



Supporting Information

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3D printed wesselsite nanosheets functionalized scaffold facilitates NIR-II photothermal therapy and vascularized bone regeneration

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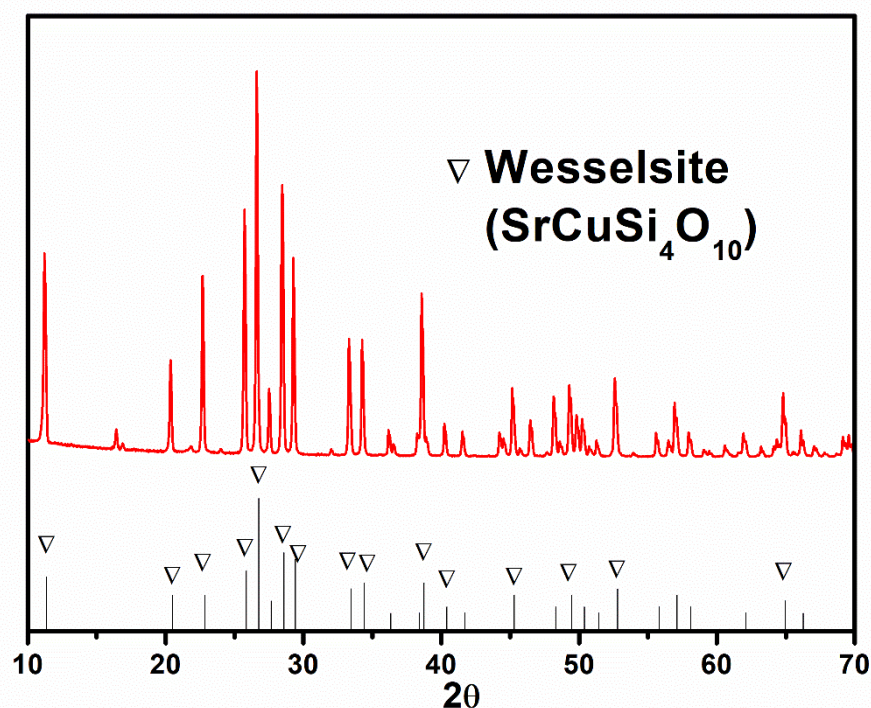


Figure S1. XRD patterns of SC powders.

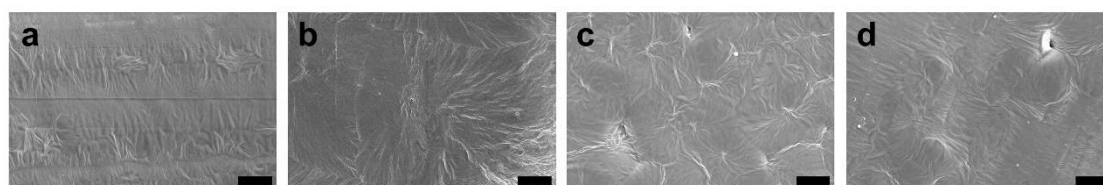


Figure S2. SEM characterization of the surface morphology of different 3D printed scaffolds. (a) PCL, (b) 2-SC/PCL, (c) 4-SC/PCL and (d) 8-SC/PCL. Scale bar: 5 μm .

