

SUPPLEMENTARY MATERIAL

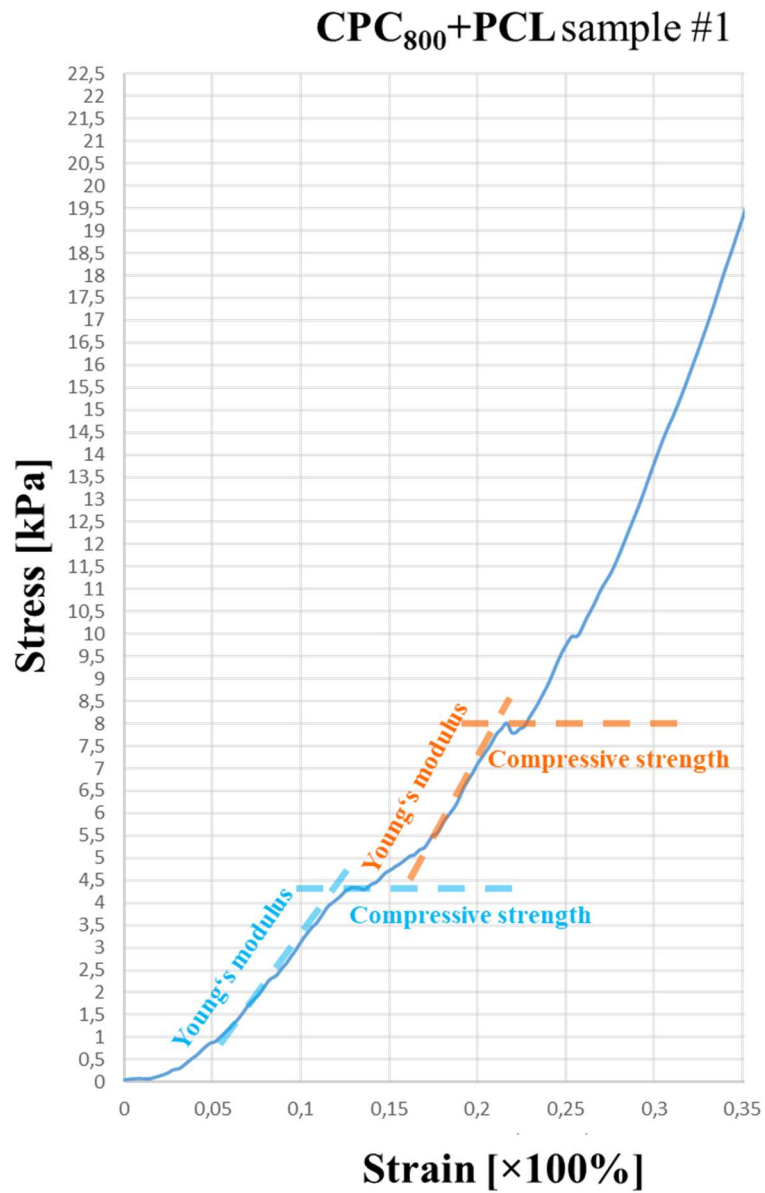


Figure S1: Representative stress-strain curve from one CPC₈₀₀+PCL scaffold, with the respective two breaking points for determination of compressive strength and Young's modulus

