ADVANCED MATERIALS

Supporting Information

for *Adv. Mater.*, DOI: 10.1002/adma.201602987

Large-Area Supercapacitor Textiles with Novel Hierarchical Conducting Structures

Hao Sun, Songlin Xie, Yiming Li, Yishu Jiang, Xuemei Sun, Bingjie Wang, and Huisheng Peng**

Supporting Information

Characterization. The morphologies were characterized by scanning electron microscope (Hitachi FE-SEM S-4800 operated at 1 kV) and transmission electron microscope (JEOL JEM-2100F operated at 200 kV). The Raman measurement was conducted on Renishaw inVia Reflex with an excitation wavelength of 632.8 nm. The galvanostatic charge–discharge curve and cyclic voltammograms were obtained via an electrochemical workstation (CHI 660E). The cyclic stability was measured by an Arbin electrochemical testing system (MSTAT-5 V/10 mA/16Ch). The infrared camera images and temperatures were obtained by an infrared camera (PI 450, Optris).

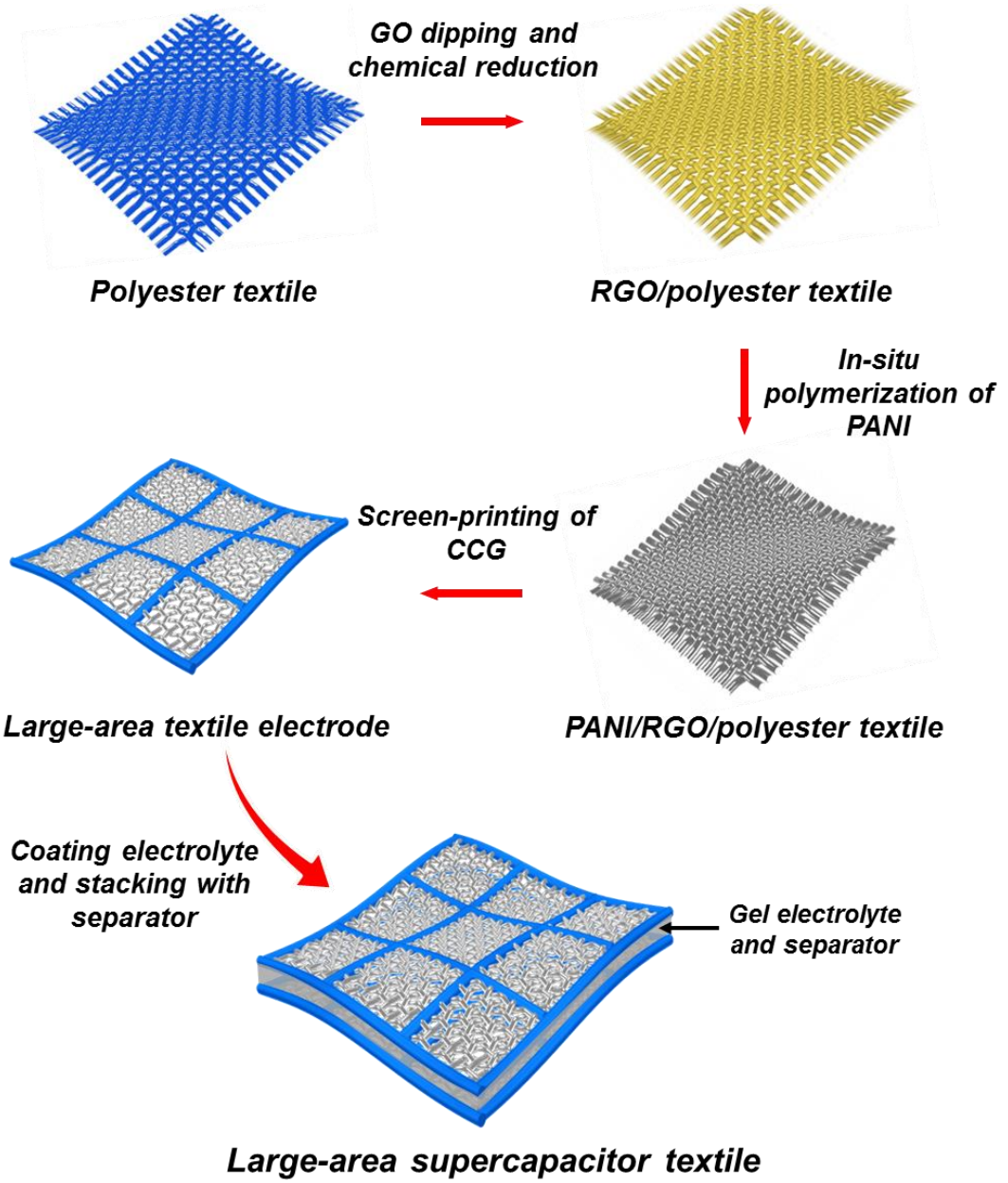

Figure S1. Schematic illustration to the experimental procedures and structures of the large-area supercapacitor textile.

