

Electronic Supplementary Information (ESI) for

Activation of sucrose-derived carbon spheres for high-performance supercapacitor electrodes

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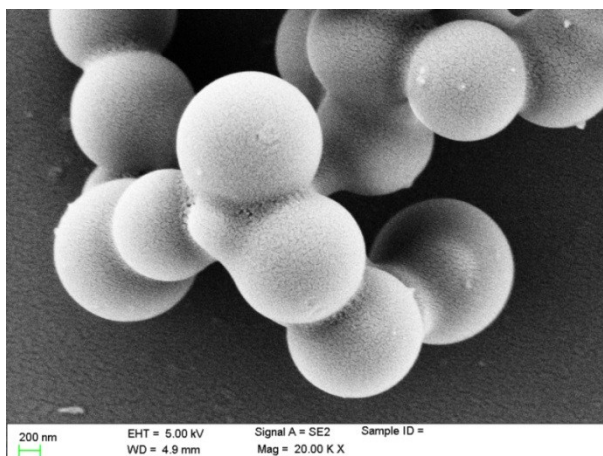


Figure S1: SEM image of sucrose HTC carbon spheres.

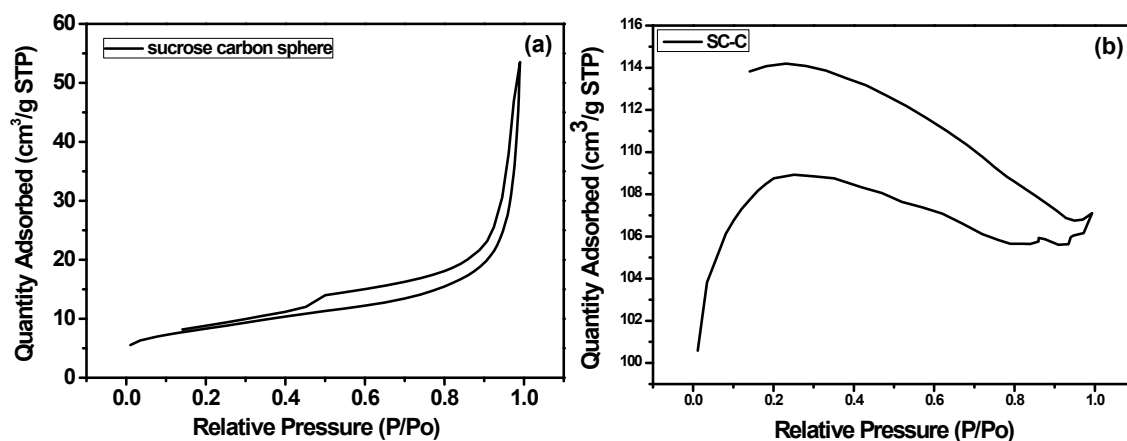


Figure S2: Nitrogen adsorption-desorption isotherms of (a) sucrose-derived spherical carbons from HTC, and (b) SCs carbonized at 800 °C without KOH.

