Electronic Supplementary Material (ESI) for Biomaterials Science.

Supplementary Information

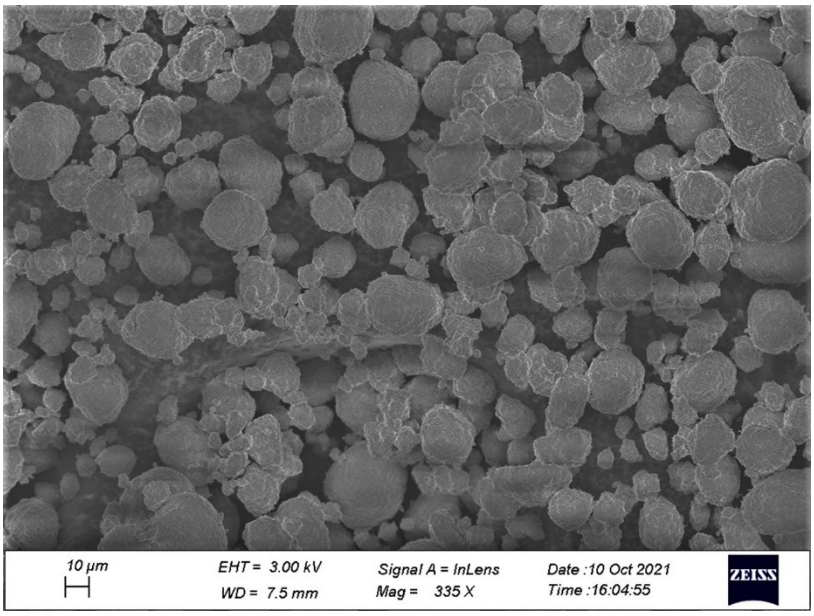

Figure S1. SEM image of commercial hydroxyapatite microparticles purchase from Sigma-Aldrich.

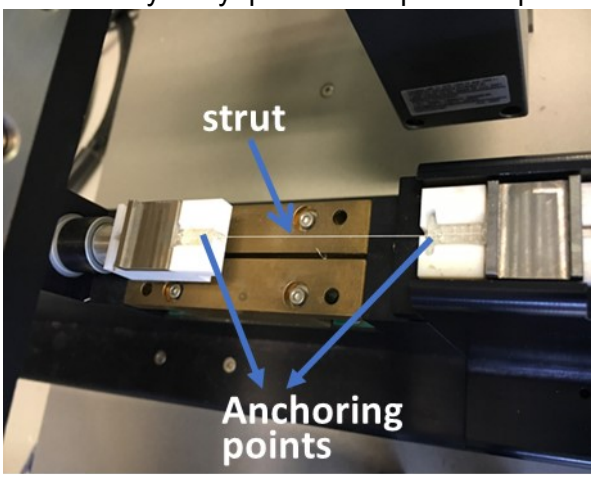

Figure S2. Tensile testing of a single strut.

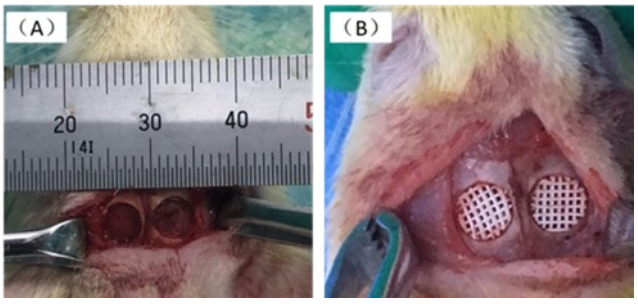

Figure S3. Photographs of (A) two calvarial defects and (B) defects filled with scaffolds.

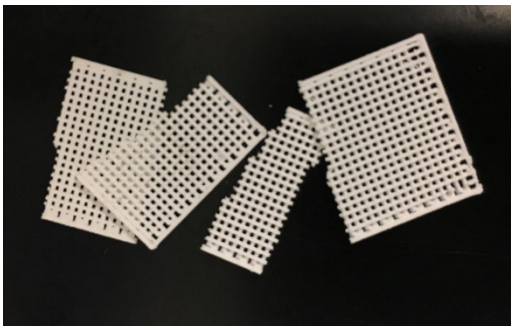

Figure S4. 3D printed PCL/HA sheet (4 layers) without PEG fractured easily after slight bending.