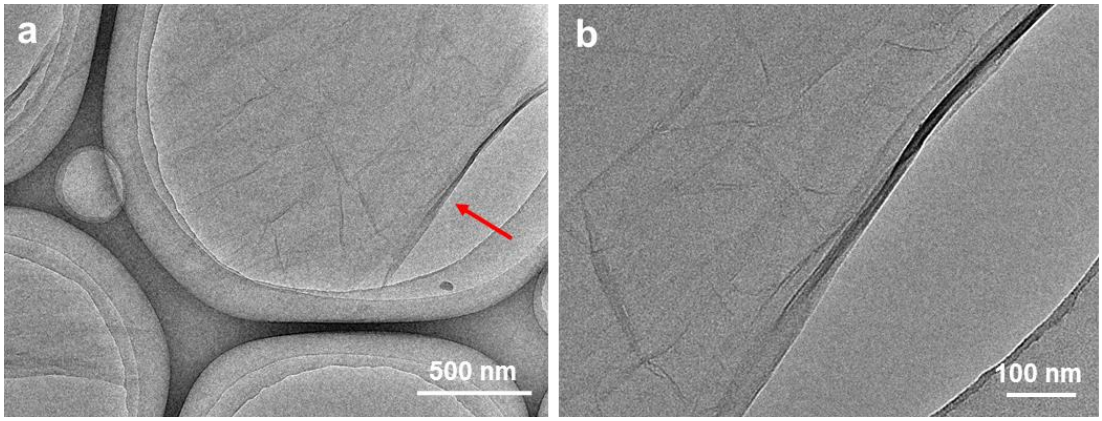

Figure S2. **a, b.** Transmission electron microscopy (TEM) image of GO sheets at different magnifications.

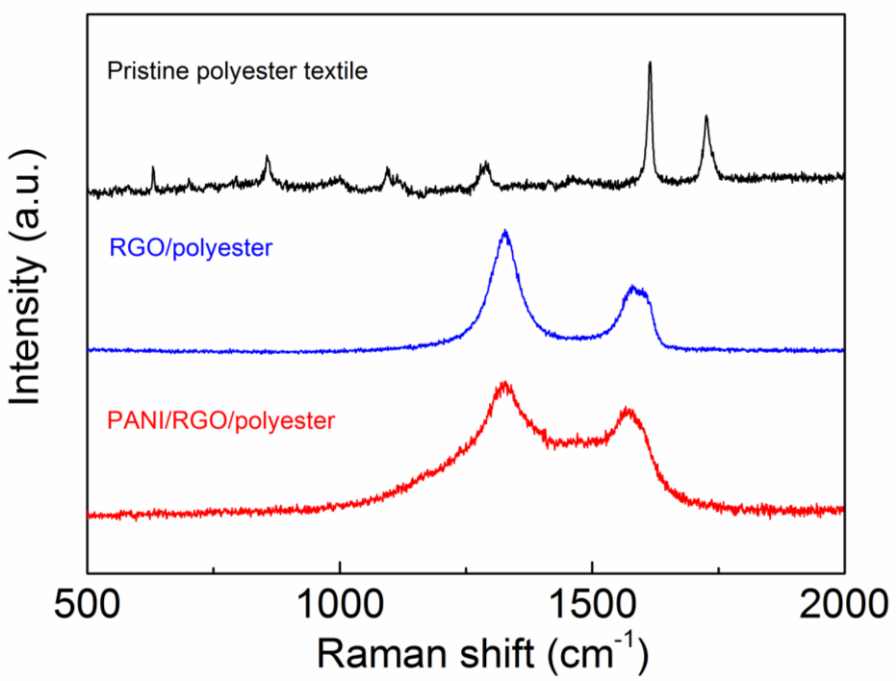

Figure S3. Raman spectra of the pristine polyester textile, RGO/polyester and PANI/RGO/polyester composite textile.

