

Electronic Supplementary Information

**Electric Double Layer Capacitors of High Volumetric Energy Based
on Ionic Liquids and Hierarchical-Pore Carbon**

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Electronic supplementary information for:

- 1. Chemical structures of EMIm-TFSI and MPPy- TFSI,**
- 2. Cyclic voltammograms of the aMP cell obtained by varying the voltage window in MPPy-TFSI,**
- 3. Variation of the R_{es} and R_w with the applied voltages for different cells,**
- 4. Capacitance retention with cycle number for the aMP and tMC symmetric cells.**

1. Chemical structures of EMIm-TFSI and MPPy- TFSI

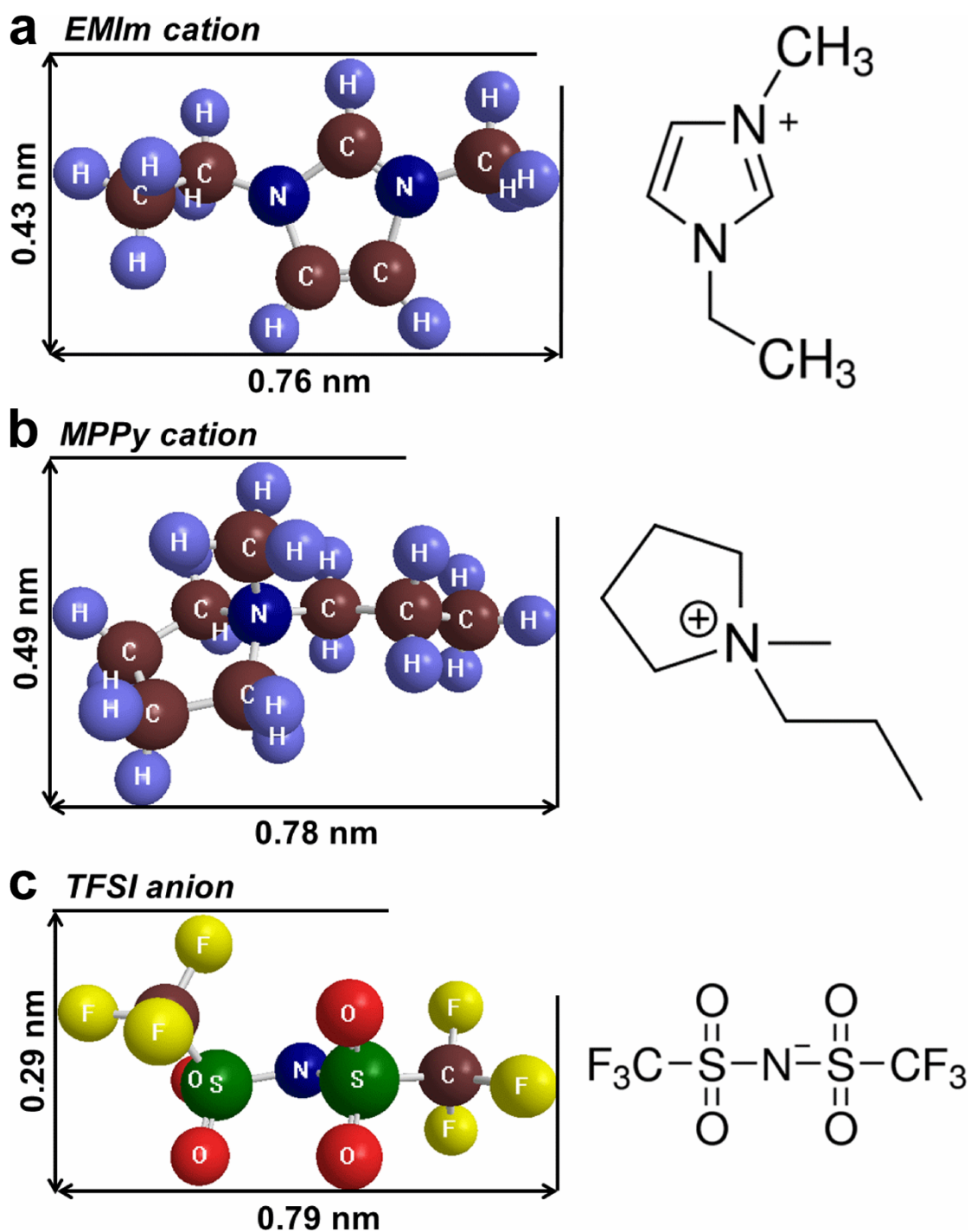


Fig. S1. Chemical structures of 1-ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide (EMIm-TFSI) and 1-methyl-1-propylpyrrolidinium bis(trifluoromethylsulfonyl)imide (MPPy-TFSI): (a) EMIm cation, (b) MPPy cation, and (c) TFSI anion.