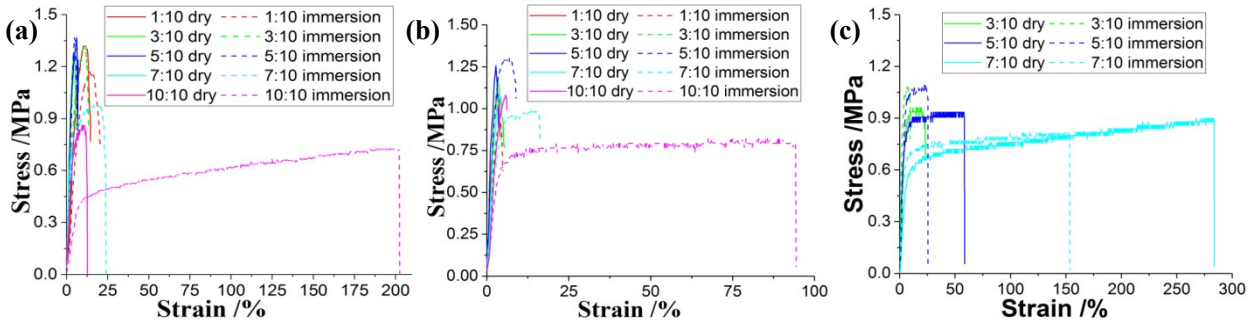

Figure S5. Representative tensile stress-strain curves of PEG/PCL/HA struts: (a) PEG(20k), (b) PEG(3350), and (c) PEG(400). The mass ratio of PCL to HA is fixed to 1:9. The mass ratio of PEG : PCL are 1:10, 3:10, 5:10, 7:10 and 10:10.

