Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

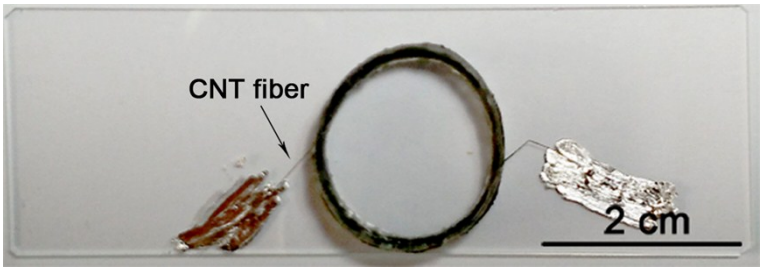

Figure S1. Photograph of a ring-type supercapacitor (RTSC). The aligned carbon nanotube (CNT) fiber was prepared by scrolling ten layers of CNT sheets with a width of 10 mm.

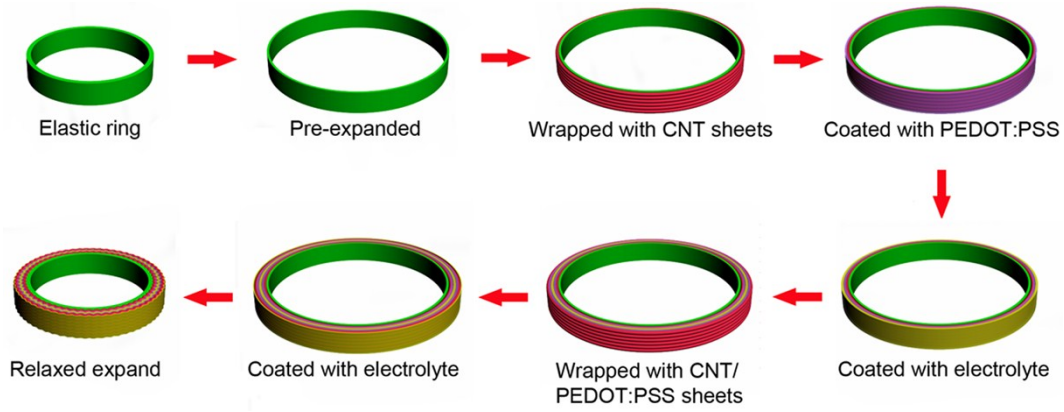

Figure S2. Schematic illustration to the fabrication of the RTSC.

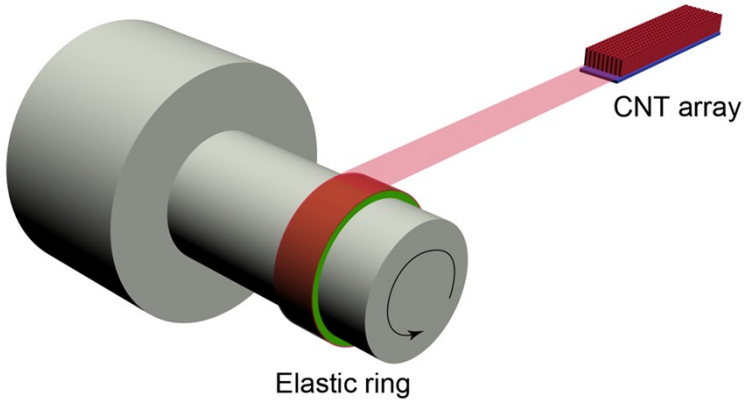

Figure S3. Schematic illustration to the preparation of the elastic ring electrode.

