

## **Woven Fabric-based Separators with Low-tortuosity for Sodium-ion Batteries**

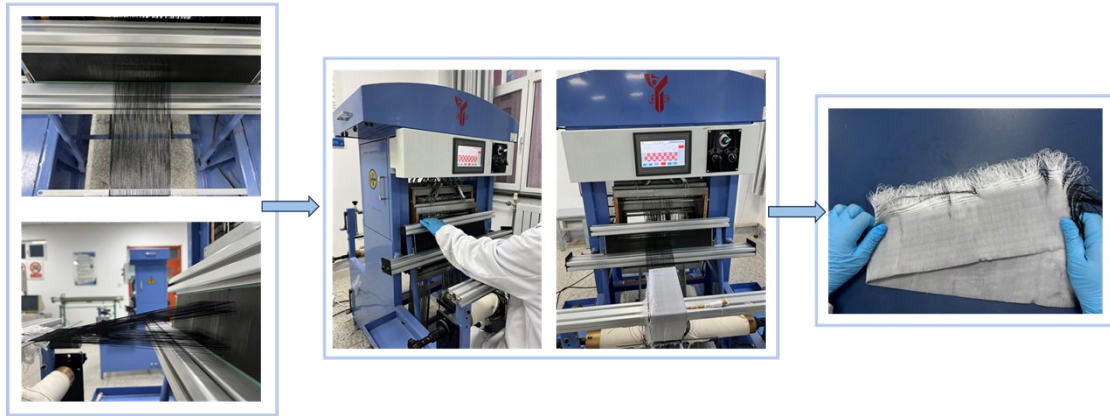
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