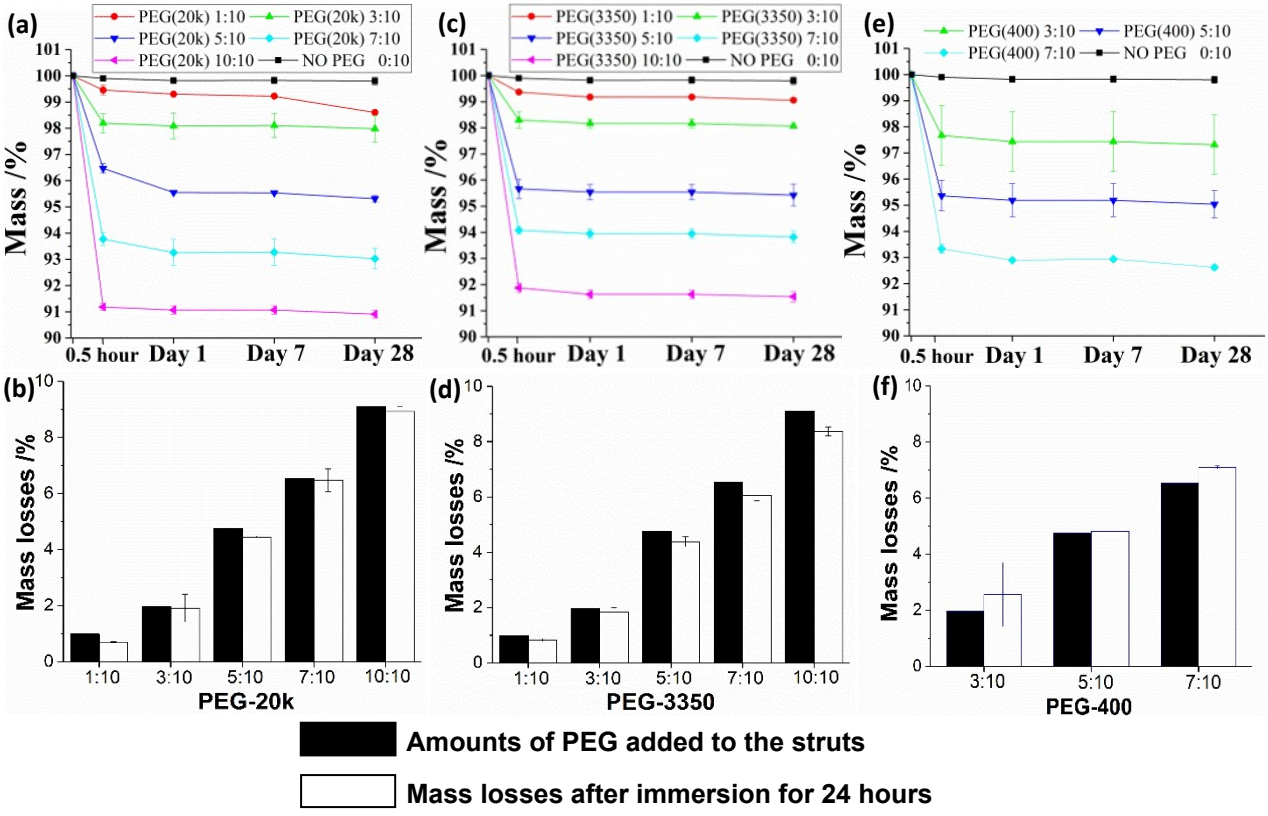

Figure S6. (a) Mass change of PCL/PEG/HA scaffolds (PCL:HA=1:9) after immersion in water. (b) Comparison of the theoretic amounts of PEG and measured amounts of leached PEG.

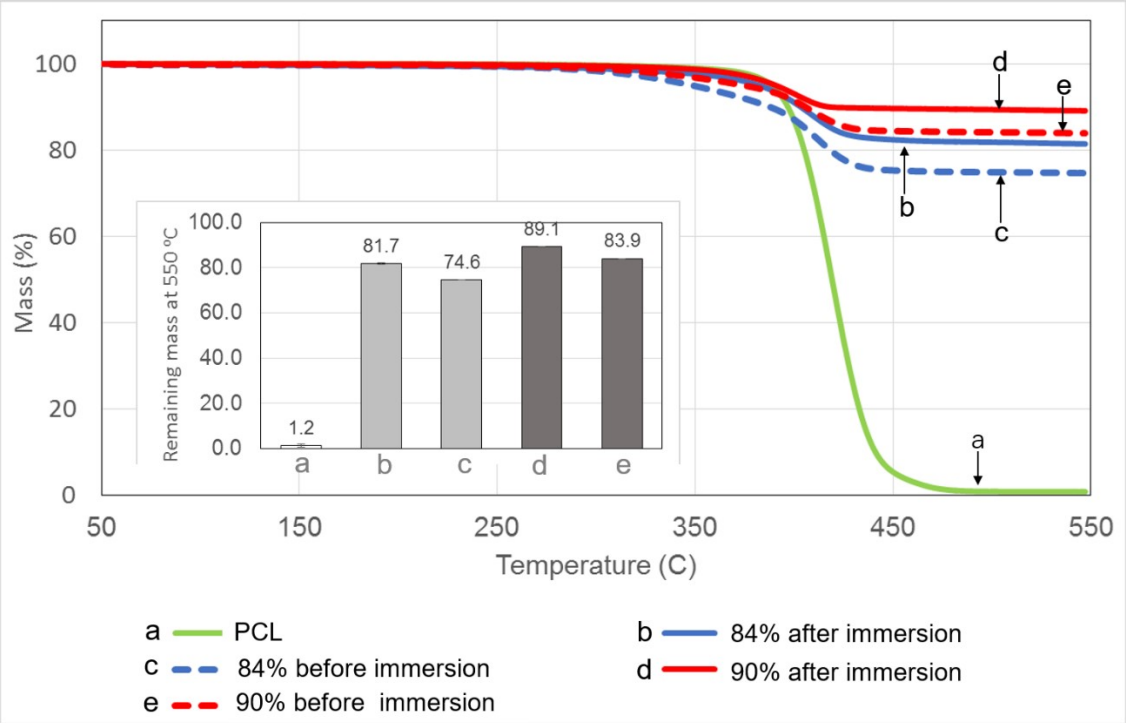

Figure S7. Measurement of hydroxyapatite content in scaffolds using thermogravimetric analysis. Inset shows the experimentally measured hydroxyapatite contents. Legends are the theoretical hydroxyapatite contents.

