Supporting Information for

Homologous Strategy to Construct High-Performance Coupling Electrodes for Advanced Potassium-Ion Hybrid Capacitors

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Supplementary Figures
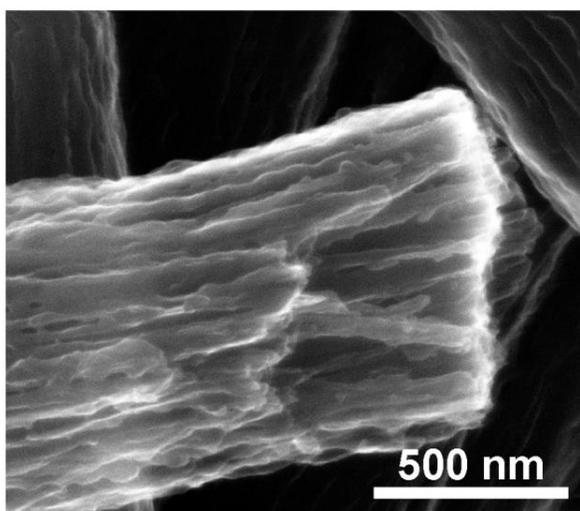
Fig. S1 SEM imagine of MCCF
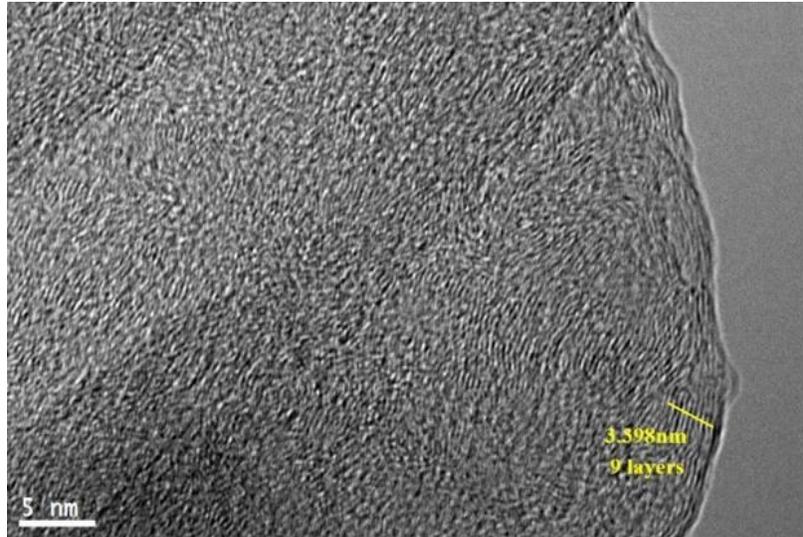
Fig. S2 TEM imagine with larger magnification of S-MCCF, in which the interlayer distance calculated to be about 0.38 nm