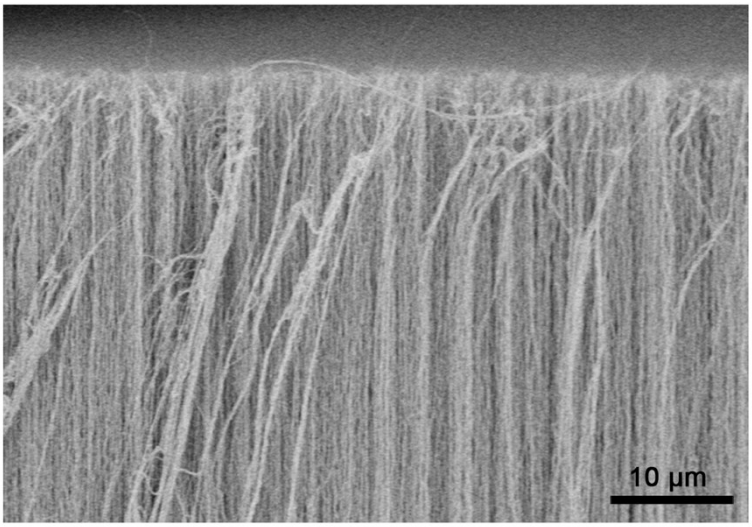

Figure S4. Scanning electron microscopy (SEM) image of a spinnable CNT array by side view.

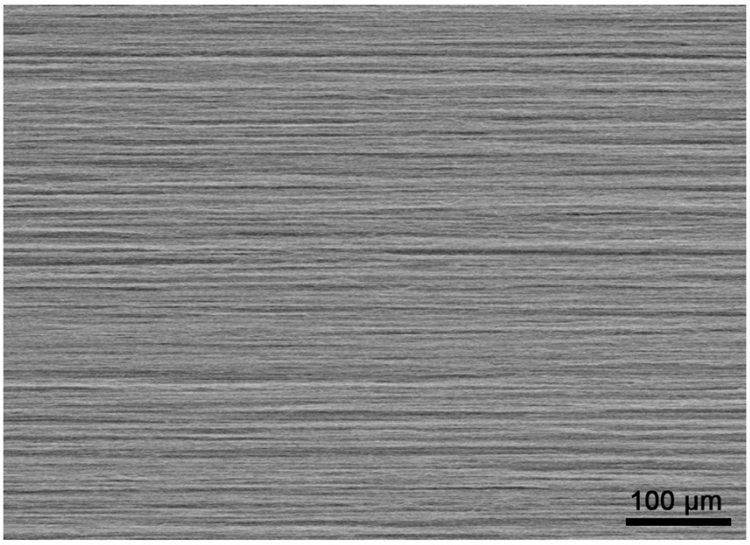

Figure S5. SEM image of an aligned CNT sheet on silicon wafer.

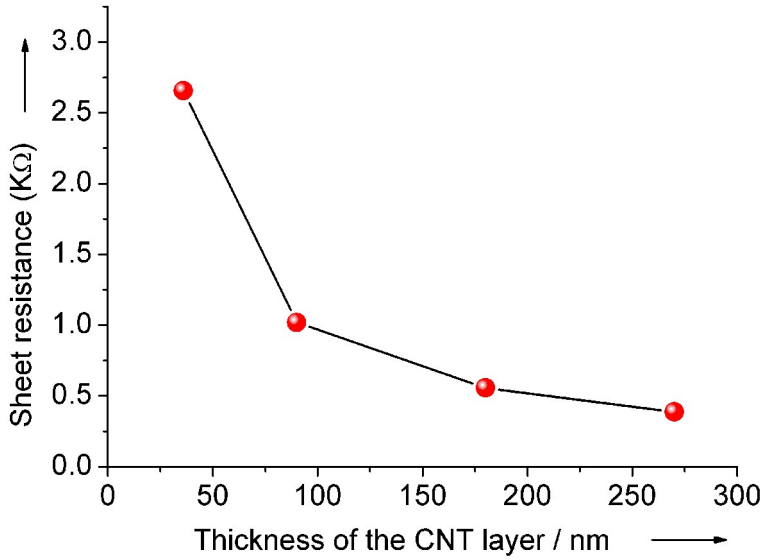

Figure S6. Dependence of electrical resistance on the layer number of CNT sheets. The sheets shared the length of 10 mm and width of 2 mm.