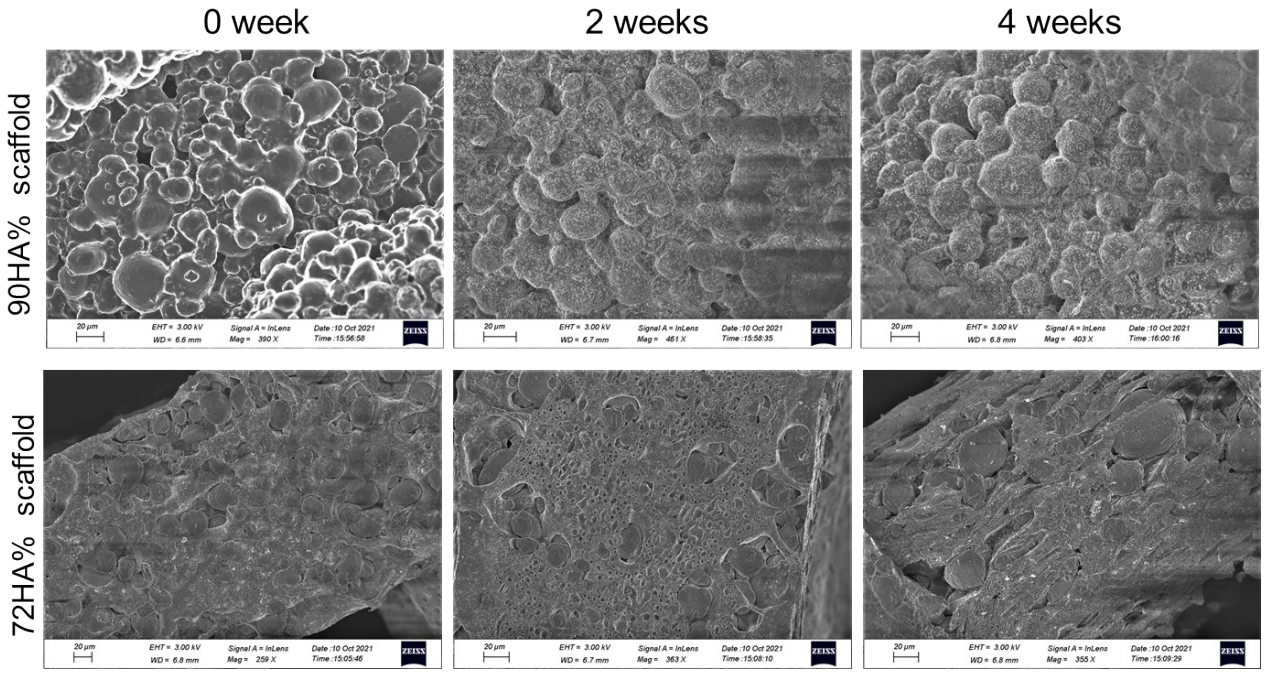

Figure S8. SEM images of scaffolds with two different hydroxyapatite contents after soaking in simulated body fluid for different times. The 90%HA scaffolds show white speckles which indicate the presence of precipitated minerals on the strut surface.

