Supporting Information

Characterization of Pitch Carbon Coating Properties Affecting the Electrochemical Behavior of Silicon Nanoparticle Lithium-ion Battery Anodes

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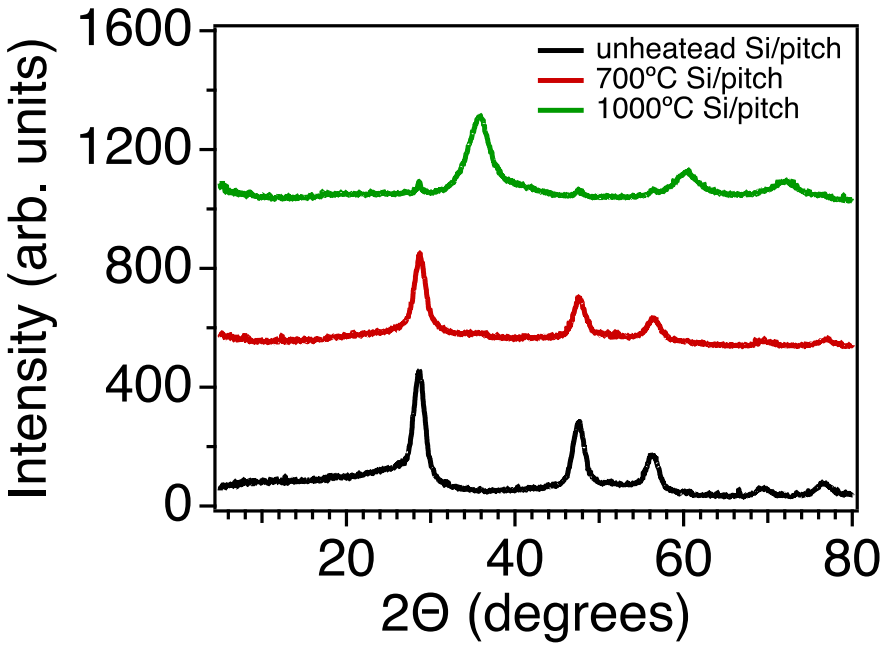

Figure S1. X-ray diffraction patterns of Si/pitch powders.

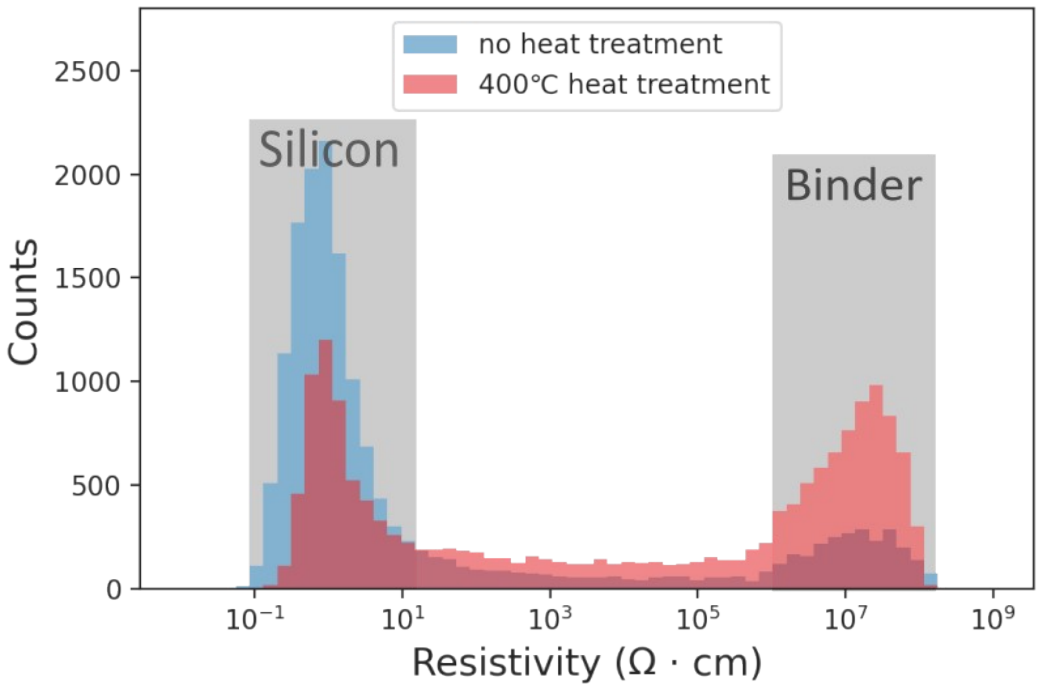

Figure S2. Resistivity map histograms for un-heated and 400°C heat treated Si-only electrodes showing consistent resistivities for the Si and the binder.