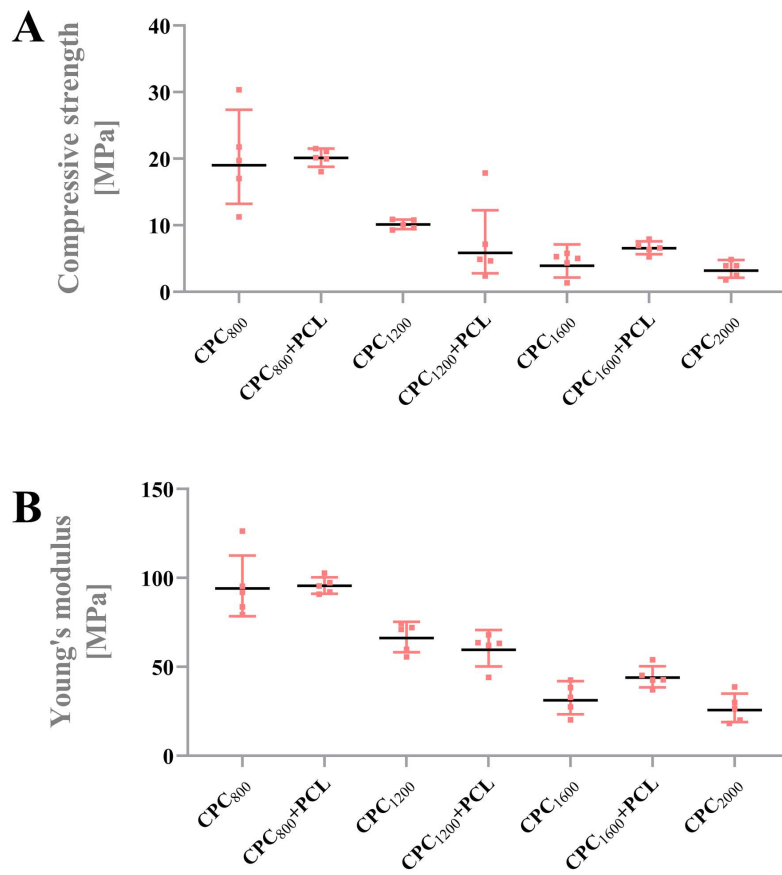


Figure S2: Mechanical properties of CPC and CPC+PCL scaffolds with different CPC strand distance (800 μm , 1200 μm , 1600 μm , 2000 μm), calculated at second breaking point of the stress-strain curve. **A:** Compressive strength of CPC and CPC+PCL scaffolds. $n = 3$. **B:** Young's modulus of CPC and CPC+PCL scaffolds. $n = 5$.

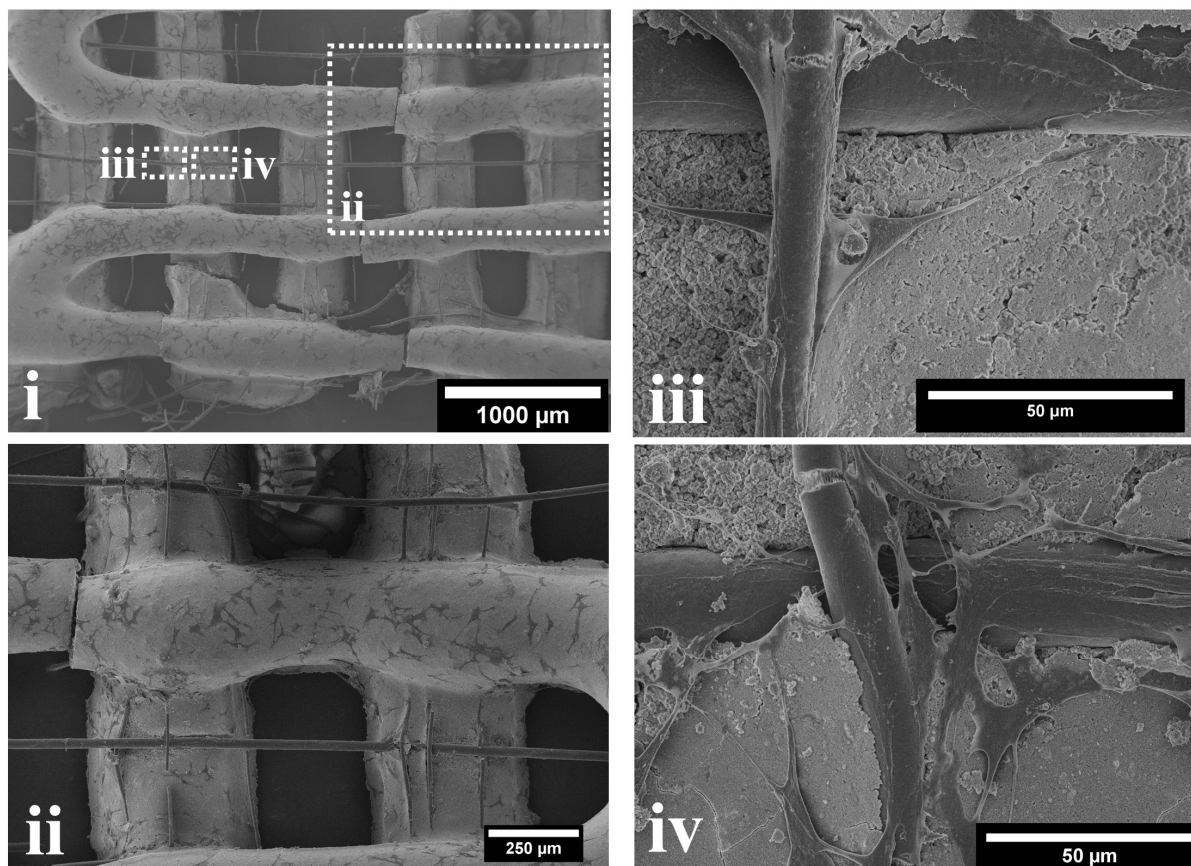


Figure S3: SEM images of mOB-seeded hybrid CPC+PCL scaffolds (day 1), overview image (i; scale bar = 1000 μm), higher magnification images focusing on biphasic interwoven structure (ii; scale bar = 250 μm) and cell attachment to CPC strands and PCL fibers (iii, iv; scale bar = 50 μm)