2. Cyclic voltammograms of the aMP cell obtained by varying the voltage window in MPPy-TFSI

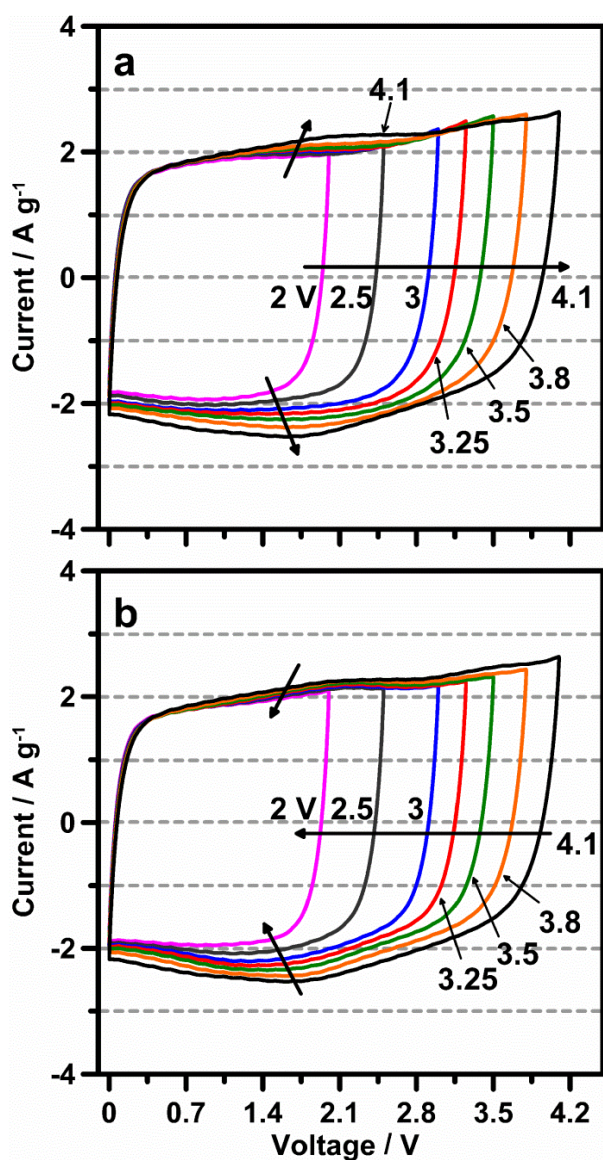


Fig. S2. Cyclic voltammograms of the symmetric aMP cell obtained sequentially by: (a) gradually extending the voltage window from 2 to 4.1 V; (b) reversing the direction of voltage-window variation from 4.1 to 2 V. The cell was assembled using MPPy-TFSI and operated at a scan rate of 50 mV s^{-1} .

