Supplementary Materials

Original, uncropped, and unadjusted FE-SEM and SEM images are as follows:

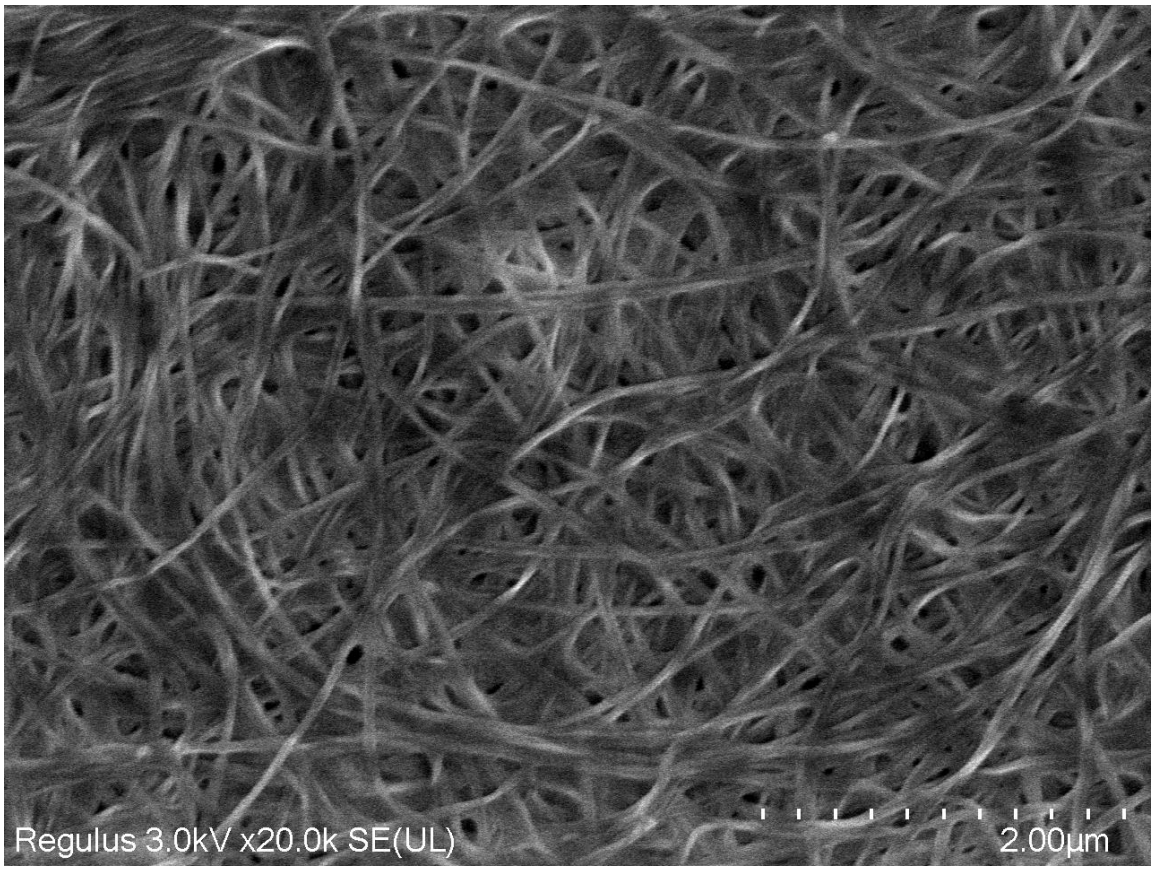


Figure S1. FE-SEM image of the dried BNC film, as shown in the figure, it is an original porous network structure composed of randomly distributed bacterial cellulose nanofibers.