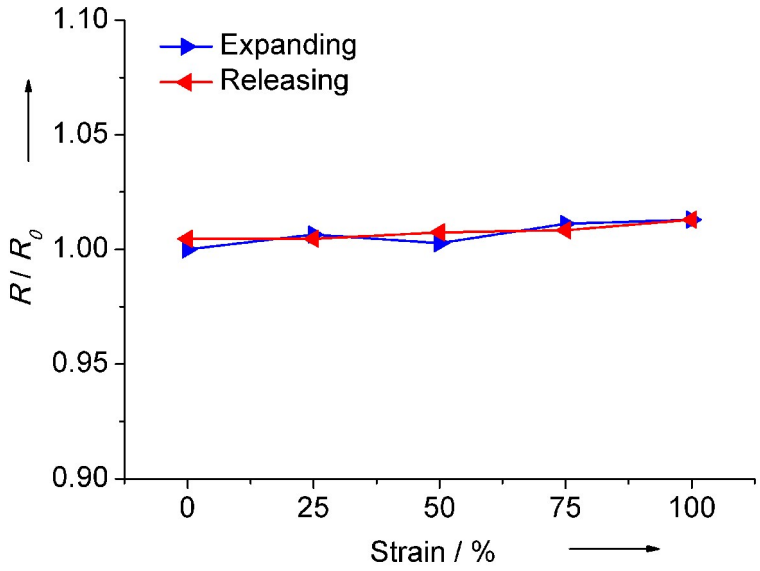

Figure S7. Dependence of electrical resistance of CNT sheet on strain. Here R_0 and R correspond to the electrical resistances before and after deformation, respectively.

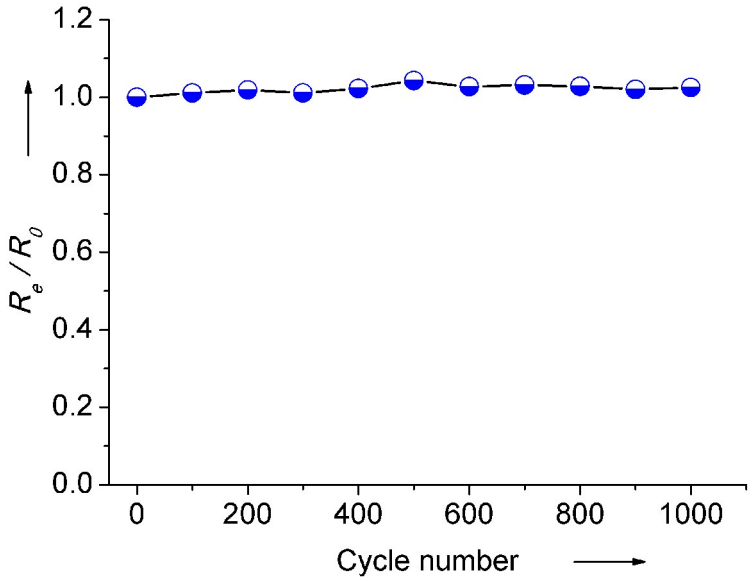

Figure S8. Dependence of electrical resistance of CNT sheet on expanding cycle number at a strain of 100%. Here R_0 and R_e correspond to the electrical resistances before and after expanding, respectively.

