

Supporting Information

Cottonseed cake-derived hard carbon anode with modulated carbon layer spacing and pores for highly reversible and durable sodium-ion batteries

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Table S1 Atomic content in the DHC, PHC and APHC samples

Samples	C(at.%)	O(at.%)	K(at.%)	Si(at.%)
DHC	95.2	4.6	0.1	0.1
PHC	94.1	5.7	0.1	0.1
APHC	94.4	5.6	—	—

Table S2 The relevant parameters of the DHC, PHC and APHC samples

Parameters	DHC	PHC	APHC
$d_{002}(\text{nm})$	0.383	0.385	0.398
I_G/I_D	1.83	1.76	1.71
Specific area ($\text{m}^2 \text{g}^{-1}$)	4.17	5.26	10.09
Pore volume ($\text{cm}^3 \text{g}^{-1}$)	0.02	0.03	0.04

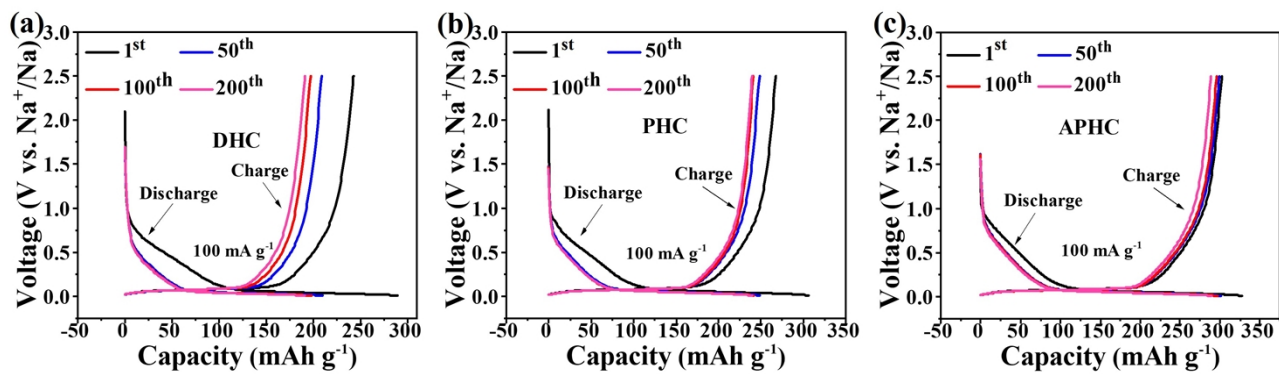


Fig. S1 The GCD curves of the DHC, PHC, and APHC electrodes at 100 mA g⁻¹.

Table S3 Equivalent circuit parameters collected from fitting the impedance spectra of the DHC, PHC and APHC samples

Values	DHC	PHC	APHC
$R_{ct} (\Omega)$	6.88	4.67	4.63
CPE (F)	1.02E-5	1.39E-5	1.46E-5