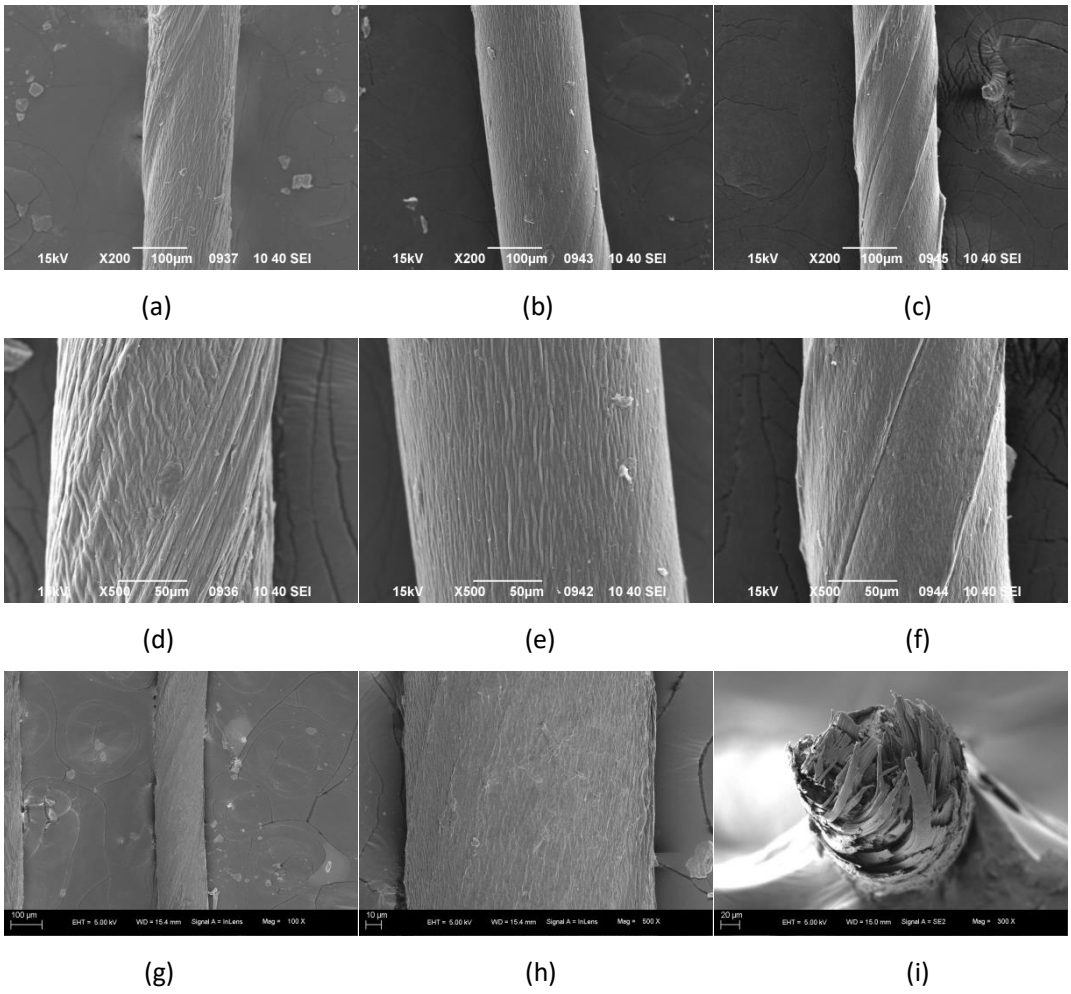


Figure S2. The original SEM images of BNC yarn: (a) 200× magnification view of BNC-100; (b) 200× magnification view of BNC-160; (c) 200× magnification view of BNC-180; (d) 500× magnification view of BNC-100; (e) 500× magnification view of BNC-160; (f) 500× magnification view of BNC-180; (g) 100× magnification view of 1%-160rBNC; (h) 500× magnification view of 1%-160rBNC; (i) Cross-sectional view of 1%-160rBNC. As shown in the figure, the yarn strips are uniform in dryness. The surface varies with the treatment method, and the fibers at the cross-section are arranged in a spiral pattern

Experimental equipment:

DF-101S Heating Type constant temperature magnetic stirrer (Shanghai Lichen Bangxi Instrument Technology Co., LTD., Shanghai, China); GZX-9240 MBE Electric Heating Blower Drying Oven (Shanghai Boxun Instrument Co., LTD., Shanghai, China); Y321 hand-cranched twist Tester (Wenzhou Lucheng Sitong Textile Instrument Factory, Wenzhou, China); DM2700M RL Polarizing Microscope (Leica Microsystems GMBH, Wetzlar, Germany); Instron5300 Universal Material Testing Machine (Instron Inc., Norwood, Massachusetts, MA, USA); Scanning Electron Microscope (SEM) (Japan Electronics, Tokyo, Japan); Regulus8100 field Emission scanning Electron Microscope FE-SEM (Hitachi, Tokyo, Japan); Sigma500 Field Emission Scanning Electron Microscope FE-SEM (Zeiss, Oberkochen, Germany); XCF-1AN Fiber Coefficient of Friction Tester (Shanghai Xinxian Instrument Co., LTD., Shanghai, China); JQW03C Single Fiber Tensile and Compressive Bending Tester (Shanghai Zhongchen Digital Technology Equipment Co., LTD., Shanghai, China).