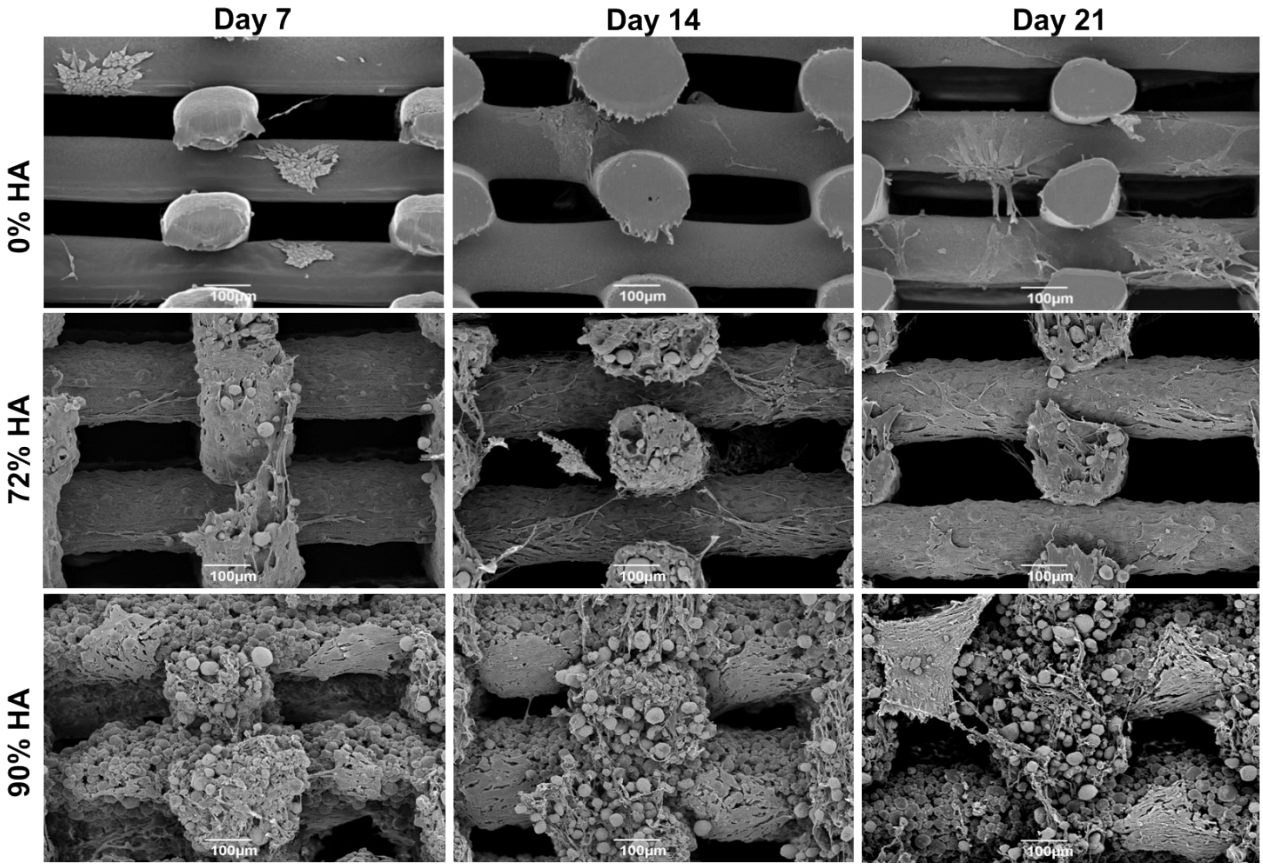

Figure S9. Representative SEM images showing middle cross-sections of scaffolds (Pure PCL, 72%HA and 90%HA) with adhered immortalized hMSCs on the strut surfaces at day 7, 14 and 21.