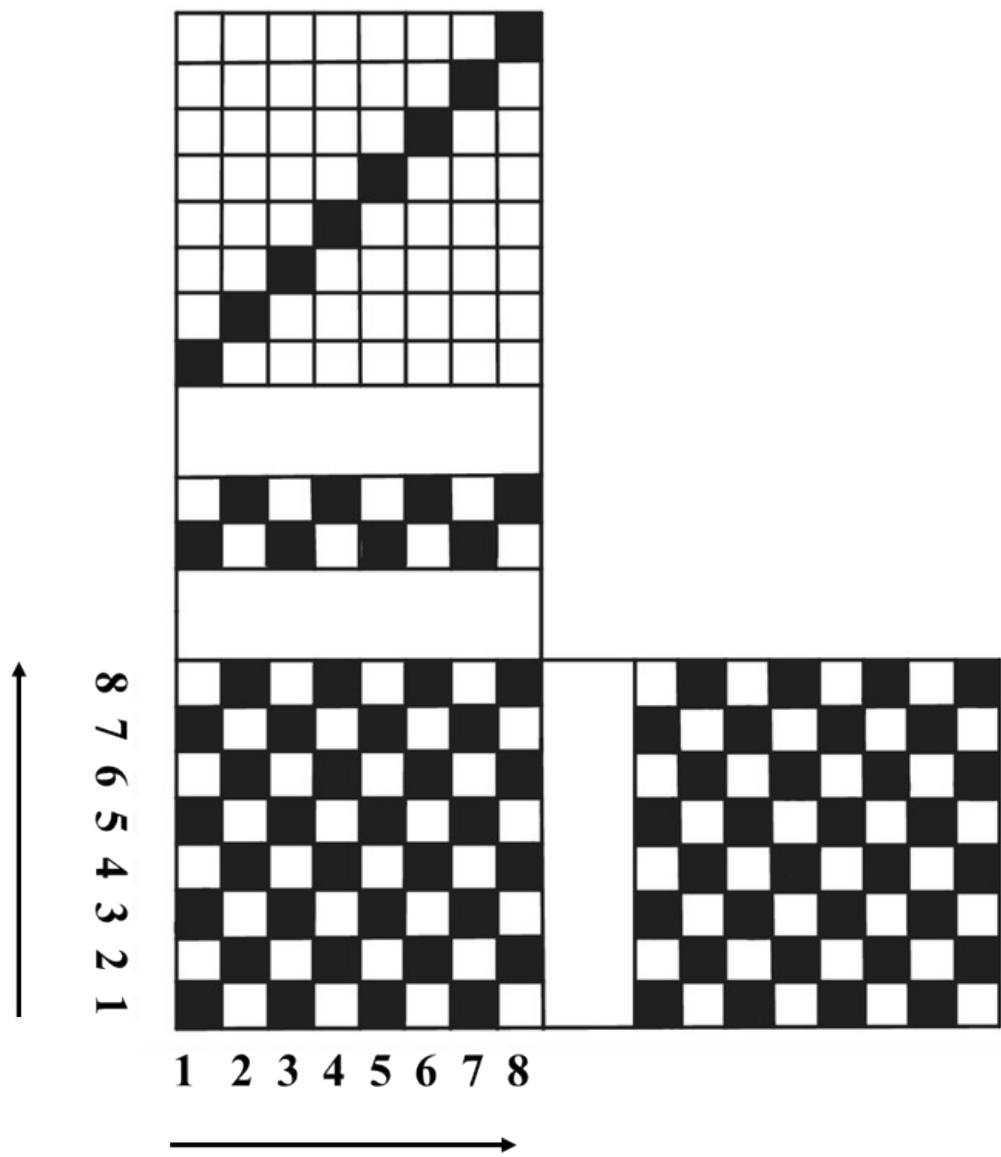
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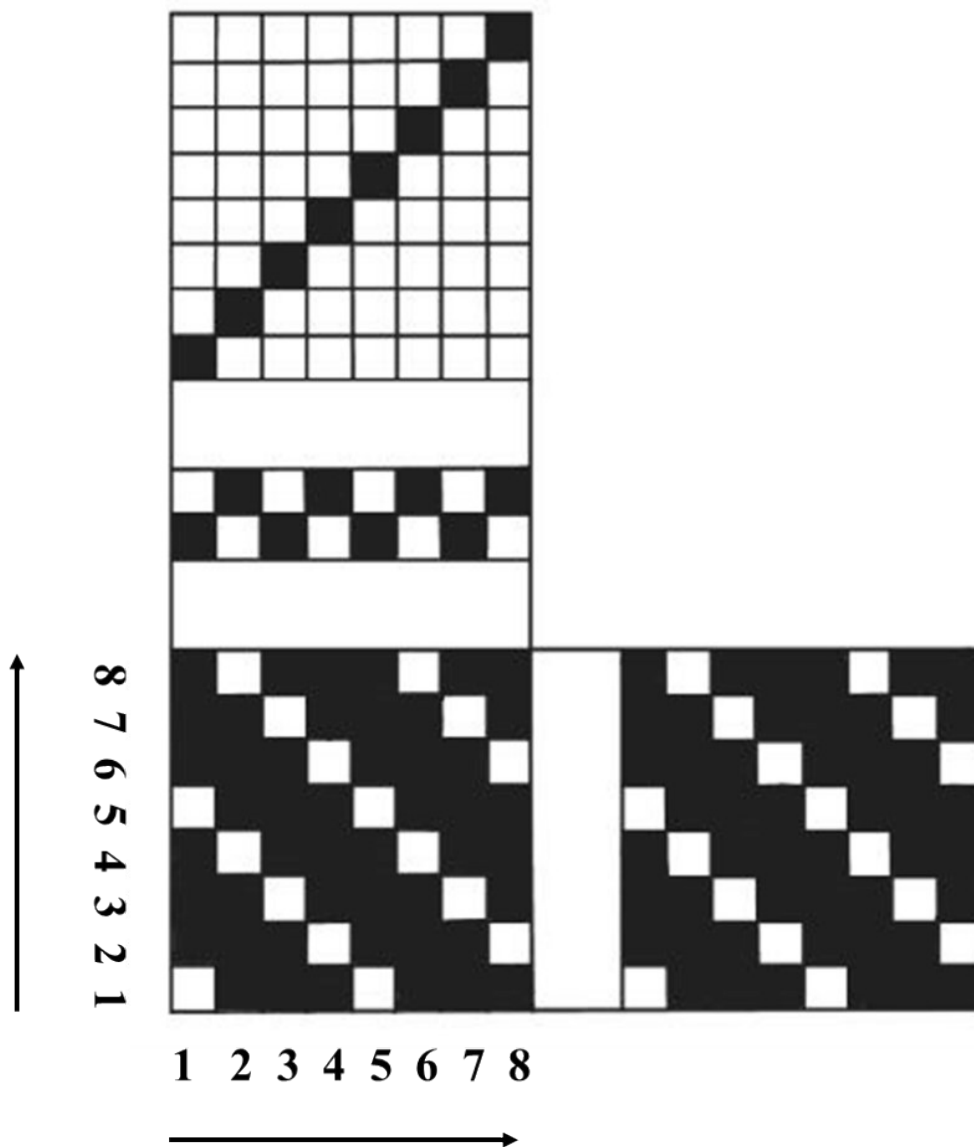
