

Electronic Supporting Information

Probing the critical role of Sn-content in SnSb@C-nanofiber anode on Li-storage mechanism and battery performance

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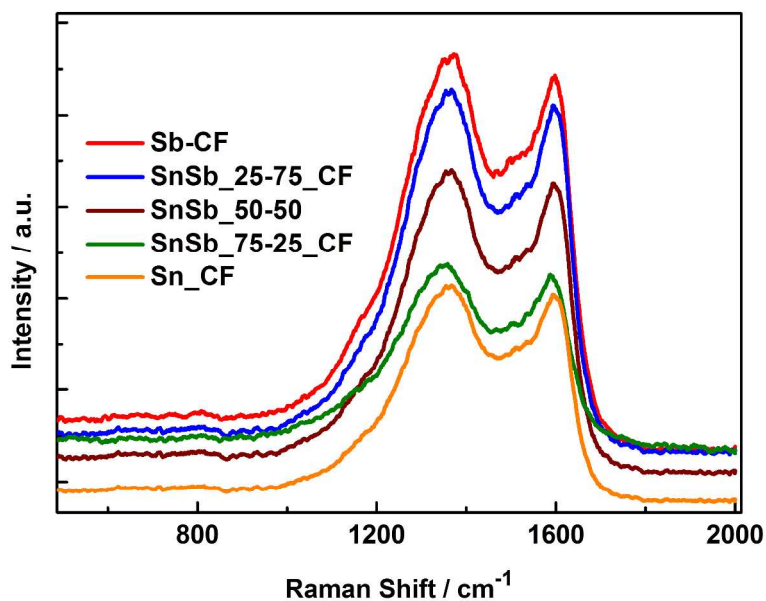


Figure S1: Raman spectra of the series of SnSb materials

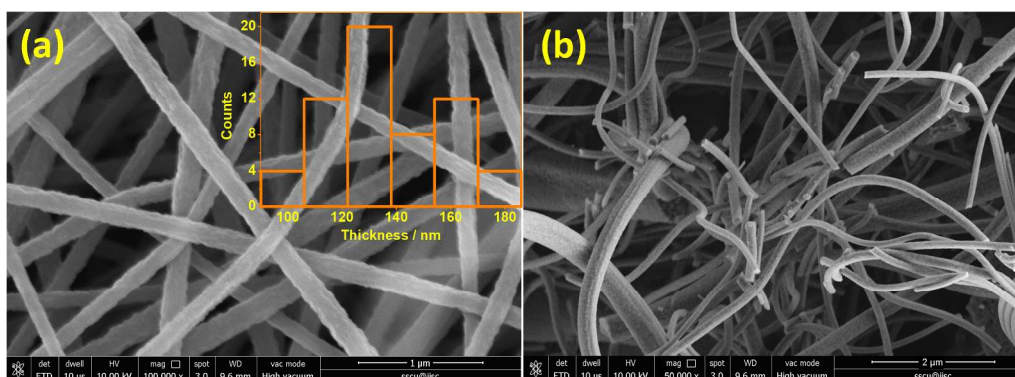


Figure S2: Scanning electron microscopy image of (a) polymer fibers containing SnCl_2 and SbCl_3 and (b) After carbonization of the polymer fibers. Inset of (a) represents the histogram of the thickness of the electrospun polymer fibers.

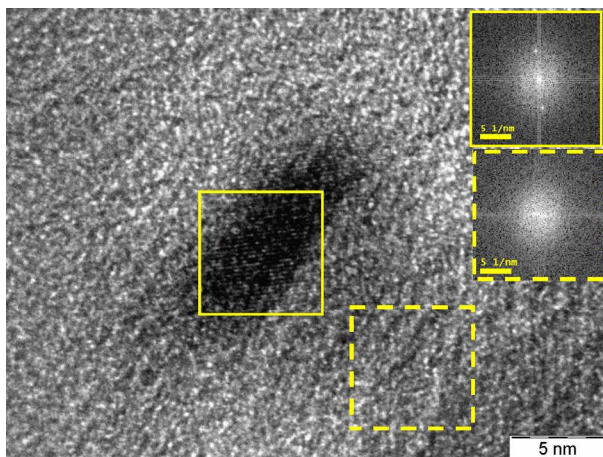


Figure S3: HRTEM image of metal-carbon fiber composite. Particle and carbon fiber regions are marked with solid and dashed yellow lines respectively. Corresponding Fast Fourier Transform (FFT) patterns are also shown as insets with respective boxes.

