

Supporting information

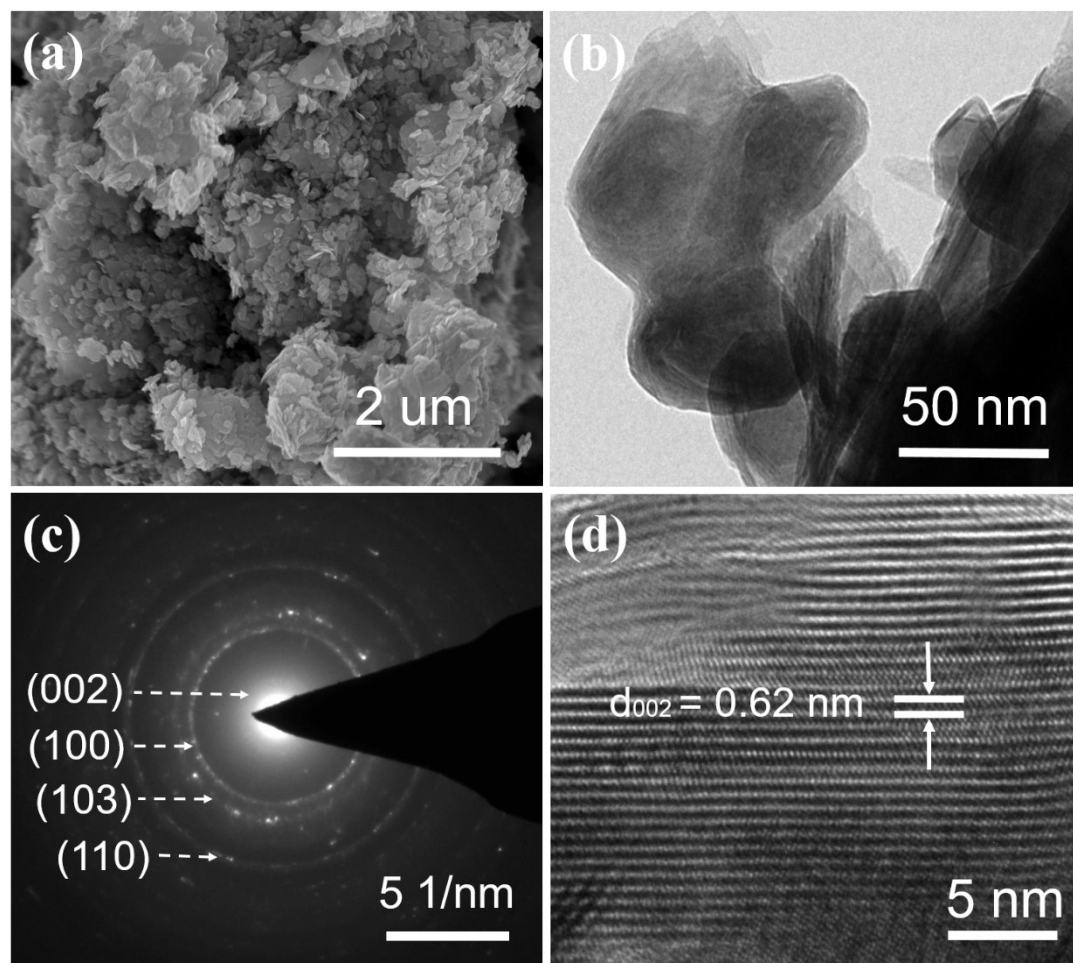


Figure S1 (a) low-resolution SEM image and (b) TEM image of pure WS₂; (c) electron diffraction pattern, and (d) high-resolution TEM image of pure WS₂.

