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

Ultra-Highly Stretchable and Anisotropic SEBS/F127 Fiber Films Equipped with Adaptive Deformable Carbon Nanotube Layer for Dual-Mode Strain Sensing

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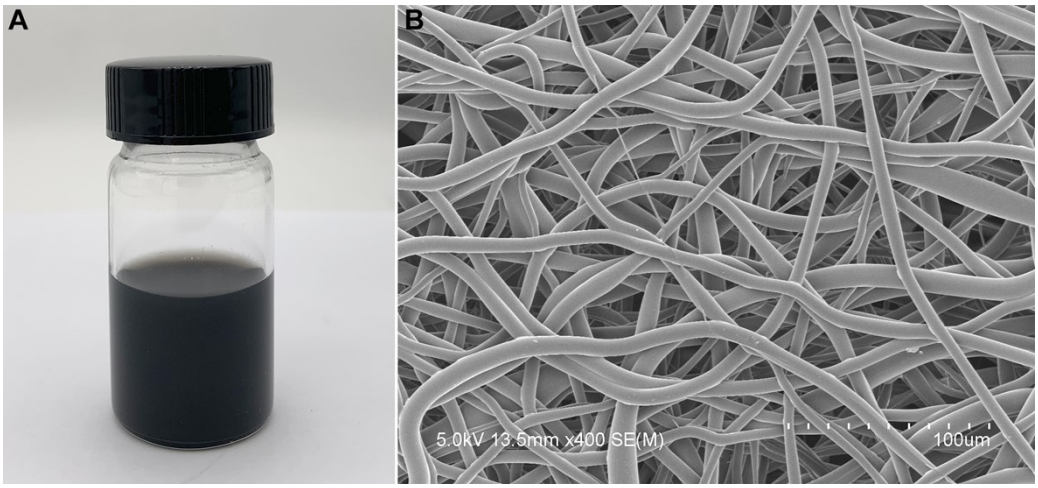

Figure S1. (A) Digital photograph of CNTs dispersion. (B) SEM image of isotropic SEBS/F127-15wt.% fiber film.