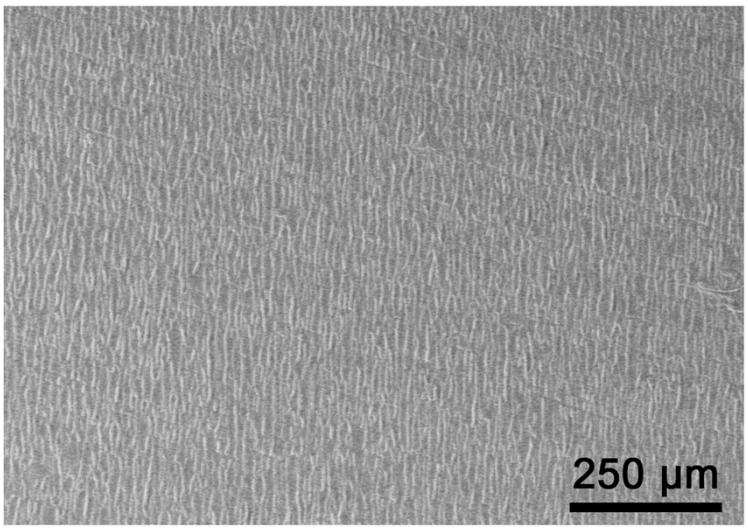

Figure S9. SEM image of the CNT sheet after expanding for 1000 cycles at a strain of 100%.

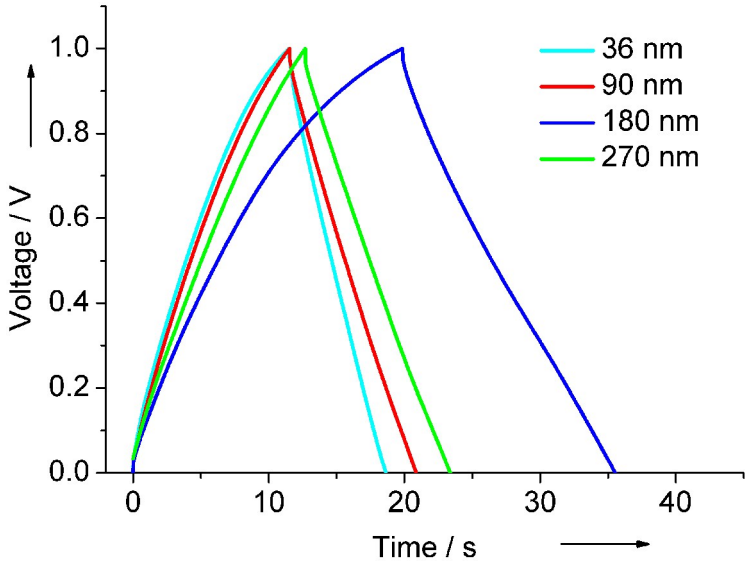

Figure S10. Galvanostatic charge-discharge curves of the RTSC fabricated from the CNT sheets with different thicknesses.

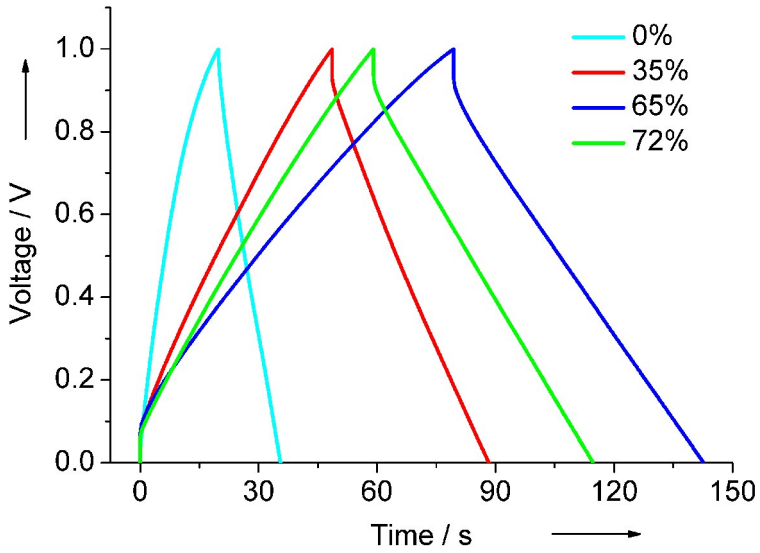

Figure S11. Galvanostatic charge-discharge curves of the RTSC fabricated from different weight percentages of PEDOT:PSS.

Table S1. Comparison of this RTSC with previous supercapacitors in terms of gravimetric specific capacitance.

