Supporting Information

Thermally-Etched N-doped Porous Layered Silicon Anode for Improved Cycling Stability of Lithium-Ion Batteries

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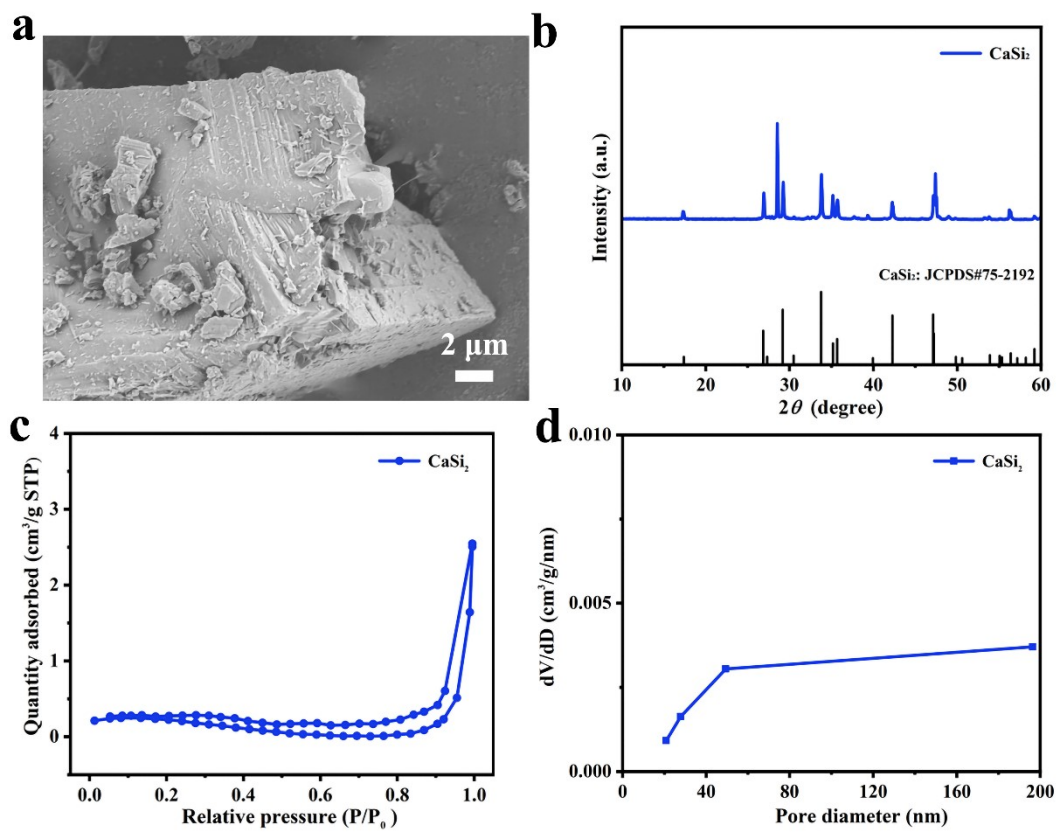
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Figure S1. (a) SEM image, (b) XRD patterns, (c) N_2 adsorption-desorption isotherm, and (d) pore size distribution of $CaSi_2$.