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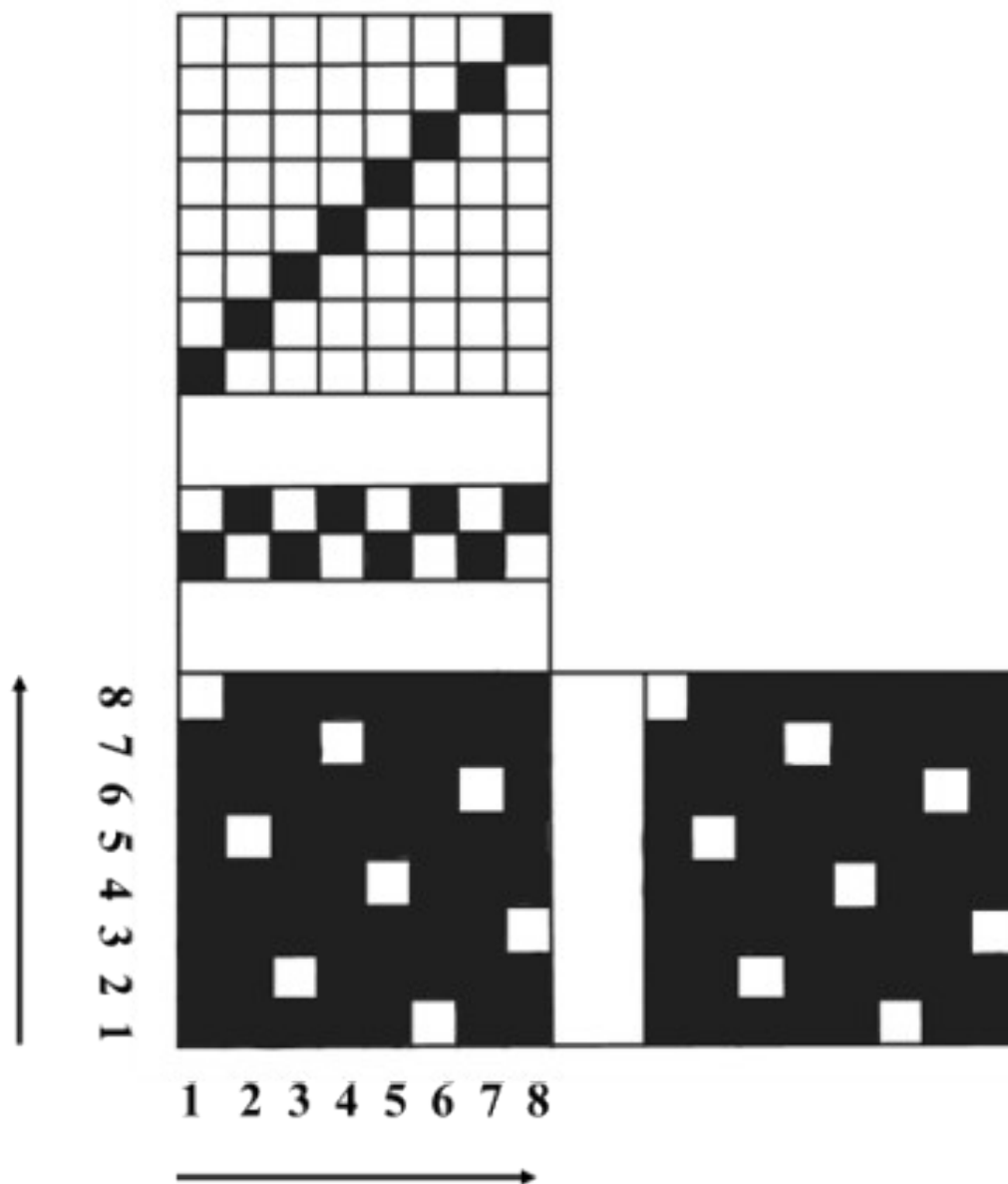
*Figure S1 Weaving process of woven fabric substrate.*