References	Configuration	Electrode materials	C (F g^{-1})
This study	Ring-type	CNT/PEDOT:PSS	134.8
21	Fiber-shaped	CNT/PEDOT:PSS	122.8
23	Fiber-shaped	CNT/OMC	41.4
24	Fiber-shaped	CNT/PANI	111.6
25	Planar	CNT/PEDOT:PSS	133
26	Planar	Carbon paper/PEDOT	154.5
27	Planar	CNT	53

CNT: carbon nanotube; PEDOT: poly(3, 4-ethyl-enedioxythiophene); PSS poly(styrene sulfonate); OMC: ordered mesoporous carbon; PANI: polyaniline.

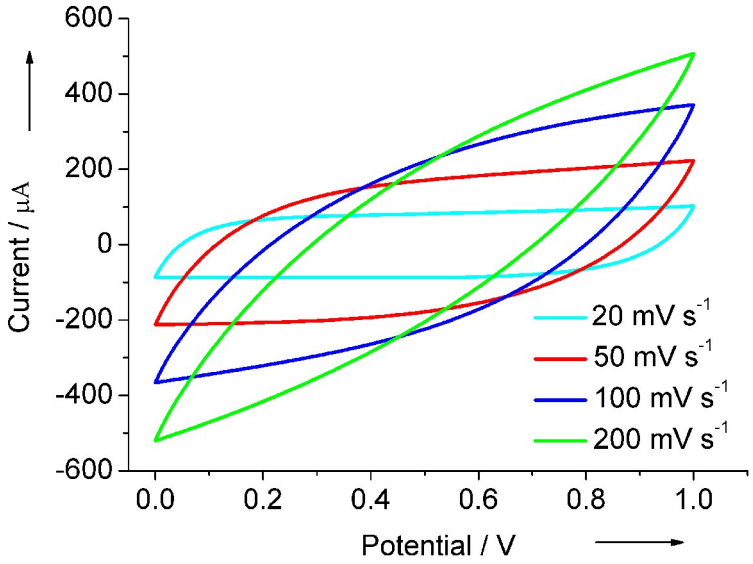

Figure S12. Cyclic voltammograms of the RTSC fabricated from PEDOT:PSS with a weight percentage of 65% at increasing scan rates.

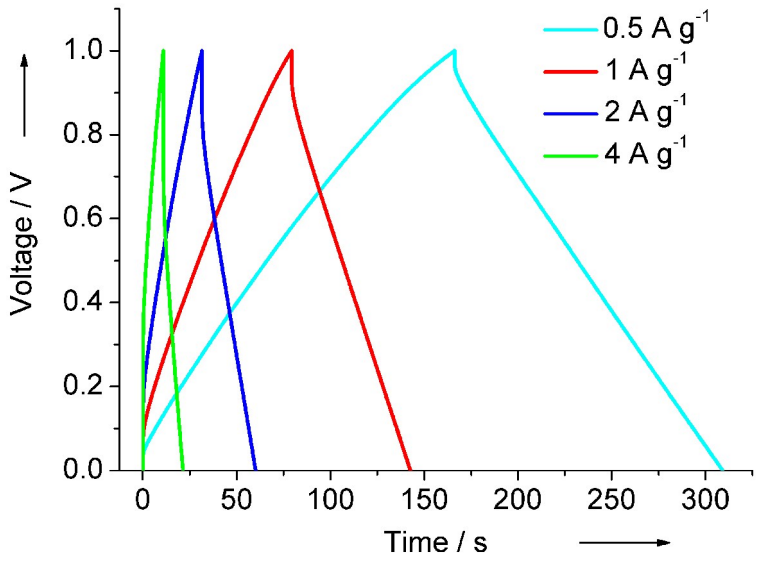

Figure S13. Galvanostatic charge-discharge curves of the RTSC fabricated from the PEDOT:PSS with a weight percentage of 65% at increasing current densities.

