Supporting information

Silicon/Graphite/Amorphous Carbon as Anode Materials for Lithium Secondary Batteries

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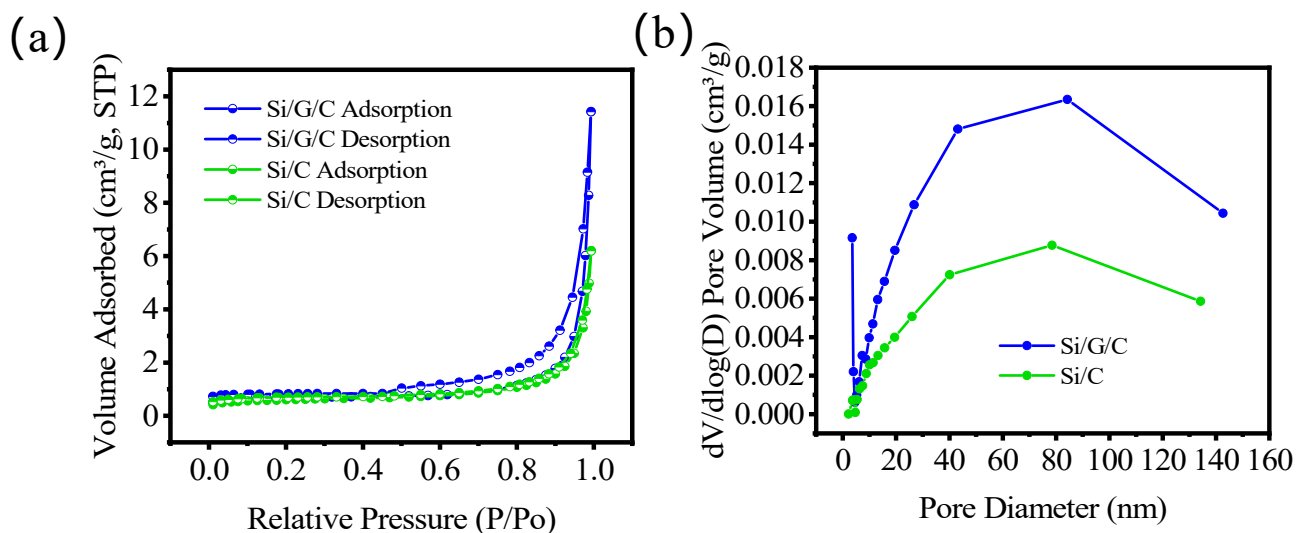
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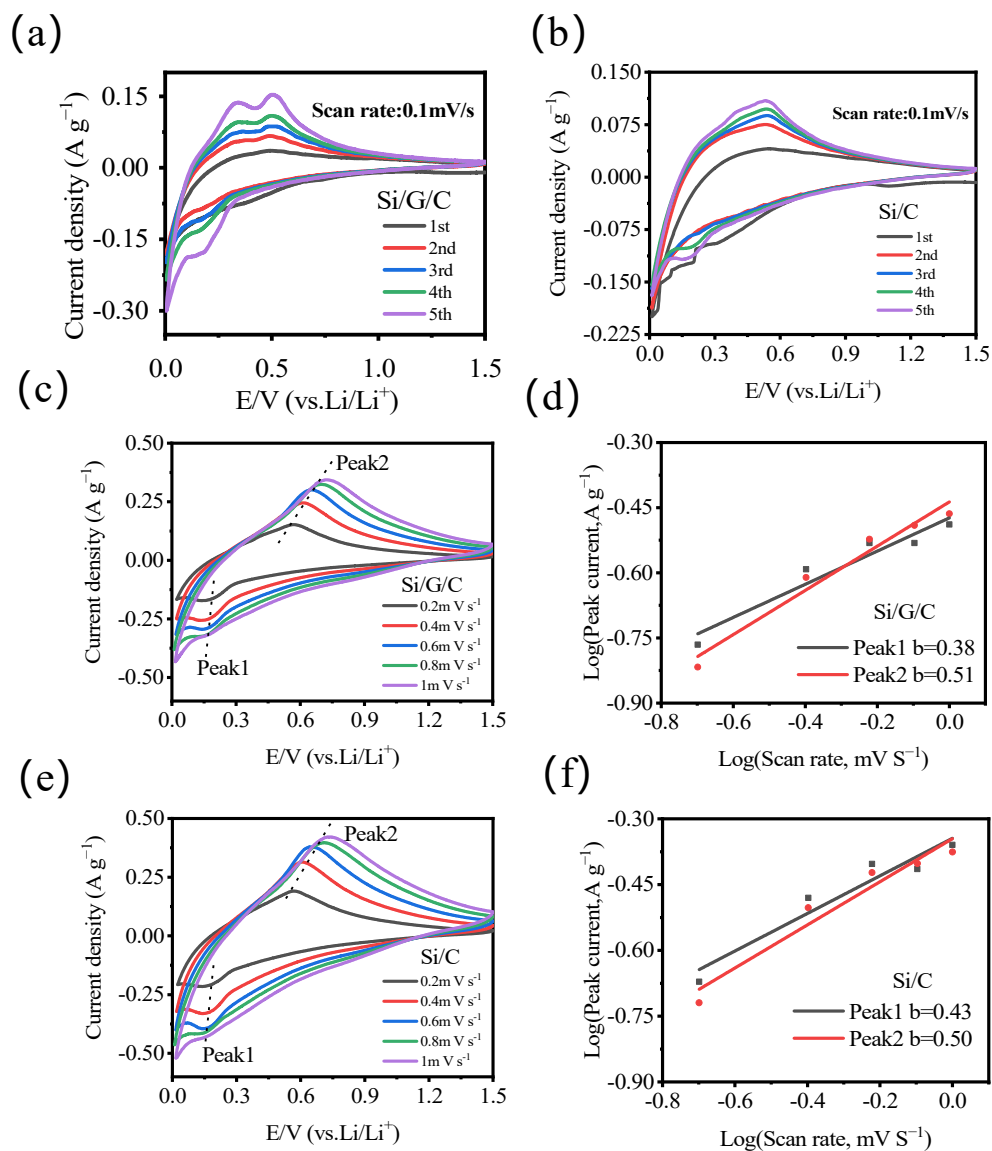**Figure S1.** (a) N_2 adsorption–desorption isotherms, and (b) pore size distribution of Si/G/C and Si/C.