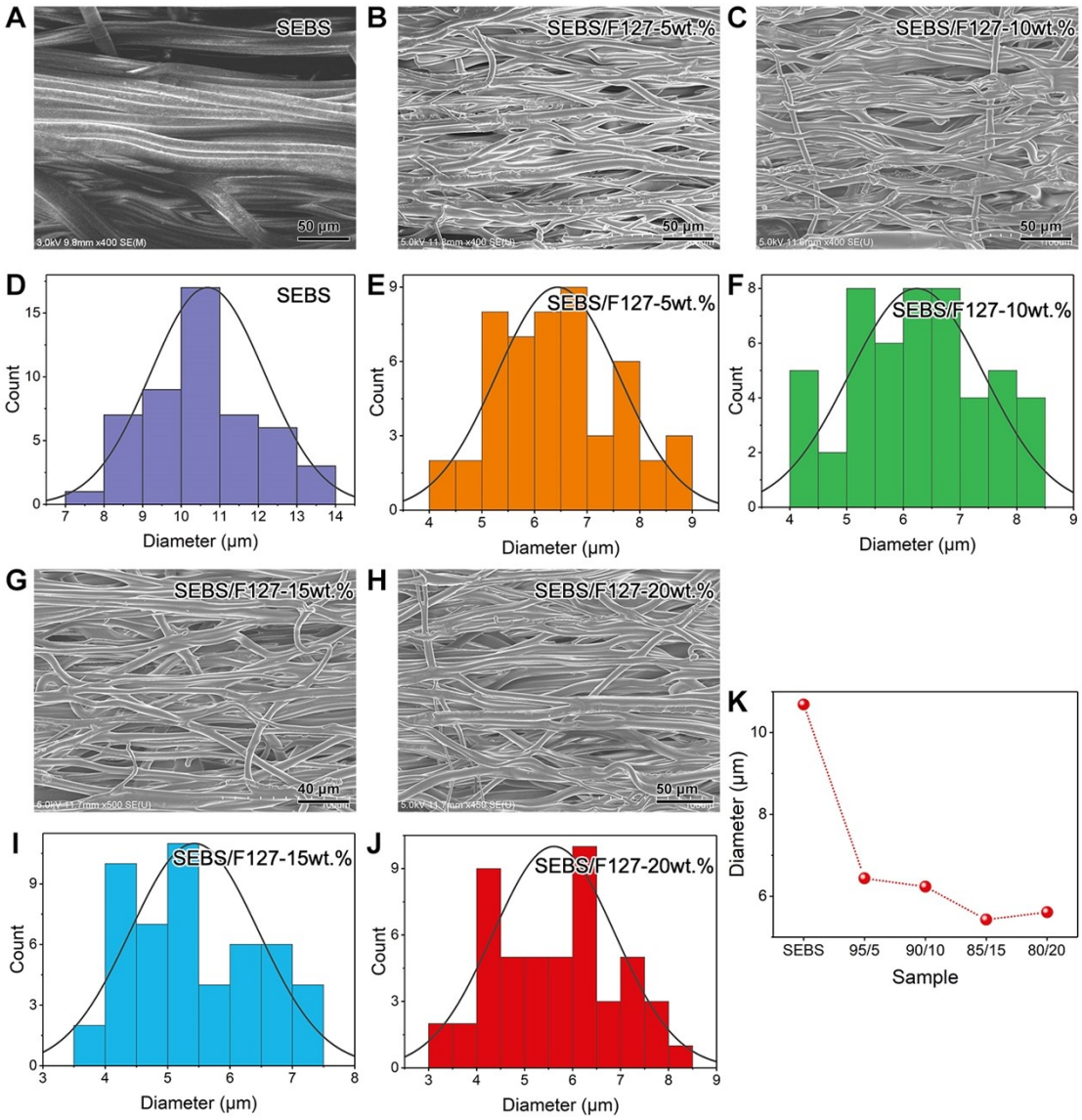

Figure S2. (A-J) SEM images and corresponding diameter distribution diagrams of SEBS fiber film and SEBS/F127 composite films with different F127 mass fractions. (K) A plot showing the mean fiber diameter versus F127 blending fractions.

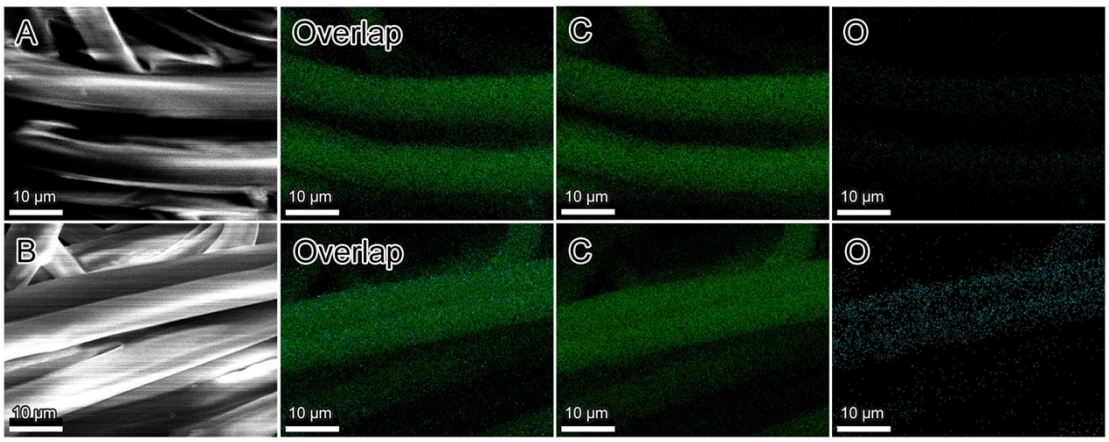

Figure S3. Elemental mapping of (A) pure SEBS and (B) SEBS/F127-15 wt.% fibrous film.