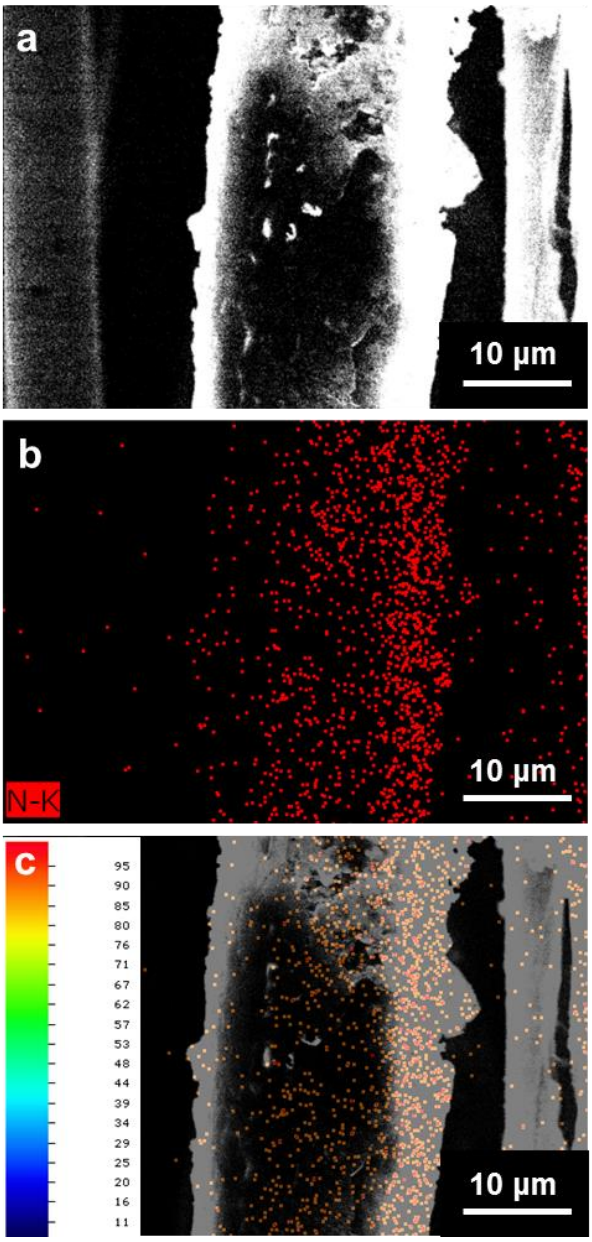

Figure S4. Nitrogen element mapping with a normal (**b**) or pseudo-color palette mode (**c**).

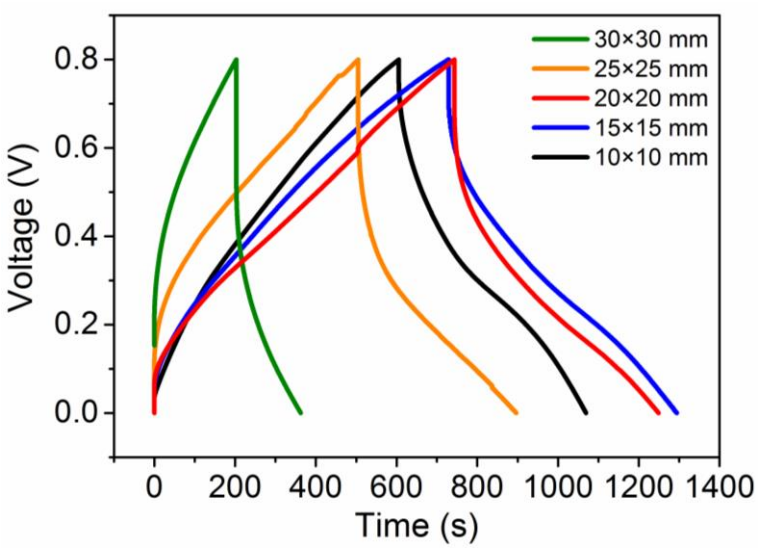

Figure S5. Galvanostatic charge-discharge curves of supercapacitor textiles with increasing dimensions from 10×10 to 30×30 mm at the same current density of 1 mA cm^{-2}.