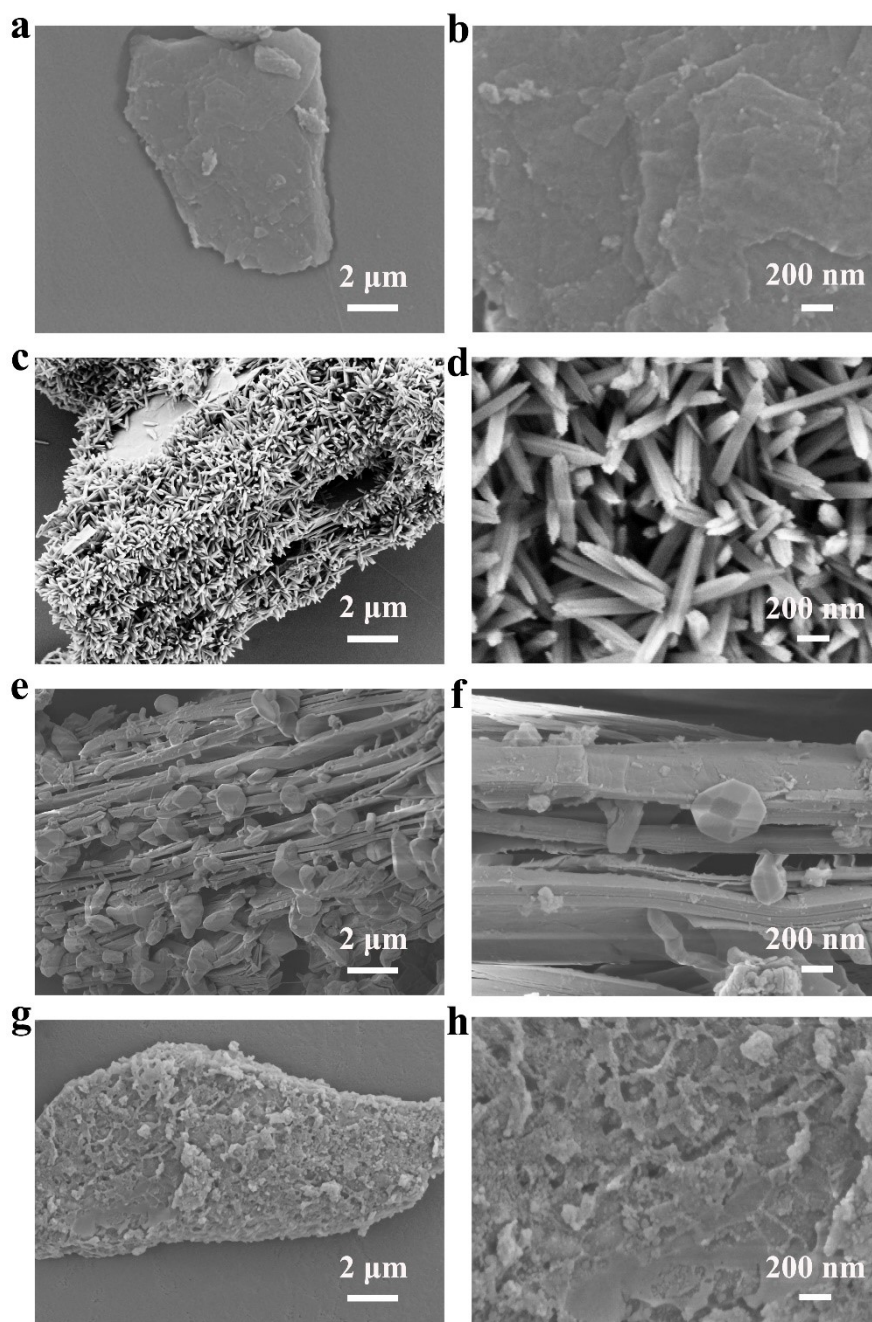
Figure S2. SEM images of (a-b) Si NFs, (c-d) FeOOH-Si NFs, (e-f) Fe_3O_4-Si NFs, and (g-h) P-Si NFs.
