

Supplementary Material

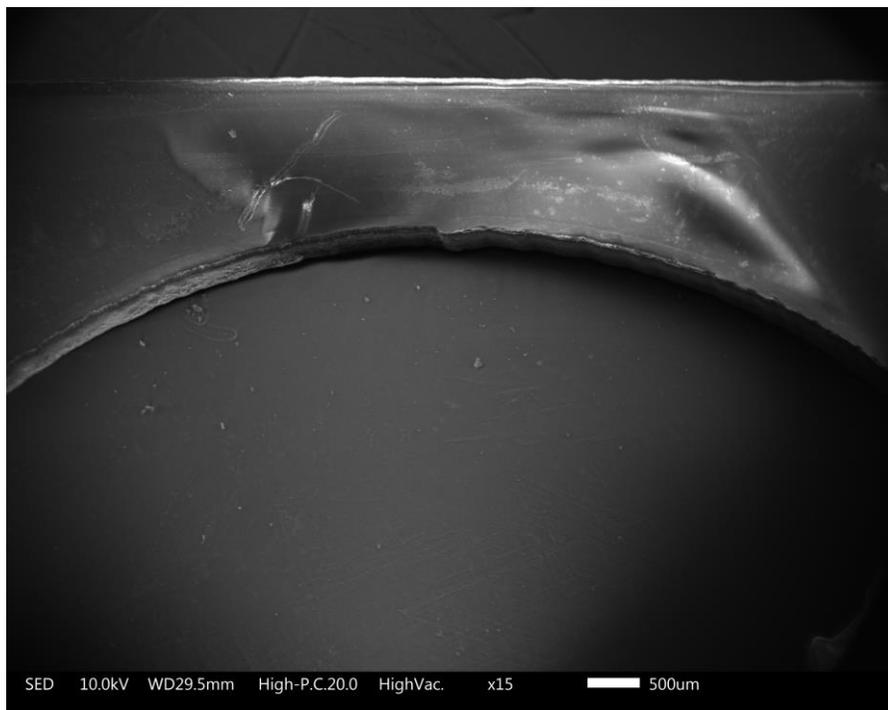


Fig. S1: SEM image of a laser-cut 250 μm PMMA film bonded to a 1.5 mm PMMA sheet, imaged after pressure testing (delamination)