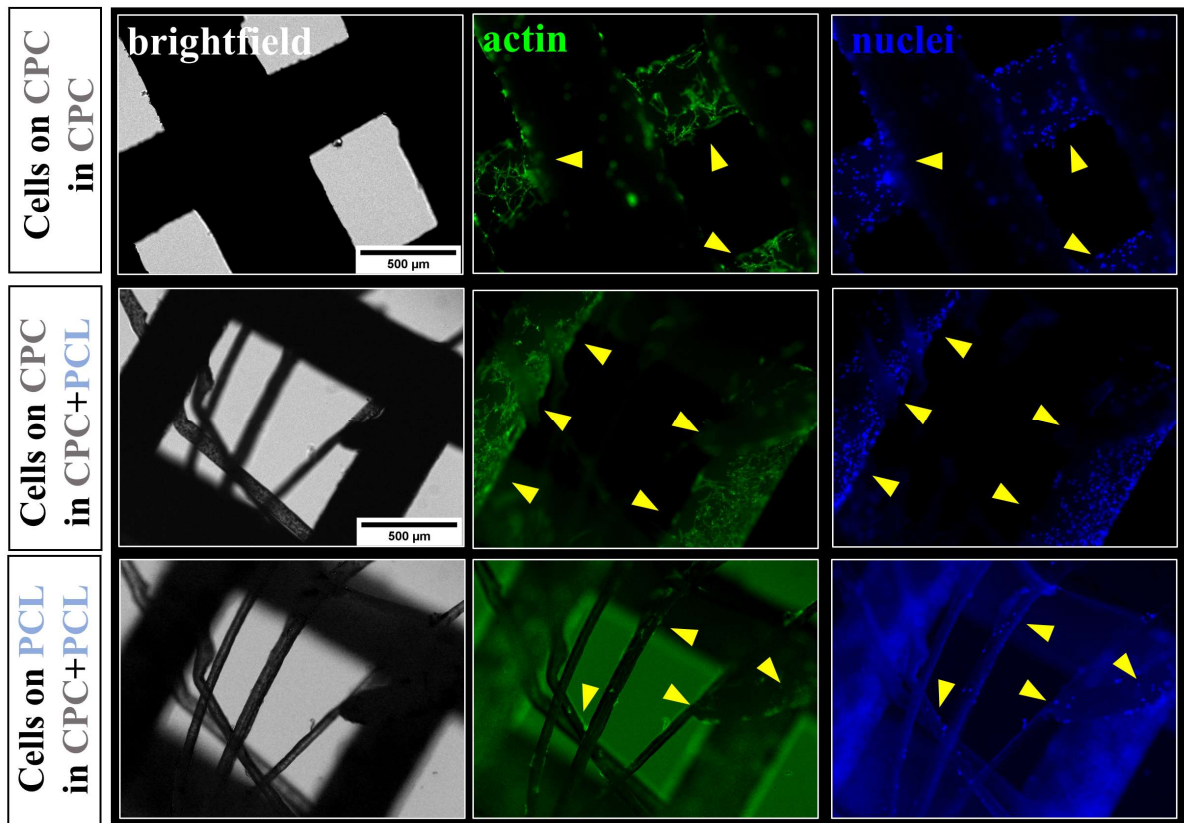


Figure S4: MC3T3-E1 attachment (yellow arrows) on CPC and on PCL fibers that were printed or dragged out of the scaffold plane, on day 1 after seeding to CPC in CPC scaffolds (A, upper panel), and cell attachment to both materials CPC (A, middle panel), and PCL fibers (lower panel) in CPC+PCL hybrid scaffolds.

