

Supplementary Materials

Stretchable Supercapacitors Based on Carbon Nanotubes-Deposited Rubber Polymer Nanofibers Electrode with High Tolerance against Strain

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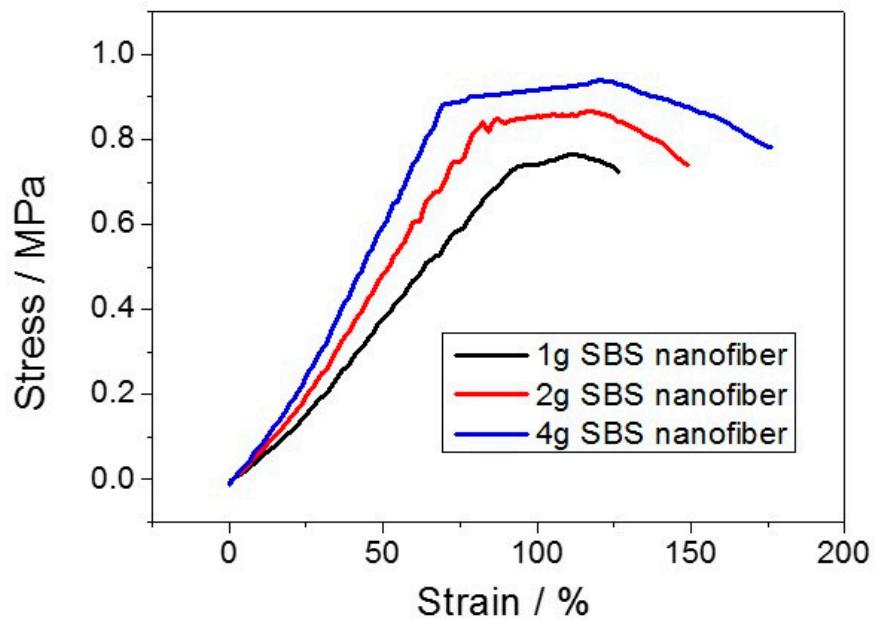


Fig. S1. Strain-stress curve for SBS nanofiber film with 1 g, 2 g, and 4 g.

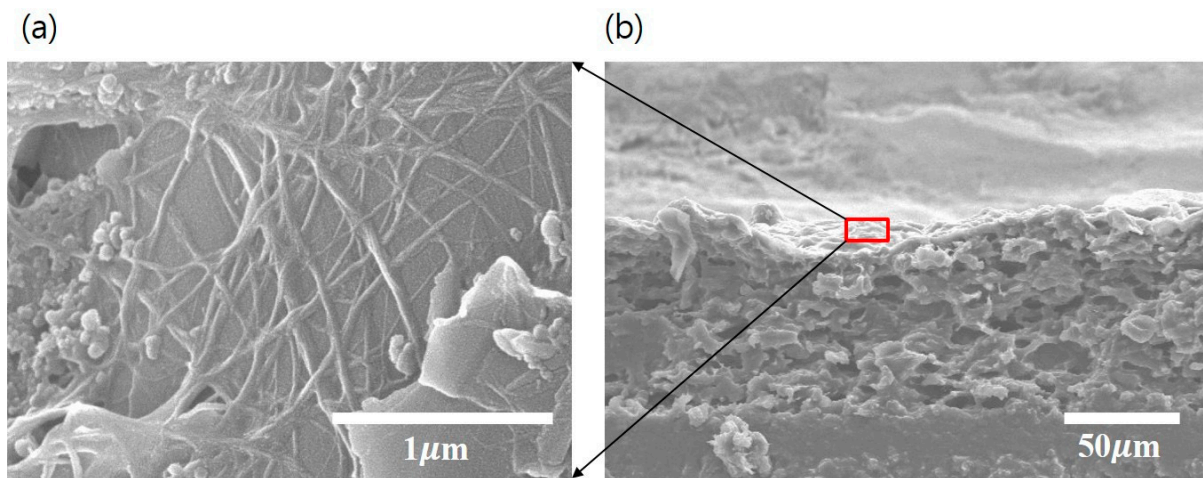


Fig. S2. FESEM image of SWCNT/SBS nanofiber mat with Zonyl treatment: (a) magnified view of coated SWCNT on single SBS nanofiber, (b) cross-sectional view of the film.

