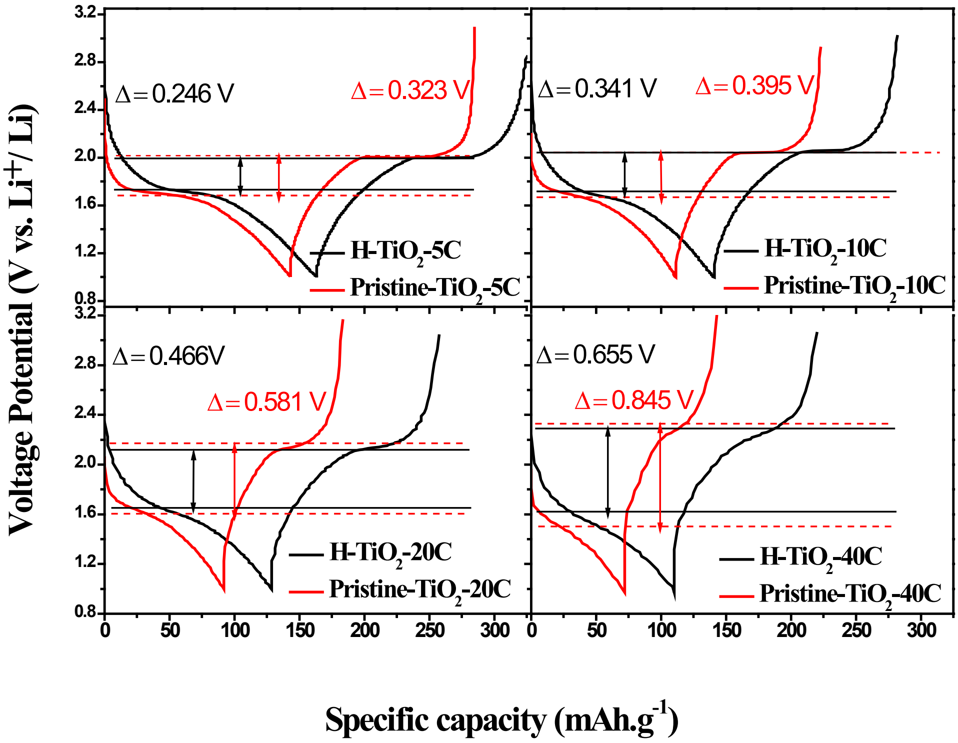
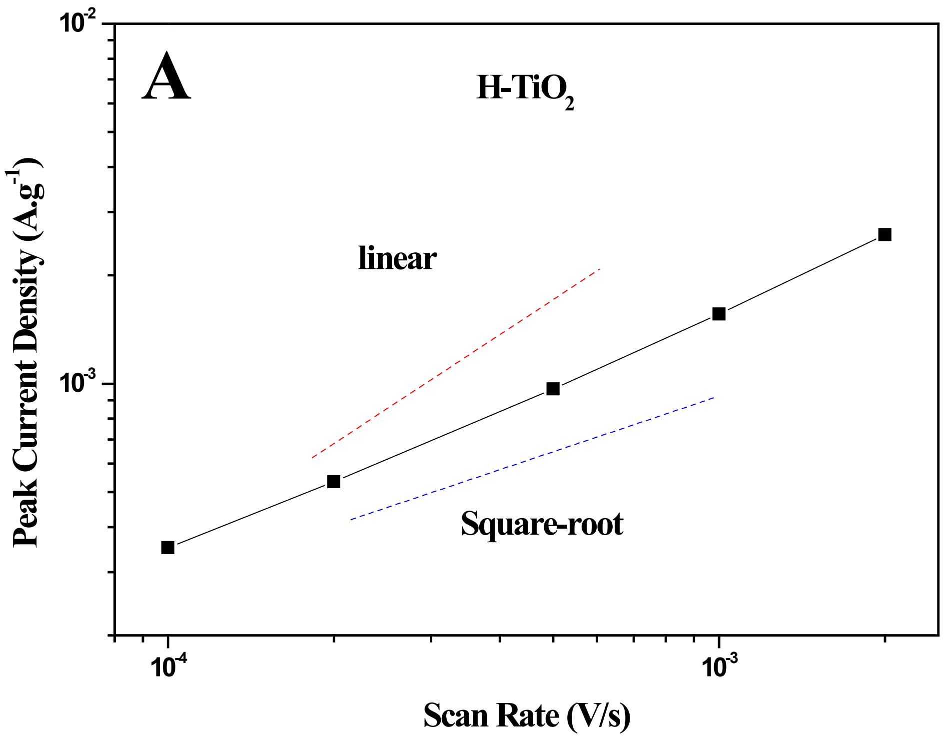


