

Facile Template-Free Synthesis of Vertically Aligned Polypyrrole Nanosheets on Nickel Foams for Flexible All-Solid-State Asymmetric Supercapacitors

Electronic Supplementary Information

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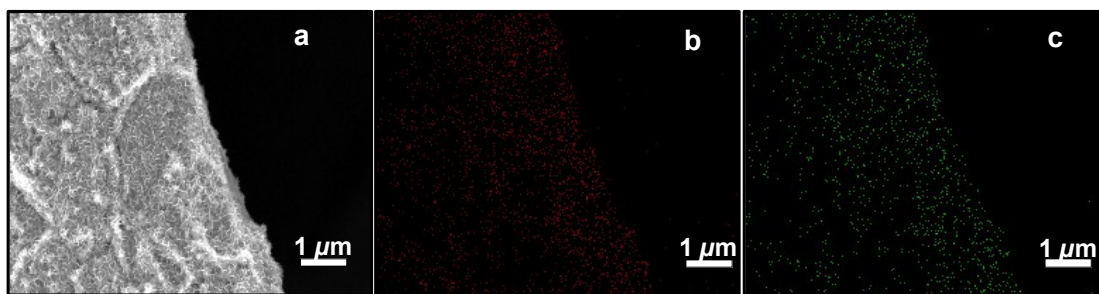


Fig.S1 Typical scanning TEM (STEM) image (a) and the corresponding elemental mapping images of carbon (b) and nitrogen (c) for Ni-PPy.

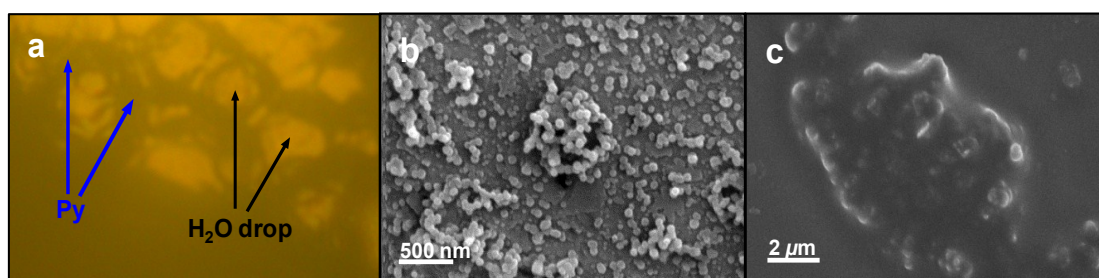


Fig.S2 The proofs for the possible mechanism of the formation of the vertically aligned PPy nanosheets on Ni foam. (a) Optical microscopy image of “sea-island” phase separation structure of Py and water on Ni foam. (b) SEM image of spherical PPy nanoparticles on Ni foam, which prepared in solution without the evaporation procedure. (c) Irregular PPy nanoparticles formed in the absence of Ni foams.

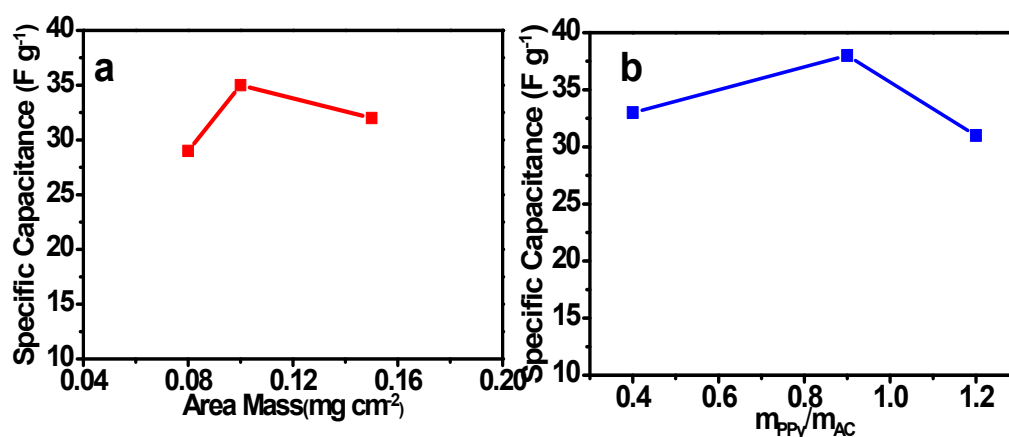


Fig.S3 (a) Specific capacitance of PPy-Ni//PPy-Ni all-solid-state symmetric supercapacitors with different area mass at the current density of 0.2 A g⁻¹. (b) Relationship between the specific capacitance of PPy-Ni//AC-Ni all-solid-state asymmetric supercapacitors and the mass ratio of PPy to AC.

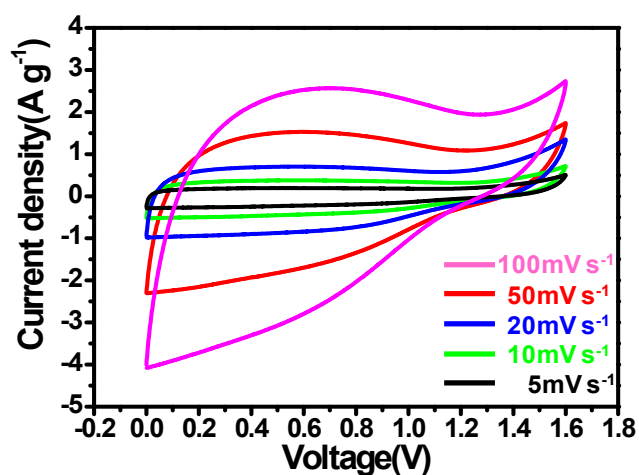


Fig.S4 CV curves of PPy-Ni//AC-Ni solid-state asymmetric supercapacitor at different scan rates of 5 to 100 mV s⁻¹.

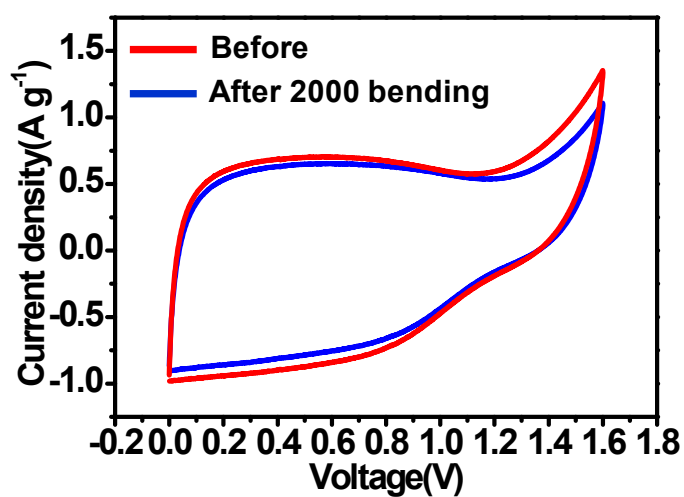


Fig.S5 CV curves of the PPy-Ni//AC-Ni all-solid-state asymmetric supercapacitor before and after 2000 bending cycles at a scan rate of 20 mV s⁻¹.