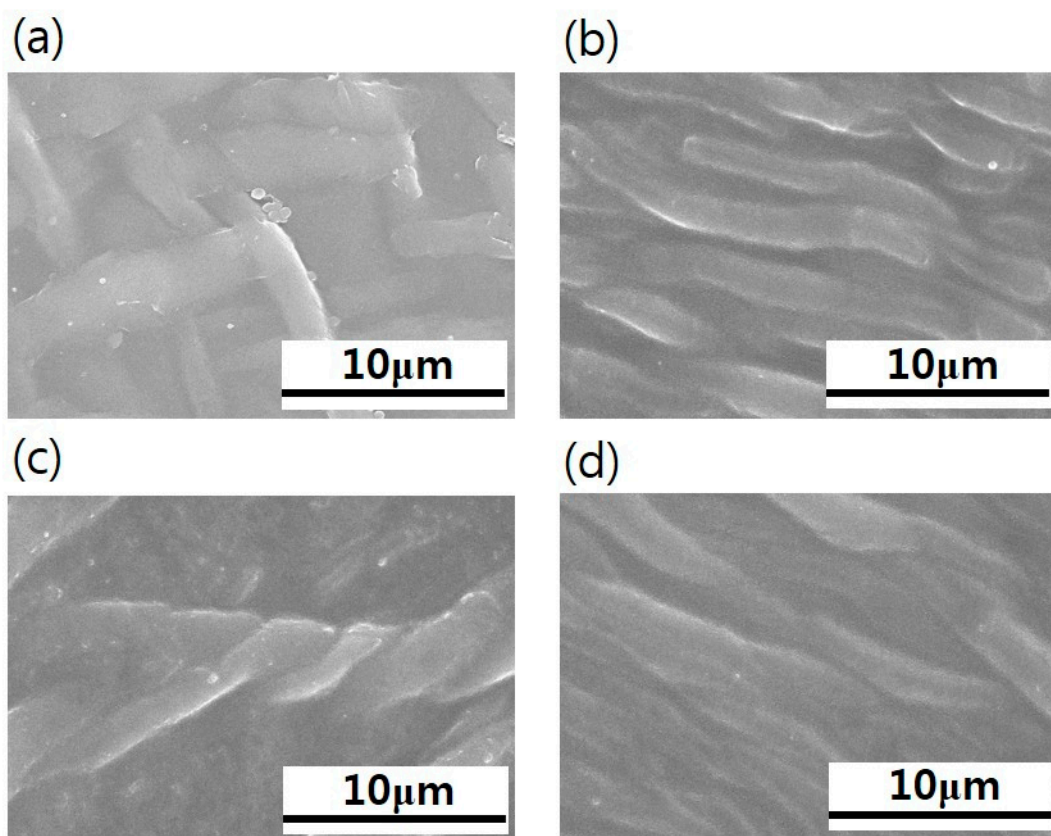


Fig S3. Micrographs of SBS and SWCNT-SBS nanofibers before/after stretching: (a) SBS without stretching, (b) SBS with 40% strain, (c) SWCNT-SBS without stretching, and (d) SWCNT-SBS with 40% strain.

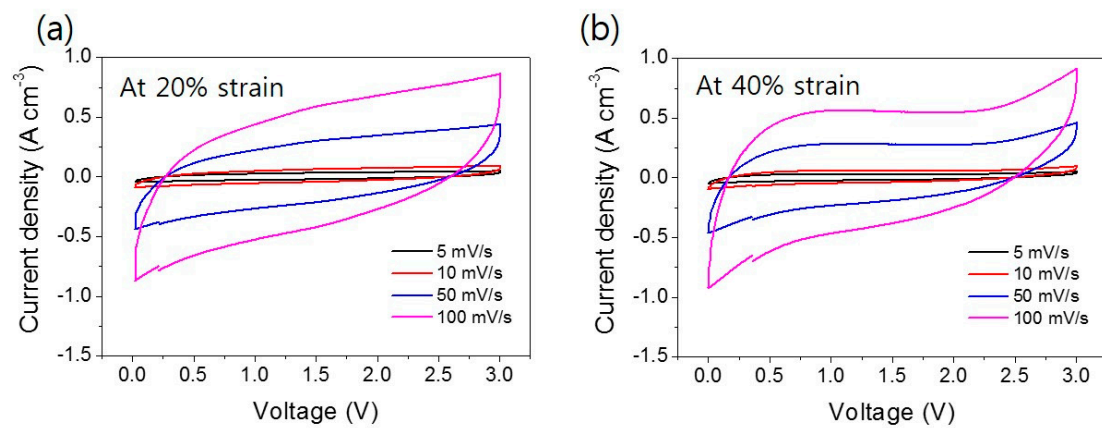


Fig. S4. Cyclic voltammograms of supercapacitors at the scan rate from 0.005 to 0.1 V s^{-1} upon (a) 20%, and (b) 40% strain.

Elec- trode	Stret- ching ratio	Specific capacity (volumetric areal gravimetric)	Capacity or retention or under stretching	Power density (volumetric or gravimetric)	Energy density (volumetric or gravimetric)	Ref.
PPy/rGO/ MWCNT	100%	10 F cm ⁻³	82.4%	7.32 mW cm ⁻³	0.36–0.94 mWh cm ⁻³	18
CNT/Ag- coated yarn		5 F cm ⁻³		300–1000 mW cm ⁻³	2 – 5 mWh cm ⁻³	19
PANI@Au @CNT	400%	6 F cm ⁻³ (0.2 mF cm ⁻²)	95%			20
CNT/MoS ₂ /PDMS	240%	13 F cm ⁻³				21
Graphene/ PDMS	50%	0.65 mF cm ⁻²				22
PANI/CNT	140%	19 F cm ⁻³ (72.9 mF cm ⁻²)	98.3%	337 mW cm ⁻³	0.7 mWh cm ⁻³	23
3D rGO	130%	75 F cm ⁻³ (120 F g ⁻¹)	97 %			24
CNT@Mn O ₂ /hydrog el	150%	6.6 mF cm ⁻²	90%			25
PPy@CNT	600%		350%			26
Buckled SWNT	131.5 %	50 F g ⁻¹	94.6%			28
Buckled SWCNT	130%	45 F g ⁻¹	92.6%			29
Wrinkled	140%	4.9 uF cm ⁻²				30

graphene		(6.4 F g ⁻¹)					
CNT/textil	120%	800 mF cm ⁻²		30 kW kg ⁻¹	20 Wh kg ⁻¹		31
e		(62 F g ⁻¹)					
Acrylate	150%	20.2 F cm ⁻³			2.14 mWh		37
rubber/M					cm ⁻³		
WCNT@c							
conductive							
polymer							
SWCNT-	145%	15.2 F cm ⁻³	93%	158–1450 mW	2 - 5.6 mWh		This
coated SBS				cm ⁻³	cm ⁻³		work
nanofiber							

Table S1. Comparison of the electrochemical performances for various stretchable supercapacitors from the previous researches with our work.