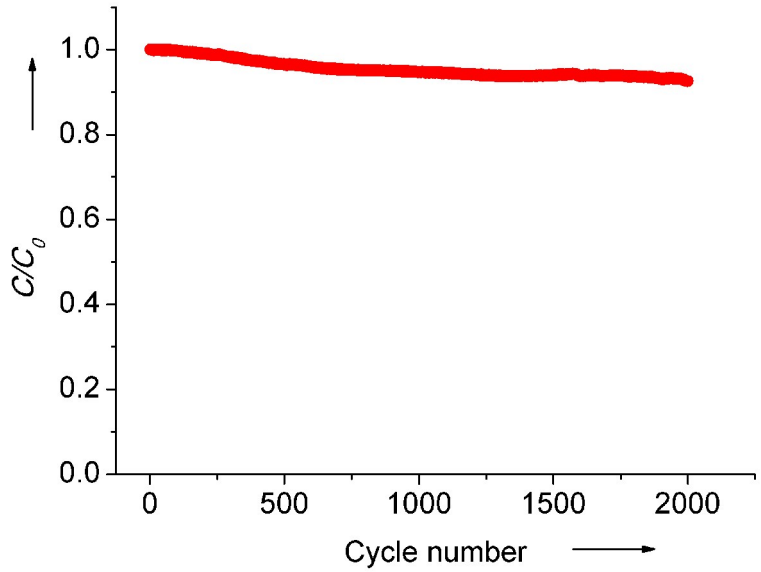

Figure S14. Dependence of specific capacitance on cycle number at a current density of 1 A g^{-1}. Here C_0 and C correspond to the specific capacitances at the first and the following cycles, respectively.

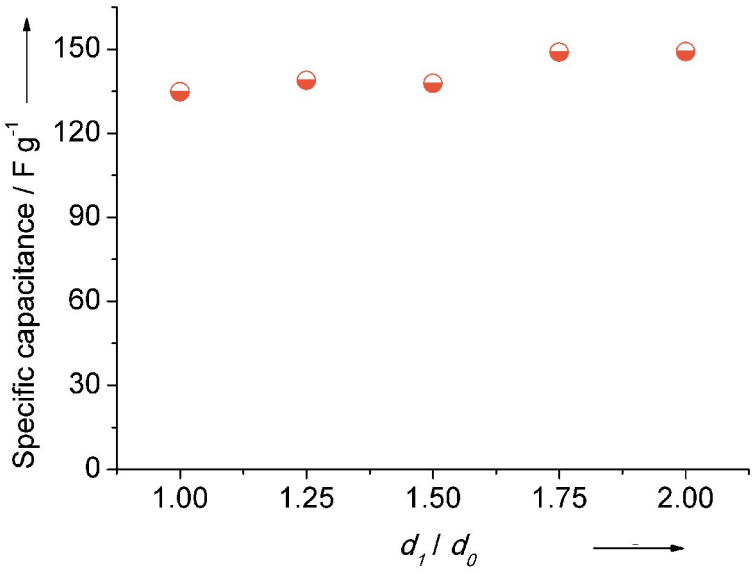

Figure S15. Dependence of specific capacitance on expanding strain. Here d_1 and d_0 are defined in Figure 3.