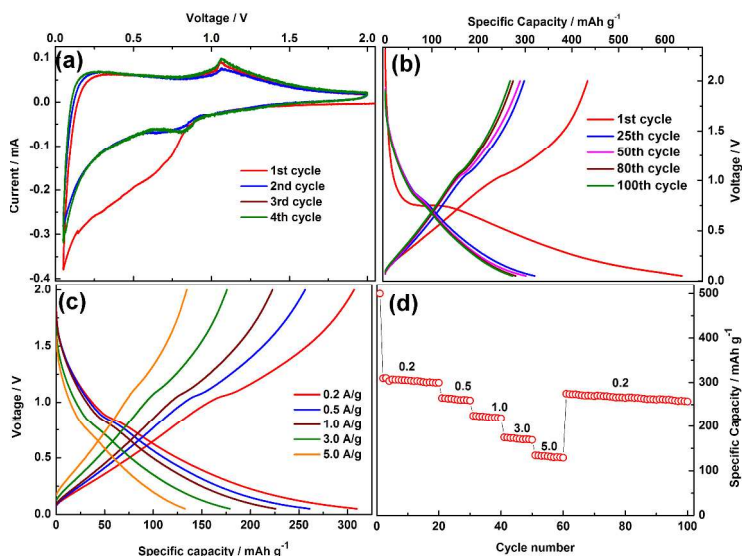


Figure S4: (a) Cyclic voltammogram (b) galvanostatic charge discharge voltage profile, (c) Voltage profile at different current densities (0.2-5.0 A/g) and (d) rate capability of Sb-CF versus $\text{Li}^+|\text{Li}$.

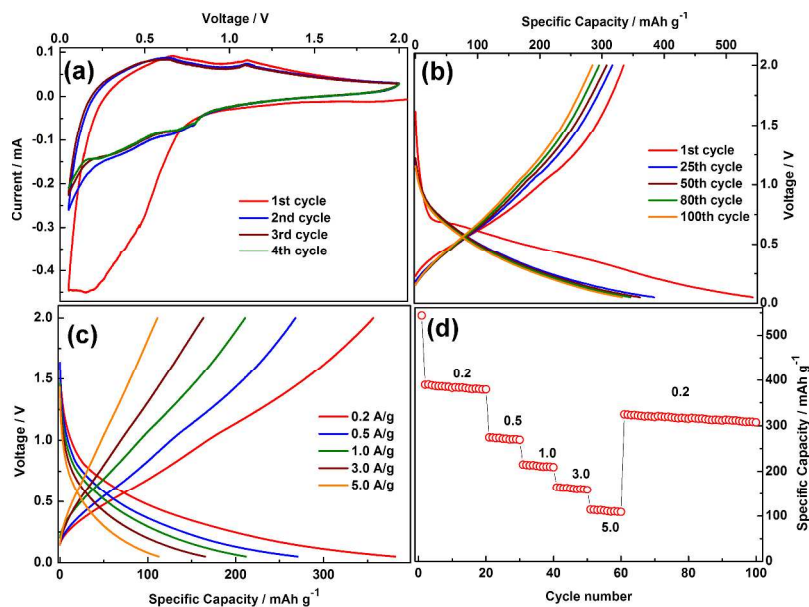


Figure S5: (a) Cyclic voltammogram (b) galvanostatic charge discharge voltage profile, (c) Voltage profile at different current densities (0.2-5.0 A/g) and (d) rate capability of SnSb-25-75-CF versus $\text{Li}^+|\text{Li}$.

