

Support Information

Biomass-Derived Hard Carbon Anodes from *Setaria viridis* for Na-Ion Batteries

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Three biomass materials were directly pyrolyzed under different atmospheres to estimate the approximate proportion of their components. All samples were weighed before and after carbonization. Pyrolysis was carry out in a tube furnace at 900°C for 1 h under air or Ar atmosphere with a heating rate of 5 °C/min.

Table S1.The rough components ratios of three biomass materials after carbonized.

atmosphere biomass	Air (after/before)	Ar (after/before)	char yeild	ash ratio
Setaria viridis	0.0192/0.5554	0.0372/0.6010	2.7%	3.5%
Palm kernel shell	0.0124/0.7965	0.2795/1.1323	23%	1.6%
Fir sawdust	0.0017/0.4443	0.0488/0.5592	8.3%	0.4%

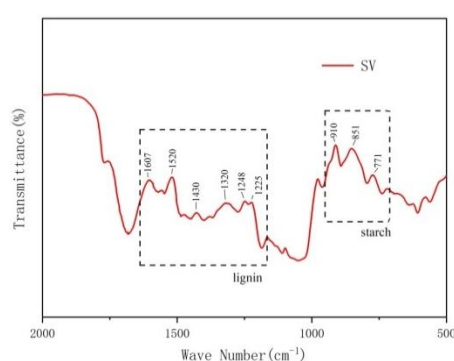


Figure S1. Fourier-transform infrared (FTIR) spectrum of untreated Setaria viridis biomass.

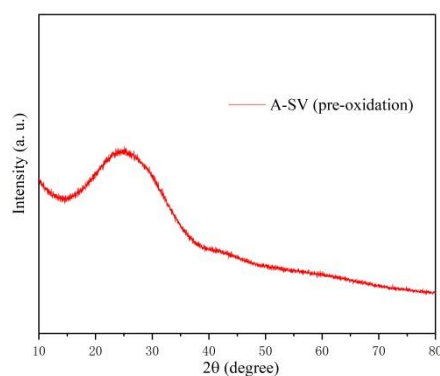


Figure S2. XRD spectrum of pre-oxidized A-SV.

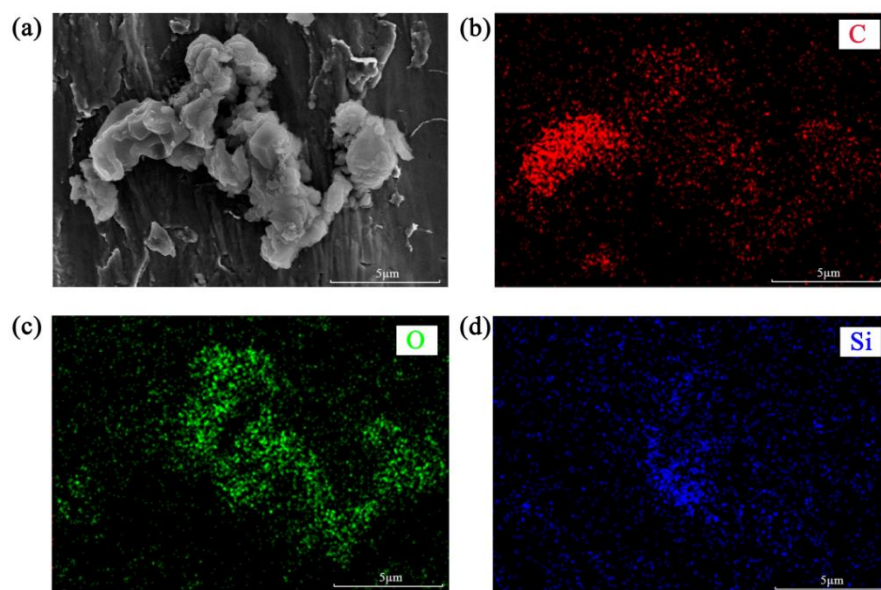


Figure S3. (a): The SEM image of SV-300; (b, c, d): Corresponding EDS C, O and Si element maps of SV-300, respectively.

