

Electronic Supplementary Information

A facile and inexpensive approach to improve the performance of silicon film as an anode for lithium-ion batteries

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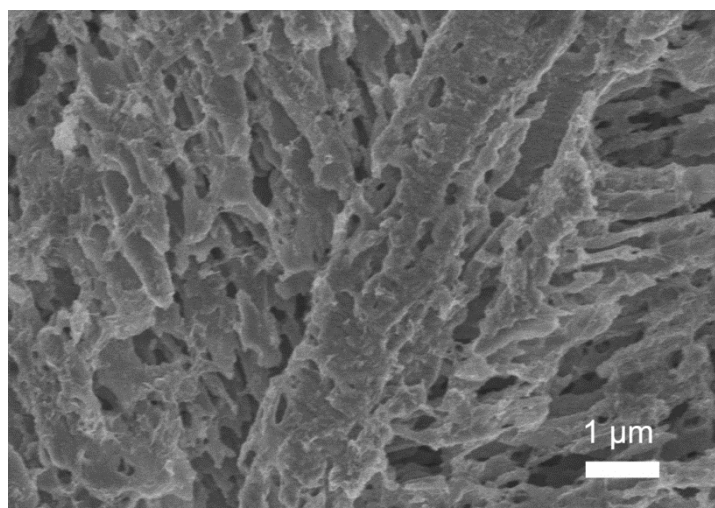


Fig. S1 SEM image of an as-etched SS plate.

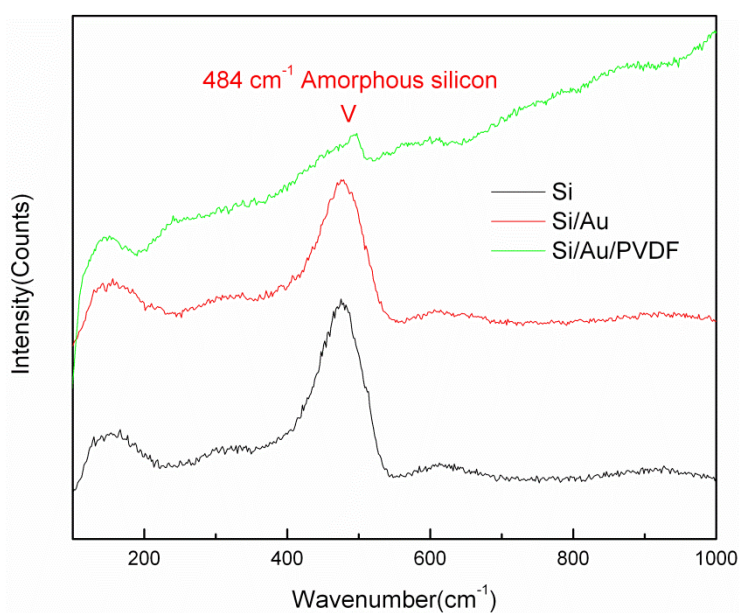


Fig. S2 Raman spectra of the Si, Si/Au, and Si/Au/PVDF film electrodes.

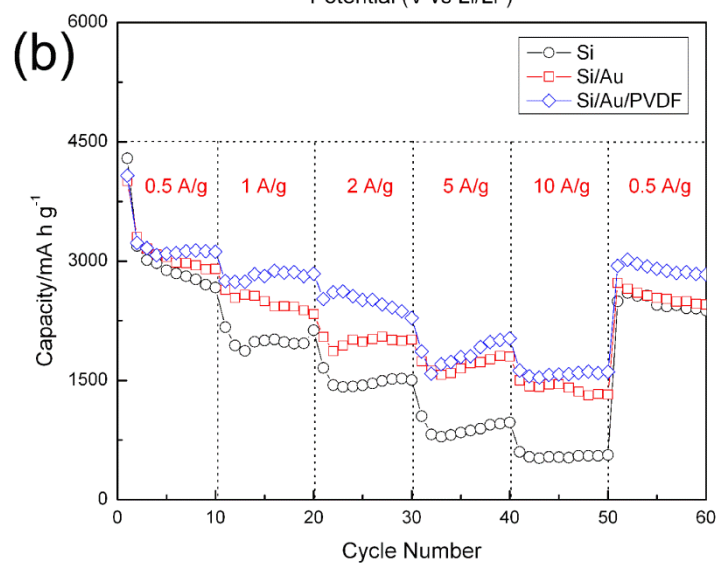
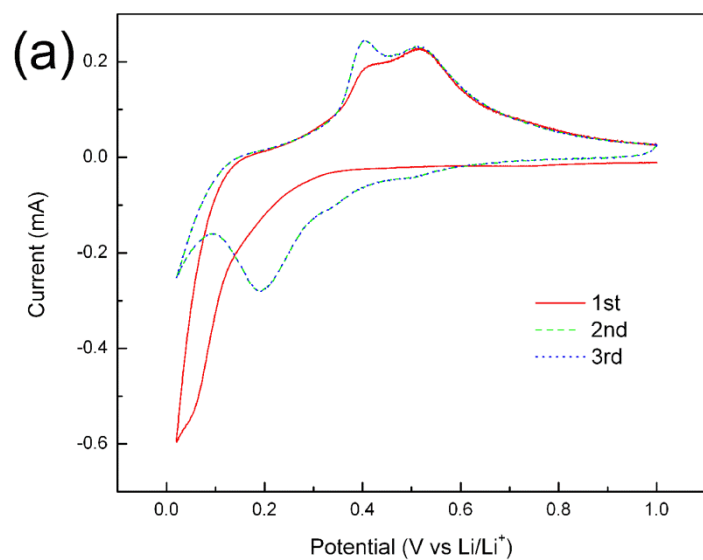