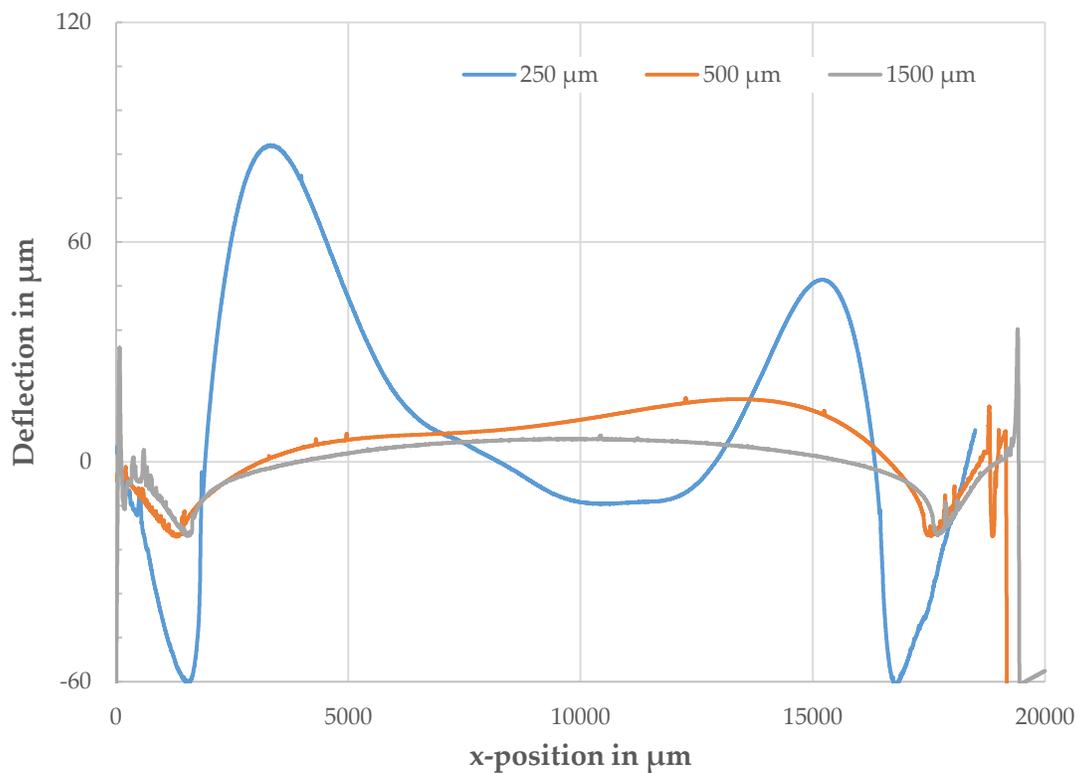


Fig. S2: Distortion of different thick PMMA substrate after thermal bonding (pressure: 2.4 MPa, temperature: 84 °C, UV dose: 3 J/cm²). Samples were obtained after pressure testing and deflection was measured with a profilometer (line-scan).

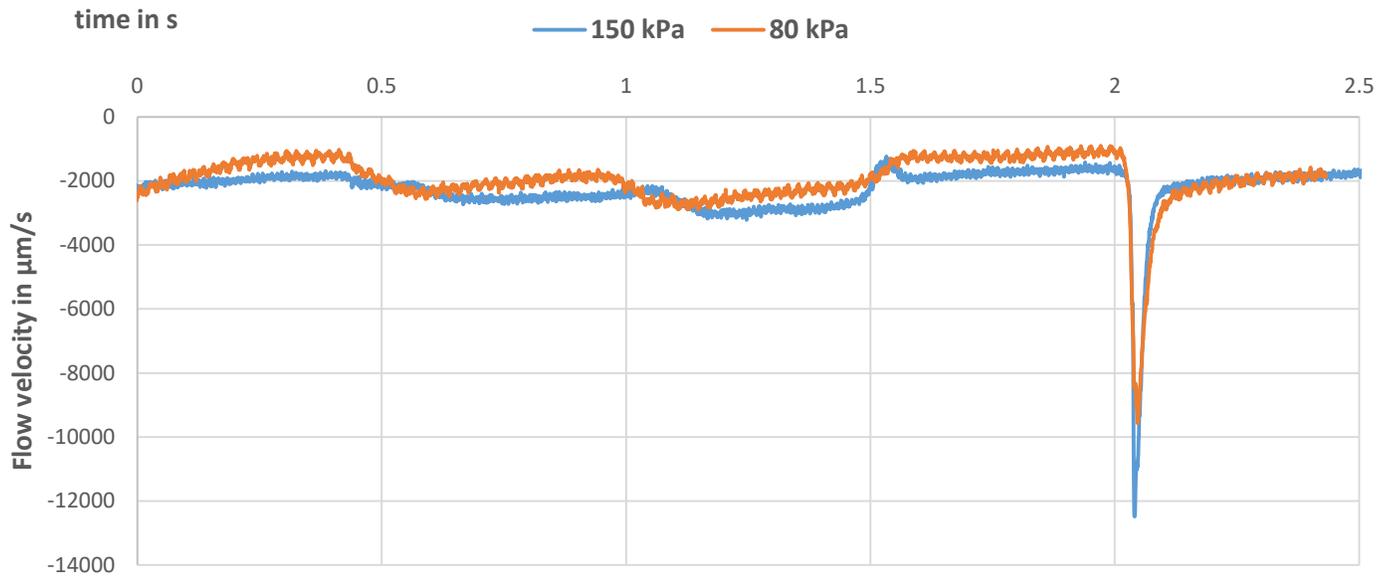


Fig. S 3: Velocity time curves for a driving pressure of 80 and 150 kPa at an actuation frequency of 1.2 Hz and a driving vacuum of -80 kPa. Measured in a 1 mm wide and 0.5 mm high channel.

