Supporting Information:

1. Electrochemical measurements employed in present work.

Measurements conducted in a three-electrode system using 6 mol L\(^{-1}\) KOH as electrolyte:

A mixture of 80 wt% the carbon sample (~4 mg), 15 wt% acetylene black and 5 wt% polytetrafluoroethylene (PTFE) binder was fabricated using ethanol as a solvent. Slurry of the above mixture was subsequently pressed onto nickel foam under a pressure of 20 MPa, serving as the current collector. The prepared electrode was placed in a vacuum drying oven at 120 °C for 24 h. A three electrode experimental setup taking a 6 mol L\(^{-1}\) KOH aqueous solution as electrolyte was used in cyclic voltammetry and galvanostatic charge-discharge measurements on an electrochemical working station (CHI660D, ChenHua Instruments Co. Ltd., Shanghai). Here, the prepared electrode, platinum foil (6 cm\(^2\)) and saturated calomel electrode (SCE) were used as the working, counter and reference electrodes, respectively.

Specific capacitances derived from galvanostatic tests can be calculated from the equation:

\[
C = \frac{I\Delta t}{m\Delta V}
\]

where \(C\) (F g\(^{-1}\)) is the specific capacitance; \(I\) (A) is the discharge current; \(\Delta t\) (s) is the discharge time; \(\Delta V\) (V) is the voltage window; and \(m\) (g) is the mass of active materials loaded in working electrode.

Specific capacitances derived from cyclic voltammetry tests can be calculated from the equation:

\[
C = \frac{1}{mv(V_b - V_a)} \int_{V_a}^{V_b} I\,dV
\]

where \(C\) (F g\(^{-1}\)) is the specific capacitance; \(m\) (g) is the mass of active materials loaded in working electrode; \(v\) (V s\(^{-1}\)) is the scan rate; \(I\) (A) is the discharge current; \(V_b\) and \(V_a\) (V) are high and low voltage limit of the CV tests.
Measurements conducted in a two-electrode system using [EMIm]BF₄/AN as electrolyte:

In a two-electrode cell, [EMIm]BF₄ and acetonitrile (AN) (weight ratio of 1:1) was adopted as electrolyte. A glassy paper separator was sandwiched between two electrodes, and each electrode contains a mixture of 80 wt% the carbon sample (~ 2 mg), 15 wt% acetylene black and 5 wt% polytetrafluoroethylene (PTFE) binder. Nickel foam serves as the current collector. The assembly of the test cell was done in a glove box filled with Ar.

Specific capacitances derived from galvanostatic tests can be calculated from the equation:

\[ C = \frac{4I\Delta t}{m\Delta V} \]

where \( C \) (F g\(^{-1}\)) is the specific capacitance; \( I \) (A) is the discharge current; \( \Delta t \) (s) is the discharge time; \( \Delta V \) (V) is the voltage window; and \( m \) (g) is the total mass of two electrodes.

Specific capacitances derived from cyclic voltammetry tests can be calculated from the equation:

\[ C = \frac{2}{mv(V_b - V_a)} \int_a^b IdV \]

where \( C \) (F g\(^{-1}\)) is the specific capacitance; \( m \) (g) is the mass of active materials loaded in working electrode; \( v \) (V s\(^{-1}\)) is the scan rate; \( I \) (A) is the discharge current; \( V_b \) and \( V_a \) (V) are high and low voltage limit of the CV tests.

Specific energy density \( E \) and specific power density \( P \) derived from galvanostatic tests can be calculated from the equations:

\[ E = \frac{1}{8} C\Delta V^2 \]
\[ P = \frac{E}{\Delta t} \]

where \( E \) (Wh kg\(^{-1}\)) is the average energy density; \( C \) (F g\(^{-1}\)) is the specific capacitance; \( \Delta V \) (V) is the voltage window; \( P \) (W kg\(^{-1}\)) is the average power density and \( \Delta t \) (s) is the discharge time.
Fig. S1. Schematic illustration of a supercapacitor cell.
Fig. S2. (a) TG-DTG curve of potassium biphthalate and magnesium powder (the mass ratio of 3:1) and (b) XRD pattern of the carbon-3:1-800 sample before washing with HCl solution.
Fig. S3 FESEM images: (a) carbon-3:1-800; (b) carbon-3:1-1000; (c) carbon-3:1-1200.
Fig. S4. Carbon-1:1/2:1/3:1-800 samples measured in a three-electrode system using 6 mol L⁻¹ KOH as electrolyte: (a) CV curves at a scan rate of 10 mV s⁻¹; (b) CV curves at a scan rate of 20 mV s⁻¹; (c) CV curves at a scan rate of 50 mV s⁻¹; (d) CV curves at a scan rate of 100 mV s⁻¹; (e) specific capacitances calculated from CV curves; (f) GCD curves at a current density of 5 A g⁻¹; (g) specific capacitances calculated from GCD curves; (h) Ragone plots; (i) Nyquist plots before/after 10000 cycles as well as the enlarged ones (j).
Fig. S5. **Carbon-3:1-800** sample measured in a two-electrode system using [EMIm]BF₄/AN as electrolyte at the operation temperatures of 25/50/80 °C: CV curves at different scan rates.