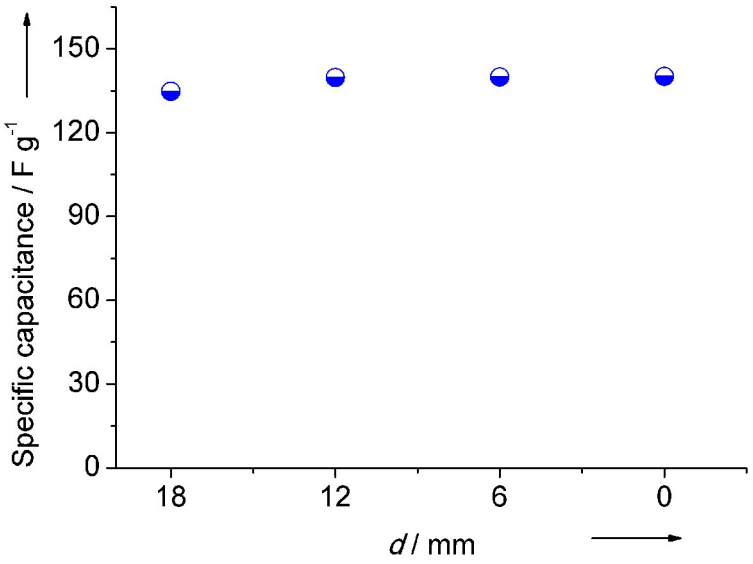

Figure S16. Dependence of specific capacitance on pressing strain. Here *d* is defined in Figure 3.

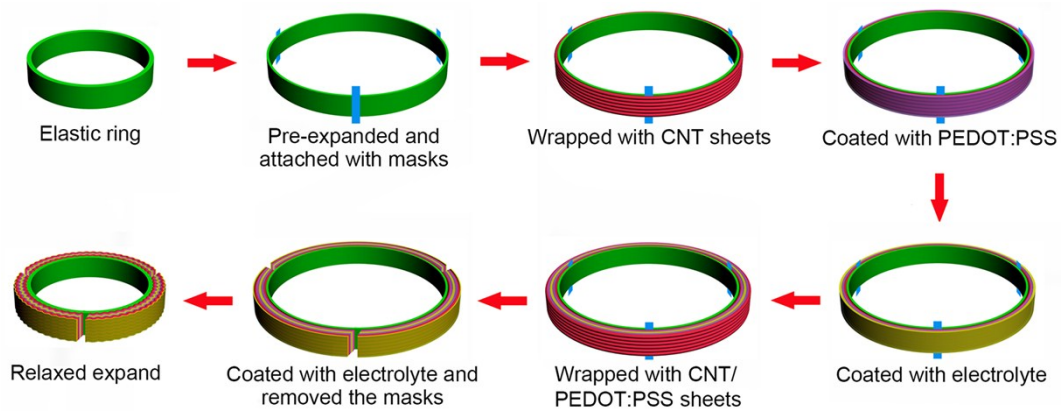

Figure S17. Schematic illustration to the fabrication of the RTSC that was composed of three sections being connected in series along the ring.

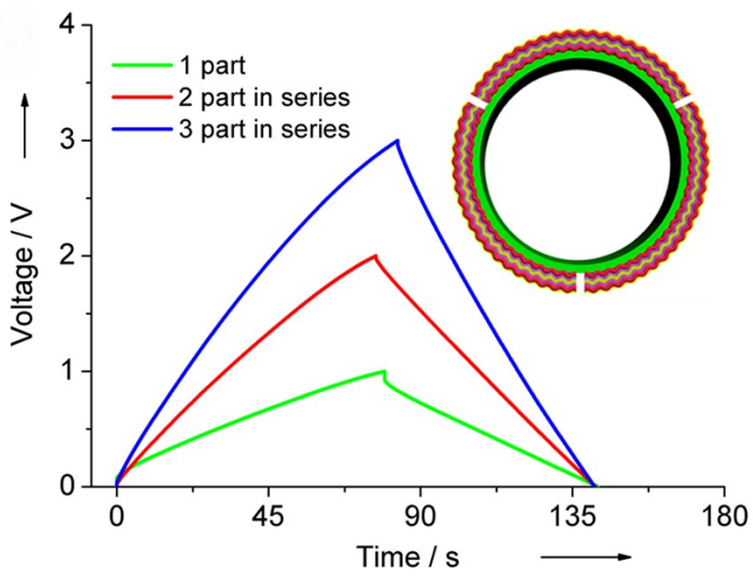

Figure S18. Galvanostatic charge-discharge curves of RTSCs composed of one, two and three sections. The two or three sections are connected in series along the ring.