Figure S2. The initial five CV curves of the (**a**) Si/G/C and (**b**) Si/C at 0.1 mV s⁻¹, (**c**, **e**) CV curves at different scan rates, (**d**, **f**) linear fitting relationship between log i and log v at different redox peaks.
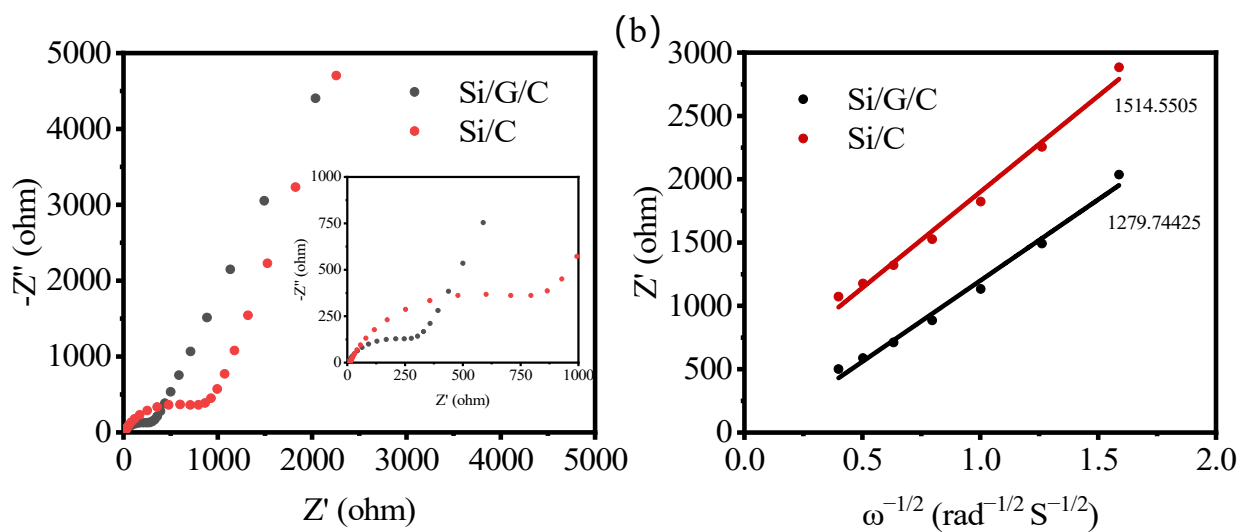