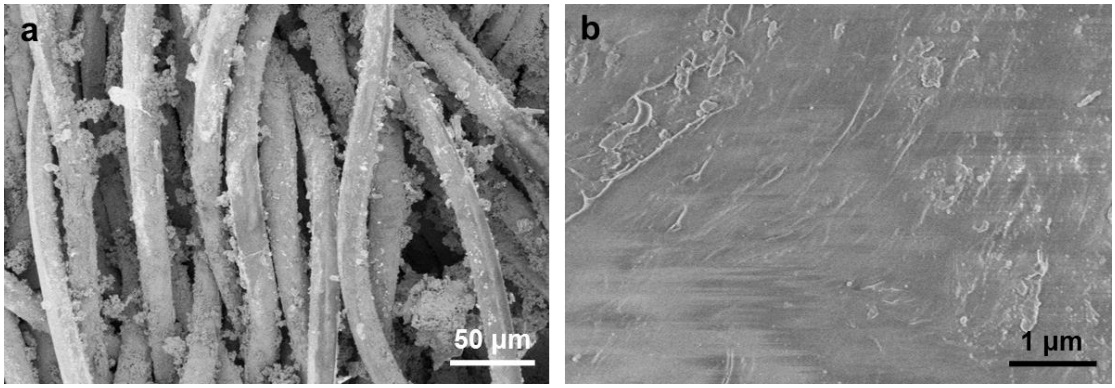

Figure S6. SEM images of a PANI/polyester textile electrode without RGO at low and high magnifications, respectively.

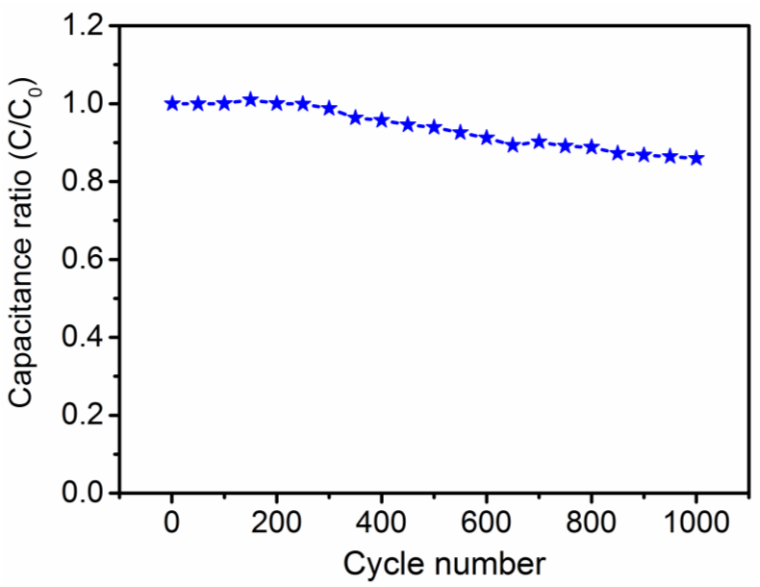

Figure S7. Capacitance variation of a 16 cm^2 supercapacitor textile during 1000 charge-discharge cycles. Current density, 4 mA cm^{-2}.

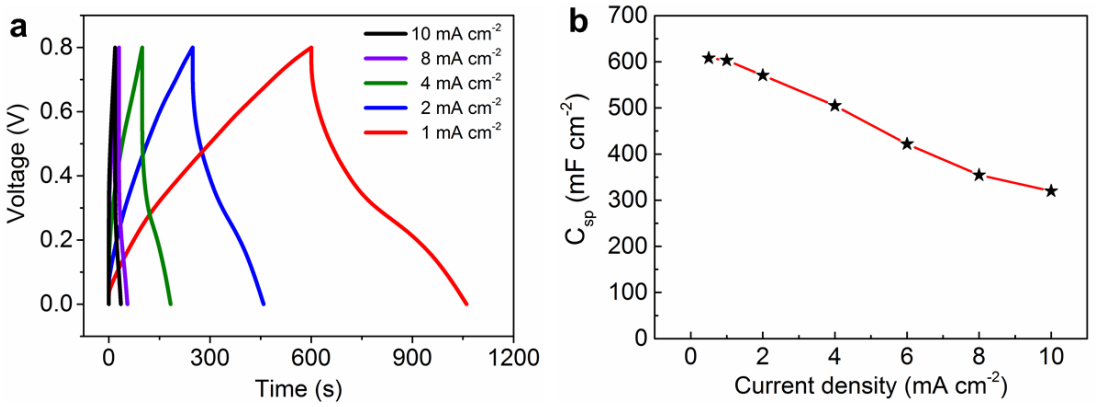

Figure S8. **a, b.** Galvanostatic charge-discharge curves and specific capacitance variation of a 16 cm^2 supercapacitor textile with CCG size of 10×10 mm at increasing current densities from 1 to 10 mA cm^{-2}, respectively.

Figure S9. Photograph of a white polyester T-shirt after the deposition of RGO and PANI.

Figure S10. Photographs of a 400 cm^2 textile electrode placed on the leaves of a plant. The arrow shows the textile electrode.

