Supplementary Information

Multifunctional silicon calcium phosphate composite scaffolds promote stem cell recruitment and bone regeneration

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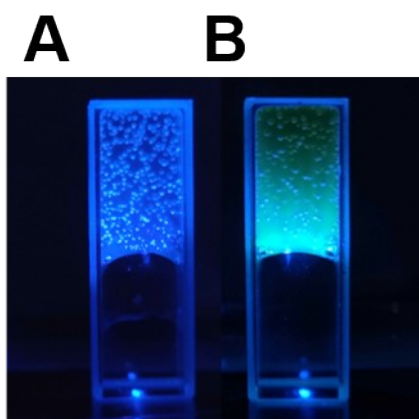E-mail: zzlxia@cqu.edu.cn, kaiyong_cai@cqu.edu.cn.

Fig. S1. (A) SF hydrogel and (B) SF@PFS-FITC hydrogel under blue excitation light.
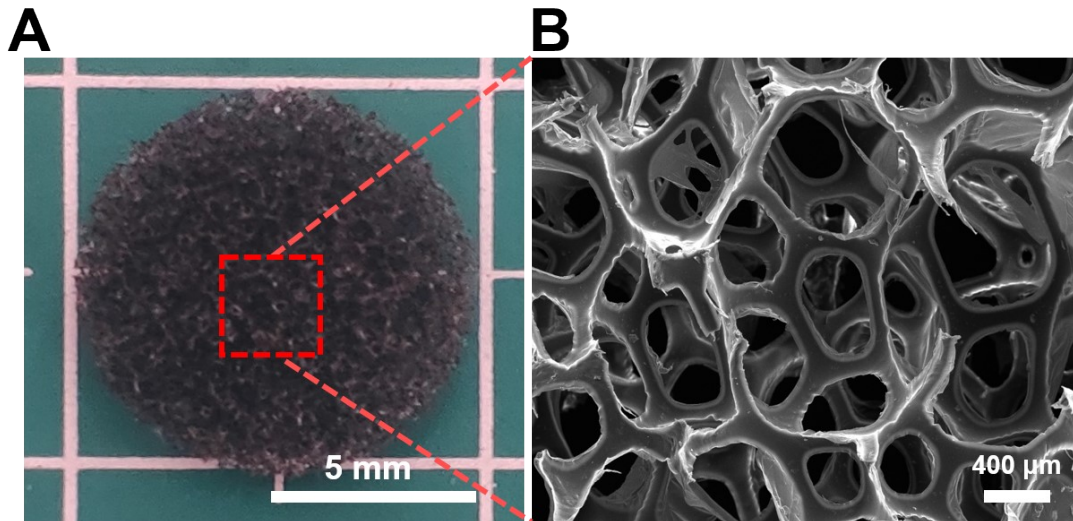
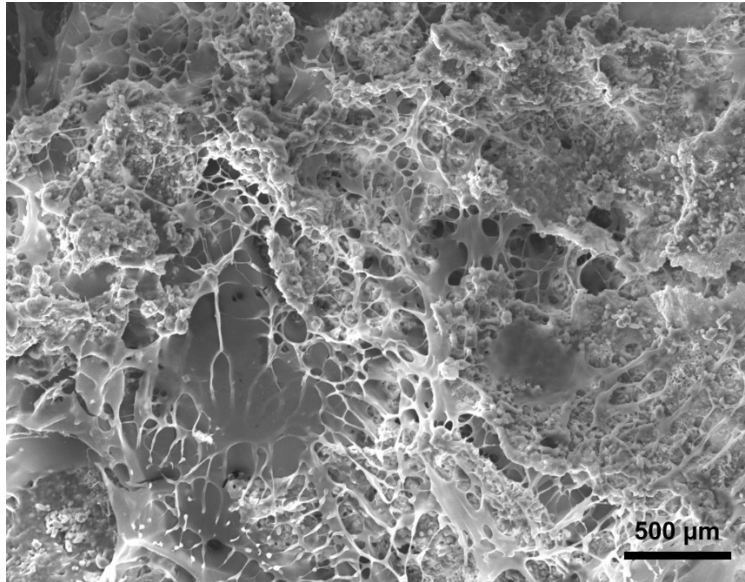**Fig. S2.** The (A) photograph and (B) SEM geometry of the foam template.