Figure S3. (**a**) electrochemical impedance spectra and (**b**) fitting Z′ and ω⁻¹/² of Si/G/C and Si/C.
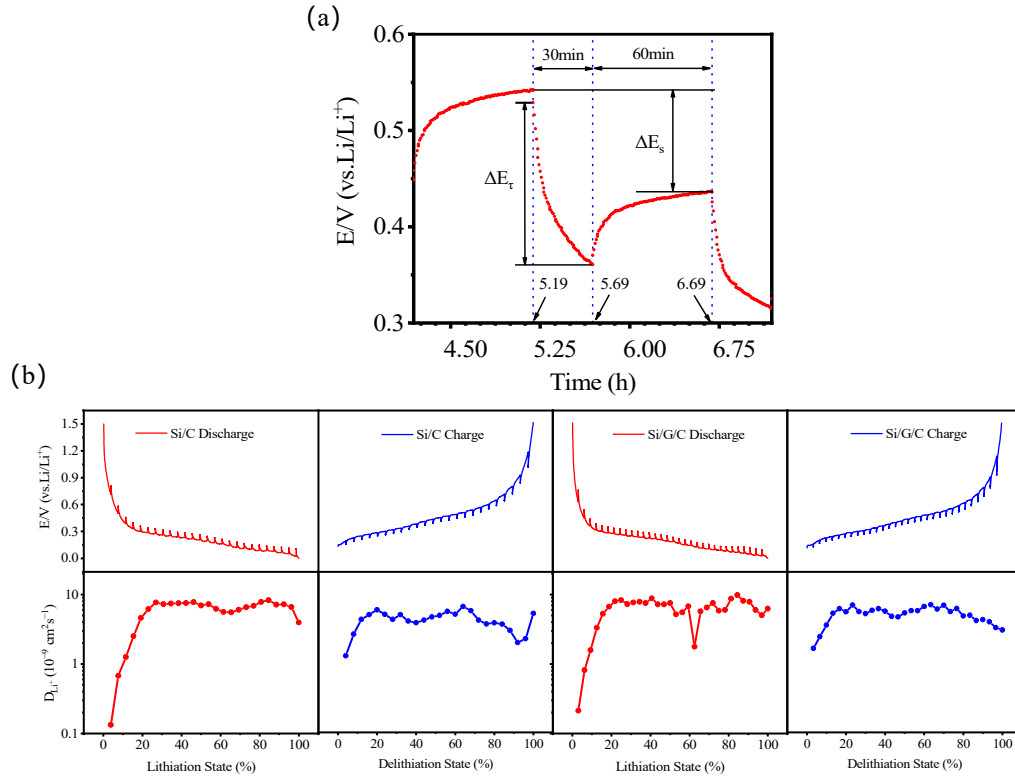
Figure S4. (a) E vs. t curves of Si/G/C electrode for a single discharge impulse and marked ΔE_s and ΔE_τ. (b) GITT curves and corresponding Li+ diffusion coefficient at different lithiation/delithiation states of the Si/G/C and Si/C electrodes.

The lithium-ion diffusion coefficient was measured by GITT with a pulse current of 0.1 A g^{-1} for a pulse time of 30 min between 1 h rest intervals (Figure S4a) and calculated by Equation: $D = \frac{4L^2}{\pi\tau}(\frac{\Delta E_S}{\Delta E_\tau})^2$, where t is the duration of the imposed current pulse (s), τ represents the relaxation time (s), and ΔEs means the steady-state potential change (V) caused by the imposed current pulse. ΔEτ is the potential change (V) during the constant current pulse after eliminating the iR drop. L is lithium-ion diffusion distance (cm); here is approximately equal to the thickness of the electrode material.