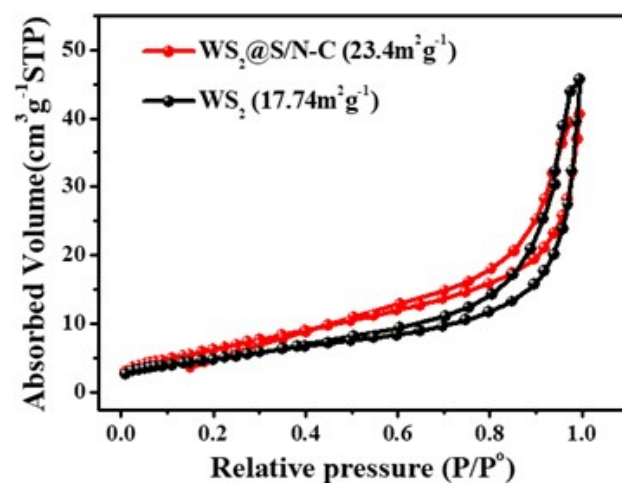


Figure S2 Nitrogen adsorption and desorption isotherms of WS₂@S/N-C nanofibers and pure WS₂.

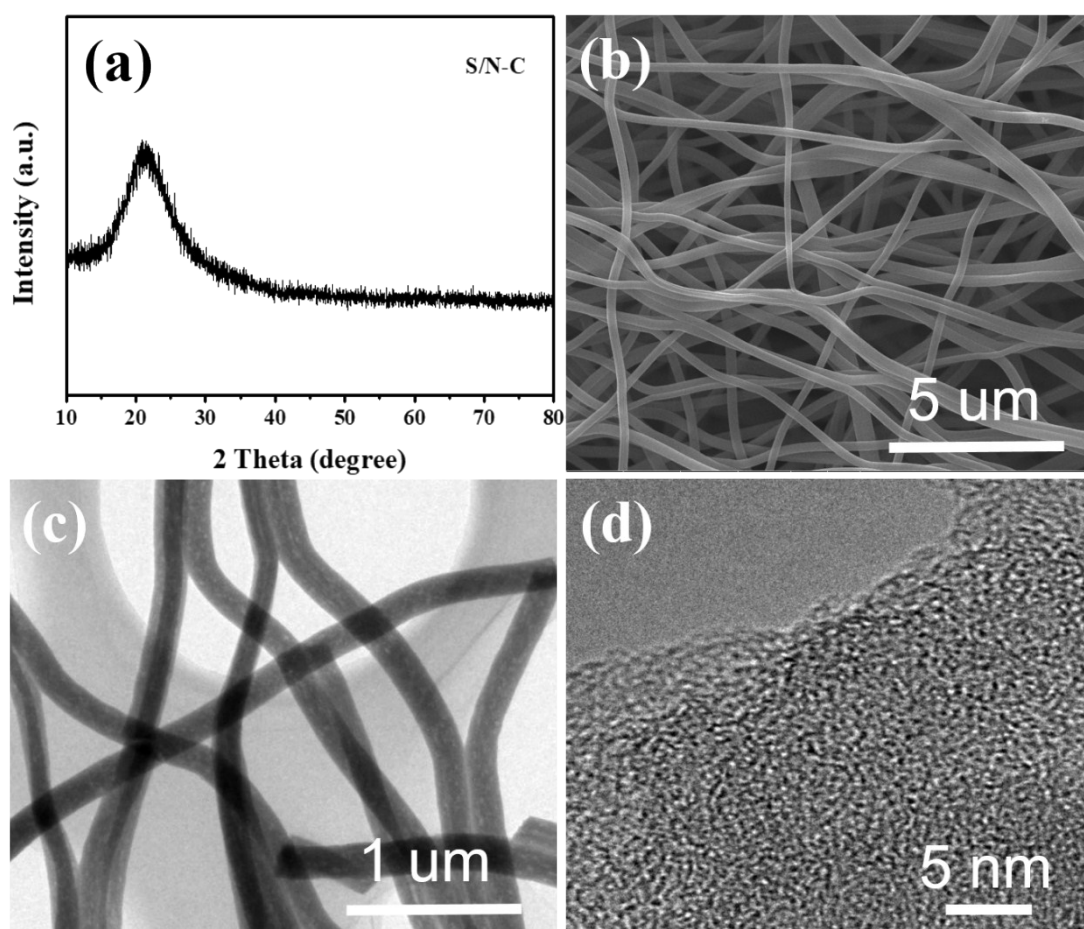


Figure S3 Characterizations of S/N-C nanofibers: (a) XRD pattern; (b) SEM image; (c) TEM image and (d) HR-TEM image.