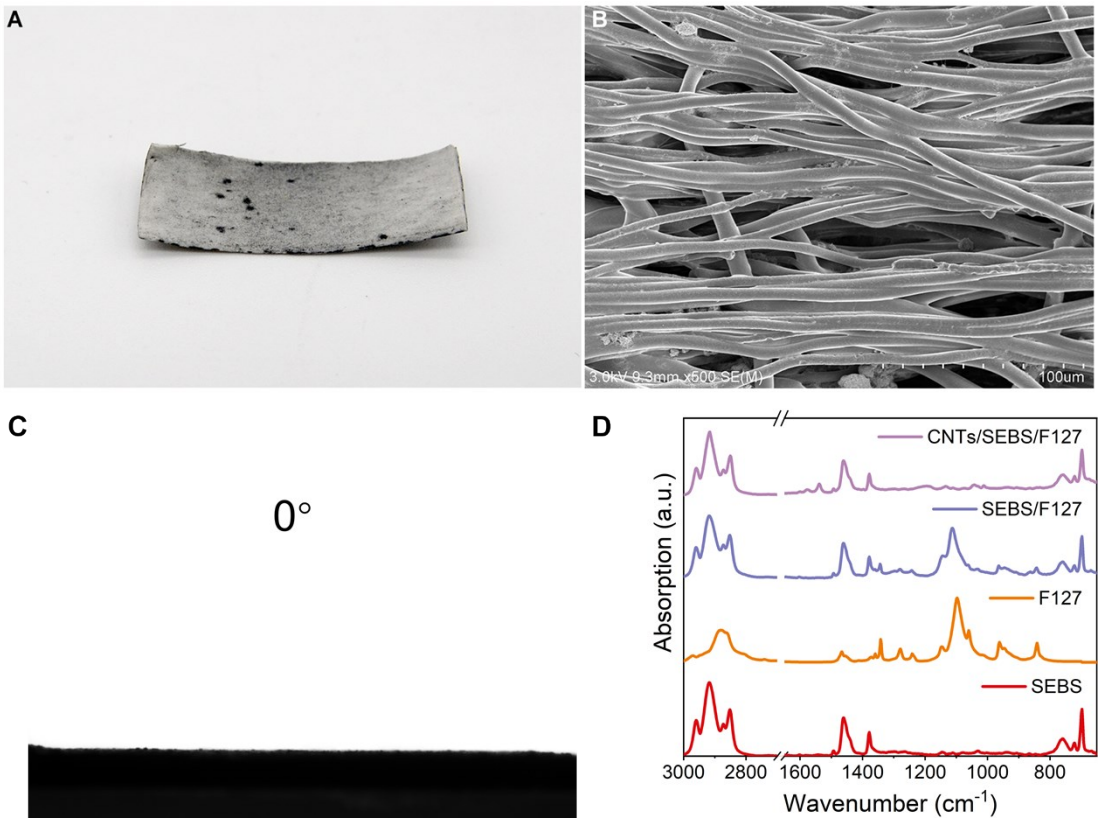

Figure S4. (A) Digital image and (B) corresponding SEM image of electrospun SEBS fiber film treated with CNTs dispersion; (C) water contact angle of CNT/SEBS/F127 fiber film (0°); (D) FTIR spectra of pure SEBS, F127, SEBS/F127 and CNT/SEBS/F127 fiber films.

