

Supporting Information

An interference screw made by silk fibroin-based bulk material
with high content of hydroxyapatite for anterior cruciate
ligament reconstruction in a rabbit model

Zhuo Yan ^{a#}, Wenbo Chen ^{b#}, Wenhe Jin ^b, Yaying Sun ^b, Kai Gu ^a, Ruixin Mi ^a, Ni Chen ^a, Shiyi
Chen ^{b*}, Zhengzhong Shao ^{a*}

Figure S1. The primer sequences for the rtPCR

Gene	Primer sequence
BMP-2	F: 5- CGCCTCAAATCCAGCTGTAAG
	R: 5- GGGCCACAATCCAGTCGTT
OCN	F: 5- CCGGGAGCAGTGTGAGCTTA
	R: 5- AGGCGGTCTTCAAGCCATACT
COL1A1	F: 5- GAGGGCCAAGACGAAGACATC
	R: 5- CAGATCACGTCATCGCACAAAC
IL1 α	F: 5- GCCCTTTACTGAAGATGACCTG
	R: 5- TCATGATGAACTCCTGCTTGAC
GAPDH	F: 5- TGCTGGTGCTGAGTATGTGGT
	R: 5- AGTCTTCTGGGTGGCAGTGAT

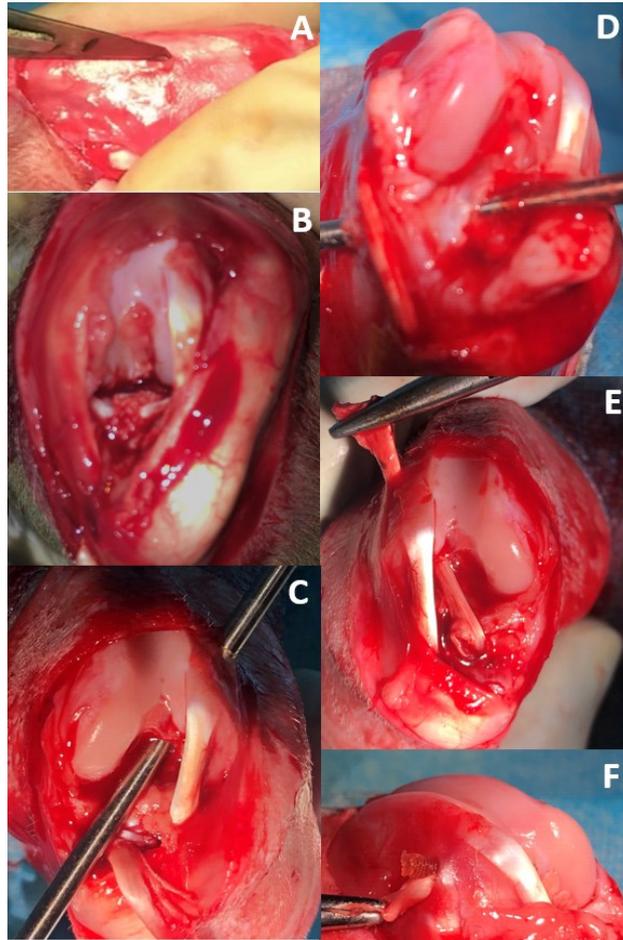


Figure S2. The key surgery procedures: (A)medial parapatellar arthrotomy, (B) lateral dislocation of the patella, (C&D) drilling of the femoral and tibial tunnels, (E) pulling through the autograft, (F) femoral fixation by the interference screw.

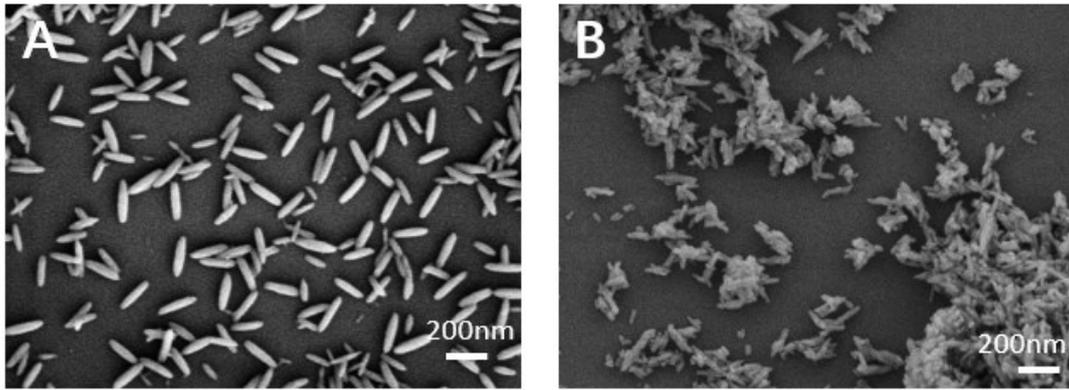


Figure S3. SEM images of (A) HA-SF nanoparticles which can uniformly disperse in water and (B) pure HA aggregates.