Fig. S3 (a) Cyclic voltammograms for the Si/Au/PVDF film electrode at a scan rate of 0.1 mV s⁻¹ between 0.02-1.0 V. (b) Capacity retention at various current densities for the Si, Si/Au, and Si/Au/PVDF film electrodes.

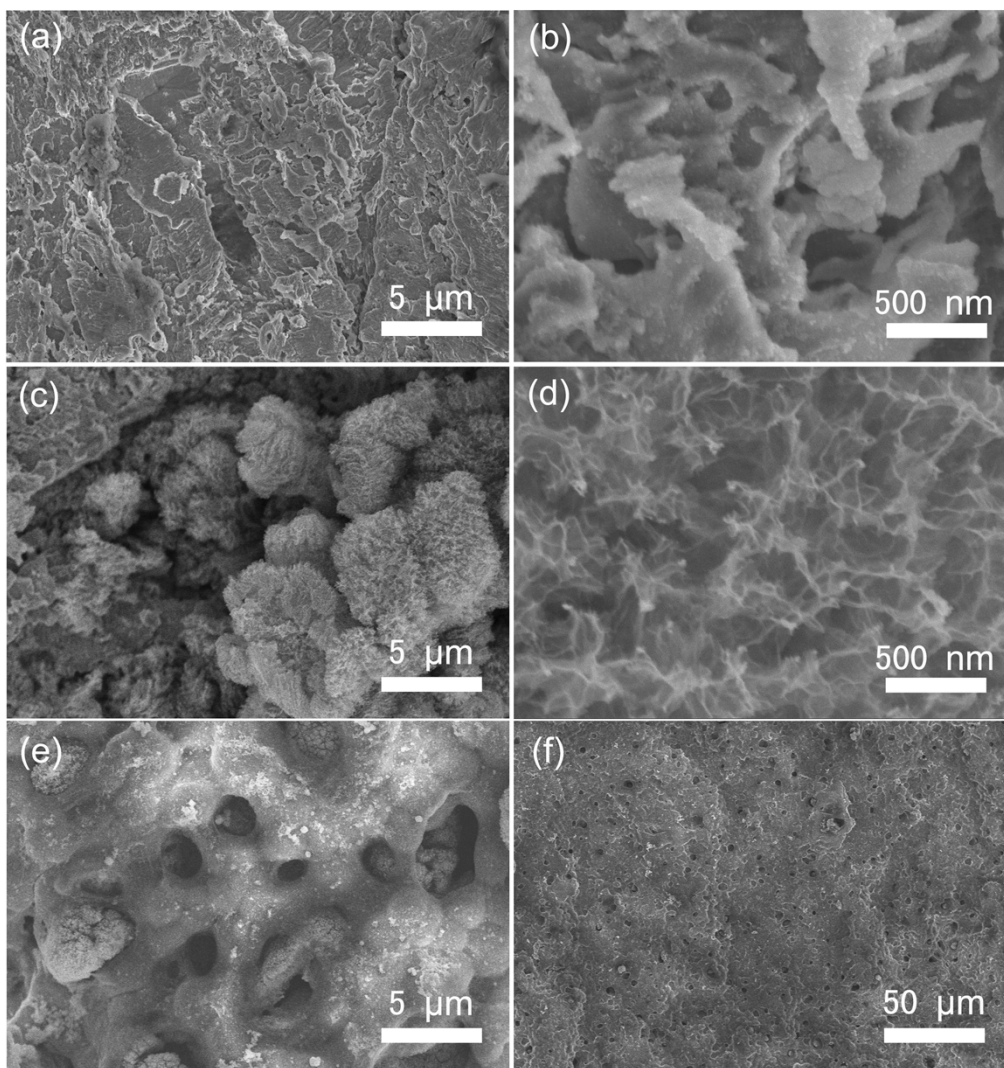


Fig. S4 Morphologies of the electrodes after 100 discharge-charge cycles at 0.5 A g^{-1} . (a) Low- and (b) high-magnification SEM images of the Si film electrode. (c) Low- and (d) high-magnification SEM images of the Si/Au film electrode. (e, f) Low-magnification SEM images of the Si/Au/PVDF film electrode.