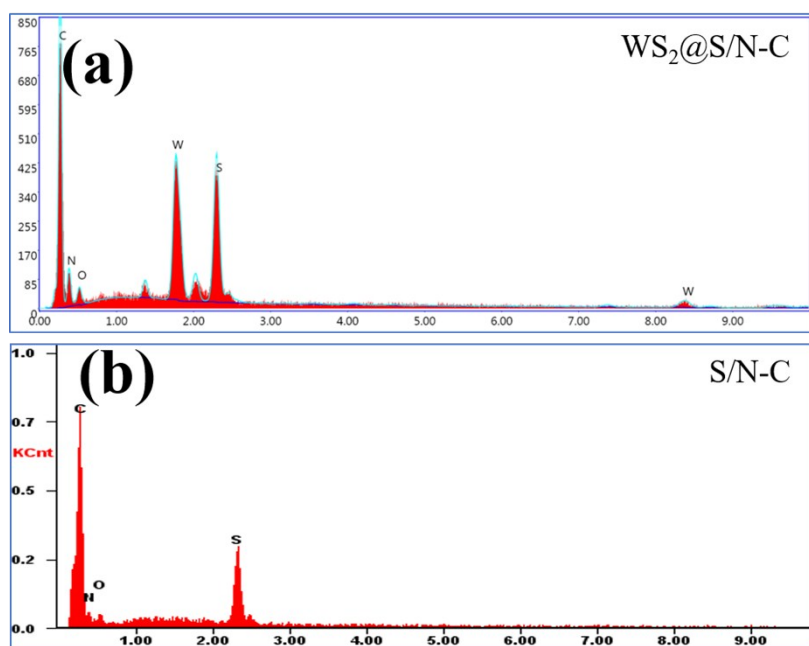


Figure S4 EDS spectrum of (a) $WS_2@S/N-C$ nanofibers and (b) S/N-C nanofibers.

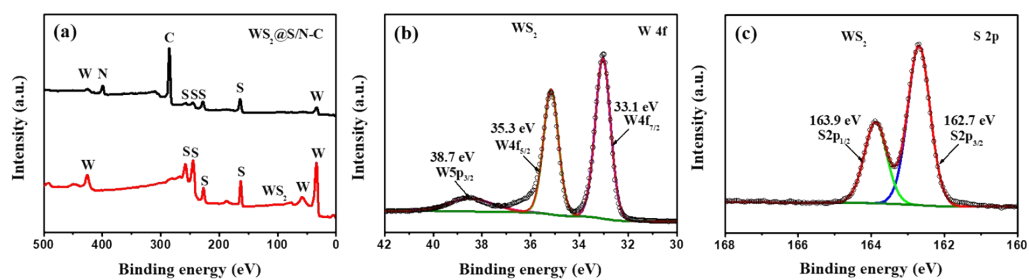


Figure S5 (a) XPS full survey spectra of WS₂@S/N-C nanofibers and pure WS₂; (b and c) High-resolution XPS spectra of W and S elements for pure WS₂.

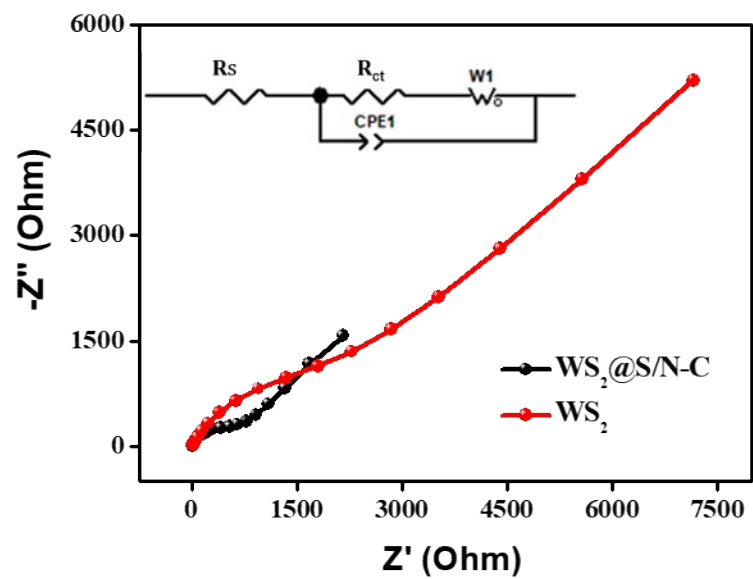


Figure S6 EIS spectra for WS₂@S/N-C and pure WS₂ after cycling for 1 cycle at 0.1 A g⁻¹. The inset is the equivalent circuit.