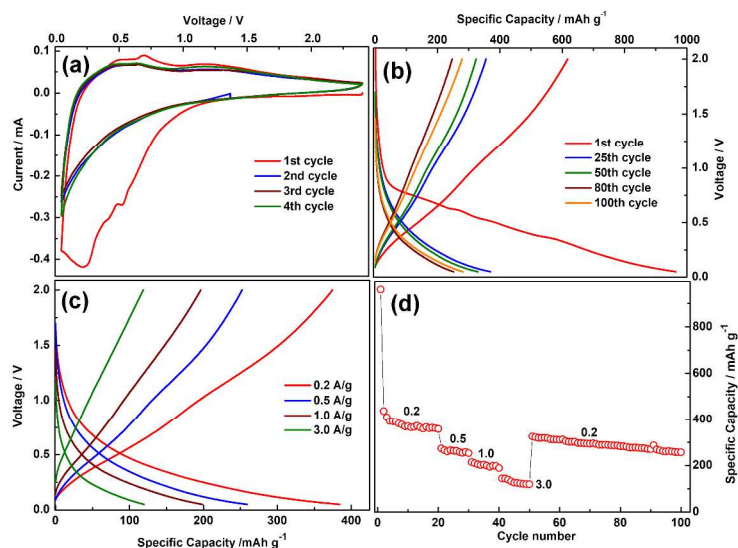


Figure S6: (a) Cyclic voltammogram (b) galvanostatic charge discharge voltage profile, (c) Voltage profile at different current densities (0.2-5.0 A/g) and (d) rate capability of Sn-CF versus $\text{Li}^+|\text{Li}$.

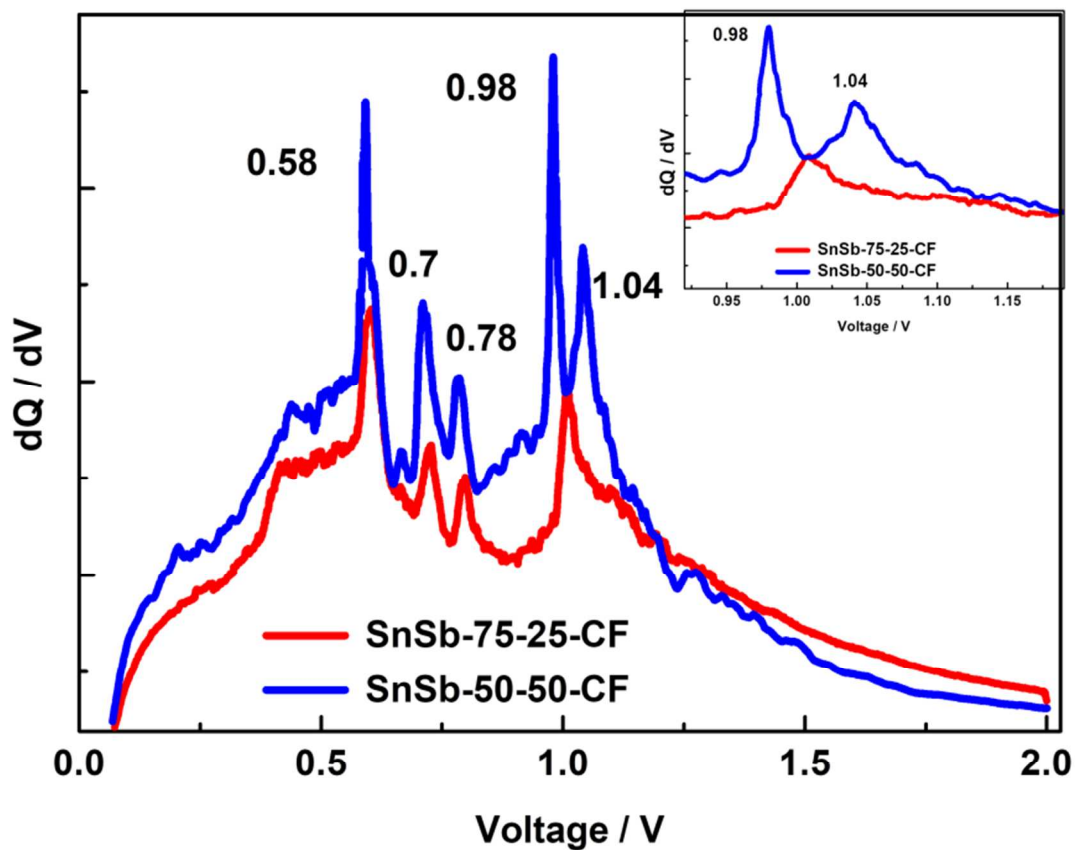


Figure S7: dQ/dV versus V plot of 1st charge step of SnSb-50-50-CF and SnSb-75-25-CF. Inset: Enlarged view of the voltage range (0.9-1.2) V