Figure S5. Polarization of ΔE versus rate plots of pristine- and H-TiO_2 electrodes.



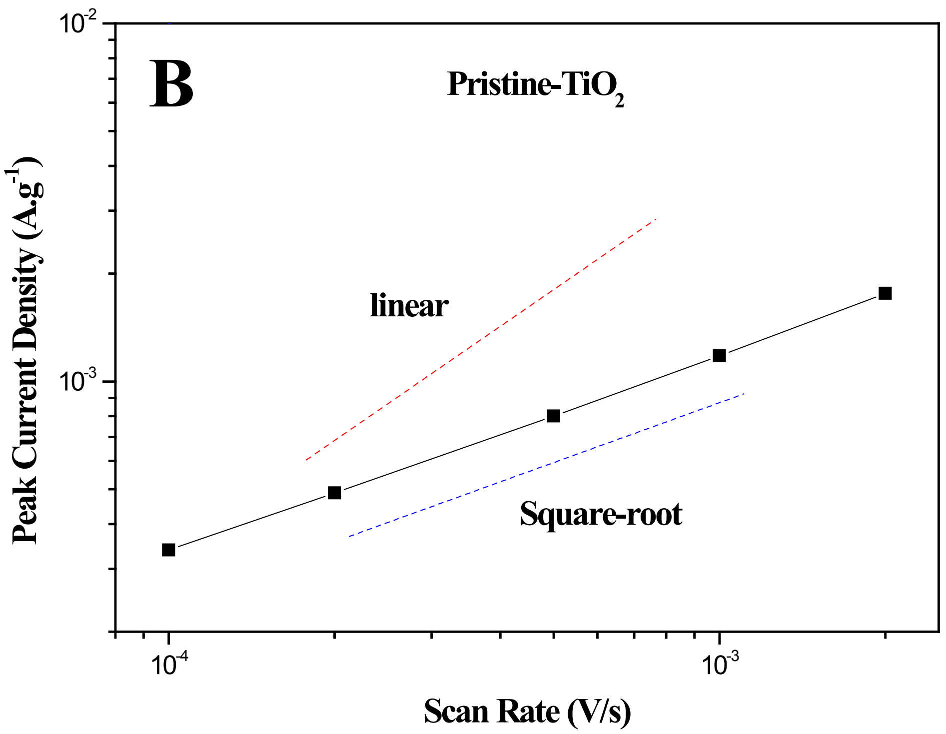
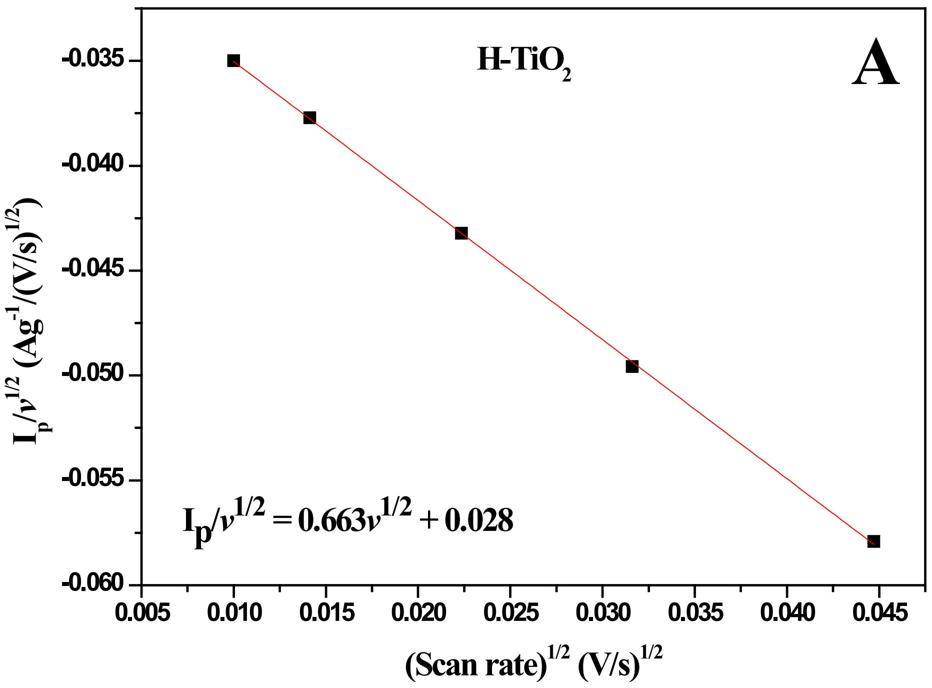