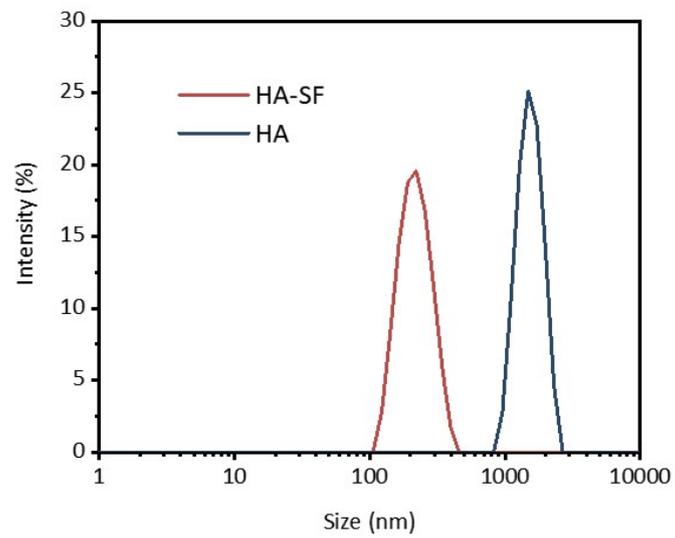


Figure S4. Particle size distribution of HA-SF nanoparticles and HA aggregates in water, detected by DSL.

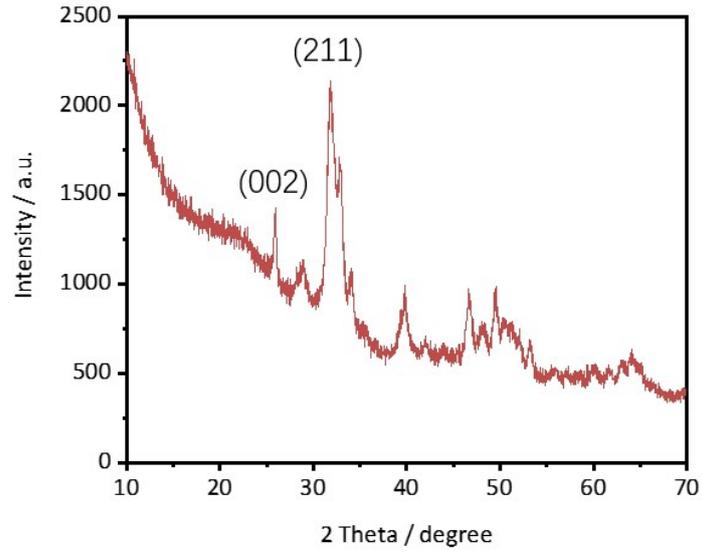


Figure S5. XRD patterns of HA-SF nanoparticles.

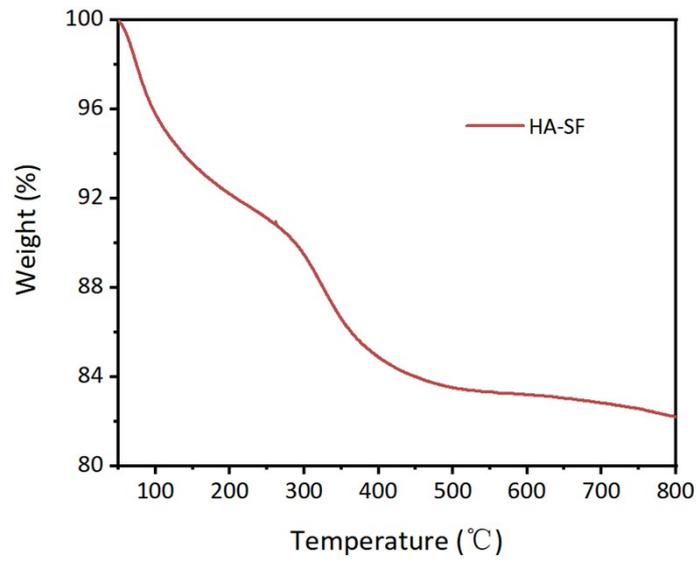


Figure S6. TGA curves of HA-SF nanoparticles.