3. Variation of the R_{es} and R_w with the applied voltages for different cells

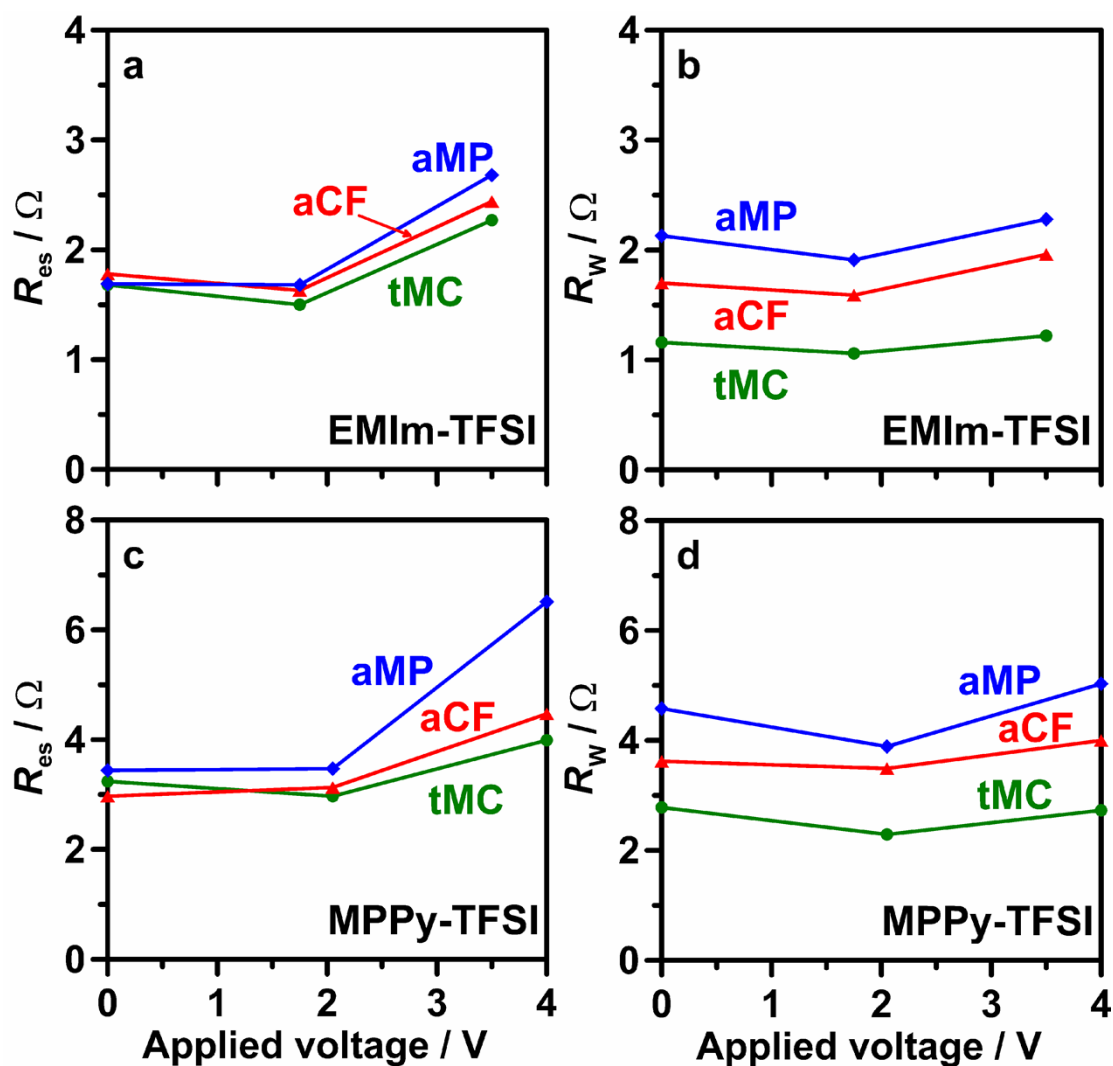


Fig. S3. Variation of the R_{es} and R_w values with the applied voltages for the symmetric aMP, aCF, and tMC cells assembled with different electrolytes: (a,b) EMIm-TFSI; (c,d) MPPy-TFSI.

4. Capacitance retention with cycle number for the aMP and tMC symmetric cells

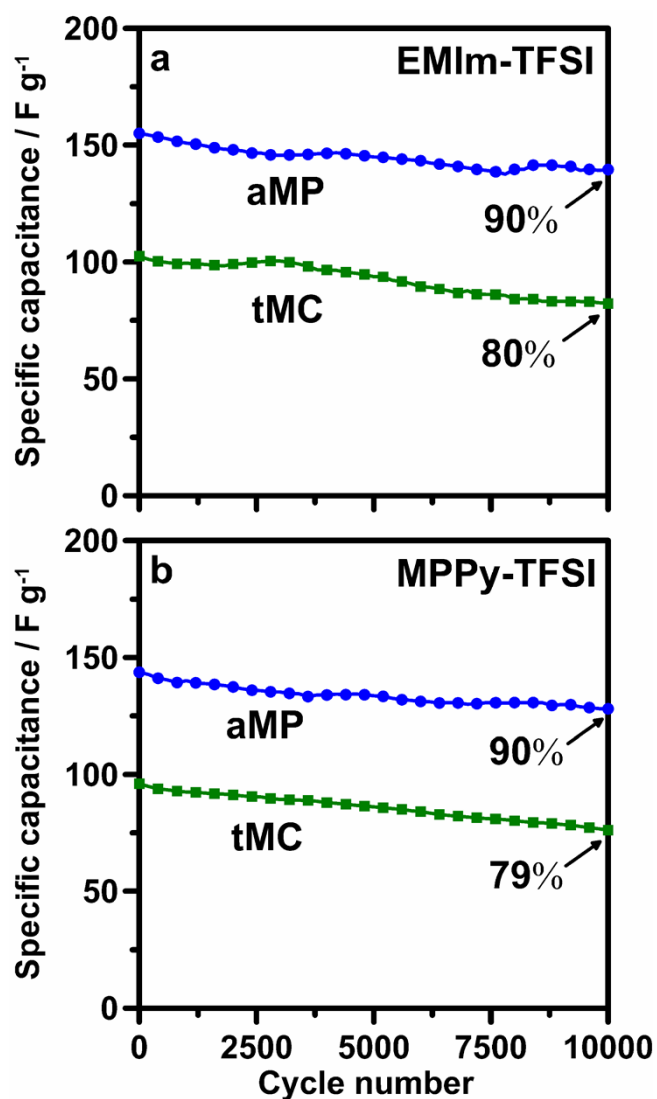


Fig. S4. Variation of specific capacitance retention with cycle number for the aMP and tMC symmetric cells assembled with electrolytes EMIm-TFSI (a) and MPPy-TFSI (b). The cells were galvanostatic charge and discharge at 10 A g^{-1} (40 mA cm^{-2}) within 0–3.5 V in EMIm-TFSI and 0–4.1 V in MPPy-TFSI.