Figure S6. The peak discharge current of pristine- and H-TiO_2 electrodes measured at various scan rates. (A) H-TiO_2 electrode. (B) Pristine-TiO_2 electrode.



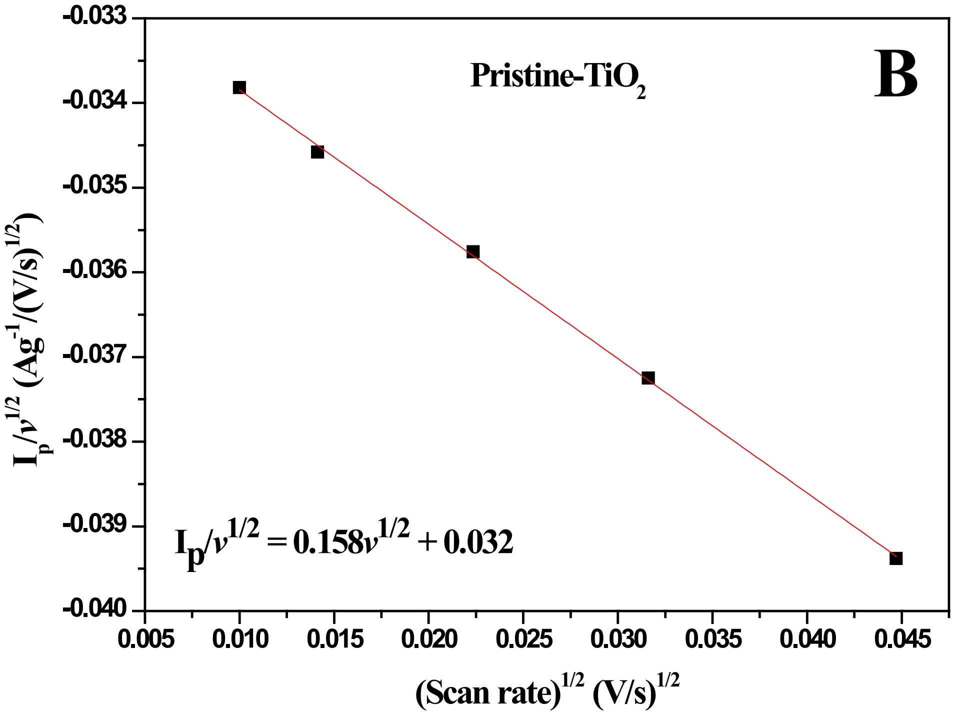


Figure S7. The calculated C_1 and C_2 for two samples using Eq. (2) that correspond to the slope and the y-axis intercept point, respectively. (A) H-TiO_2. (B) Pristine-TiO_2.