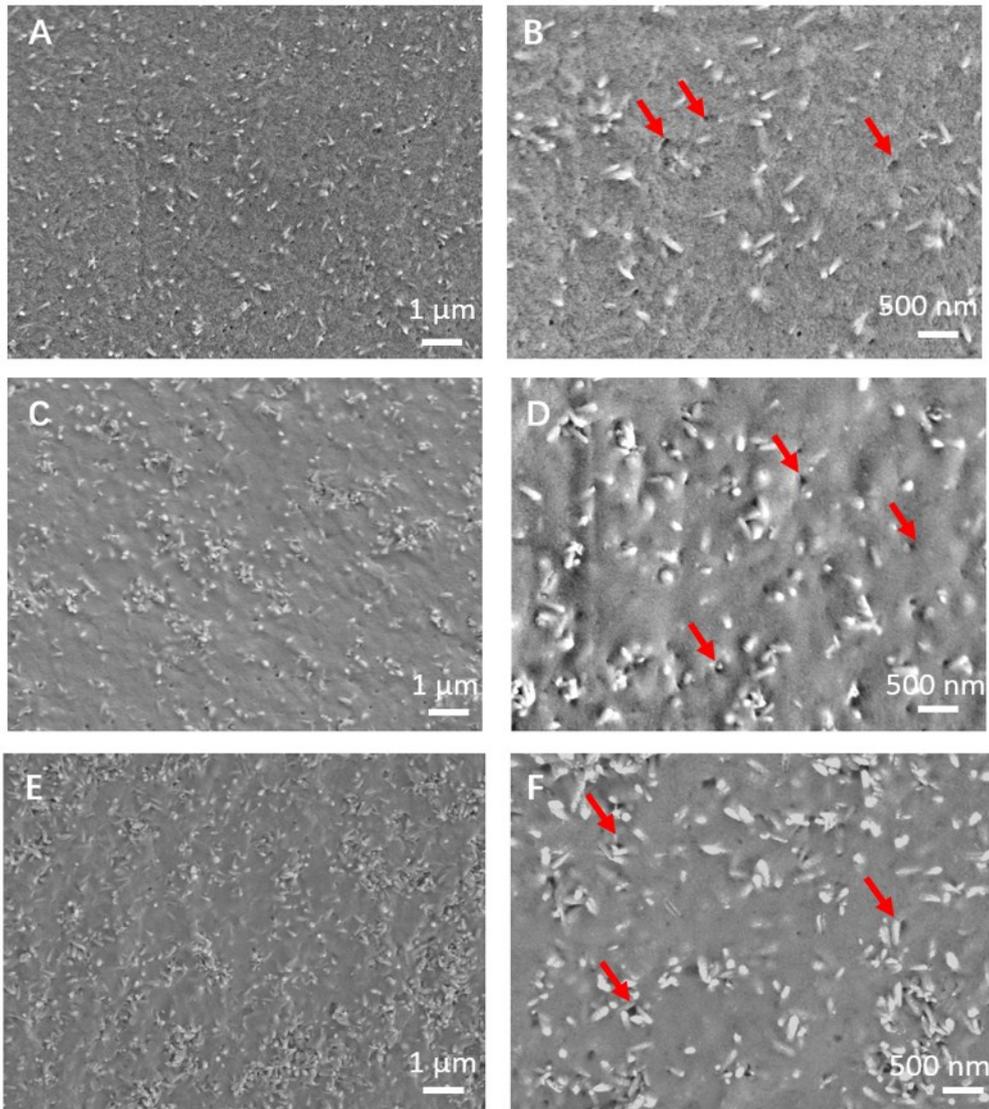


Figure S7. SEM images of the cross sections of (A,B) SF/10% HA-SF, (C,D) SF/20% HA-SF and (E,F) SF/30% HA-SF. The red arrows pointed a few of tiny pores produced during the dehydration.

