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Supplementary information

Vertically Oriented TiS_{2-x} Nanobelt Arrays as Binder– and Carbon–Free Intercalation Electrodes for Li– and Na– based Energy Storage Devices

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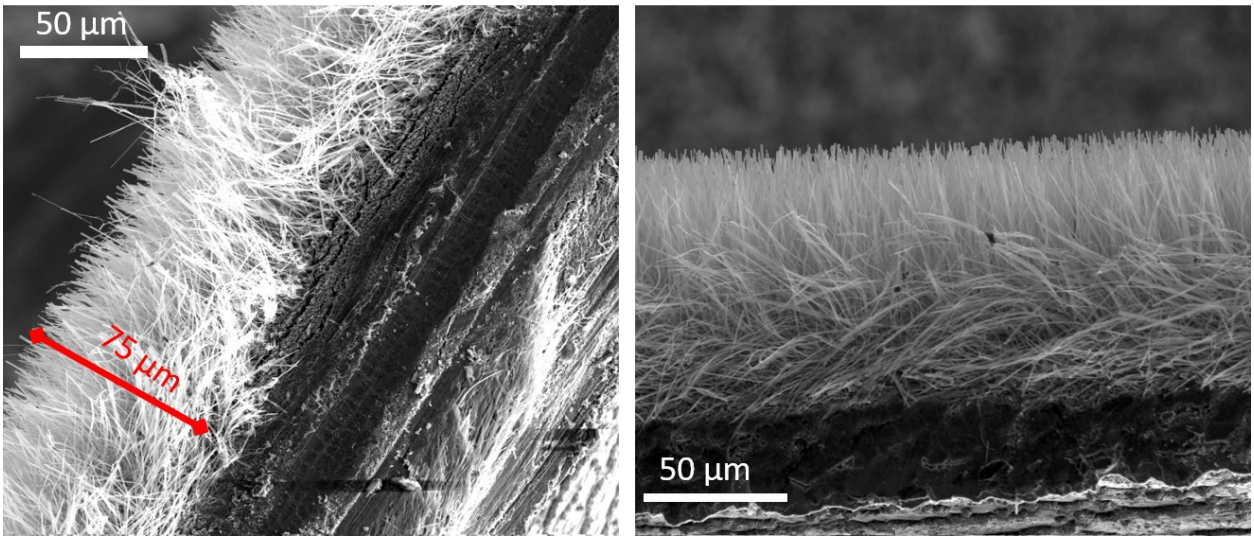

Figure S1. Cross-sectional SEM image of the TiS_{2-x} nanobelt array substrate obtained upon the pyrolysis of TiS_3 substrates.