*Figure S2* Fabric structure chart of PW (the black squares represent the warp interlacing points and the blank squares represent the weft interlacing points).

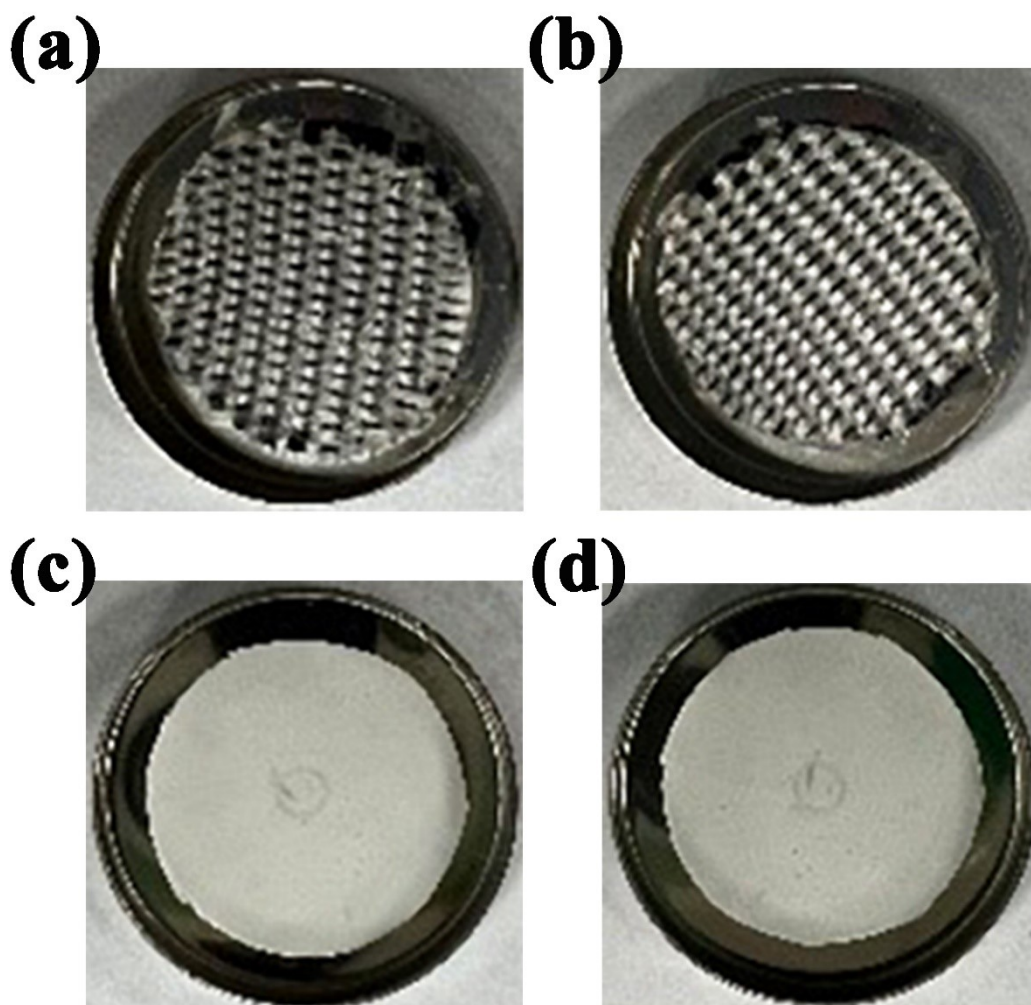


*Figure S3* Fabric structure chart of TW (the black squares represent the warp