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Supporting Information

Fast Self-Replenishing Slippery Surfaces with 3D Fibrous Porous Network for the Healing of Surface Properties

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Figures and Tables

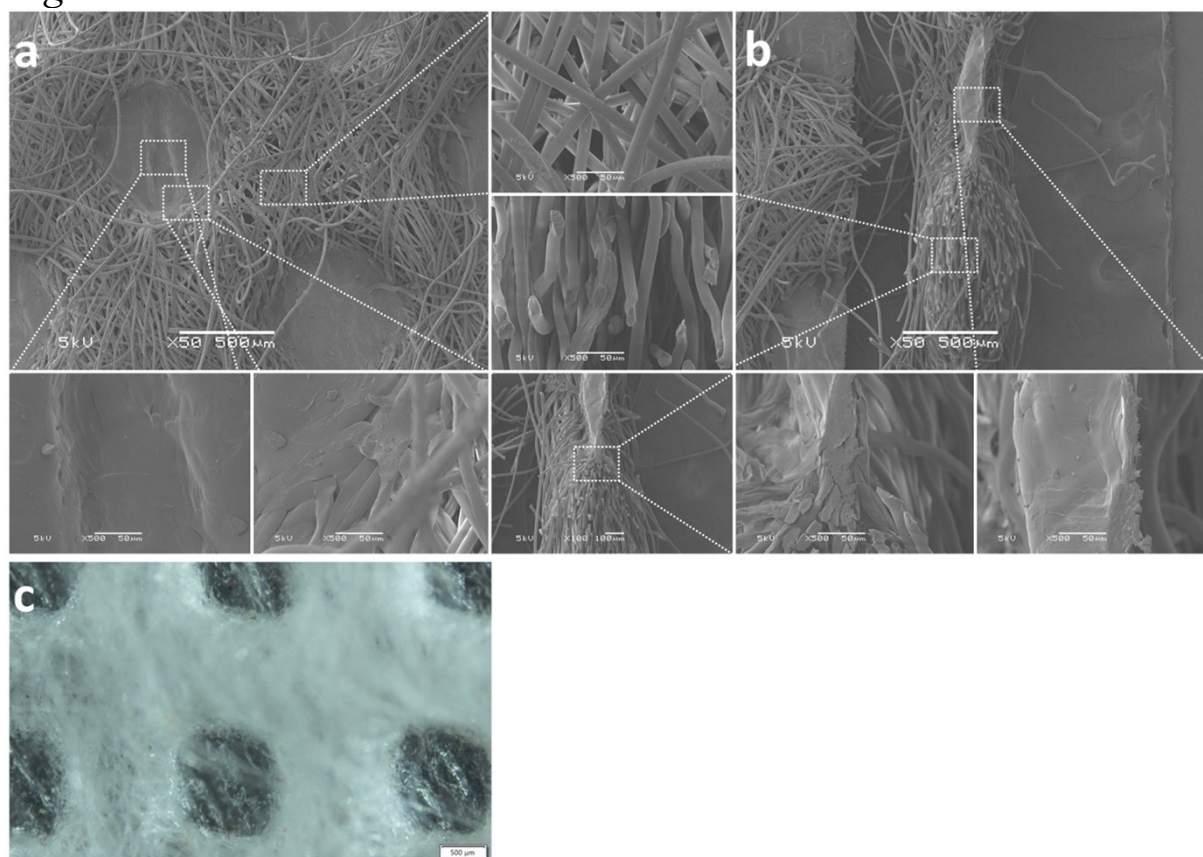


Fig. S1. Surface structure characterization. SEM of commercial water-soluble non-woven fabrics: (a) top view, (b) side view. (c) Optical micrographs of commercial water-soluble non-woven fabrics.