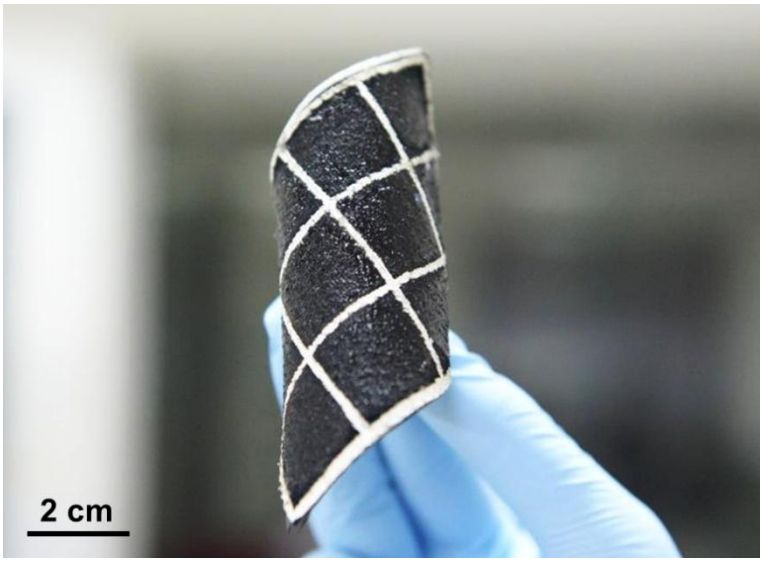

Figure S11. Photograph of a 48 cm^2 supercapacitor textile under bending.

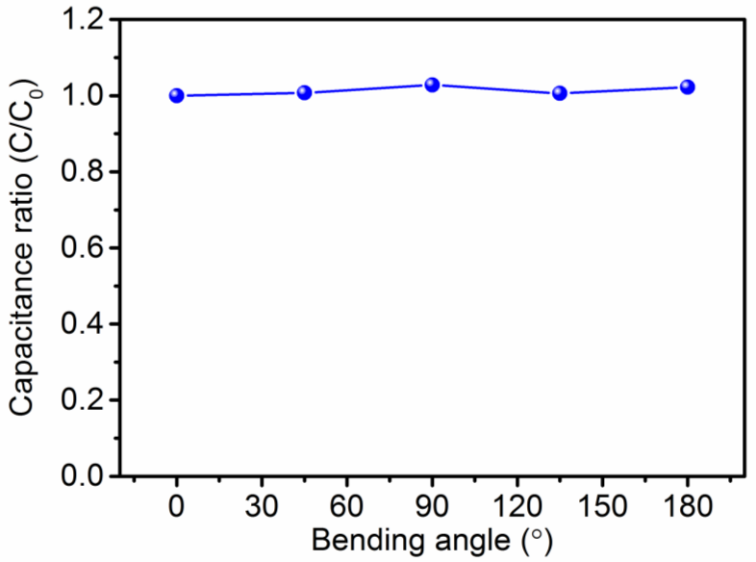

Figure S12. Capacitance variation of a 16 cm^2 supercapacitor textile at increasing bending angles from 0 to 180°. Current density, 0.5 mA cm^{-2}.

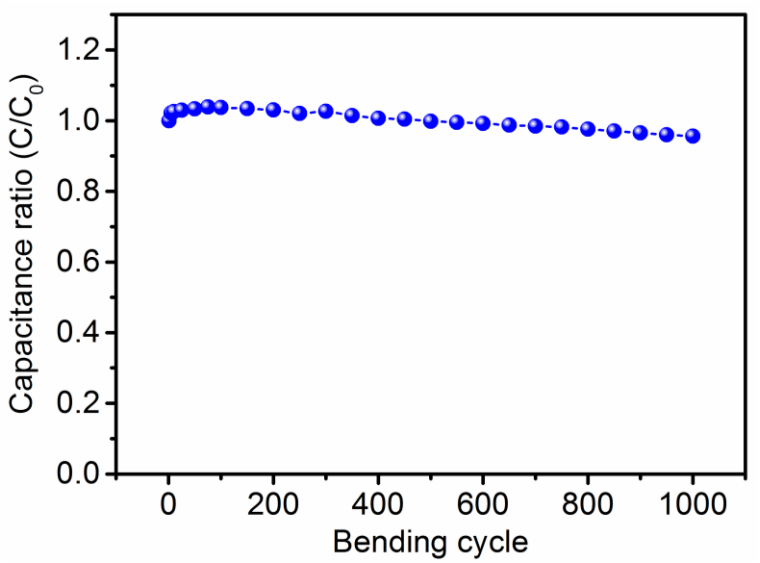

Figure S13. Capacitance variation of a 16 cm^2 supercapacitor textile during 1000 bending cycles with a bending angle of 90°. Current density, 0.5 mA cm^{-2}.