interlacing points and the blank squares represent the weft interlacing points).

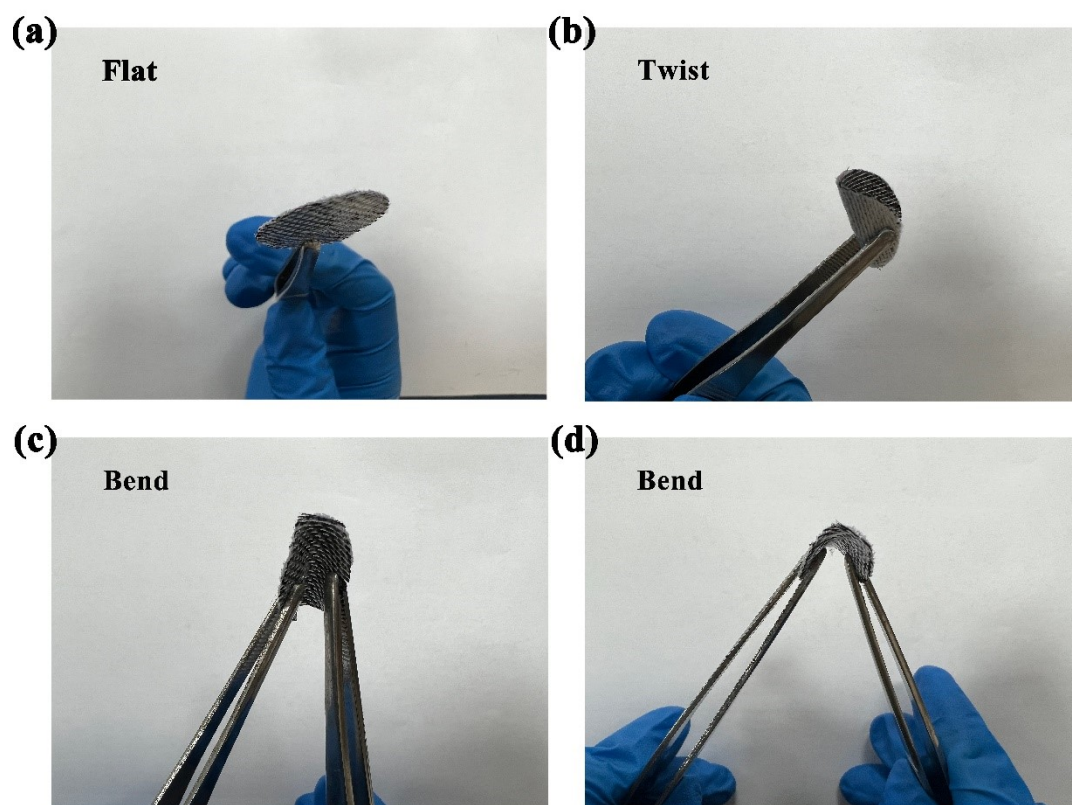


**Figure S4** Fabric structure chart of SW (the black squares represent the warp interlacing points and the blank squares represent the weft interlacing points).