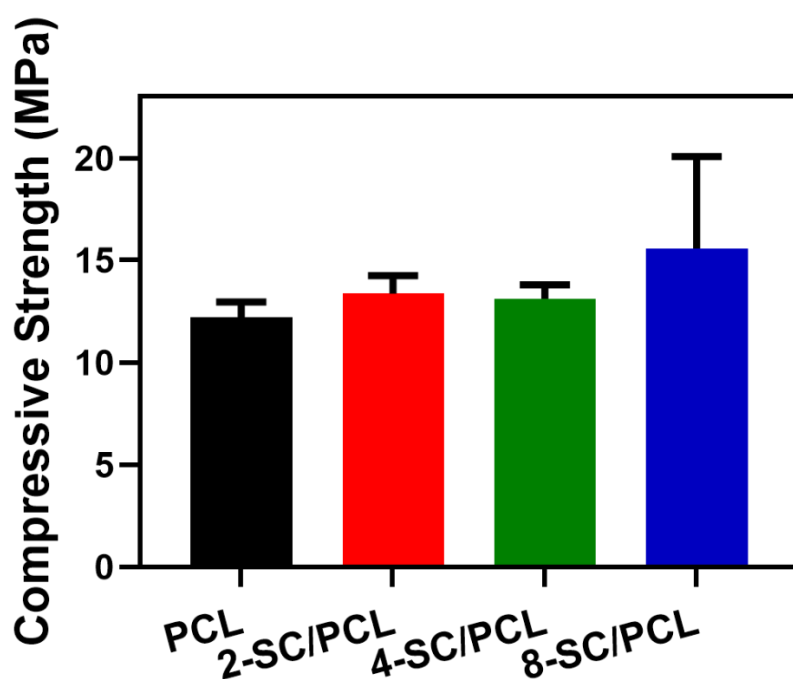


Figure S3. Compressive strength of different 3D printed scaffolds. Data are presented as mean \pm s.d. ($n = 3$). One-way ANOVA analysis.

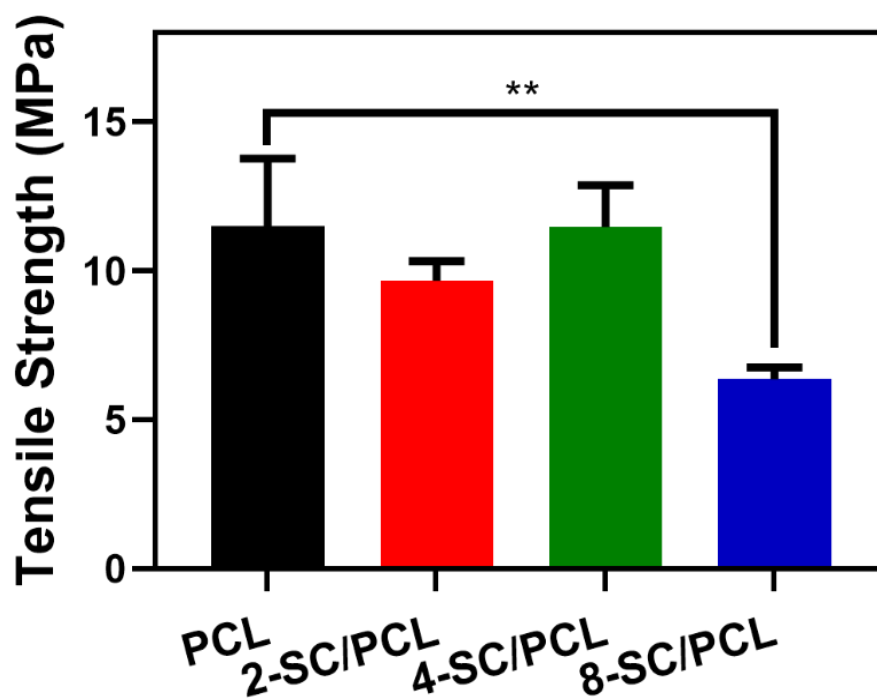


Figure S4. Tensile strength of different 3D printed scaffolds. Data are presented as mean \pm s.d. (n = 3). ** for $0.001 < P < 0.01$. One-way ANOVA analysis.