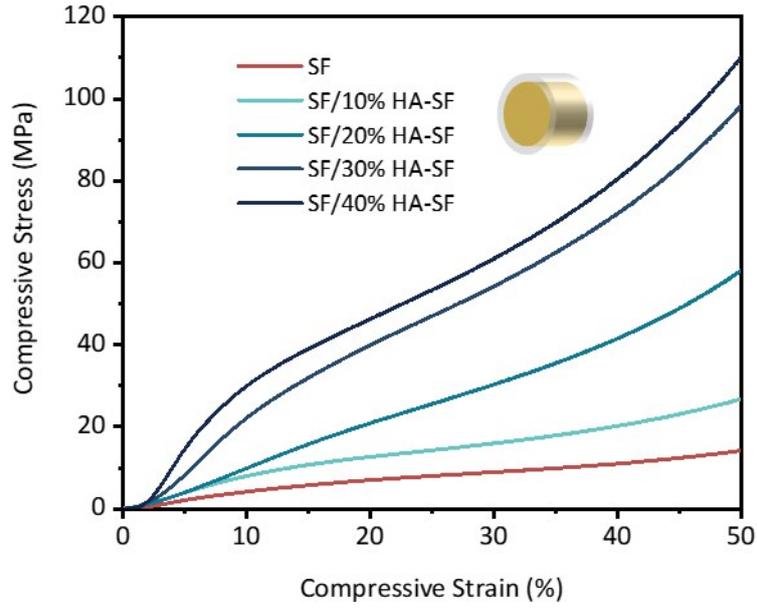


Figure S8. Stress-strain curves of the sample noted in the restricted wet state for 1 day. The inserted picture described the sample being restricted.

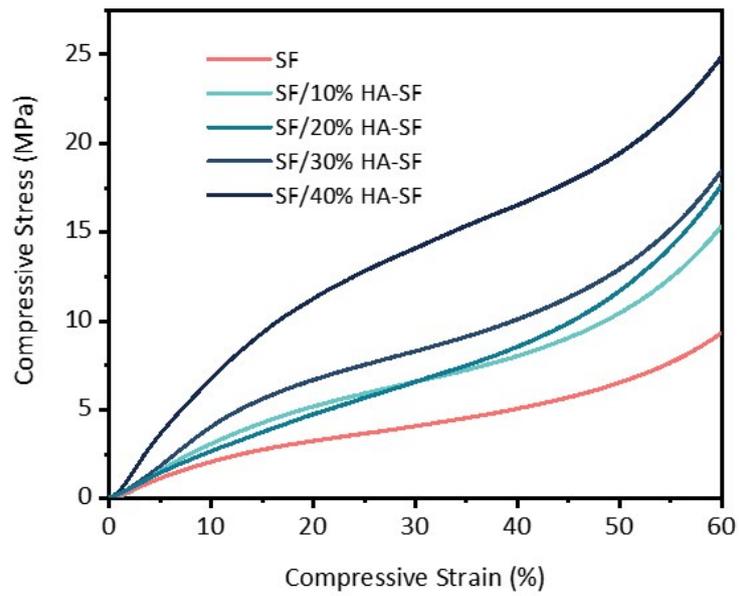


Figure S9. Stress-strain curves of the samples noted in the restricted wet state for 7 days.

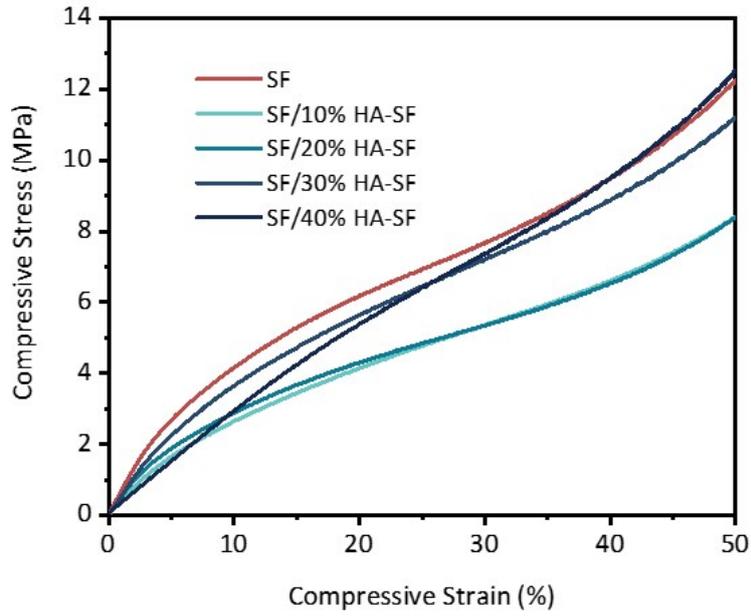


Figure S10. Stress-strain curve of the samples noted in the wet state for 1 day.