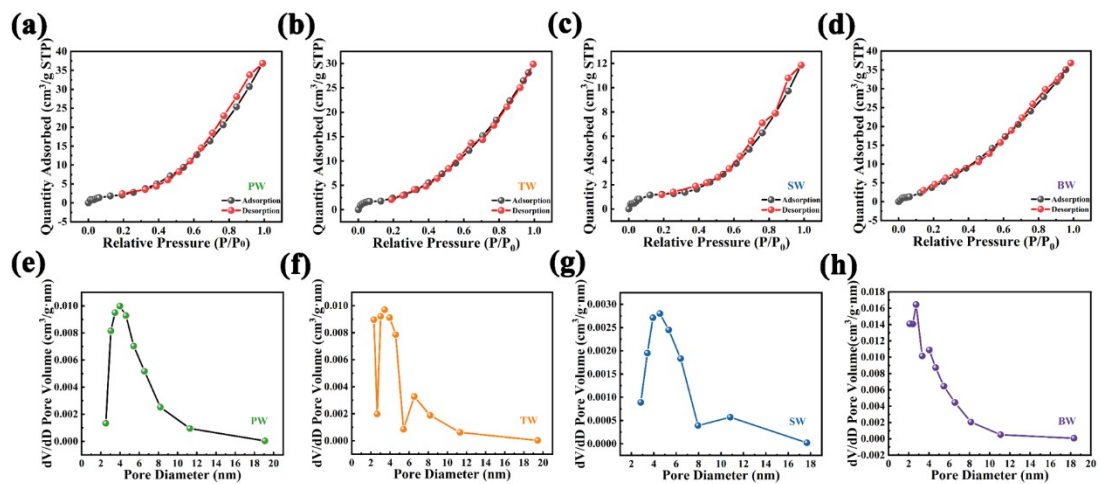


**Figure S6** Thermal stability of TBC-WS (a) in initial state and (b) after 100 °C for 1 h; PP (c) in initial state and (d) after 100 °C for 1 h.