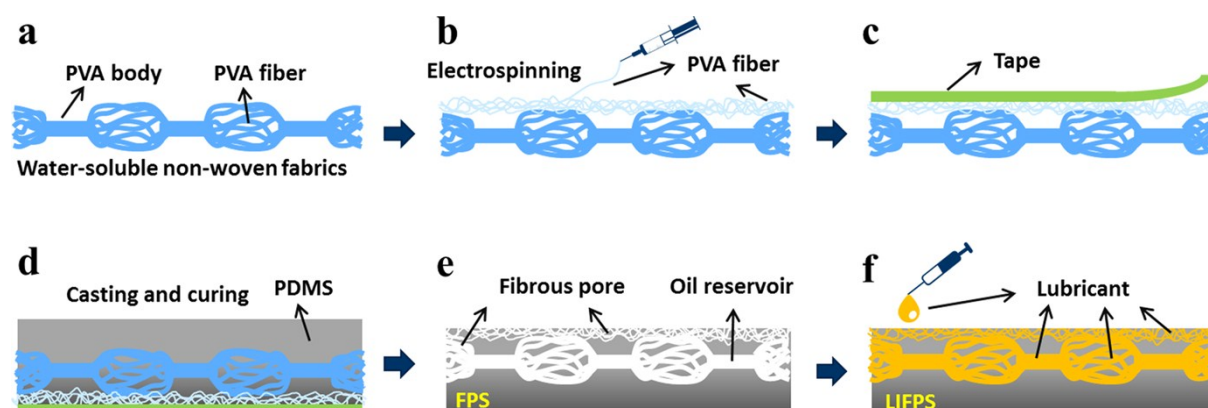


Fig. S2. Schematic diagram of the fabrication process: a) Commercial water-soluble non-woven fabrics; b) Forming of surface covering layer by electrospinning; c) Sacrificial template assembled from water-soluble fabrics and tape; d) PDMS casting and curing process; e) Dissolve PVA fibers with water; f) Filling the porous structure with lubricant.

