

A Novel Method to Fabricate Discrete Porous Carbon Hemispheres and Their Electrochemical Properties as Supercapacitors

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1. SEM and TEM photos of the samples with 15 wt% DVB

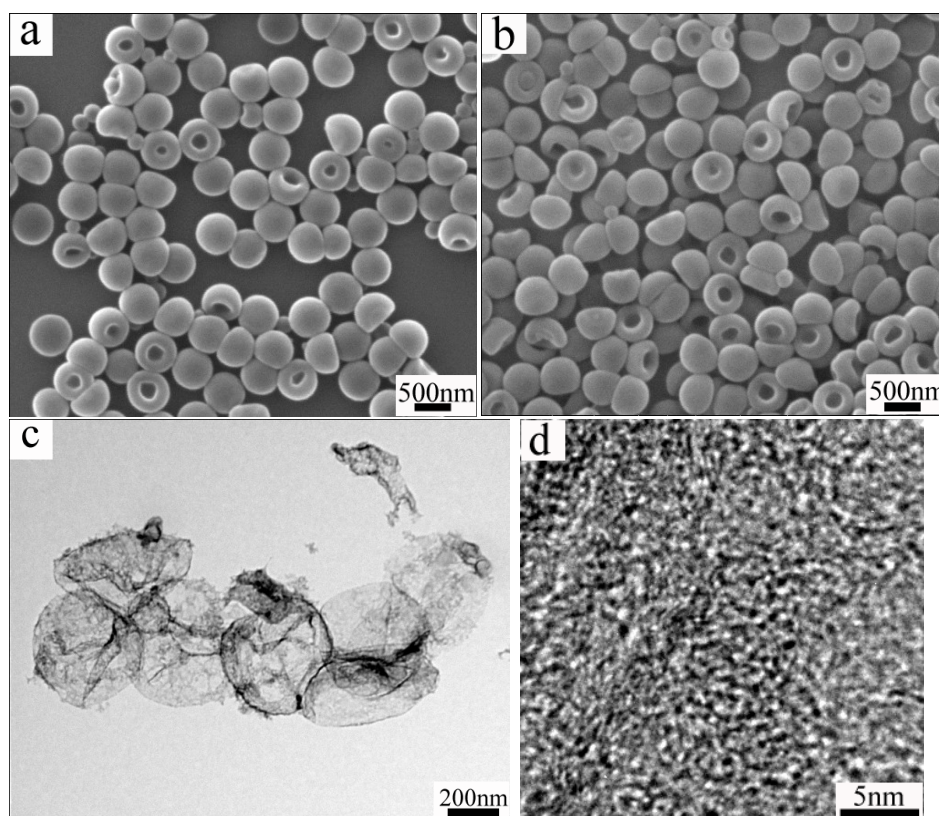


Fig. S1 SEM and TEM photos of the samples with 15 wt% DVB: (a) SEM photo of H15, (b) SEM photo of SH15, (c-d) TEM photos of CH15.

2. Texture properties of the CH35 carbon material

Table S1 Texture properties of the CH35 carbon material

Sample	S_{BET} (m^2/g)	V_{t} ^a (cm^3/g)	V_{mi} ^b (cm^3/g)	V_{mea} ^c (cm^3/g)	D_{HK} ^d (nm)
CH35	676	2.63	0.27	2.36	0.66

- a Total pore volume.
- b Micropore volume determined by using the Dubinin-Radushkevich (D-R) equation.
- c Mesopore and macropore volume obtained by subtracting V_{mi} from V_{t} .
- d Median micropore diameter calculated by the H-K method.

3. The cyclic voltmmograms are obtained at different scan rates, and specific capacitance, $C_s(\text{F}/\text{g})$, is calculated from these curves by the following equation

$$C = \frac{2\Delta S}{m\nu U}$$

where ΔS is the area of the current (A) against time (s) curve, m is the mass of carbon hemispheres in the electrode (g), ν is the scan rate, and U is the potential window (V).