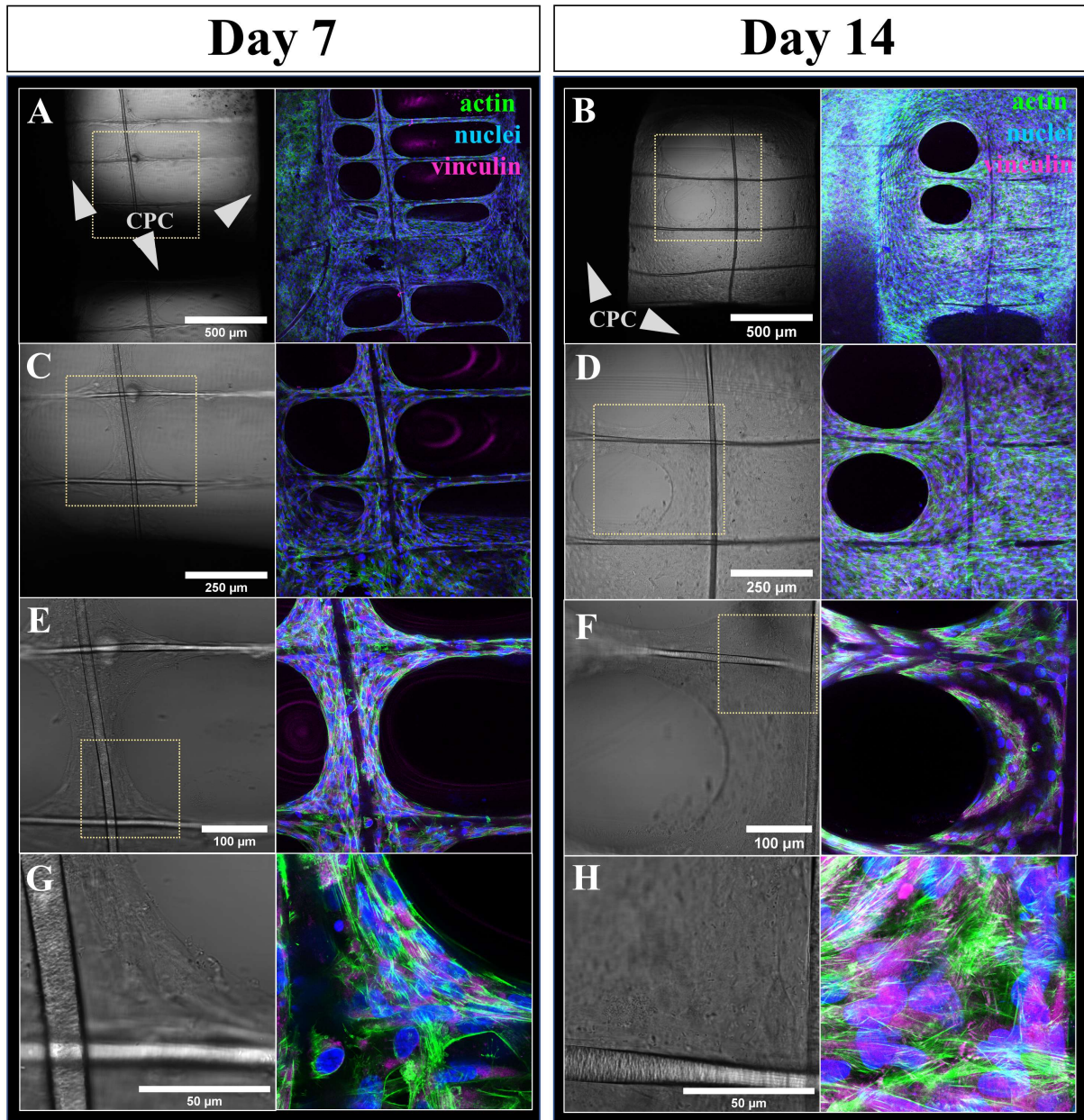


Figure S5: A: cLSM fluorescence images of hMSC cell morphology and focal adhesion points on day 7 and 14 of cultivation in CPC₁₆₀₀+PCL scaffolds with a CPC strand distance of 1600 μm : cytoskeleton in green (phalloidin), cell nuclei in blue (DAPI), vinculin/focal adhesion points in magenta (anti-vinculin immunostaining), scale bars in A/B represent 500 μm , scale bars in C/D represent 250 μm , scale bars in E/F represent 100 μm , scale bars in G/H represent 50 μm .