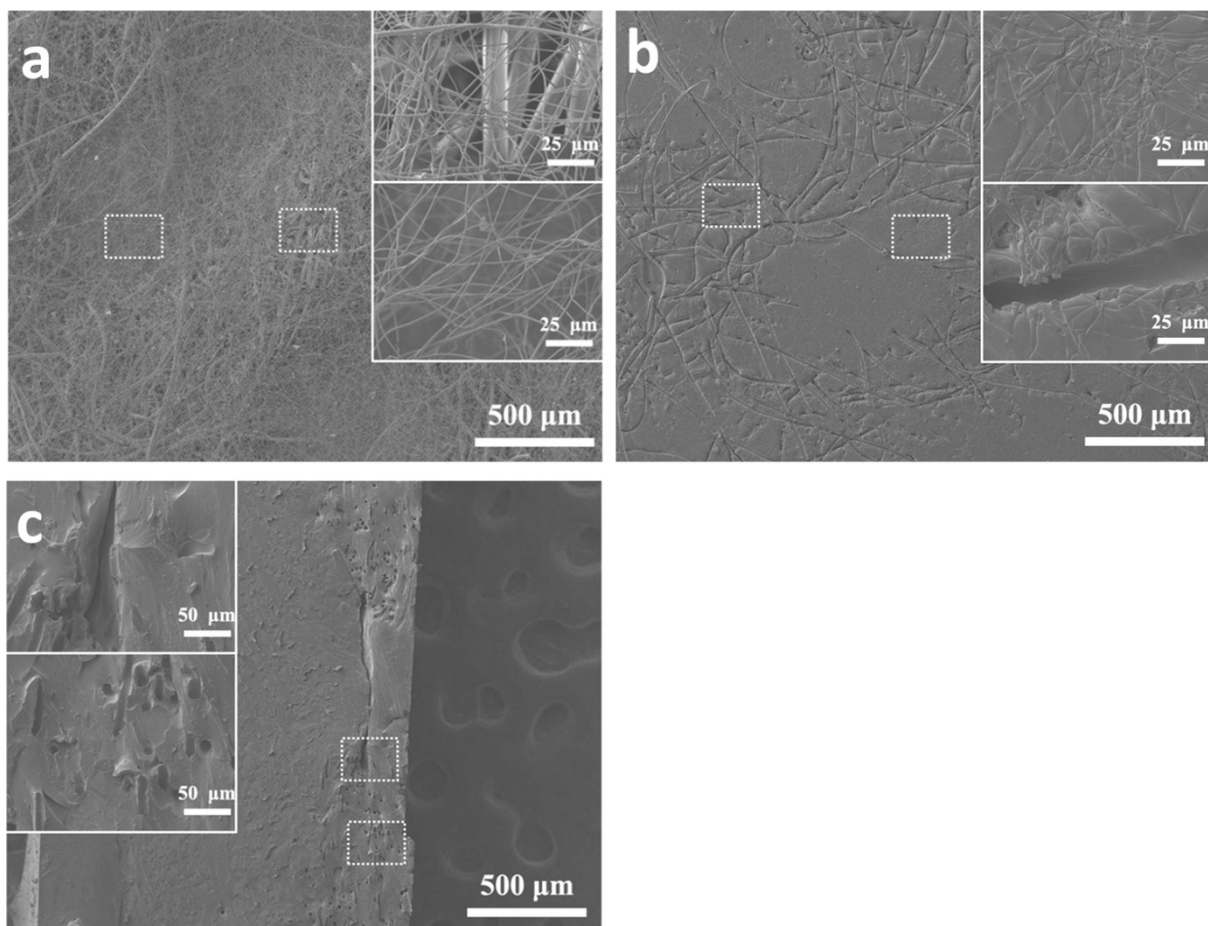


Fig. S3. SEM images of a) water-soluble non-woven fabric modified by electrospinning for 5 hours and b) FPS-5, c) Cross-section SEM images of FPS-5.