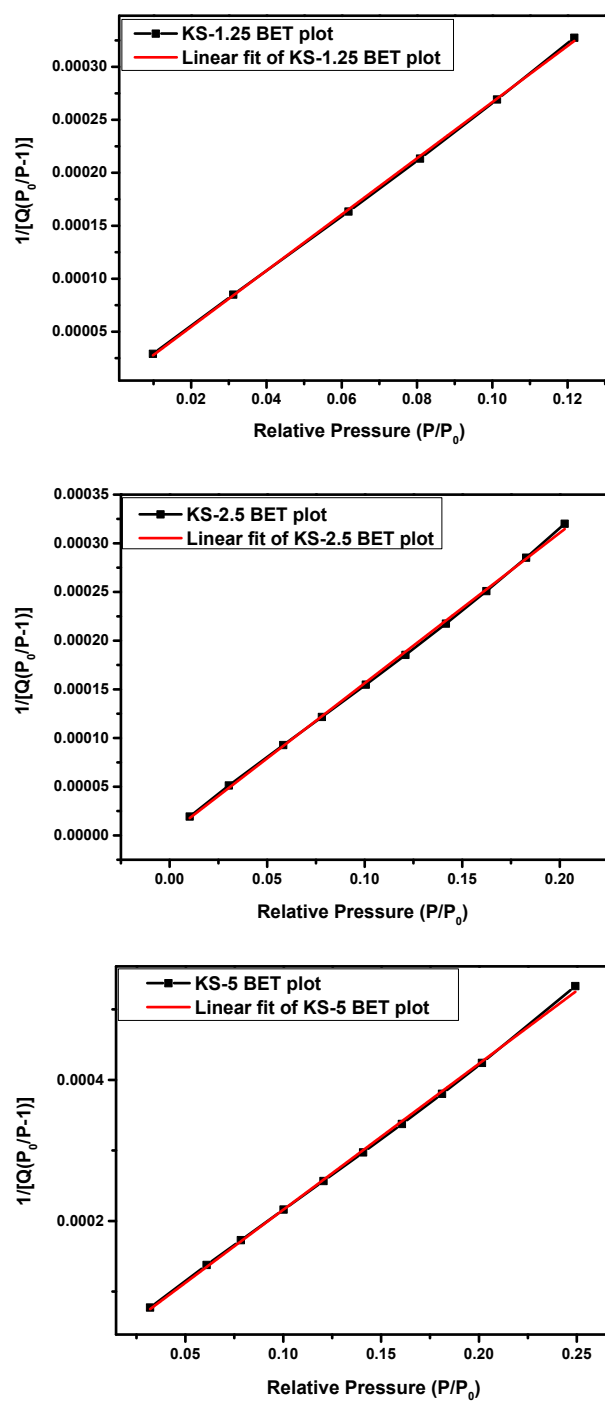


Figure S3: The regression of BET analysis for sample KS-1.25, KS-2.5 and KS-5.

Table S1: The fitting results of BET analysis for each sample.

Sample	Relative Pressure Range for Linear Fitting	BET Surface Area (m ² /g)	Slope (g/cm ³ STP)	Y-Intercept (g/cm ³ STP)	BET constant C	Correlation
KS-1.25	0.01-0.12	1642	0.00265	1.54458E-6	1716.68	0.99982
KS-2.5	0.01-0.2	2823	0.00154	1.94842E-6	790.384	0.99961
KS-5	0.03-0.26	2094	0.00207	8.96932E-6	231.79	0.99964

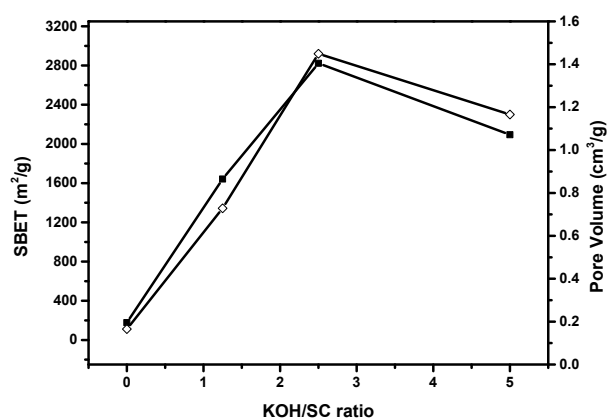


Figure S4: BET surface area (solid symbols) and pore volume (empty symbols) versus KOH/SC weight ratio.