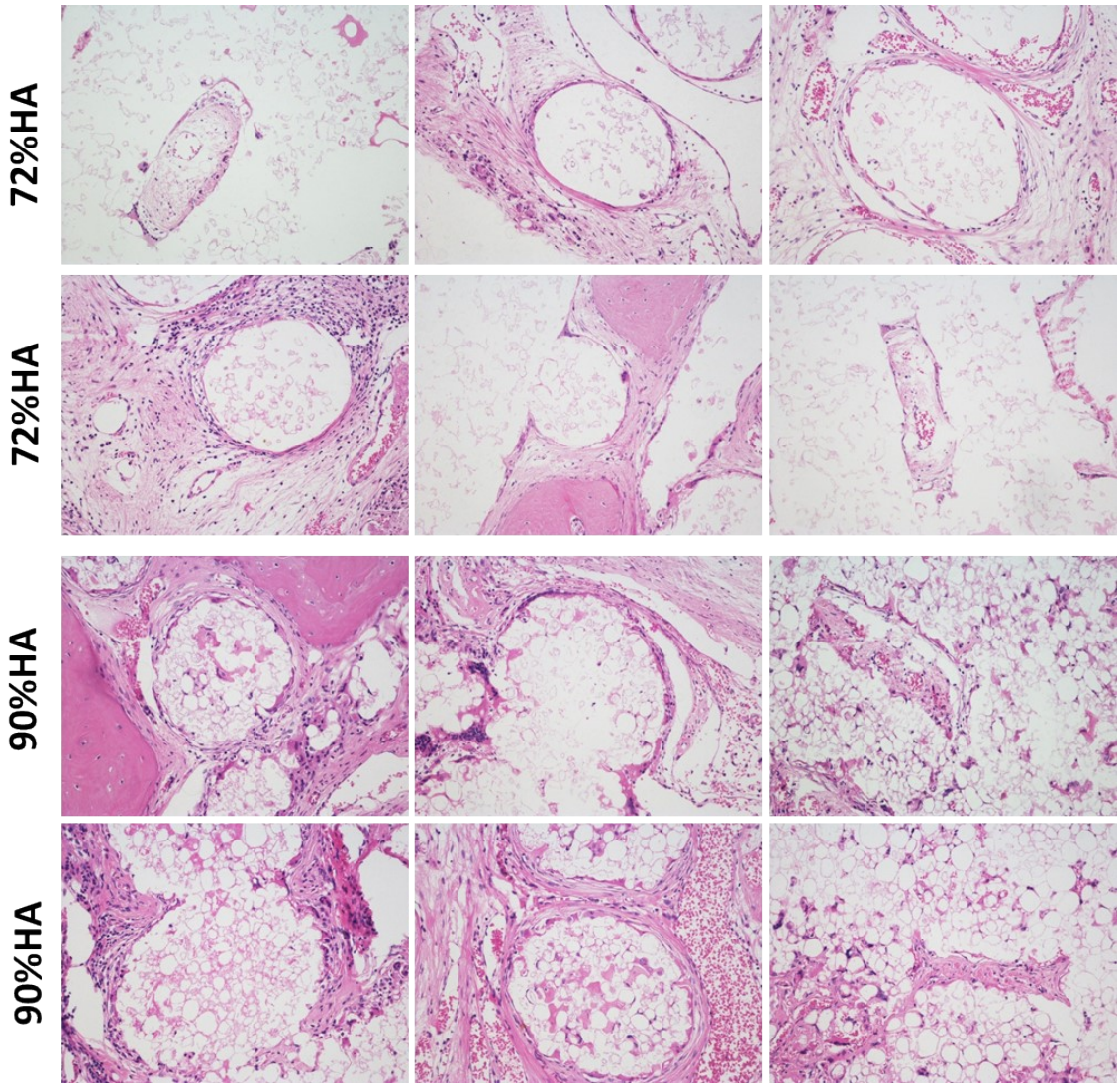

Figure S10. Representative high-magnification images of H&E stained images.