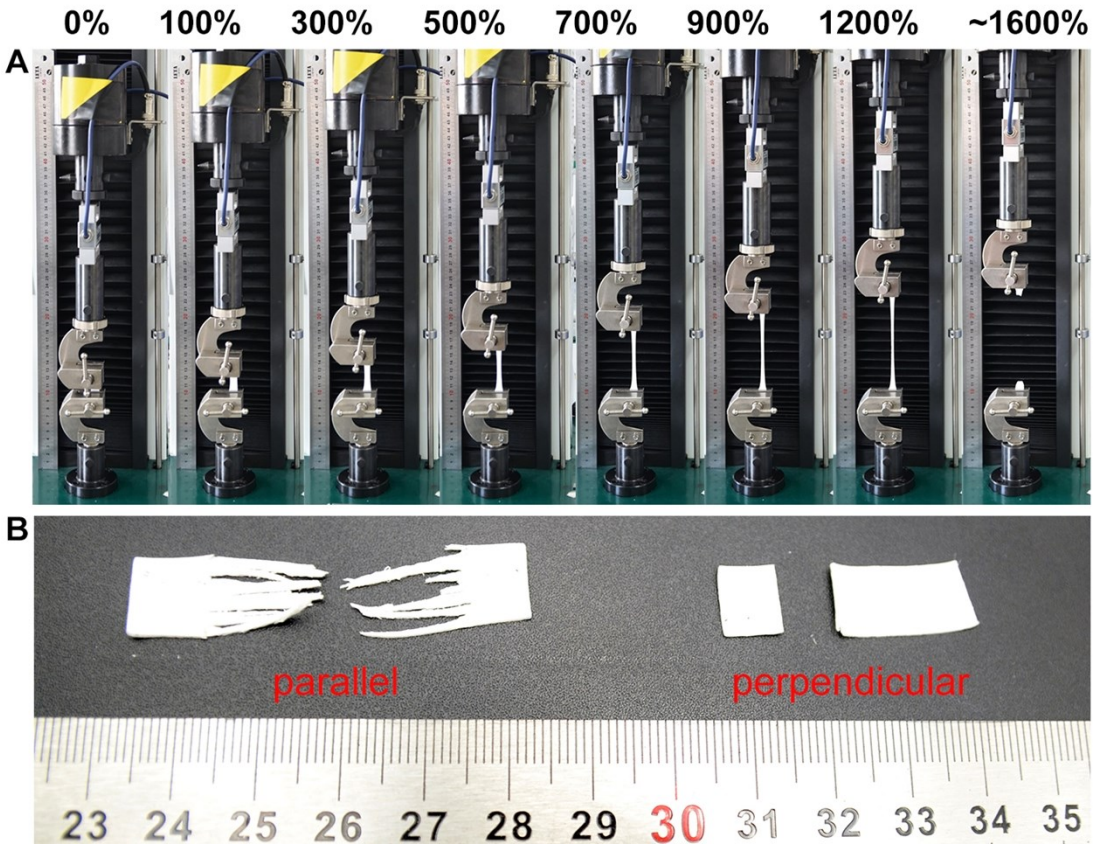

Figure S5. (A) Typical digital images of tensile tests of composite SEBS/F127 fibrous film (broke at elongation of ~1600%). (B) Digital images of fractured SEBS/F127 film stretched in parallel and perpendicular direction.