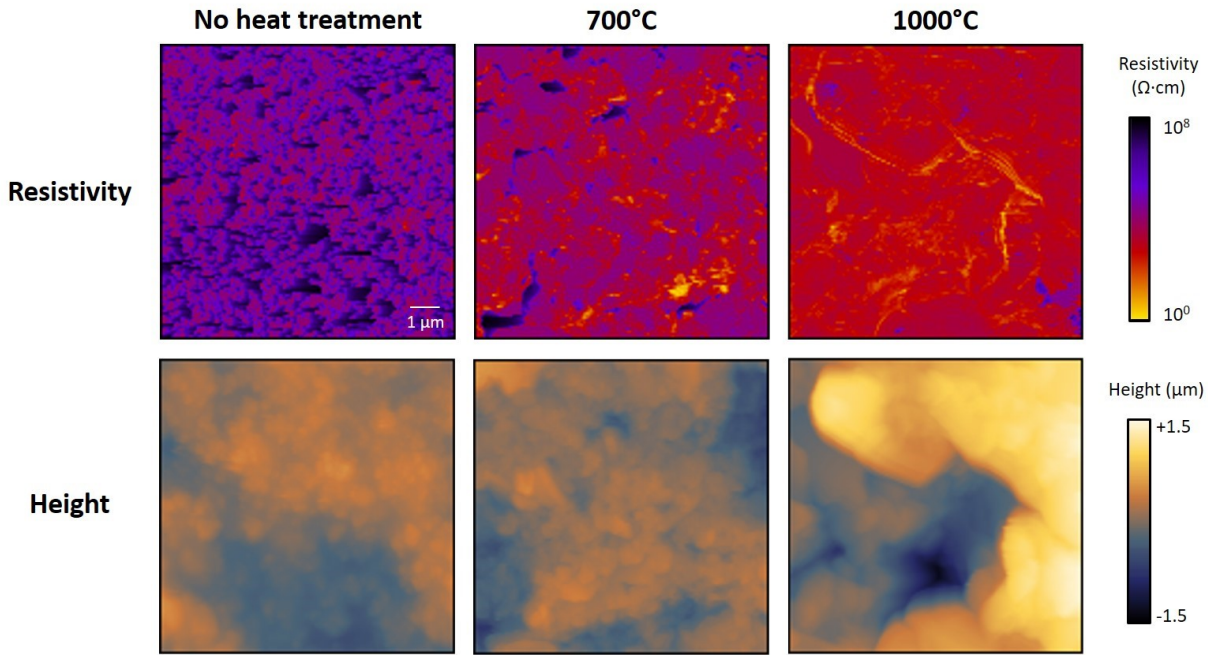

Figure S3. Electronic resistivity and morphology of pristine pitch electrodes upon thermal annealing.

