Supporting Information for

Surface roughness in microfluidic device fabrication: Limitations of conventional methods and a novel solution for multi-material bonding

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Fig. S1.

Geometry of the PDMS specimen with **a)** CAD rendering of PDMS specimen **b)** specimen dimensions. The specimens were casted in a 3D-printed mold (Form 3, Formlabs, USA) shaped as the negative. The mold had an open bottom to realize different surface roughness for the tensile test

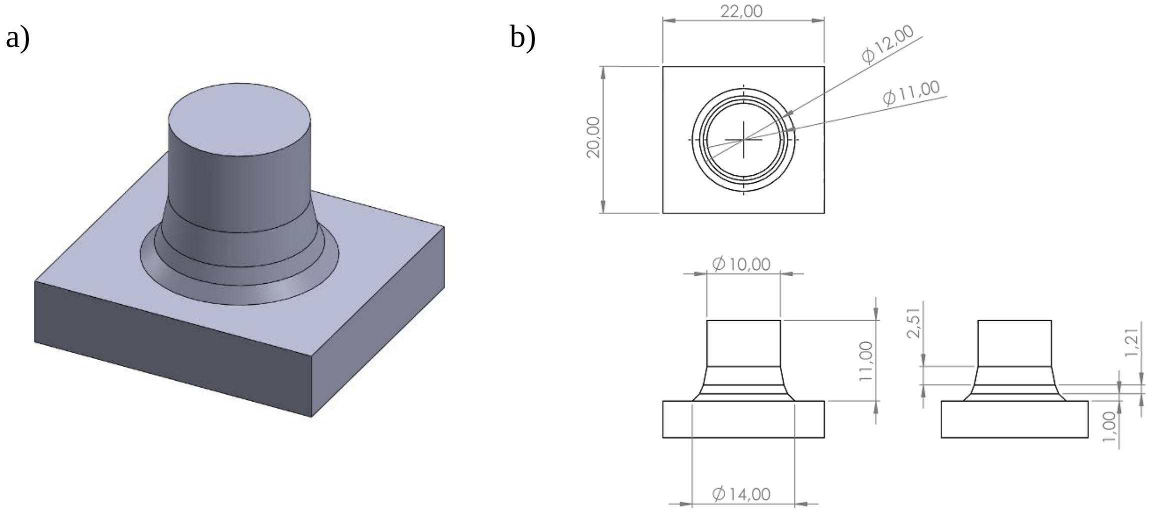


Fig. S2.

Surface profile of a) pristine FR4 and b) copper side of copper-clad laminate (Cu 35/00, Bungard, Germany)

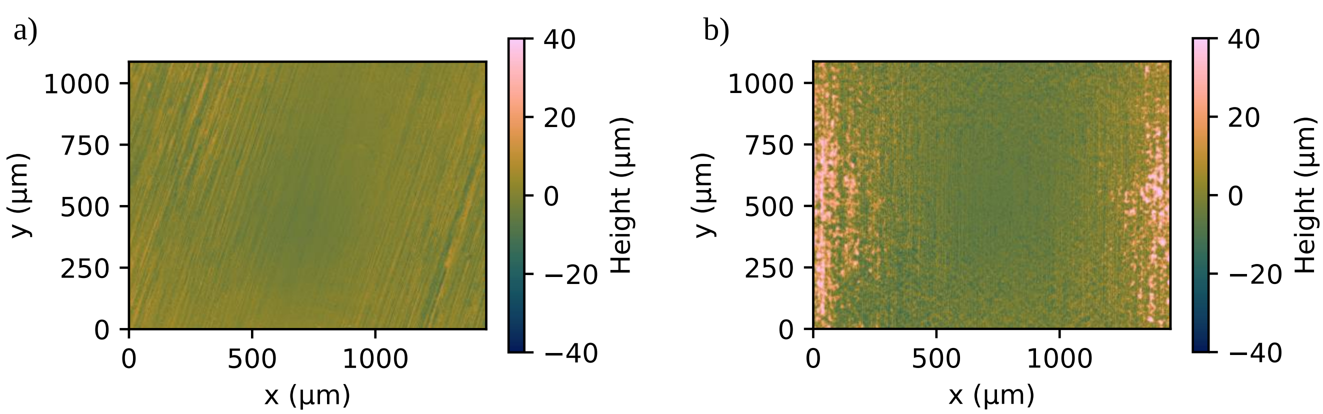


Fig. S3.