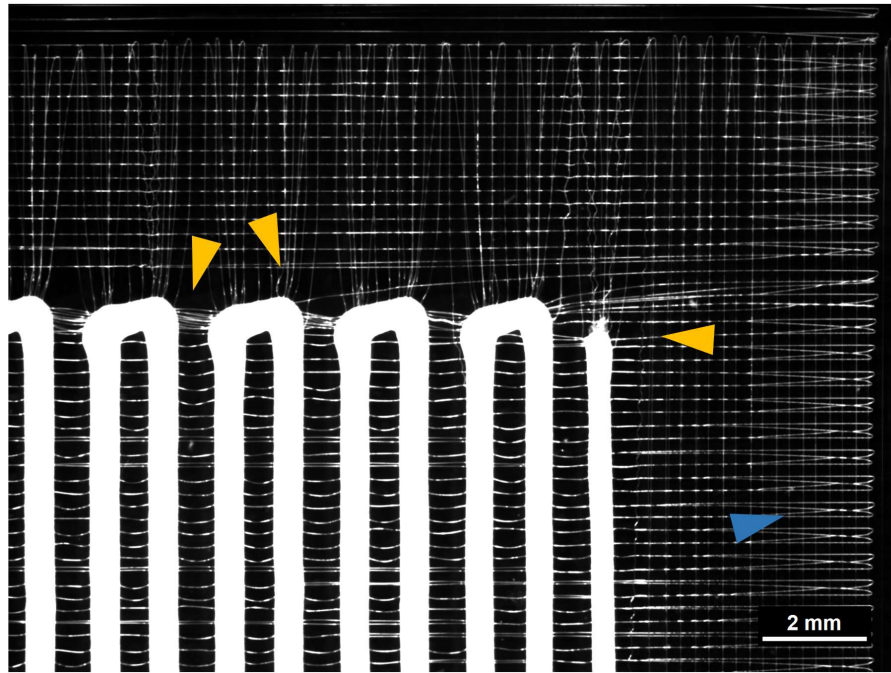


Figure S6: Light microscopy image of 1 CPC layer + 4 PCL layers with a 90° PCL-to-CPC-orientation. Yellow arrows indicate fiber accumulation due to a locally increased electrical field strength. Blue arrow indicates regular fiber structure at the outer edges of the PCL scaffold, scale bar = 2 mm.

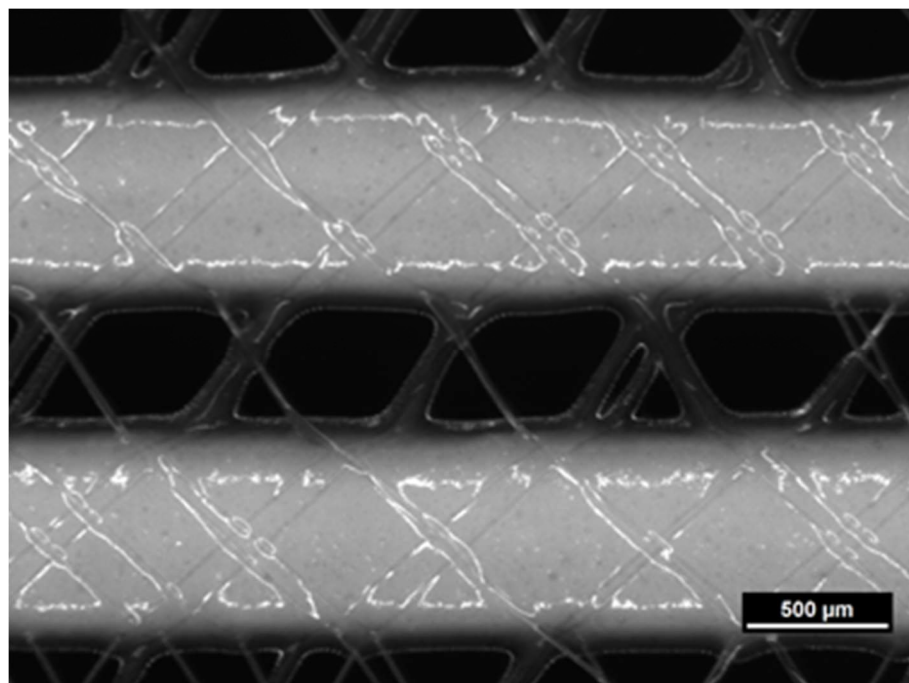


Figure S7: Light microscopy image of 1 CPC layer + 2 PCL layers with a 45° PCL-to-CPC-orientation to the CPC which can lead to a reduced level of deflection of the PCL fibers in comparison to PCL fibers printed in parallel to CPC strands, scale bar = 500 μm .