

## Electronic Supplementary Information (ESI)

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

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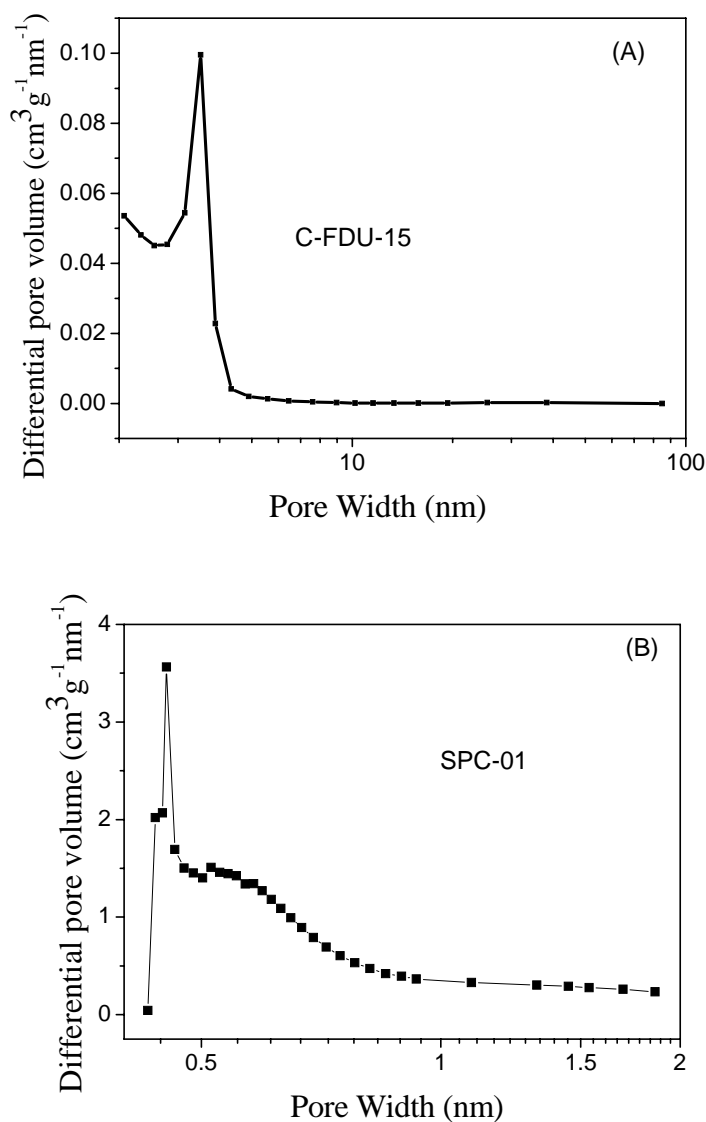


Fig. S1 (A) Barrett-Johnson-Halender pore size distribution of C-FDU-15 and (B) Horvath-Kawazoe pore size distribution of SPC-01, respectively.

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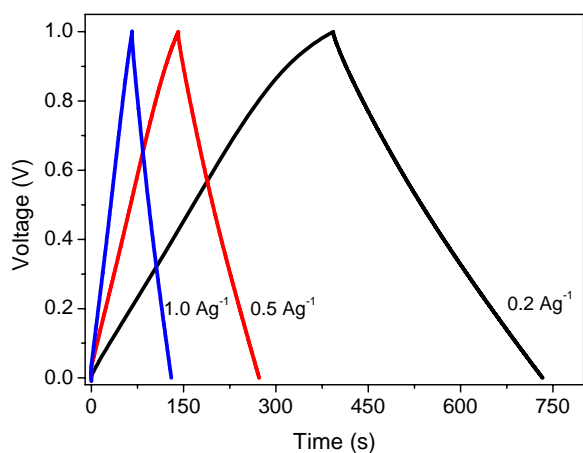


Fig. S2 Constant charging-discharging profiles of PS-HPC at different current densities over a voltage range of 0-1V in 6 molL<sup>-1</sup> KOH electrolyte. These tests were executed using Arbin instruments by assembling a symmetrical two-electrode supercapacitor using PS-HPC as electrode, which was 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.

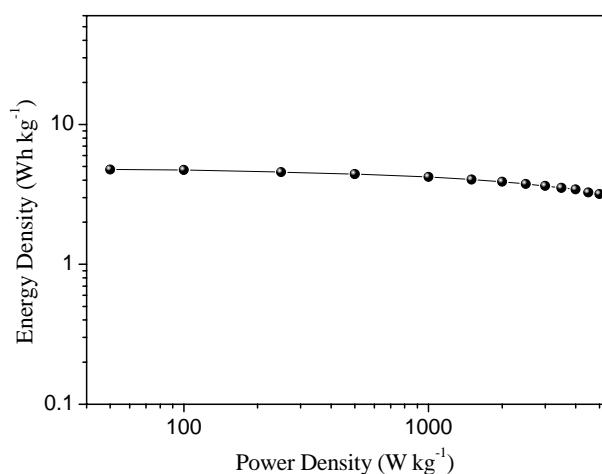


Fig. S3 Ragone plot for a supercapacitor with PS-HPC as electrodes. The energy and power densities are obtained, respectively, by the equation reported in the reference (*Angew. Chem. Int. Ed.* 2008, 47, 373-376.):  $E=CU^2/2$  and  $P=IU/2$ , where  $C$ ,  $U$ , and  $I$  are the gravimetric capacitance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