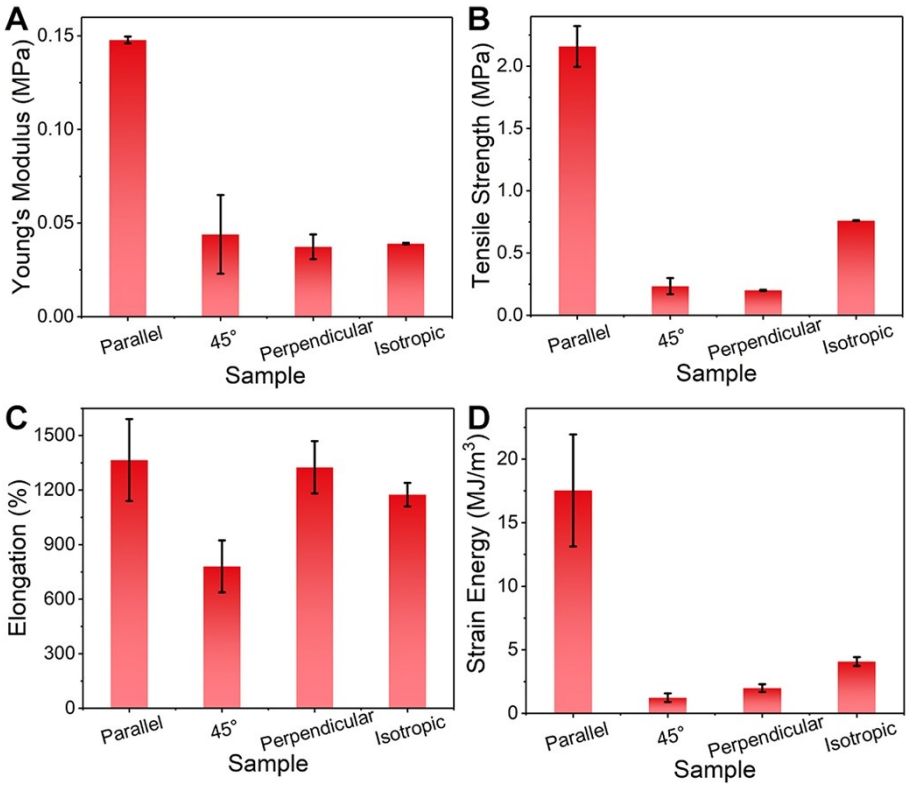

Figure S6. (A) Young's modulus, (B) tensile strength, (C) elongation and (D) strain energy of SEBS/F127-15 wt.% fiber films (parallel, 45° and perpendicular direction) and isotropic SEBS/F127-15 wt.% film.

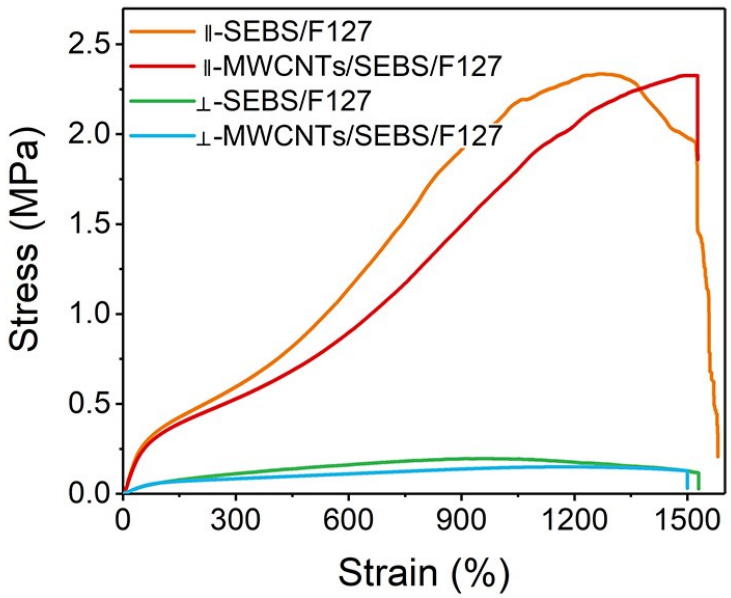

Figure S7. Strain-stress curves of SEBS/F127 and CNT/SEBS/F127 fiber films at parallel (||) and perpendicular (⊥) loading directions.

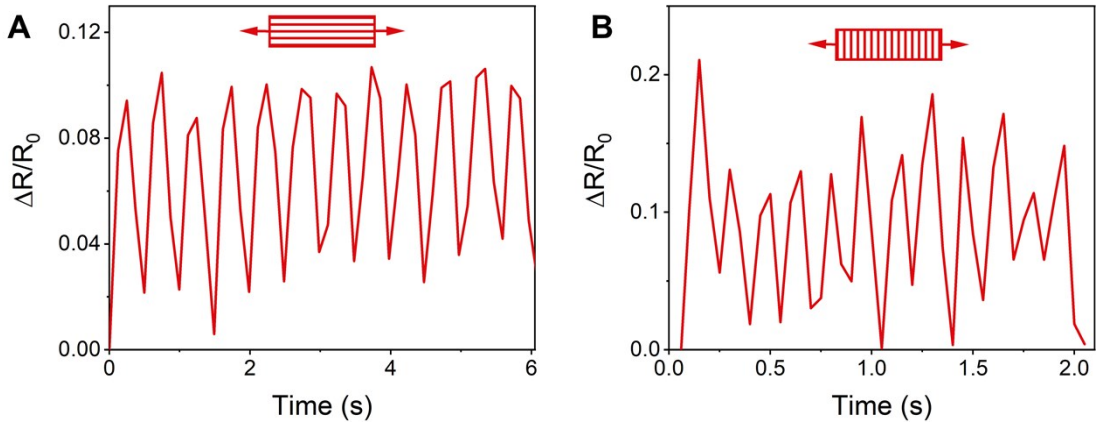

Figure S8. Minimal strain detection of CNT/SEBS/F127 in (A) parallel direction (~1.5%) and (B) perpendicular direction (~0.5%).