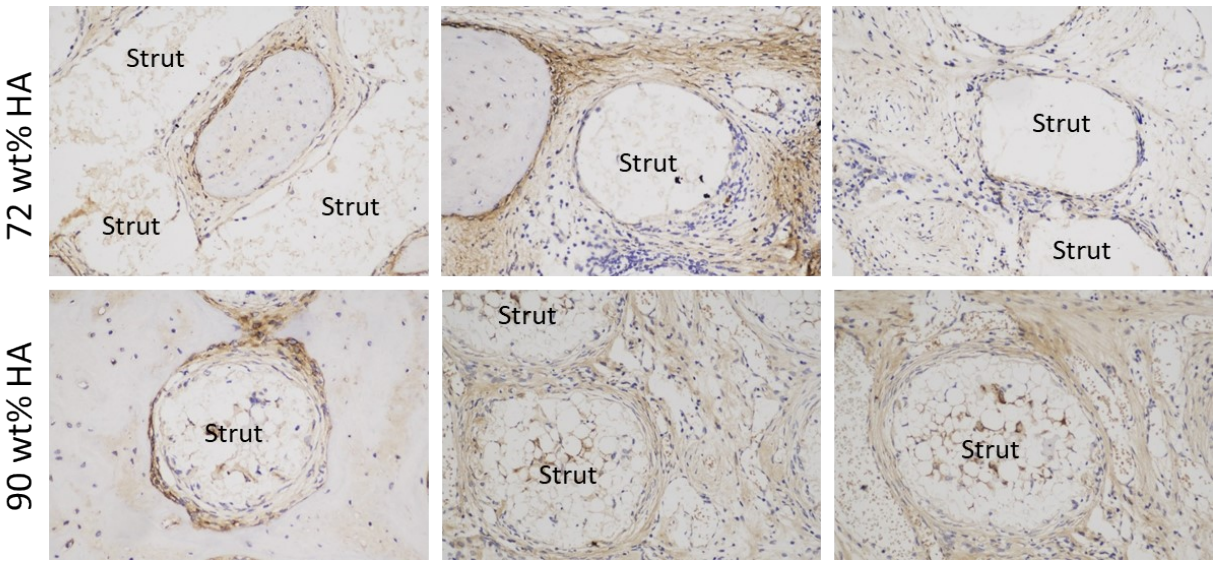

Figure S11. High-magnification images of immunohistochemistry staining of collagen II.

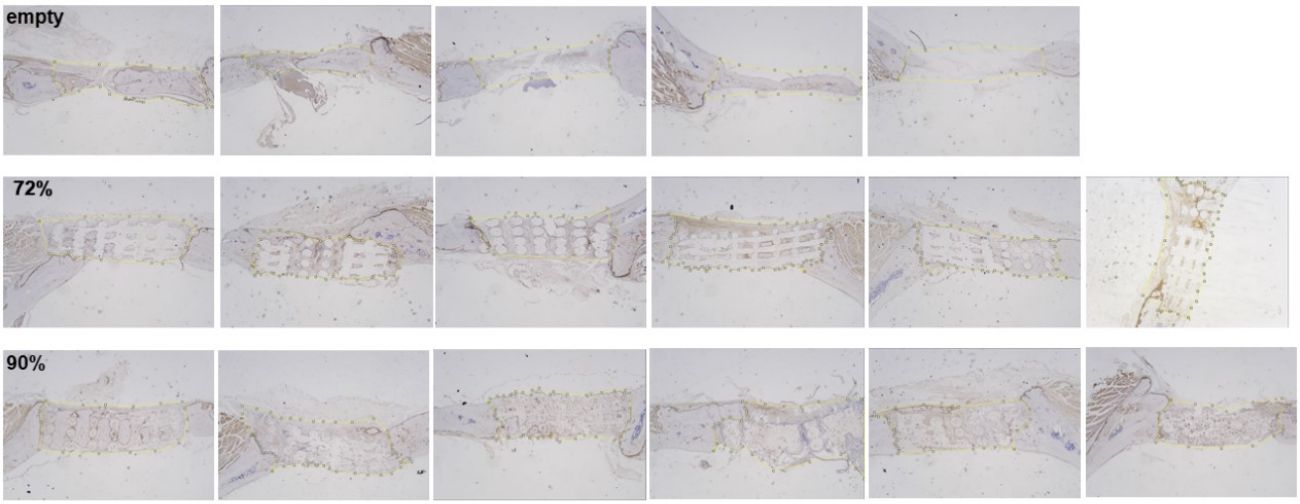

Figure S12. Immunohistochemistry images used for the quantification of collagen II