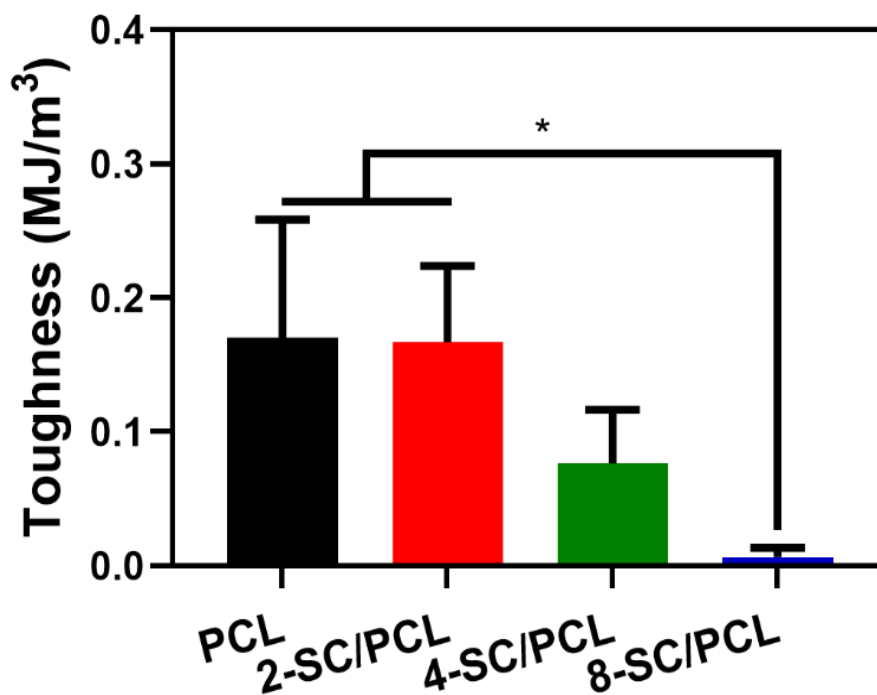


Figure S5. Toughness of different 3D printed scaffolds. Data are presented as mean \pm s.d. (n = 3). * for $0.01 < P < 0.05$. One-way ANOVA analysis.

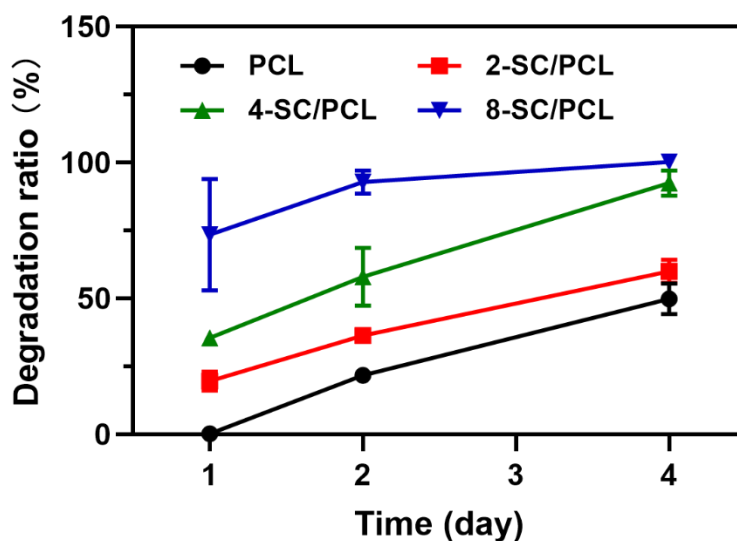


Figure S6. Quantitative analysis of scaffolds degraded in 5 M NaOH aqueous solution for 4 days. Data are presented as mean \pm s.d. (n = 3).

	Before degradation	After degradation
Highest temperature (°C)	45.48 \pm 0.97	41.77 \pm 2.15
Compressive strength (MPa)	13.1 \pm 0.69	7.53 \pm 0.58
Compressive Young's modulus (MPa)	128.31 \pm 3.22	73.45 \pm 4.26

Table S1. The photothermal and compressive mechanical properties of 3D printed composite scaffolds (taking 4-SC/PCL as an representative scaffold) before and after degradation in PBS for 4 weeks. Data are presented as mean \pm s.d. (n = 3).

	2-SC/PCL	4-SC/PCL	8-SC/PCL
Sr (ppm)	0.267 \pm 0.029	0.776 \pm 0.05	1.992 \pm 0.283
Cu (ppm)	0.459 \pm 0.063	1.492 \pm 0.239	4.044 \pm 0.416
Si (ppm)	5.384 \pm 0.855	13.339 \pm 1.839	24.78 \pm 3.922

Table S2. The ionic concentrations released from different 3D printed composite scaffolds in cell culture media for 3 days. Data are presented as mean \pm s.d. (n = 4).