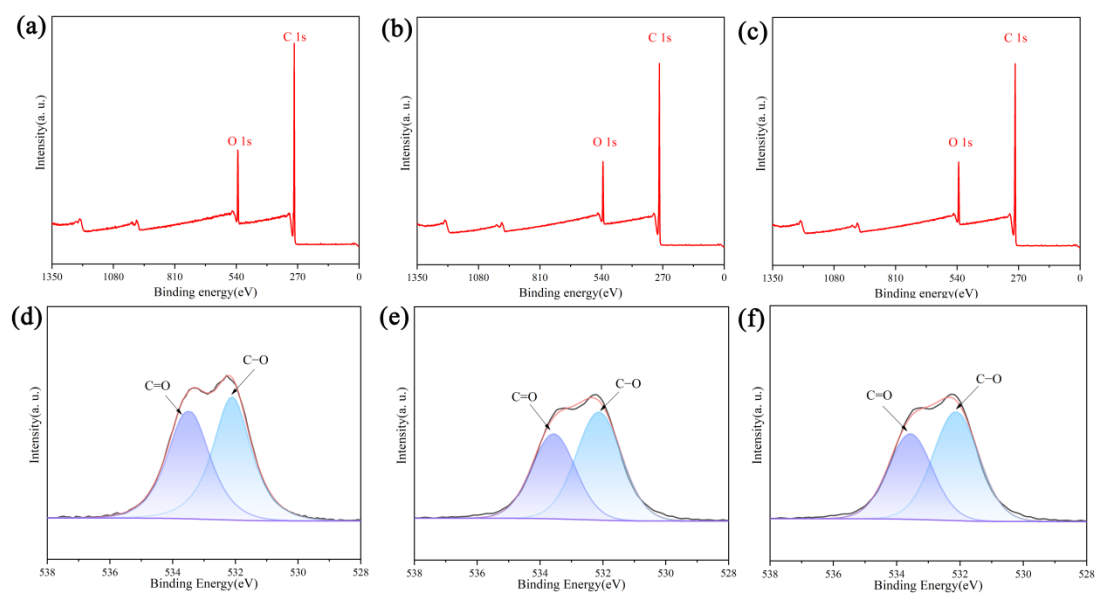


Figure S4. (a, b, c) XPS spectra of SV-300, SV-300h, SV-300n, respectively. (d, e, f) O1s spectra of SV-300, SV-300h, SV-300n, respectively.

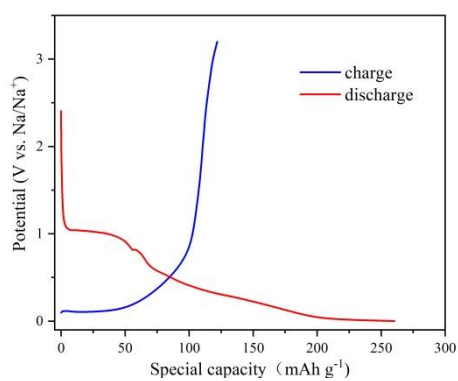


Figure S5. Charge/Discharge of another SV-300 sample.

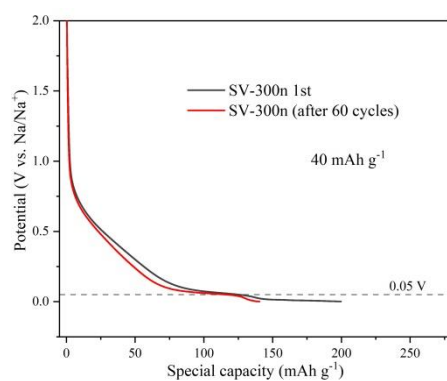


Figure S6. The change in discharging curve of SV-300n after 60 cycles.

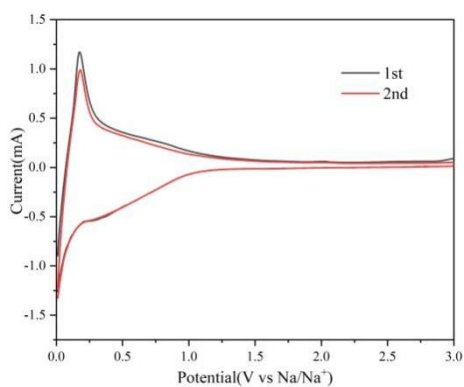


Figure S7. The CV curve of SV-300n at 0.1 mV s^{-1} .

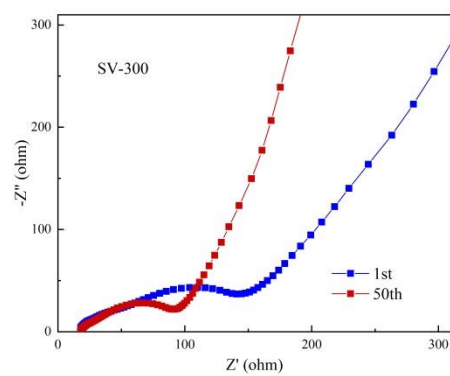


Figure S8. The change in impedance with cycles of SV-300.