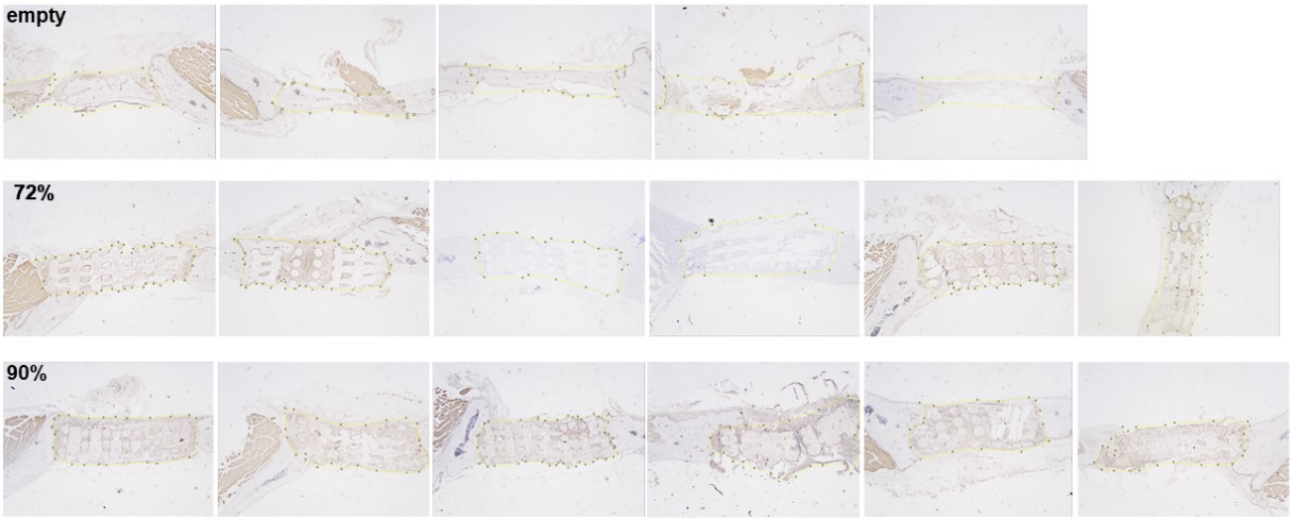

Figure S13. Immunohistochemistry images used for the quantification of OCN

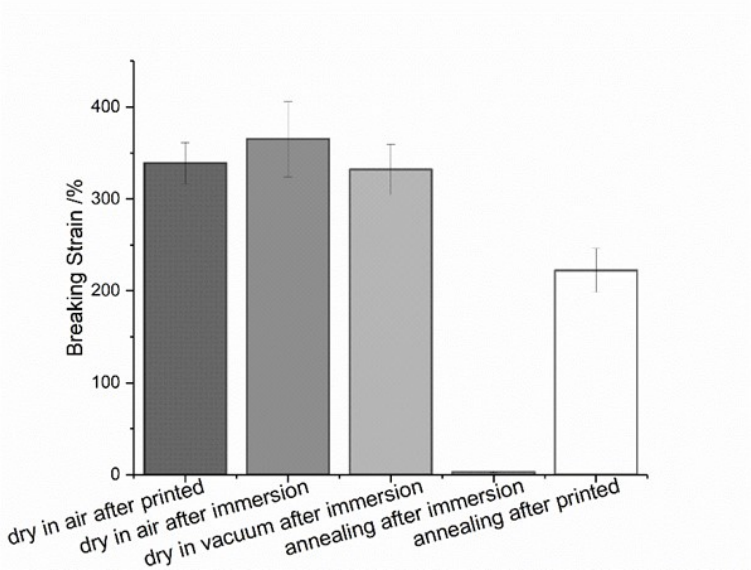

Figure S14. Breaking strain of PCL/PEG/HA struts with different treatments. Annealing (57°C) of struts after immersion in water removed ductility. Data represent mean ± SD, n=5.