Electronic Supplementary Information (ESI)

Fast Ion Transport and High Capacitance of Polystyrene-based Hierarchical Porous Carbon Electrode Material for Supercapacitors

Fei Xu, Rongjun Cai, Qingcong Zeng, Chong Zou, Dingcai Wu, Feng Li, Xiaoe Lu, Yeru Liang, Ruowen Fu**

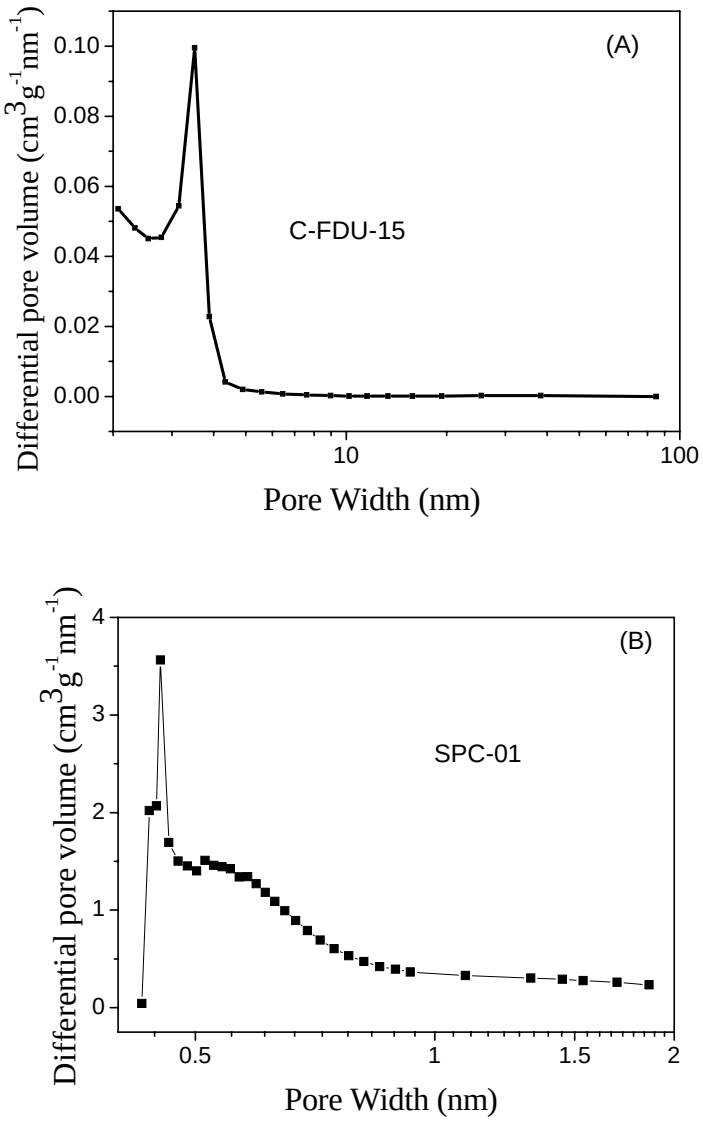

Fig. S1 (A) Barrett-Johner-Halendar pore size distribution of C-FDU-15 and (B) Horvath-Kawazoe pore size distribution of SPC-01, respectively.

*Corresponding authors; Tel: +86-020-84112759, Fax : +86-020-84115112; E-mail : wudc@mail.sysu.edu.cn (D. Wu), cesfrw@mail.sysu.edu.cn (R. Fu).

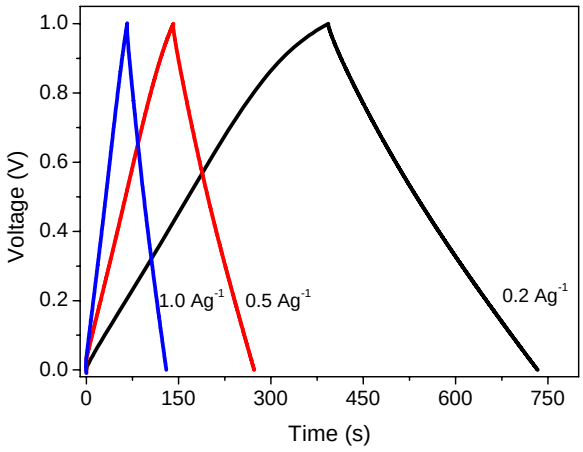

Fig. S2 Constant charging-discharging profiles of PS-HPC at different current densities over a voltage range of 0-1V in 6 molL^{-1} KOH electrolyte. These tests were executed using Arbin instruments by assembling a symmetrical two-electrode supercapacitor using PS-HPC as electrode, which was prepared by pressing a mixture of 85 wt.% active material, 10 wt.% conductive carbon black and 5 wt.% polytetrafluoroethylene into a nickel foam current collector.

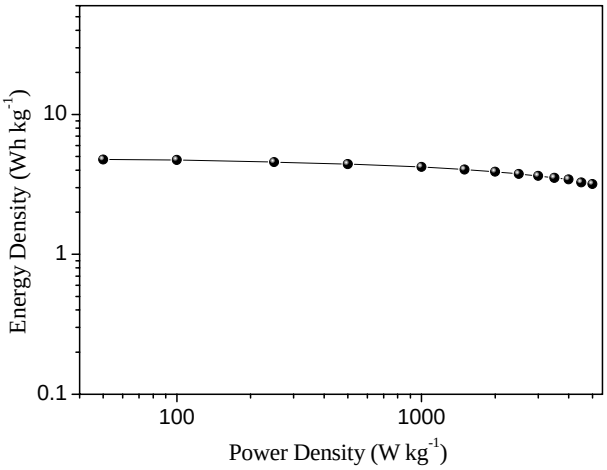

Fig. S3 Ragone plot for a supercapacitor with PS-HPC as electrodes. The energy and power densities are obtained, respectively, by the equation reported in the reference (*Angew. Chem. Int. Ed.* 2008, 47, 373-376.): $E=CU^2/2$ and $P=IU/2$, where C, U, and I are the gravimetric capacitance obtained by constant current charge-discharge test, the cell voltage (i.e., 1 V), and the current density.