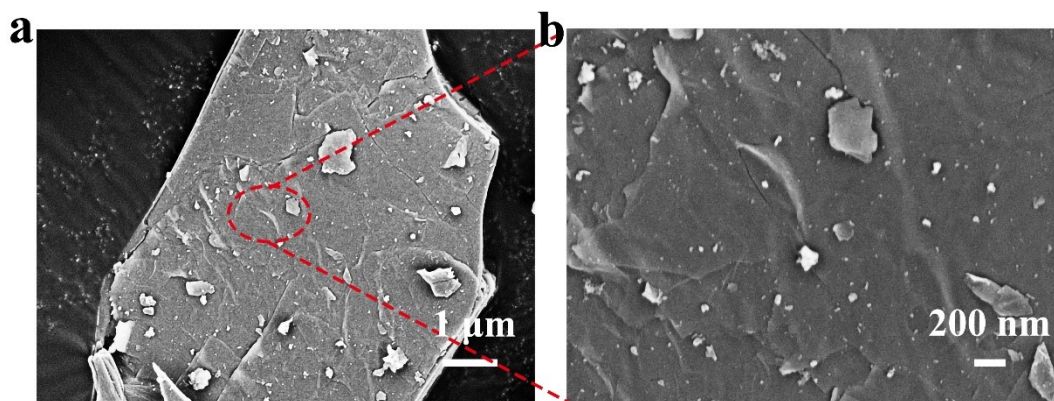
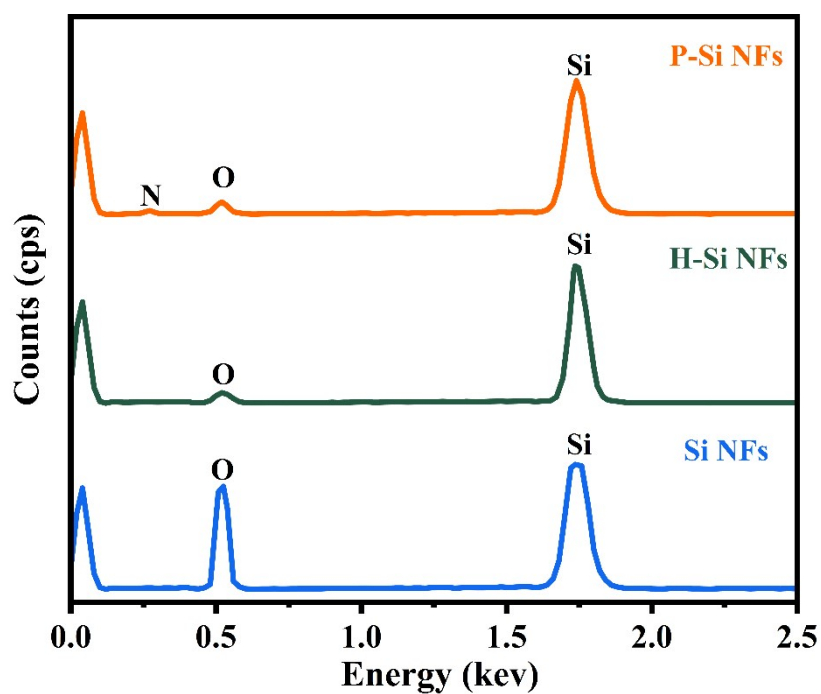**Figure S3.** (a-b) SEM images of H-Si NFs.

Figure S4. EDS spectra of Si NFs, H-Si NFs, and P-Si NFs.

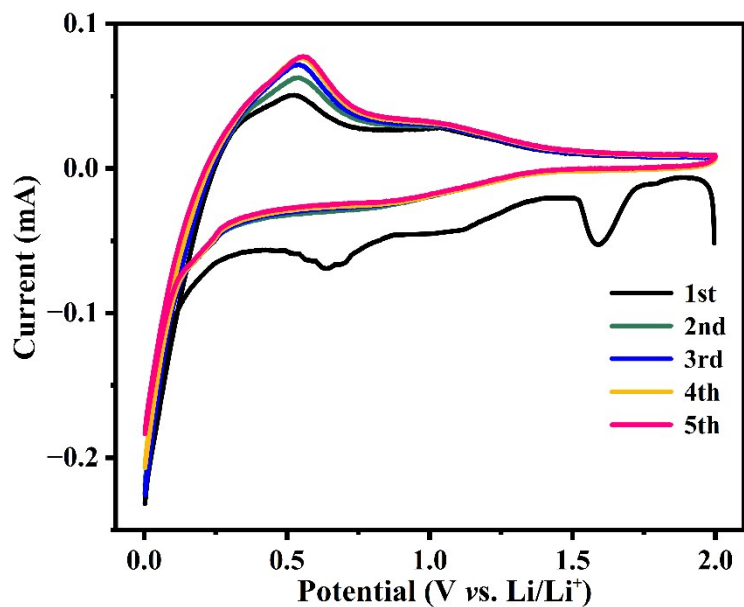**Figure S5.** Photos of (a) Si NFs, (b) H-Si NFs, and (c) P-Si NFs.