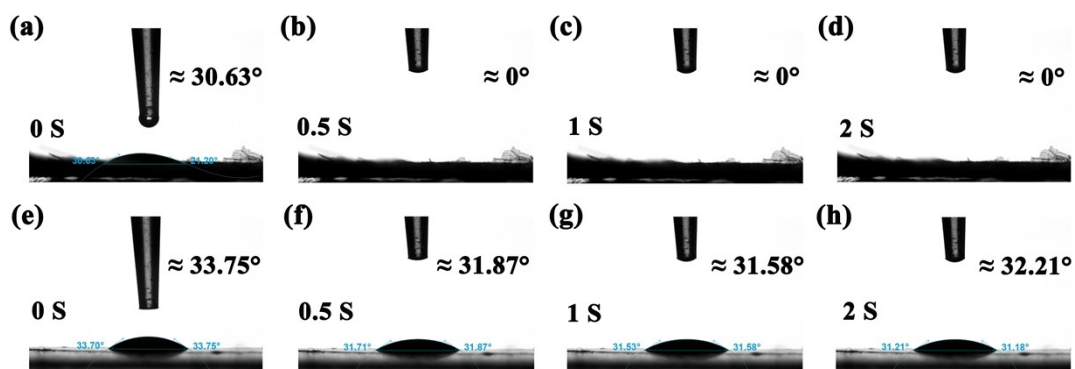


**Figure S7** Optical photograph of TBC-WS at different bending states: (a)flat, (b)twist, (c) and (d) bend.

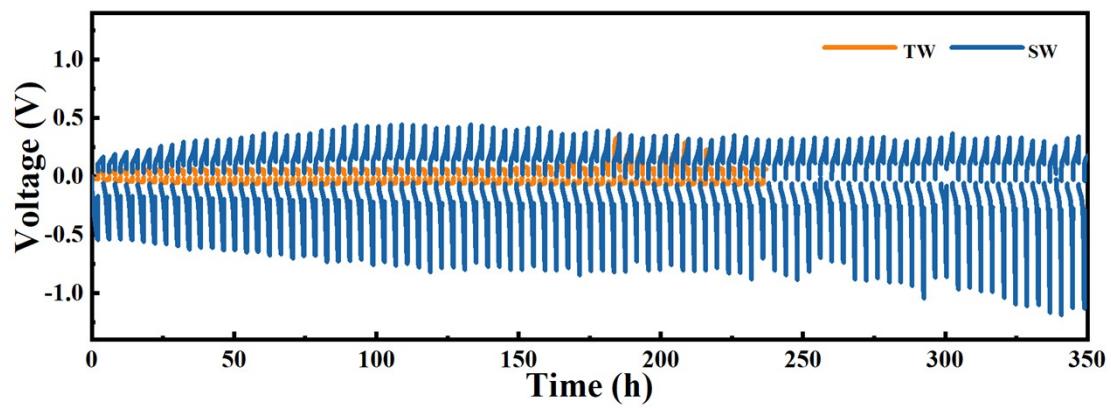




**Figure S8**  $N_2$  adsorption/desorption isotherm of (a) PW, (b) TW, (c) SW and (d) BW, pore size distribution of (e) PW, (f) TW, (g) SW and (h) BW.



*Figure S9* Contact angles of (a-d) BW separator and (e-h) PP separator at different time.



*Figure S10* Voltage-time images of TW and SW at  $0.5 \text{ mA cm}^{-2}$ ,  $1 \text{ mAh cm}^{-2}$ .