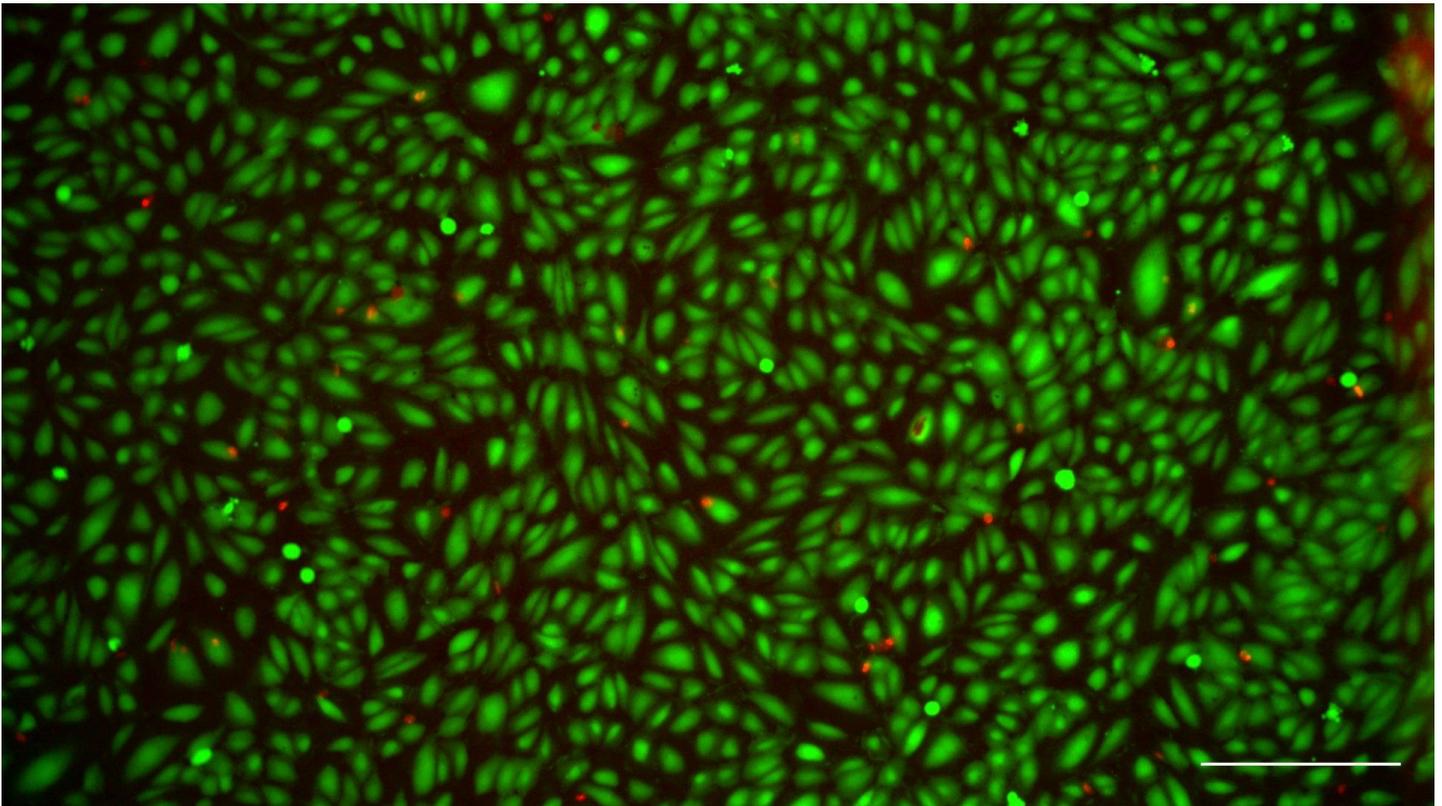


Fig. S 4: Live-dead staining of HUVEC cells after 24h cultivation on-chip (control: perfusion on tilting platform). Green: living cells. Red: Dead cells. Scale bar: 200 μm