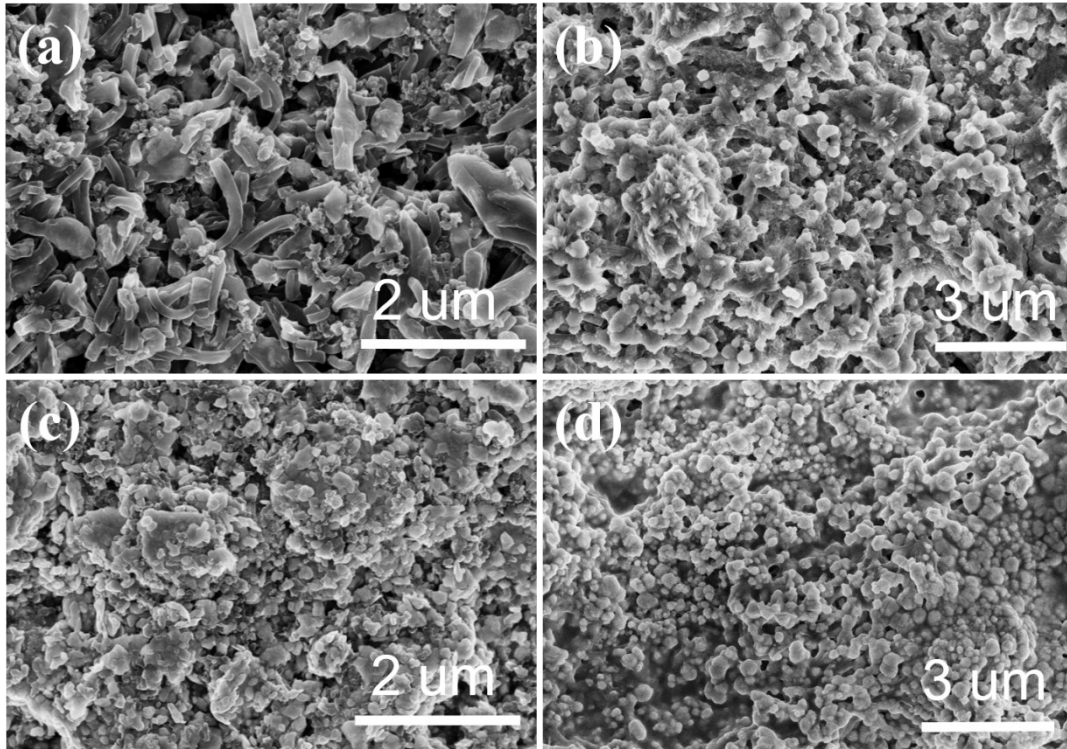


Figure S7 Low-resolution SEM images of WS₂@S/N-C electrode: (a) fresh electrode and (b) cycled electrode after 100 cycles; low-resolution SEM images of WS₂ electrode: (c) fresh electrode and (d) cycled electrode after 100 cycles.

Table S1. The adsorption behavior of Na on pristine WS₂.

Adsorption sites WS ₂	I (S-top)	II (Hollow)	III (W-top)
E _{ad} (eV)	-0.494	-0.744	-0.759
Q _{Na} (e)	0.56	0.74	0.76

Table S2. The adsorption behavior of Na on WS₂@S/N-C.

Adsorption sites WS ₂ @S/N-C	I (S-top)	II (Hollow)	III (W-top)
E _{ad} (eV)	-0.897	-1.168	-1.208
Q _{Na} (e)	0.65	0.79	0.79