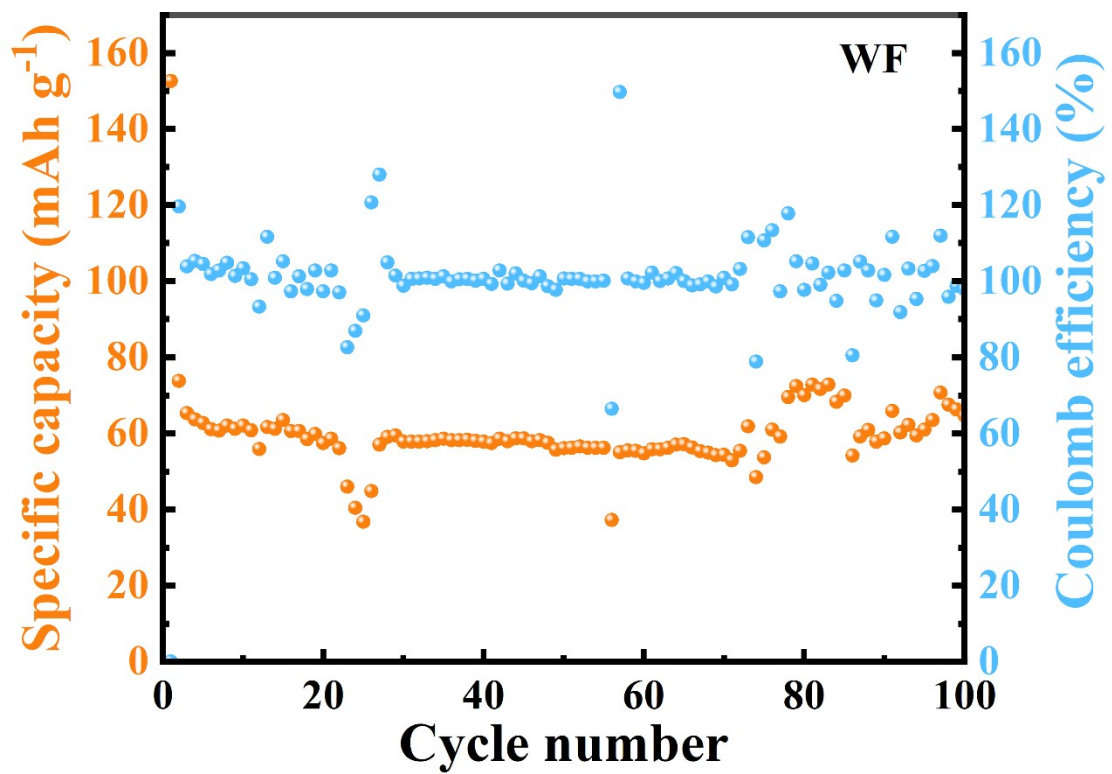
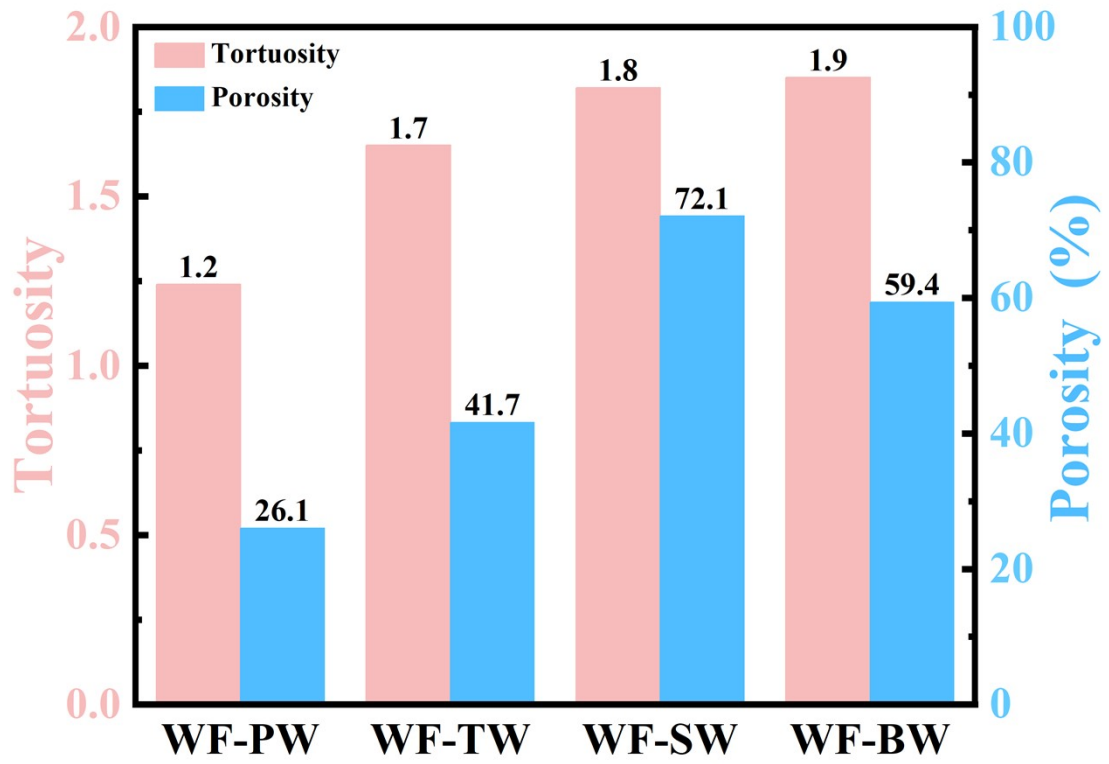


Figure S11 Cycle curves under  $0.03 \text{ A g}^{-1}$  of HC||Na half-cell with pure WF without TBC slurry.



*Figure S12 Tortuosity and porosity pure WF without TBC slurry.*