4. The supercapacitor performance of CH25 estimated by the two-electrode system

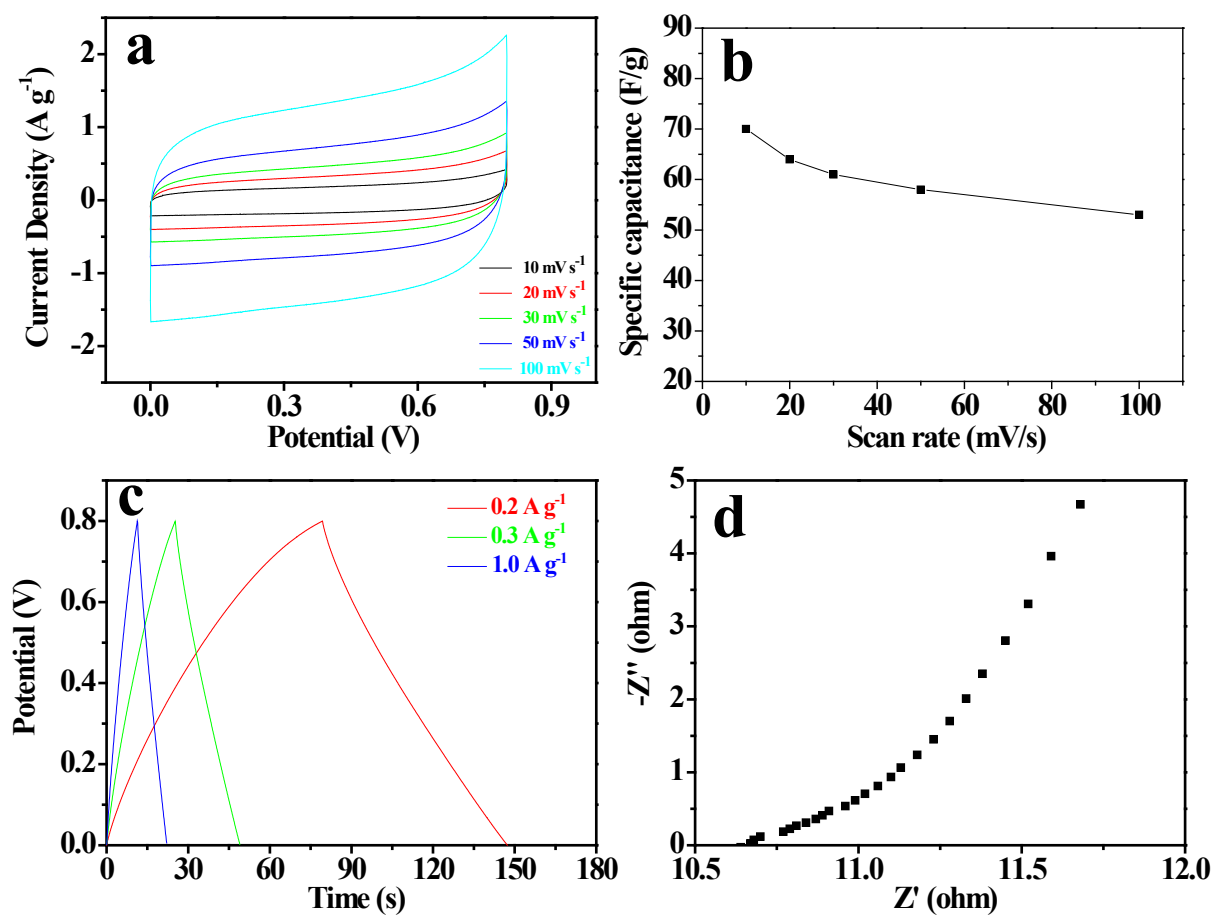


Fig. S2. (a) Cyclic voltammetry (CV) curves of CH25 at the scan rates of 10, 20, 30, 50, and 100 mV s⁻¹. (b) The correlation of specific capacitance with scan rates for CH25. (c) Chronopotentiometry (CP) curves of CH25 at current densities of 0.2, 0.3, and 1.0 A g⁻¹. (d) Nyquist plot at open circuit potential with amplitude of 5 mV for the CH25 sample with 1 M H₂SO₄ as an electrolyte.

5. The thermogravimetric curves of the sulfonated (P(St-co-DVB)) capsules

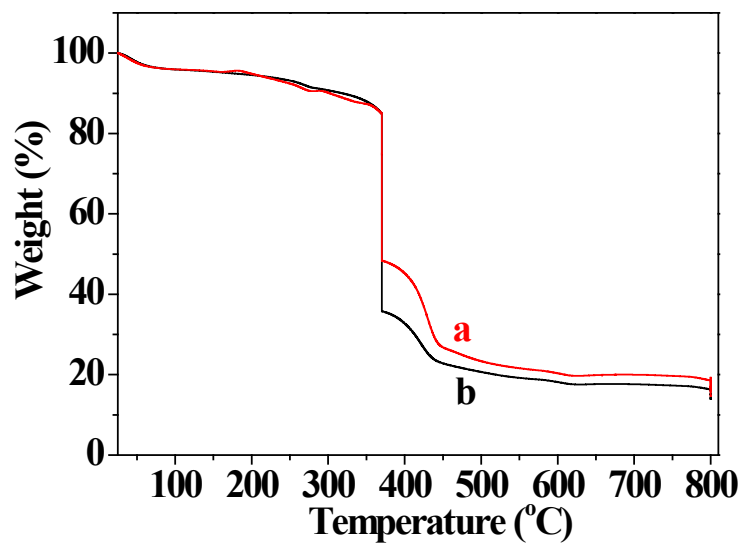


Fig. S3. The thermogravimetric curves of the sulfonated (P(St-co-DVB)) capsules under the carbonization conditions: (a) SH35, (b) SH25, which were measured by using the TGA/DSC.