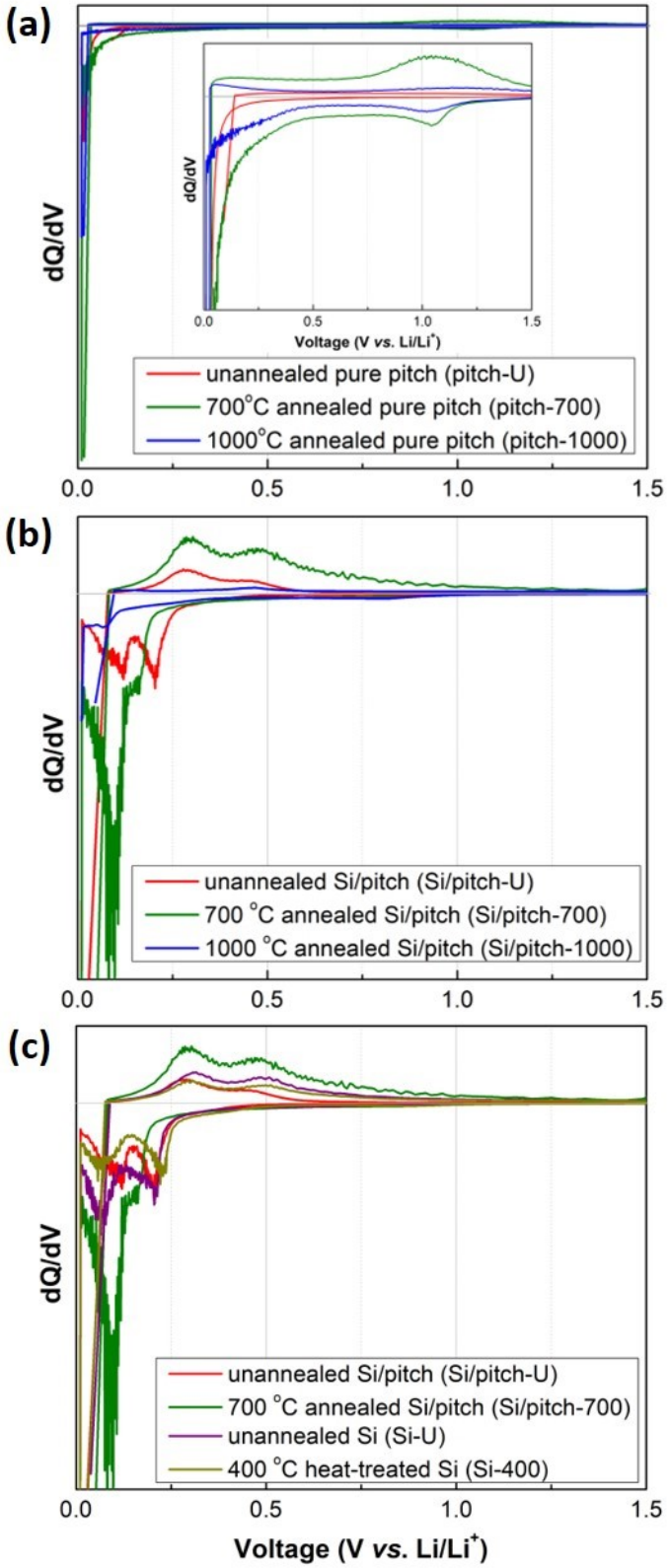

Figure S4. Differential capacity plots of (a) pure pitch, (b) Si/pitch and (c) Si electrodes upon thermal annealing.