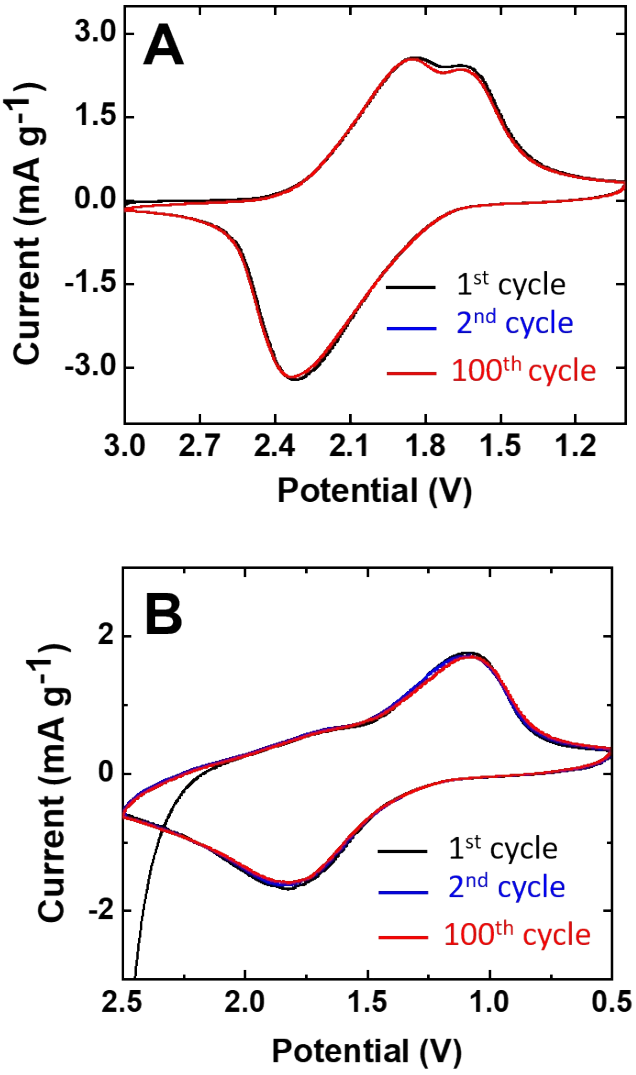

Figure S2. Cyclic voltammetry characteristics of the first, second, and third cycles for a vertically oriented TiS_{2-x} nanobelt array cathode in an assembled CR3032 cell with Li (A) and Na (B) as the anodes. As demonstrated here, there are no significant changes in the CV characteristics upon cycling, suggesting that TiS_{2-x} does not undergo any phase transformation upon the formation of the SEI layer.

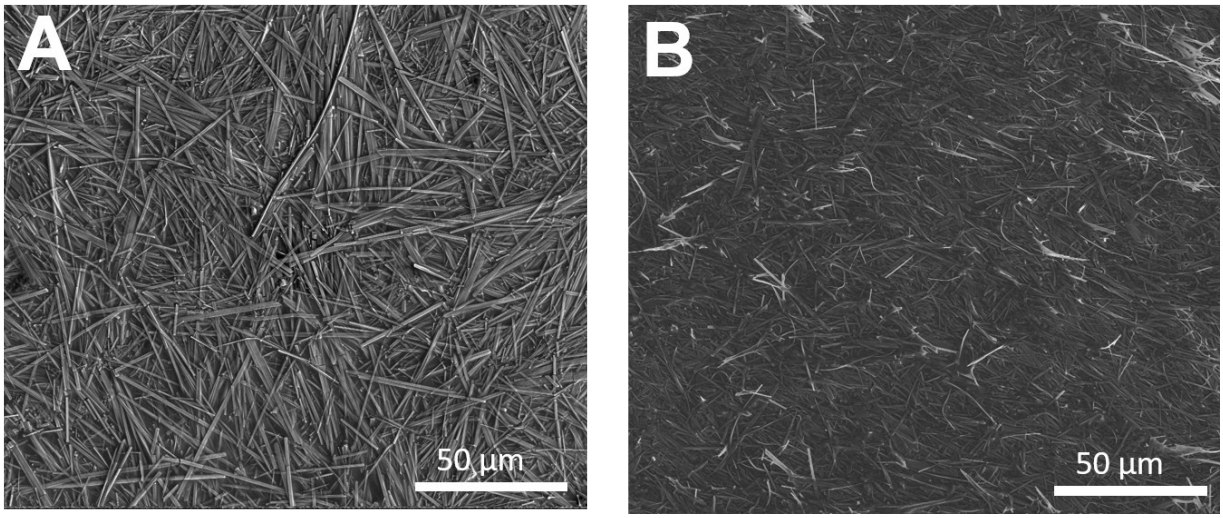

Figure S3. SEM images of (A) Li–TiS_{2-x} and (B) Na–TiS_{2-x} half–coin cells after 100 cycles. After closing the coin cell, we observe that the top layer of the TiS_{2-x} layer is completely pressed against the cap. This causes the nanobelts to lay flat. However, we do not observe any substantial morphological degradation of the nanobelt morphology upon cycling.