Fig. S3. SEM image of silicon calcium phosphate-SF hydrogel composite scaffold.
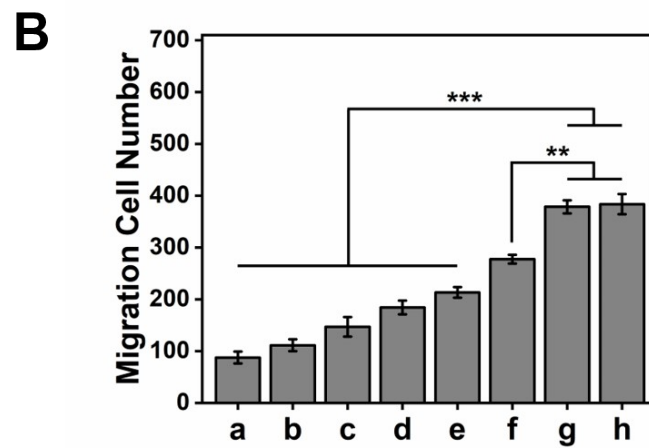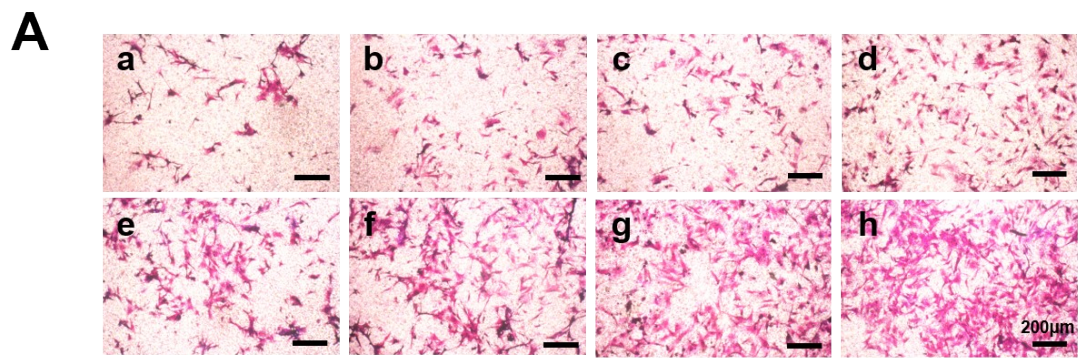
Fig. S4. (A) Migrated MSCs staining of different concentration of groups after culture for 24 h, a-h: 0, 0.00032, 0.0016, 0.008, 0.04, 0.2, 1, and 5 mg/mL; (B) quantitative counting of migrated MSCs. Error bars represent means $\pm$ SD for n = 6, *p < 0.05, **p < 0.01.
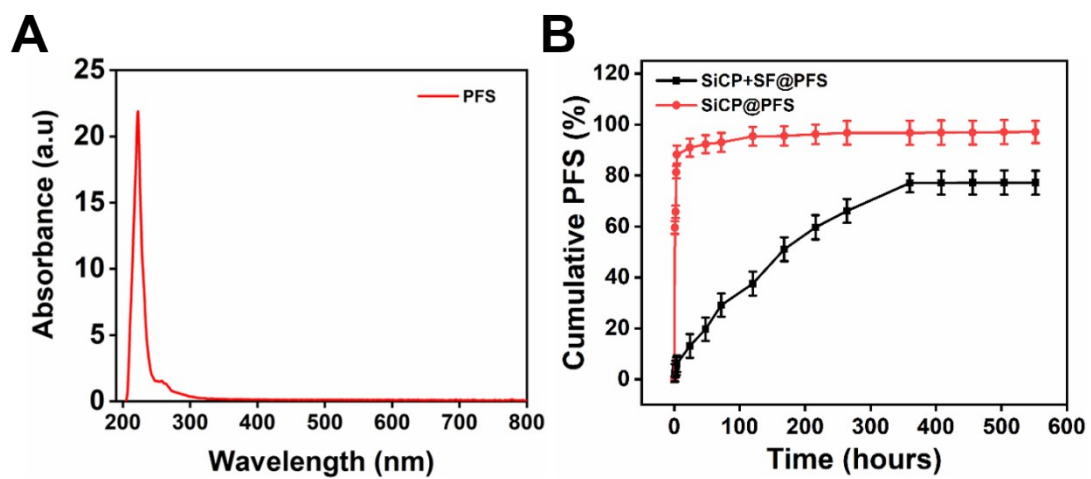
Fig. S5. (A) Ultraviolet absorption characteristic peak of PFS peptides at 214 nm; (B) percentage of cumulative release of PFS peptides.

Table S1. The quantitative measurement of different ions released from scaffolds

Days	Samples	P (mg/ L)	Si (mg/ L)	Ca (mg/ L)
7	SiCP	10.6±0.35	5.73±0.50	17.73±0.35
	SiCP+SF	4.56±0.45	2.96±0.99	6.64±0.47
	SiCP+SF@PFS	5.12±0.23	2.25±0.38	8.64±0.44
14	SiCP	23.79±1.22	11.97±0.70	36.64±0.41
	SiCP+SF	23.99±0.65	11.99±0.71	35.12±0.56
	SiCP+SF@PFS	21.37±0.63	10.19±0.58	34.49±1.59
21	SiCP	39.75±1.78	20.44±0.78	62.72±0.89
	SiCP+SF	41.45±2.81	21.60±0.53	61.26±1.03
	SiCP+SF@PFS	39.60±0.98	20.48±0.92	60.59±1.47

Table S2. Real-time PCR primers used in this study

Target gene	Primers sequences
OSX	F: 5'-CACCCATTGCCAGTAATCTTCGTG -3'
	R: 5'-CATAGTGAGCTTCTTCCTGGGG-3'
Runx 2	F: 5'-GCCGTAGAGAGCAGGGAAGAC-3'
	R: 5'-CTGGCTTGGATTAGGGAGTCAC-3'
COL I	F: 5'-CCTGAGCCAGCAGATTGA-3'
	R: 5'-TCCGCTCTTCCAGTCAG-3'
OCN	F: 5'-GAGGGCAGTAAGGTGGTGAA-3'
	R: 5'-CGTCCTGGAAGCCAATGTG-3'
GAPDH	F: 5'-TGCGTTGTTGCGGTCCAC-3'
	R: 5'-GGCATTGCTCTCAATGACAA-3'