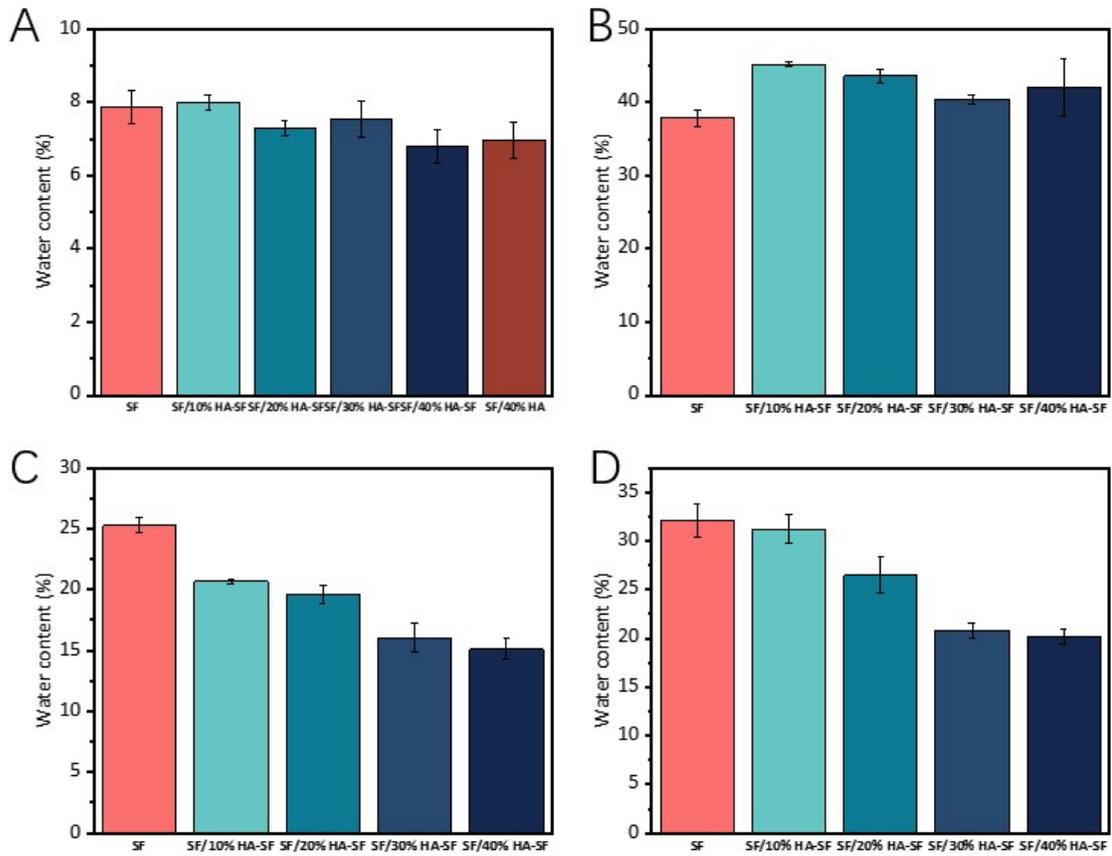


Figure S11. Water content of the samples (A) in dry state, (B) in wet state, (C) in the restricted wet state for 1 day, (D) in the restricted wet state for 7 days.

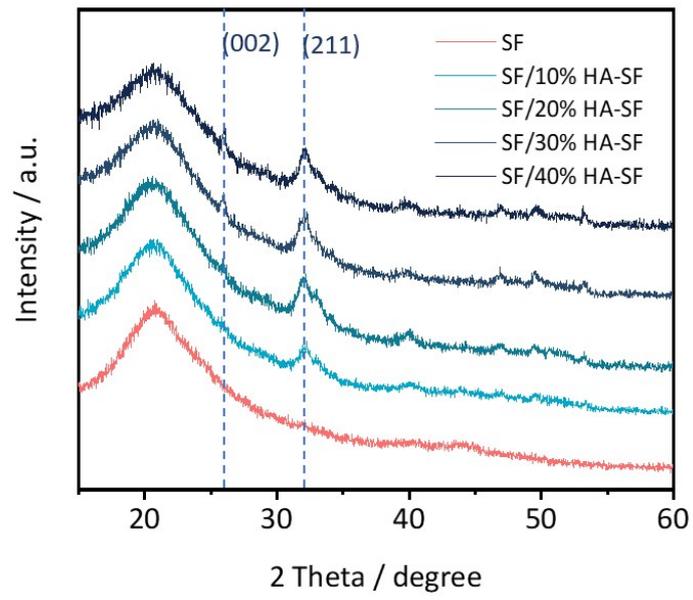


Figure S12. XRD curves of SF and SF/HA-SF (10%, 20%, 30%, 40%) composite bulk materials.