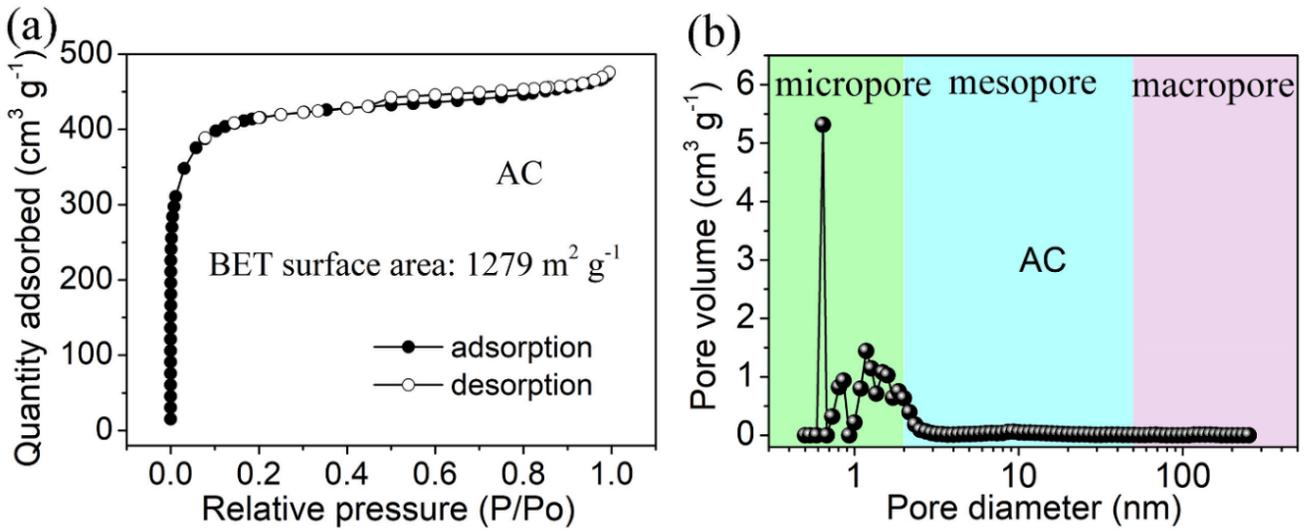
Fig. S3 a N_2 adsorption-desorption isothermal curves and **b** Pore size distributions of AC
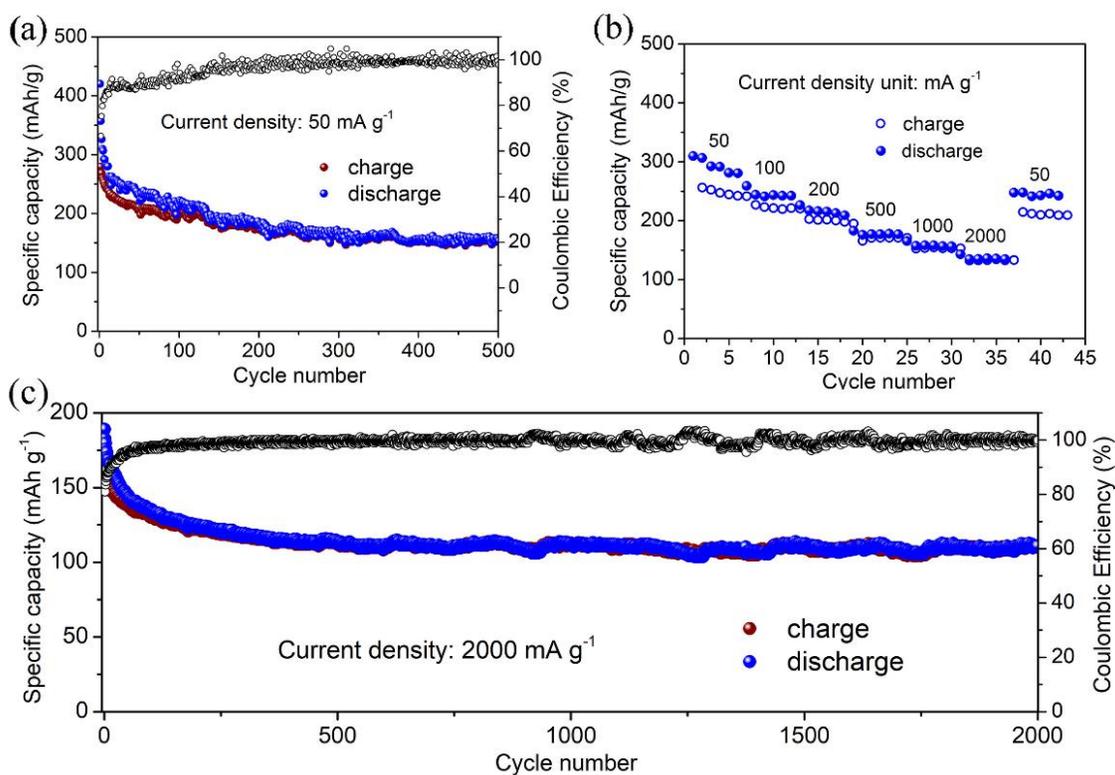
Fig. S4 Electrochemical performance of MCCF anode for PIBs: **a** Cycling performance at the current density of 50 mA g^{-1}. **b** Rate performances tested at 50, 100, 200, 500, 1000, 2000, and 50 mA g^{-1}. **c** Long-term cycling performance at a current density of 2000 mA g^{-1}
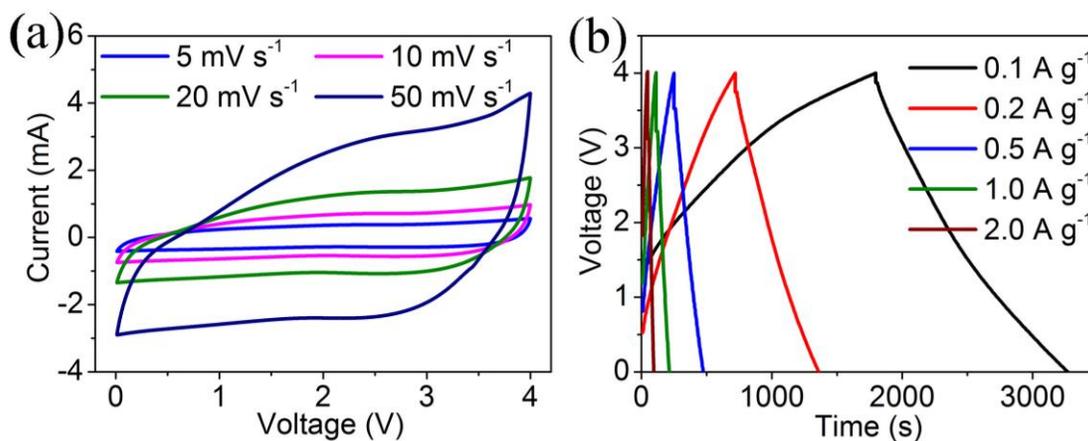
