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Supporting Information

Hollow mesoporous carbon cages by pyrolysis of waste polyethylene for supercapacitors

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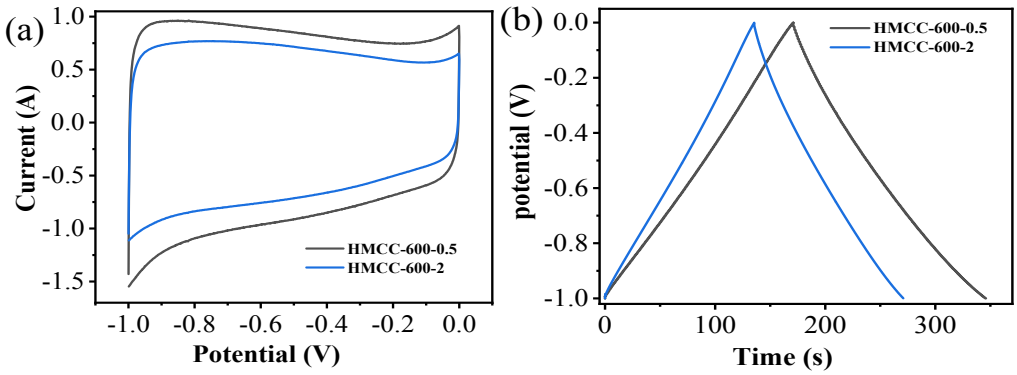

Figure S1 Electrochemical performance of HMCC-600-0.5 and HMCC-600-2 in three-electrode system. (a) Cyclic voltammograms curves at 5 mV s^{-1}, (b) Galvanostatic charge/discharge curves at 1 A g^{-1}.

As shown in Figure S1a, the CV curve area of HMCC-600-0.5 is larger than that of HMCC-600-2, which indicates the specific capacitance of HMCC-600-0.5 is higher than that of the HMCC-600-2. Figure S1b shows the GCD curves of HMCC-600-0.5 and HMCC-600-2 which exhibit the symmetrical triangle, and the discharging time of the HMCC-600-0.5 is longer than that of HMCC-600-2. In addition, the specific capacitance of HMCC-600-0.5 and HMCC-600-2 composite samples are 170 and 135 F g^{-1}, respectively. Based on the above discussion, we conclude that when the mass ratio of magnesium powder to plastic is 1:1, the electrochemical performance of the sample is more excellent."

Table S1 Comparison of specific capacitance rate of carbon materials

Carbon material	Specific capacitance rate (%)	Electrolyte	References
Porous hollow carbon spheres	67	6 M KOH	21
N-doped hollow mesoporous carbon	61	6 M KOH	22
N-doped nanoparticles carbon	69	6 M KOH	23
Two-dimensional porous carbon	54	6 M KOH	24
Cotton-derived hierarchically porous carbon	63	6 M KOH	25
Hollow mesoporous carbon cages	75	6 M KOH	This work