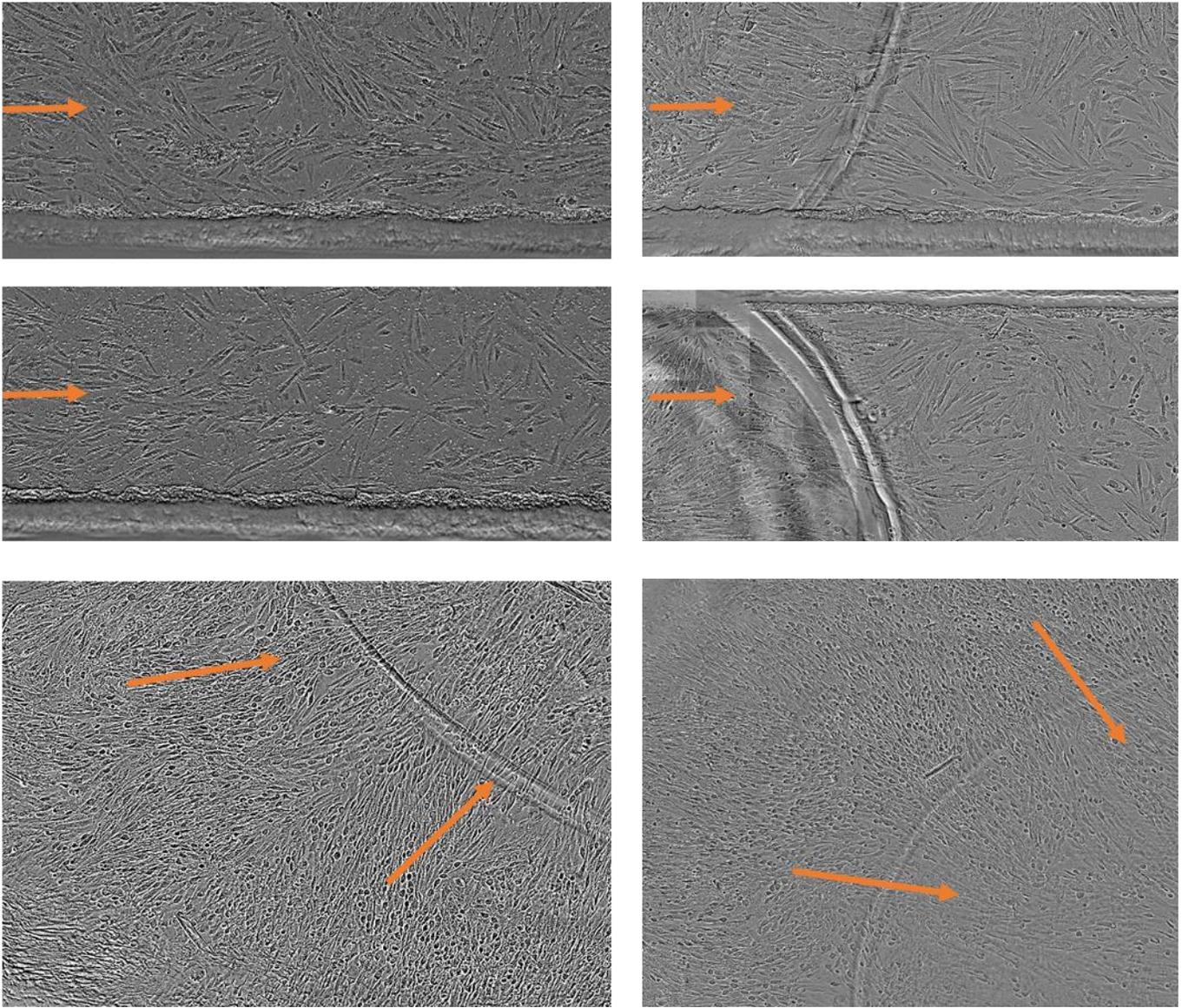


Fig. S 5: Phase contrast images of HLECP2 cells cultivated under flow (orange arrow) and used for analysis of the orientation.

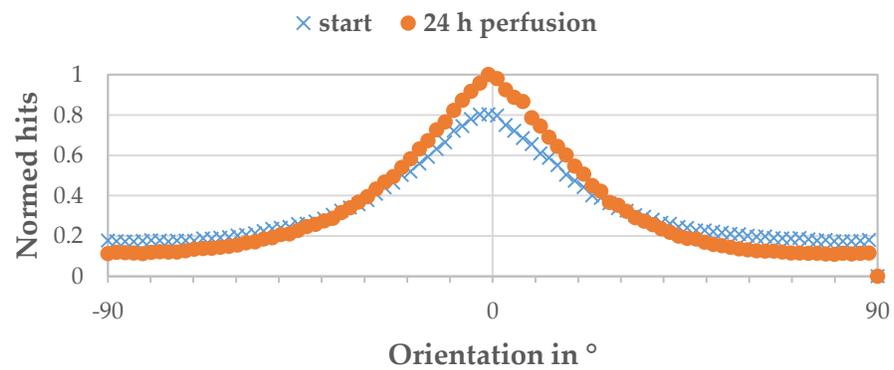


Fig. S 6: Normalized histogram of HLEC cells cultivated under flow at the beginning and end of the experiment