Electronic Supplementary Material (ESI) for Sustainable Energy & Fuels.

Supporting Information

Flexible Membrane Electrode with Electrolyte-Affinity Surface for Energy Storage: Effects of Amphiphilic Block Copolymers and Membrane Thickness

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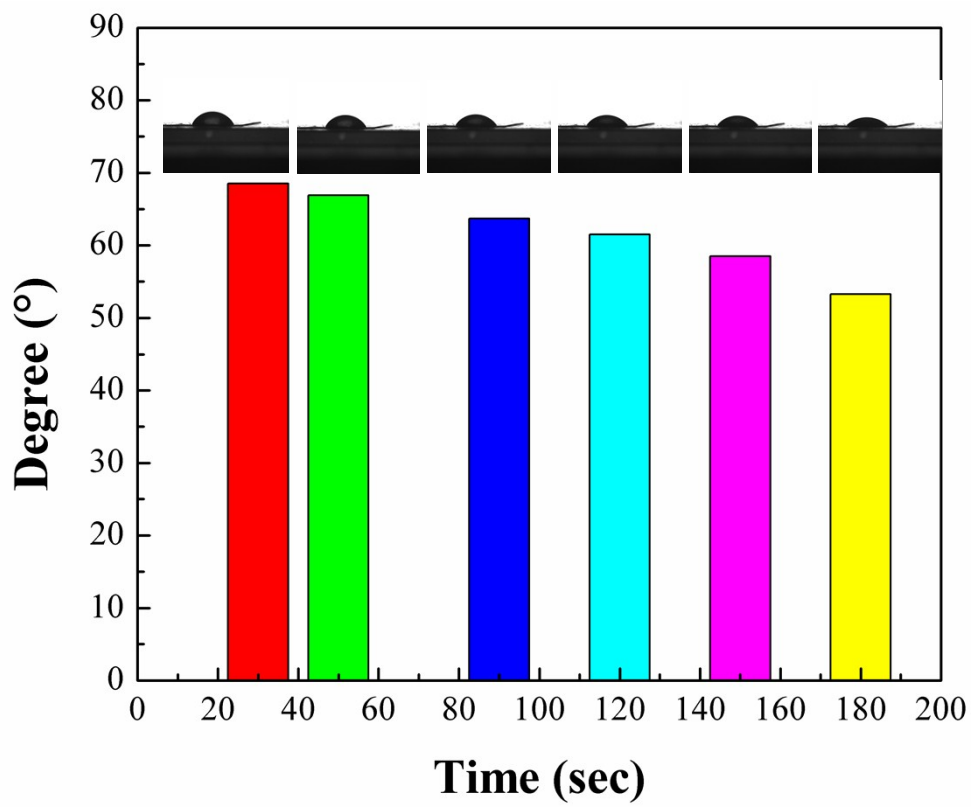