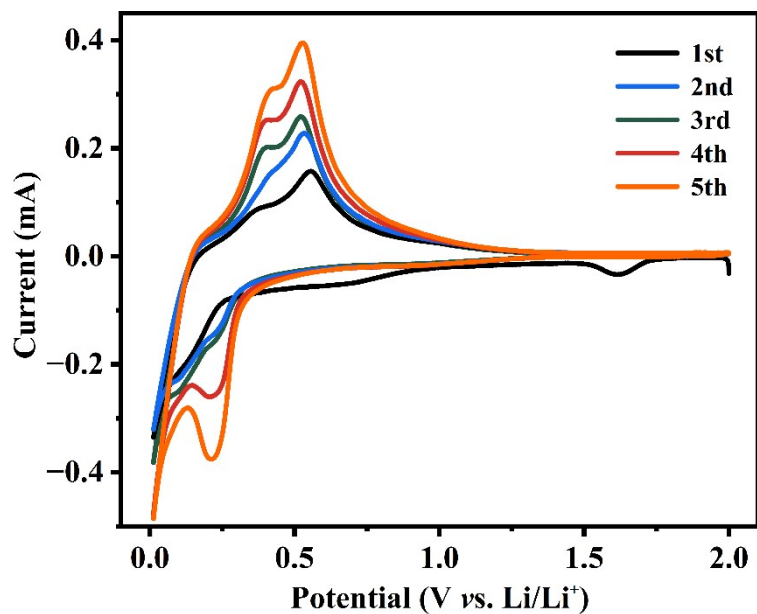
Figure S6. CV curves of the Si NFs anode.

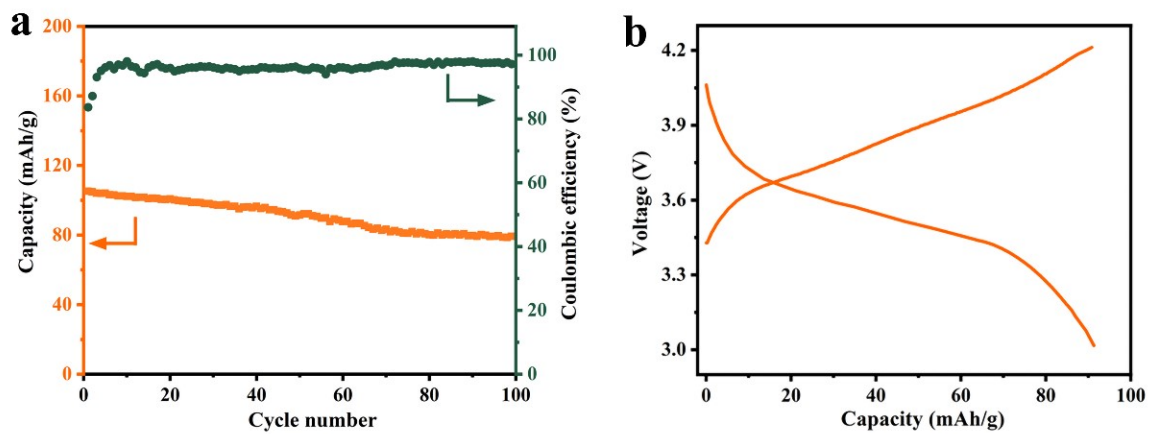**Figure S7.** CV curves of the H-Si NFs anode.

Figure S8. (a) The cycle performance of the P-Si NFs‖LiCoO$_2$ full cell between 3.0 and 4.2 V at 1C (150 mAh/g at 1C). (b) Charge/discharge profiles of the 50th cycle at 1C.