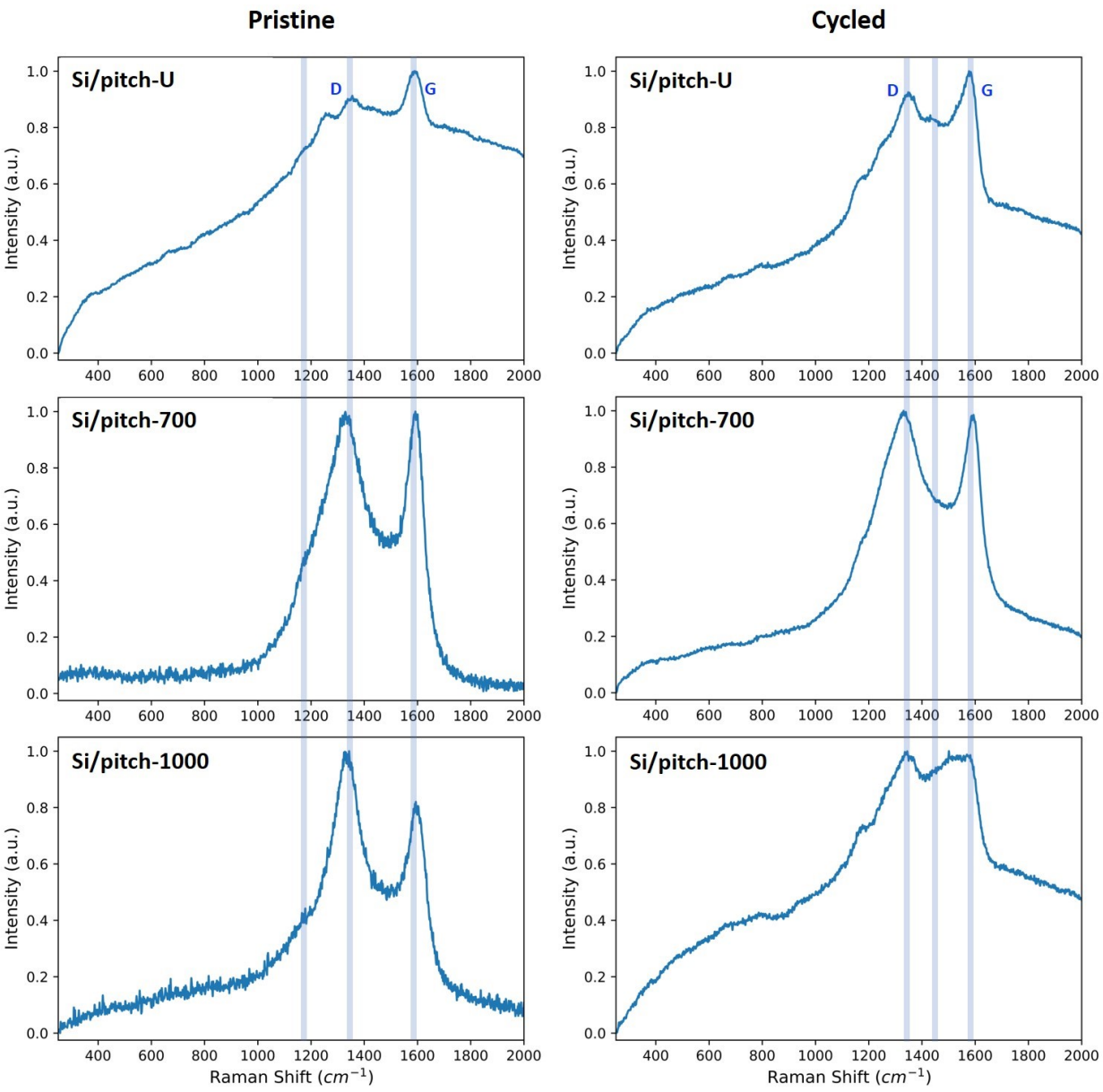

Figure S5. Raman spectra of Si/pitch electrodes upon electrochemical cycling.

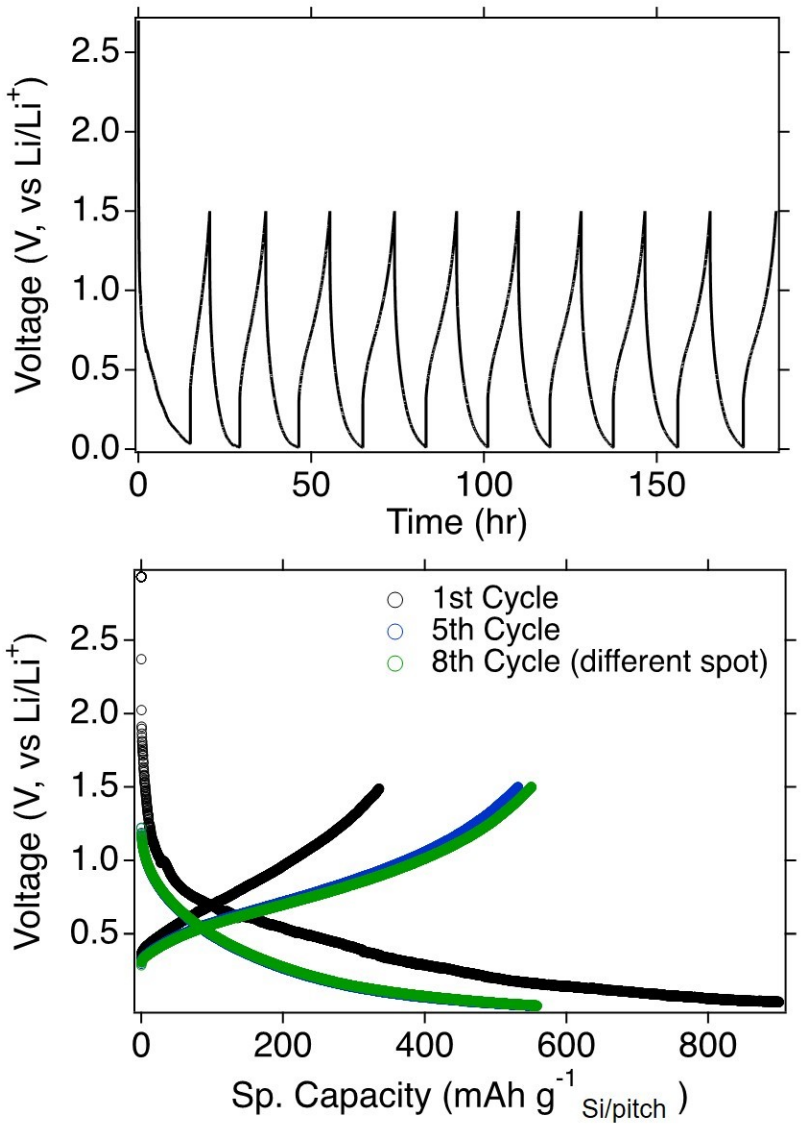

Figure S6. Electrochemical behaviors of the in-situ windowed coin cells with Si/pitch electrodes (*vs*. a Li metal reference/counter electrode).