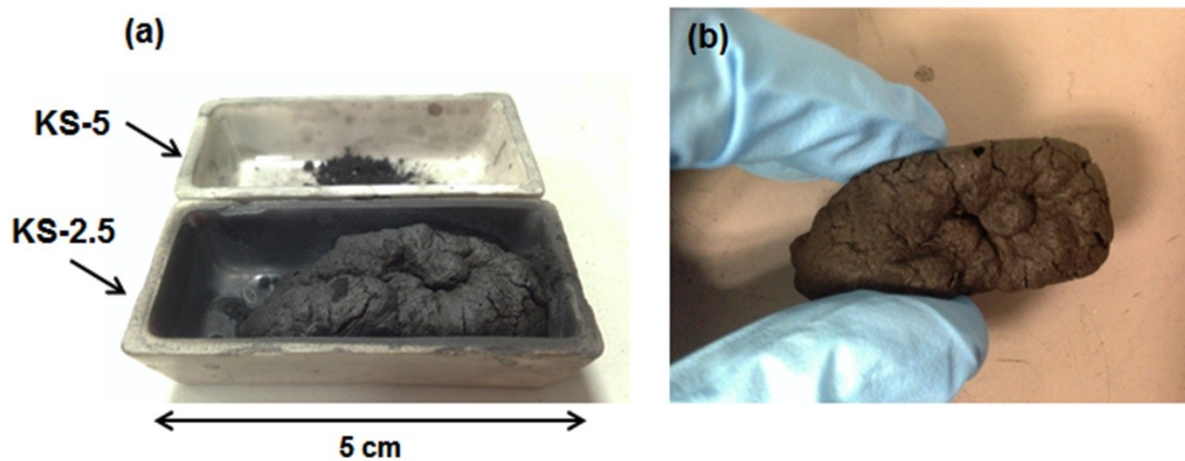


Figure S5: (a) Comparison of KS-2.5 and KS-5 after KOH activation. KS-2.5 exhibits expanded volume. (b) A monolithic sample of KS-2.5.