Figure S1 *Dynamic contact angles for FME-PAA-60 μm*

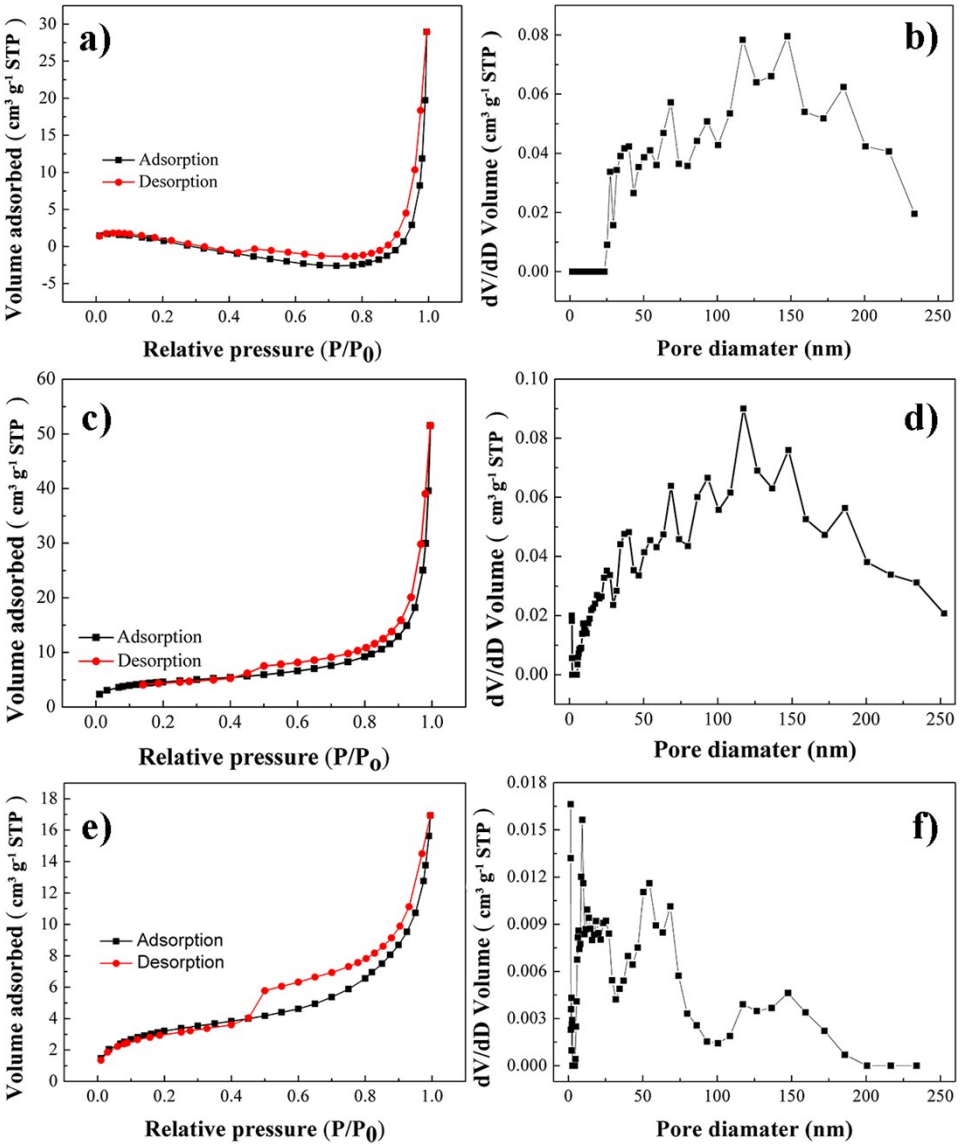


Figure S2 *BET characterization for FME-PAAs with different thickness: a and b) 30 µm, c and d) 60 µm, and e and f) 100 µm*

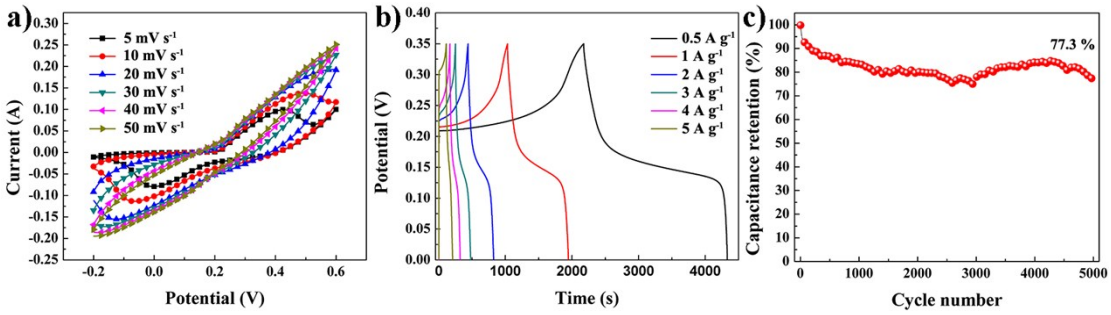
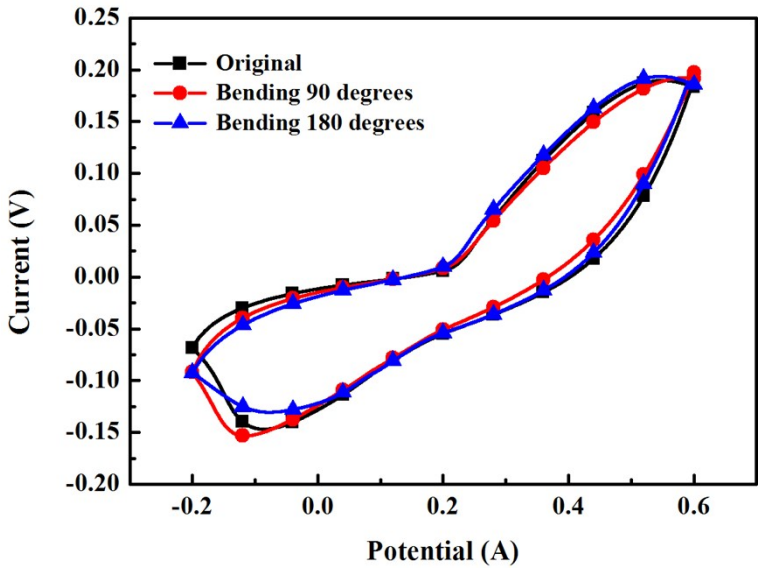


Figure S3 *Electrochemical performance of FME-PAA-60: a) CV, b) GCD, and c) cycle life*



F*igure S4* *The CV curves of FME-PAA-60 at different bending states*

Table S1 The energy densities and power densities of various asymmetric supercapacitors based on $Ni(OH)_2$ reported in literatures

Asymmetric supercapacitors	Specific capacitance	Energy density & power density	Current density or scan rate	Cycle life	Measurement conditions	**Ref.**
Co_3O_4@$Ni(OH)_2$//AC	98.40 F g^{-1}	40.0 Wh kg^{-1} at 346.9 W kg^{-1}	0.4 A g^{-1}	90.5 % after 5000 cycles	3 M KOH	**[1]**
$Ni(OH)_2$/AC/CNT//AC	82.1 F g^{-1}	32.3 Wh kg^{-1} at 504.8 W kg^{-1}	0.5 A g^{-1}	83.5 % after 1000 cycles	6 M KOH	**[2]**
CNT/$Ni(OH)_2$// rGO	78 F g^{-1}	35.0 Wh kg^{-1} at 1800 W kg^{-1}	2 A g^{-1}	–	1 M KOH	**[3]**
$Ni(OH)_2$ – AB //AC	144 F g^{-1}	18.7 Wh kg^{-1} at 1971.0 W kg^{-1}	2 mV s^{-1}	91.08 % after 5000 cycles	2 M KOH	**[4]**
β -$Ni(OH)_2$ /Ni-foam//AC	105.8 F g^{-1}	36.2 Wh kg^{-1} at 100.6 W kg^{-1}	0.13 A g^{-1}	92 % 1000 cycles	6 M KOH	**[5]**
Ni(OH)2@3D Ni//AC	92.8 F g^{-1}	21.8 Wh kg^{-1} at 660 W kg^{-1}	1 A g^{-1}	96 % after 3000 cycles	1 M KOH	**[6]**
FME-PAA-60//FME-AC	114.1 F g^{-1}	40.6 Wh kg^{-1} at 400.0 W kg^{-1}	0.5 A g^{-1}	90.7 % after 5000 cycles	6 M KOH	**Our work**

References

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