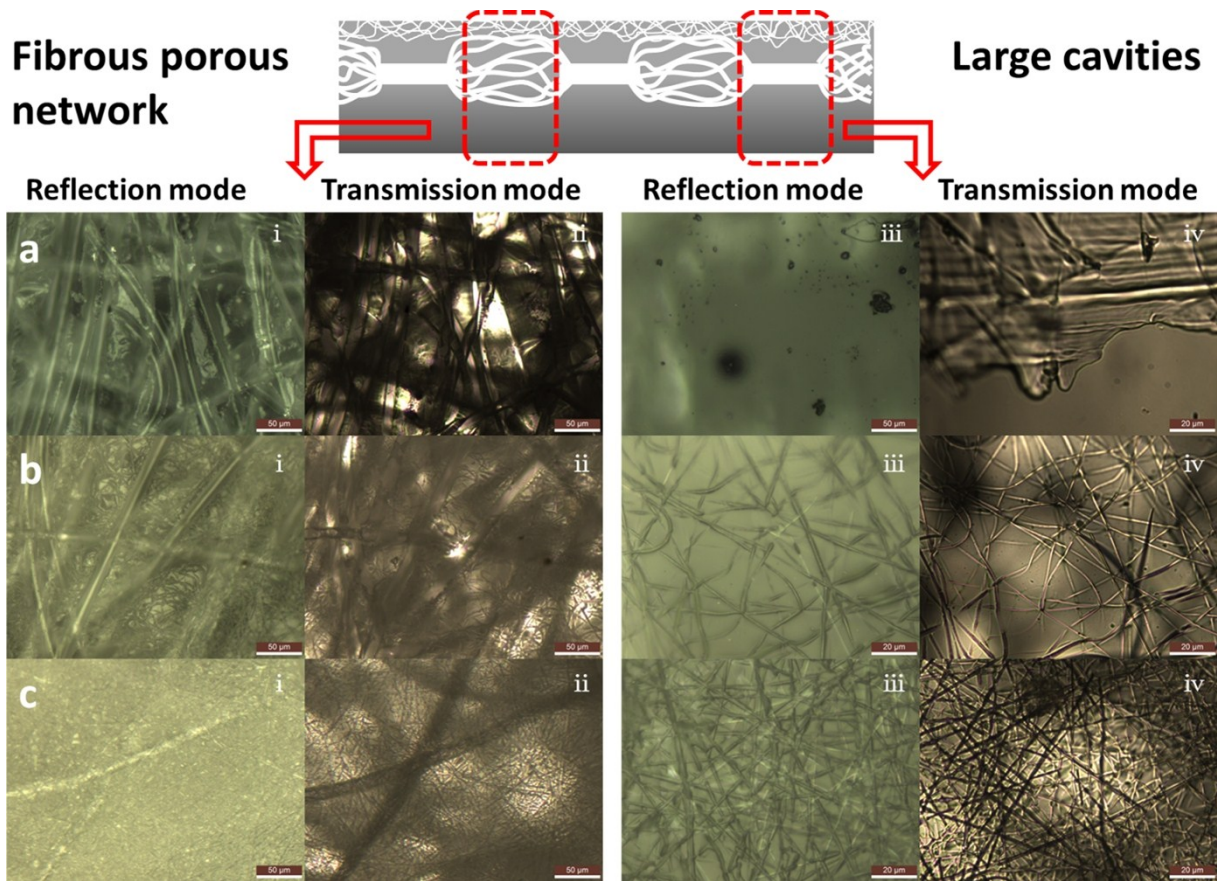


Fig. S4. Optical micrograph of the samples in different modes: (a) FPS-0, (b) FPS-5, (c) FPS-25.

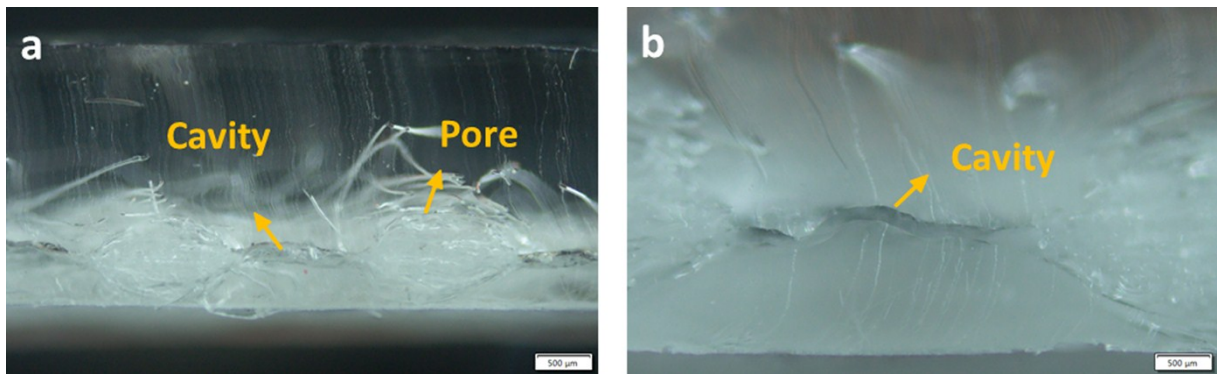


Fig. S5. (a) Cross-section optical micrograph of FPS-0. (b) Magnified view of the cavity.

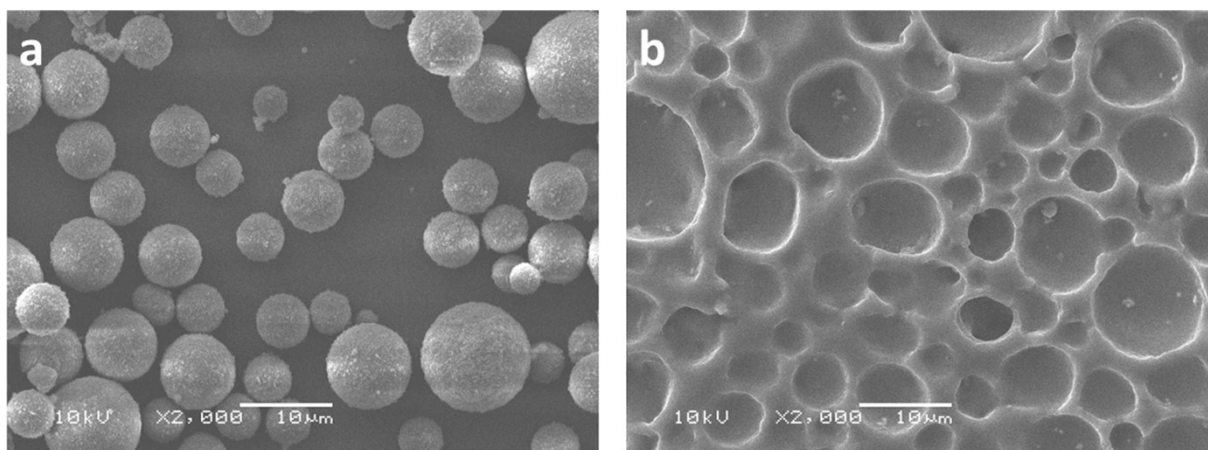


Fig. S6. (a) SEM of silica microspheres used to prepare control samples. (b) SEM of control samples.