Fig. S5 a CV curves and **b** GCD profiles of S-MCCF//aMCCF PIHC with an anode to cathode mass ratio of 1:1
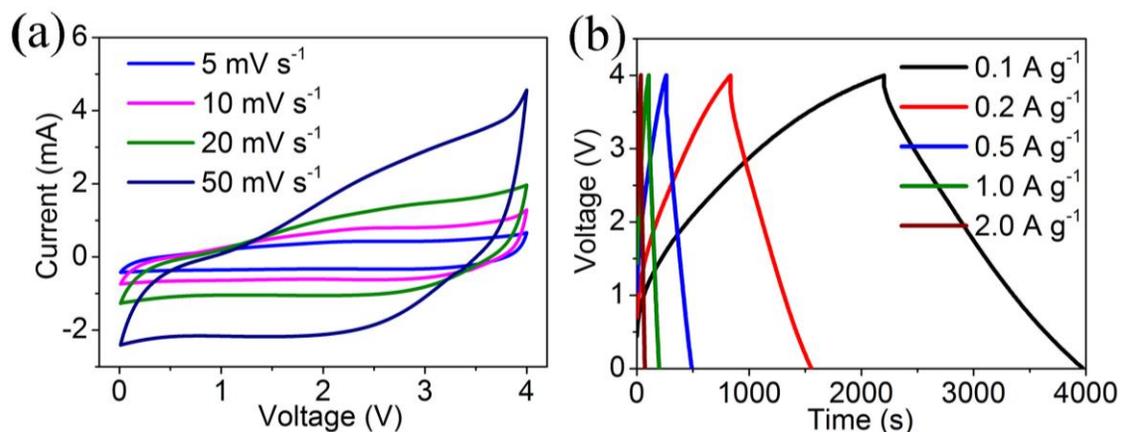
Fig. S6 a CV curves and **b** GCD profiles of S-MCCF//aMCCF PIHC with an anode to cathode mass ratio of 1:3
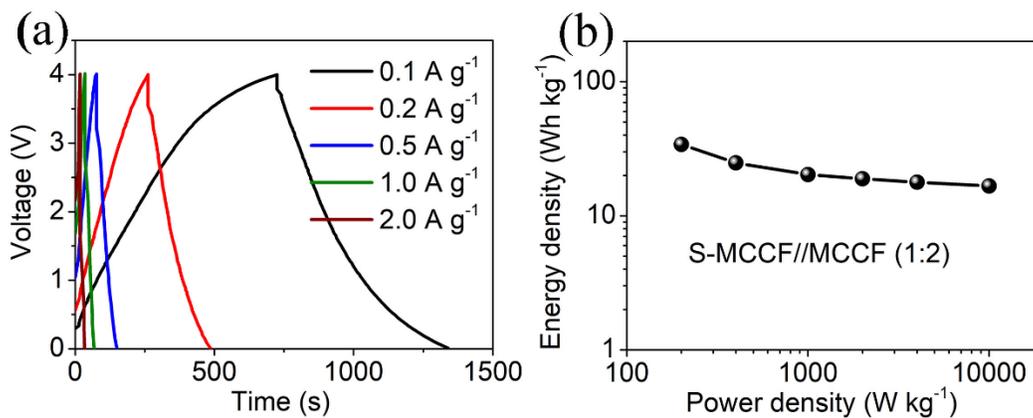
Fig. S7 a GCD profiles and **b** Ragone plots of the energy density versus power density for S-MCCF//MCCF PIHC with an anode to cathode mass ratio of 1:2