

Supporting Information

One-step 3D Printed Intelligent Silk Fibroin Artificial Skin with Built-In Electronic and Microfluidics

Maoze Guo, Qian Li, Bingbing Gao* and Bingfang He*

School of Pharmaceutical Sciences, Nanjing Tech University, Nanjing 211816, China.

E-mail: gaobb@njtech.edu.cn, bingfanghe@njtech.edu.cn.

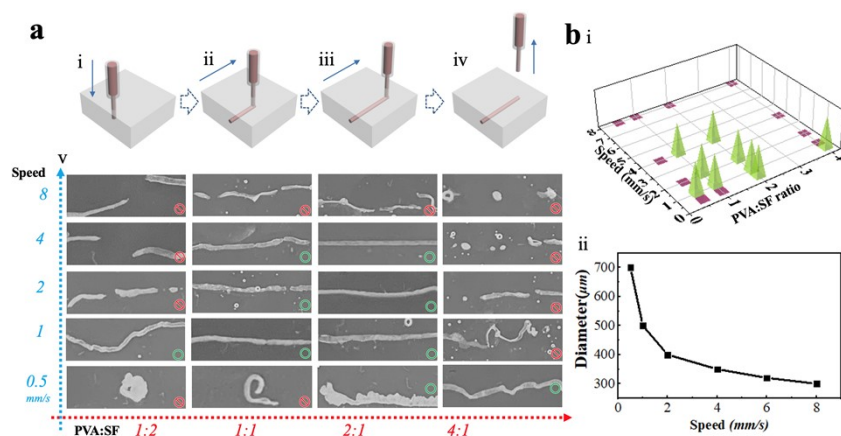


Figure S1: Printing performance of the vaseline inks inside PU-SF precursor. a) Schematic diagram of the printing process (i-immerse, ii, iii-moving, iv-lifting) and (v) photographs of vaseline inks printed in PU-SF precursor with various components ratio and printing speed (moving distance: 1cm). b) Printing performance (i), red: non-printable; green: printable and relationship between the diameter of the extruded lines and printhead moving speed (ii).

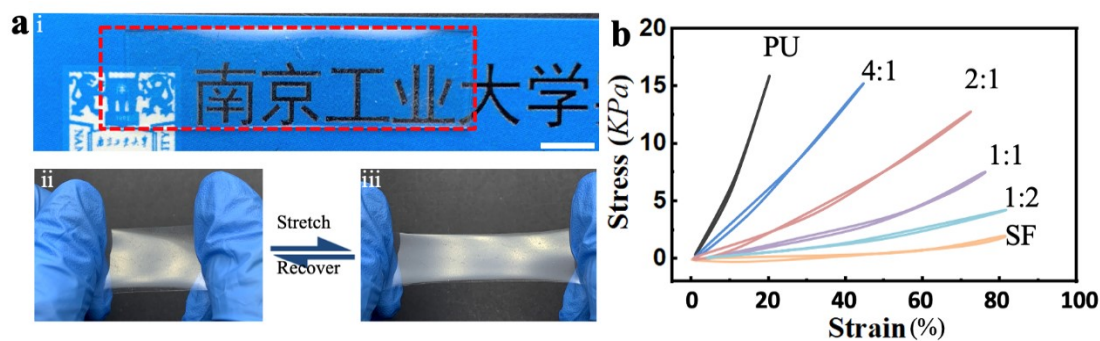


Figure S2: a) Optical images of the PU-SF membrane on a substrate with Nanjing Tech University badge (i), under stretch and recovery circulation (ii, iii). b) Schematic image of the self-healing mechanism.

Table S1. Comparison of abbreviations and full names.

full names	abbreviations
intelligent silk fibroin artificial skin	i-skin
photonic crystals	PCs

Silk fibroin	SF
α -fetoprotein	AFP
carcinoembryonic antigen	CEA
polyurethane	PU
brain natriuretic peptide	BNP
myoglobin	Myo
fluorescein isothiocyanate-labeled bovine serum albumin	FITC-BSA
cyanine 3	Cy3
gauge factors	GF