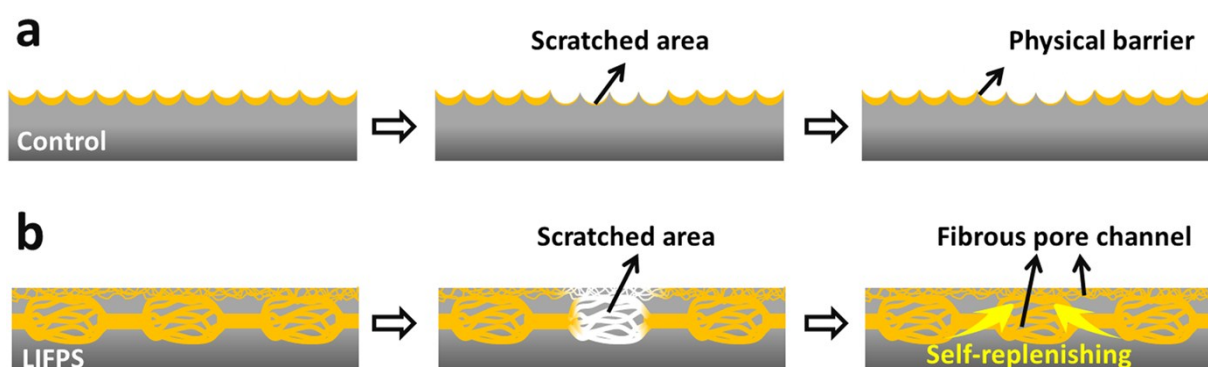


Fig. S7. Schematic diagram of the self-replenishing process of a) control sample and b) LIFPS.

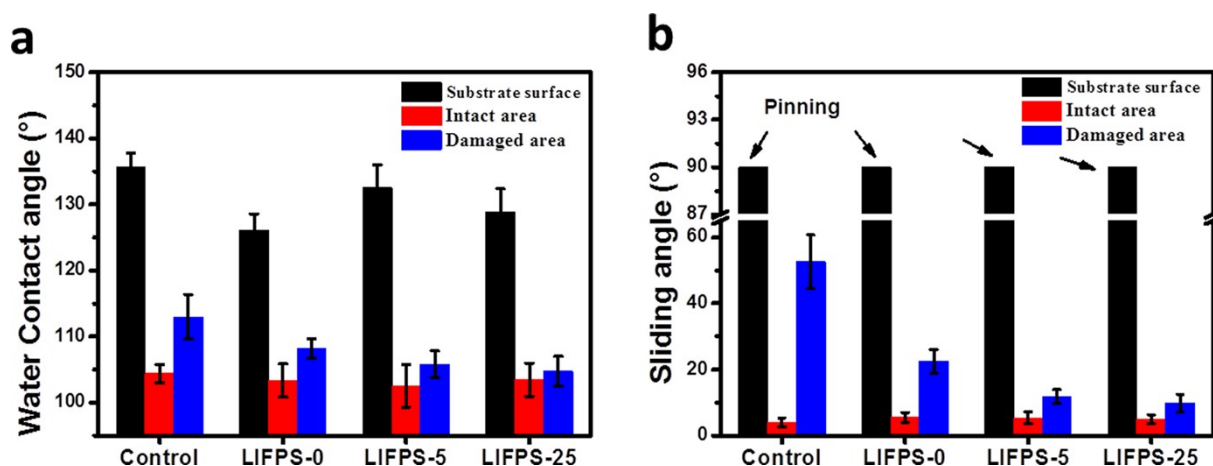


Fig. S8. Comparison of a) water contact angle and b) sliding angle on different samples and different area of sample. Silicone oil was selected as lubricant and the volume of water droplets tested was 6 μ l. The value given is the average of five parallel measurements.