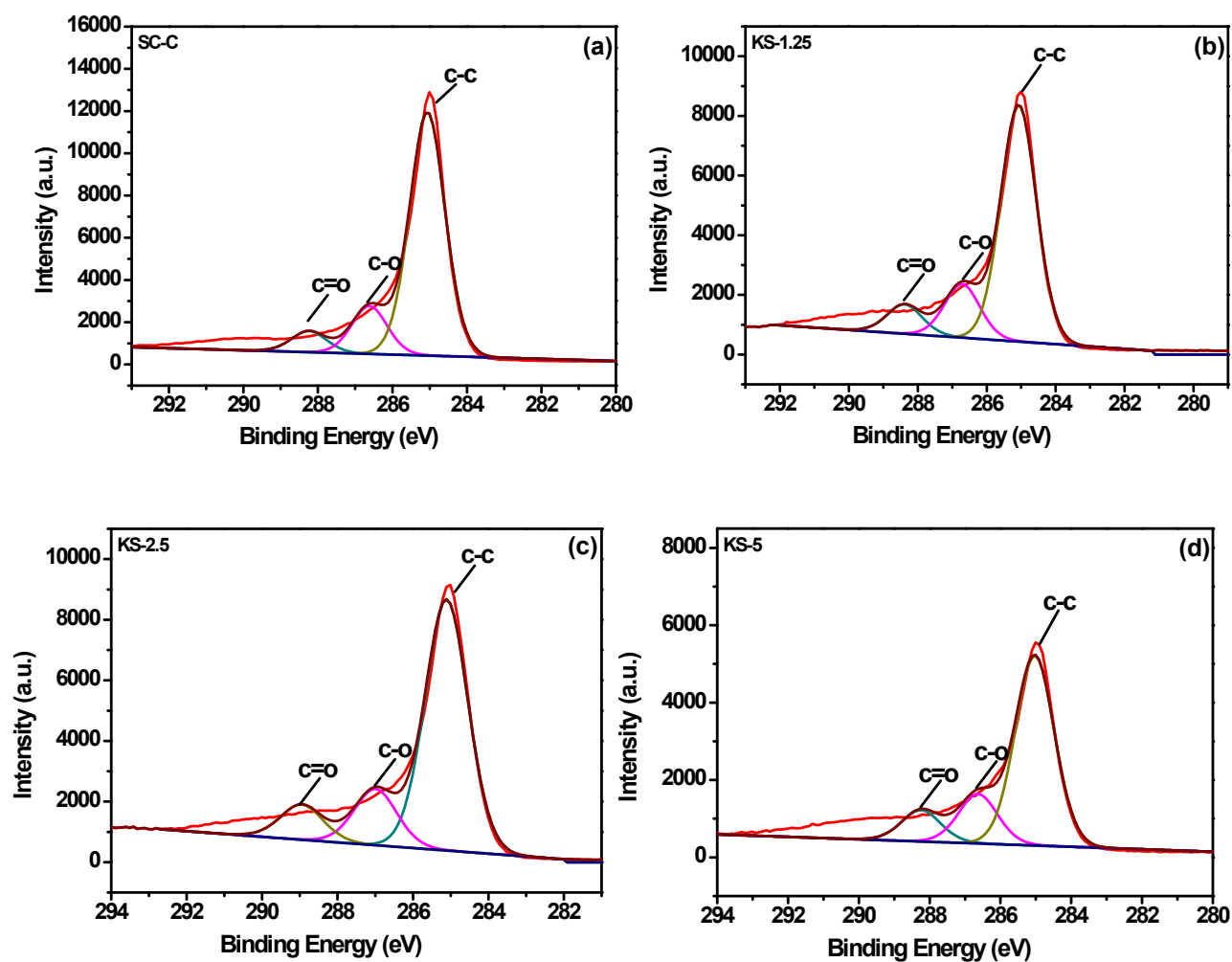


Figure S6: XPS spectra of the C 1s peak for the samples.

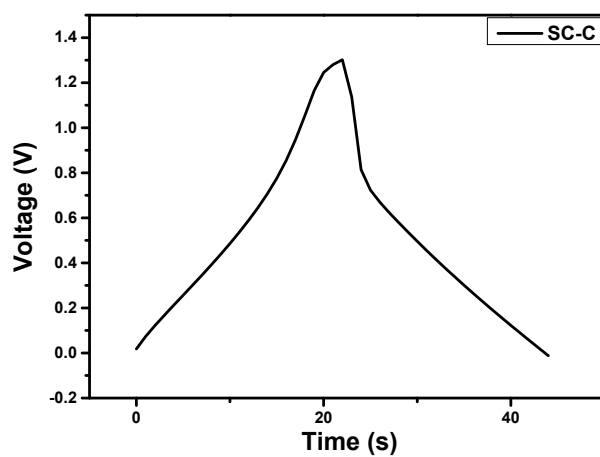


Figure S7: Typical charge-discharge curve of SC-C at a current density of 1 A g⁻¹.

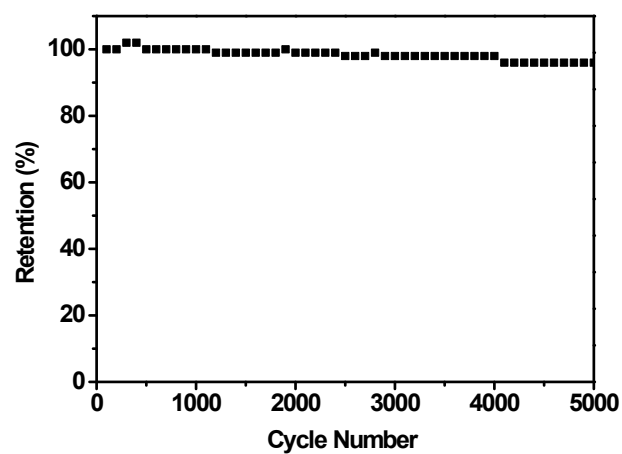


Figure S8: Cycling performance of KS-2.5 at the current density of 2 A g^{-1} in 6 M KOH solution.

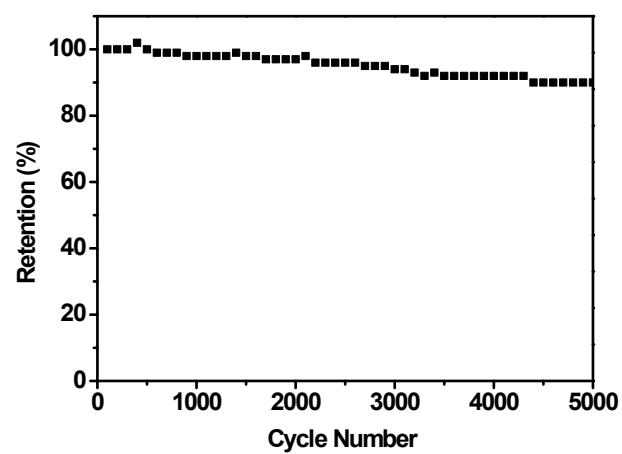


Figure S9: Cycling performance of KS-2.5 in 1 M TEABF₄/AN electrolyte at the current density of 2 A g^{-1} .