Tensile test setup with **a)** front view of tensile test machine with clamped specimen **b)** close-up of specimen clamped between the crossheads.

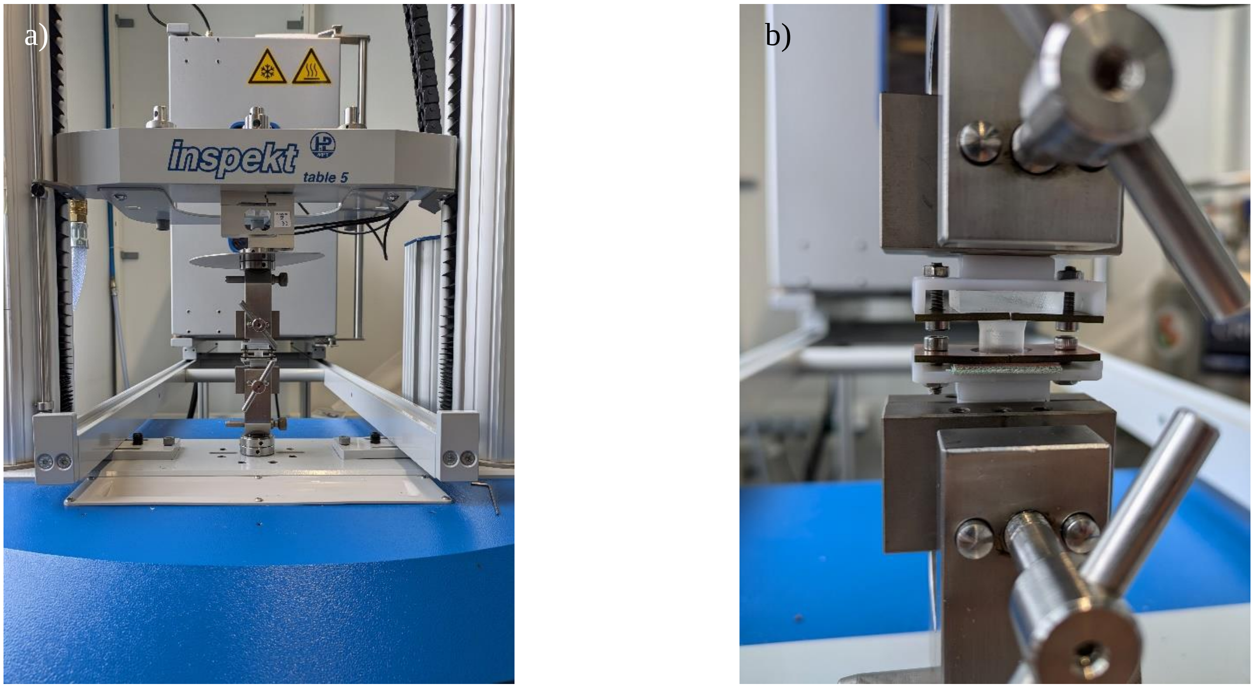
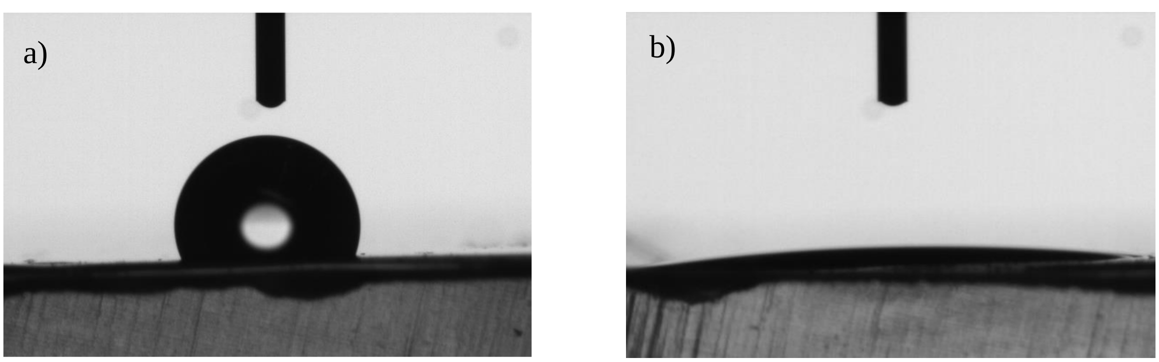
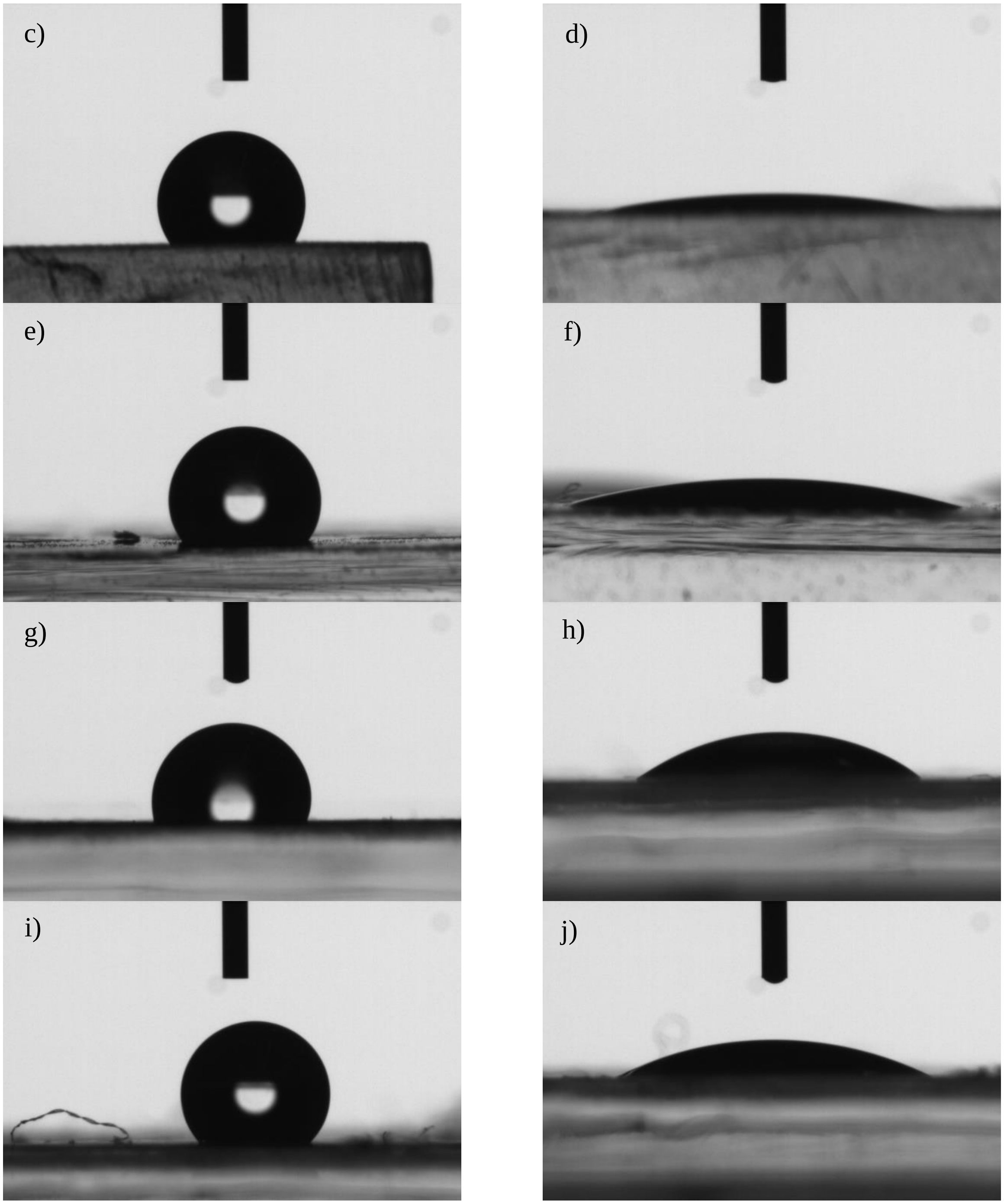


Fig. S4.

Representative contact angle measurement readings **a,c,e,g,i)** before and **b,d,f,h,j)** after O2 plasma treatment for **a,b)** PDMS (S_a = 1.0 µm) **c-d)** PDMS (S_a = 4.24 µm) **e,f)** PDMS (S_a = 4.24 µm) with present copper electrode **g,h)** copper (S_a = 3.47 µm) **i,j)** copper (S_a = 13.34 µm)




c)
d)
e)
f)
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