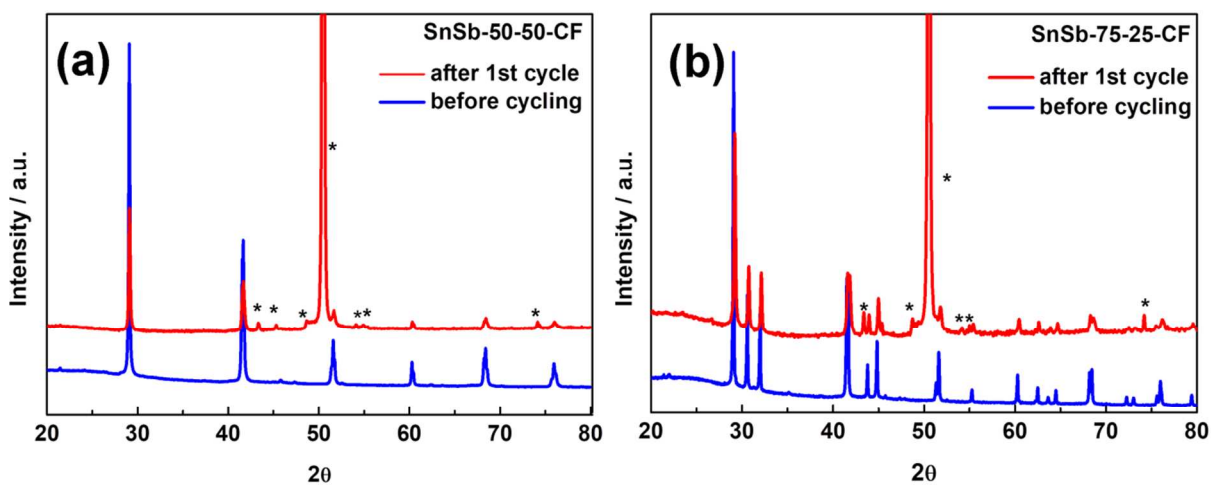


Figure S8: Ex-situ powder XRD pattern of (a) SnSb-50-50-CF and (b) SnSb-75-25-CF before and after 1st charge step. The marked peaks correspond to Cu current collector.

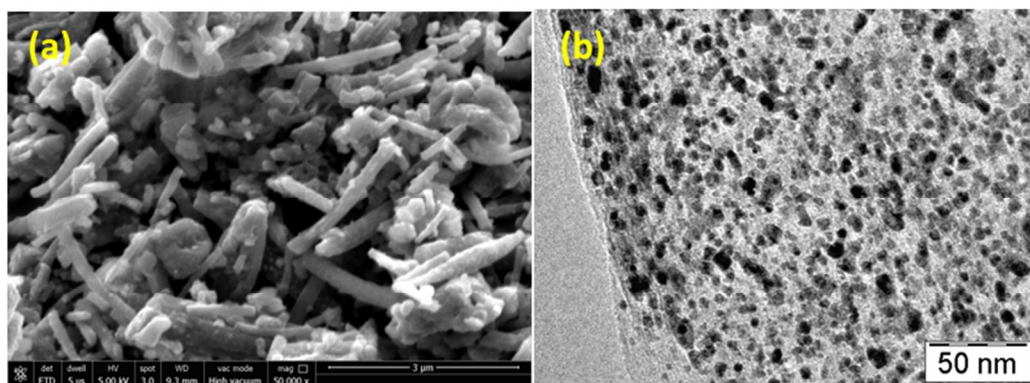


Figure S9: (a) SEM image and (b) bright field TEM image of SnSb-75-25-CF after cycling showing the retention of fibrous morphology and the particles inside the fiber respectively.