

Supplementary Material

Long-Time Behavior of Surface Properties of Microstructures Fabricated by Multiphoton Lithography

Mateusz Dudziak ^{1,*}, Ievgeniia Topolniak ^{1,*}, Dorothee Silbernagl ¹, Korinna Altmann ¹ and Heinz Sturm ^{1,2}

¹ BAM Bundesanstalt für Materialforschung und -Prüfung, Unter den Eichen 87, 12205 Berlin, Germany; dorothee.silbernagl@bam.de (D.S.); korinna.altmann@bam.de (K.A.); Heinz.Sturm@bam.de (H.S.)

² TU Berlin, Institute for Machine Tools and Factory Operations (IWF), Pascalstr. 8-9, 10587 Berlin, Germany

* Correspondence: mateusz.dudziak@bam.de (M.D.); ievgeniia.topolniak@bam.de (I.T.)

AFM FDC measurement

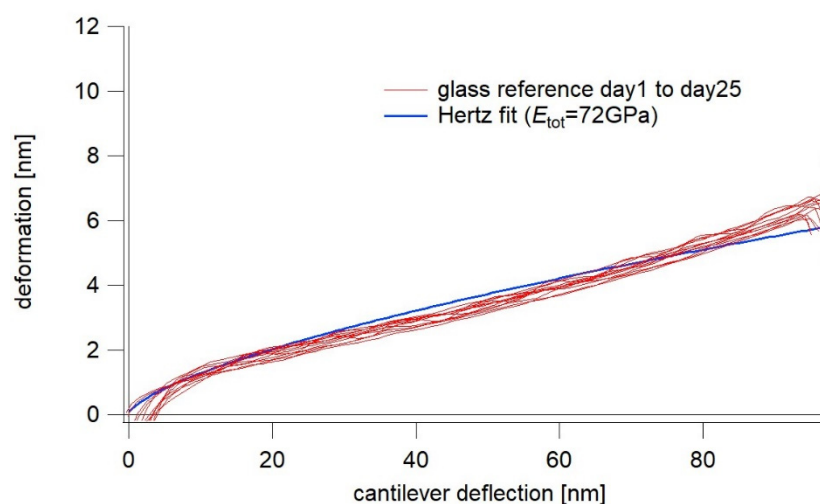


Figure S1. Averaged FDC from reference measurements on glass: curves are highly reproducible throughout the whole experiment and in very good agreement with the Hertzian fit.

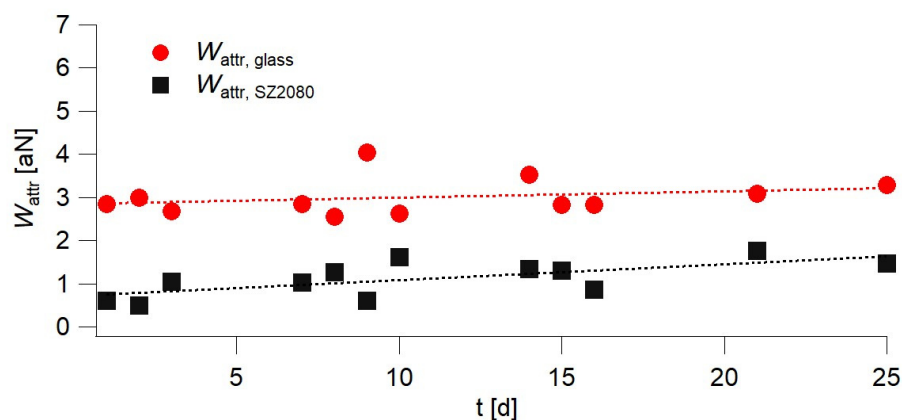


Figure S2. Comparison of work of attractive forces during approach W_{attr} of glass and SZ2080 over time. As attractive forces of glass are fairly stable, indicating a clean tip with unchanged geometry, attractive forces of SZ2080 increase, an indication of increased density of the material at the surface of MLP-fabricated structures.

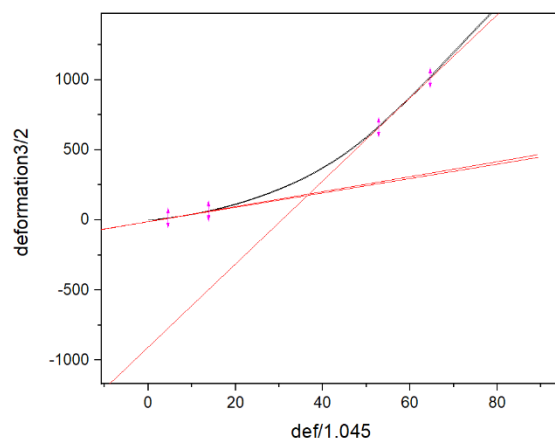


Figure S3. F_{yield} is determined by the point of intersection of linear fits of the deformation $D^{3/2}$ in the regime of elastic and plastic deformations, respectively.

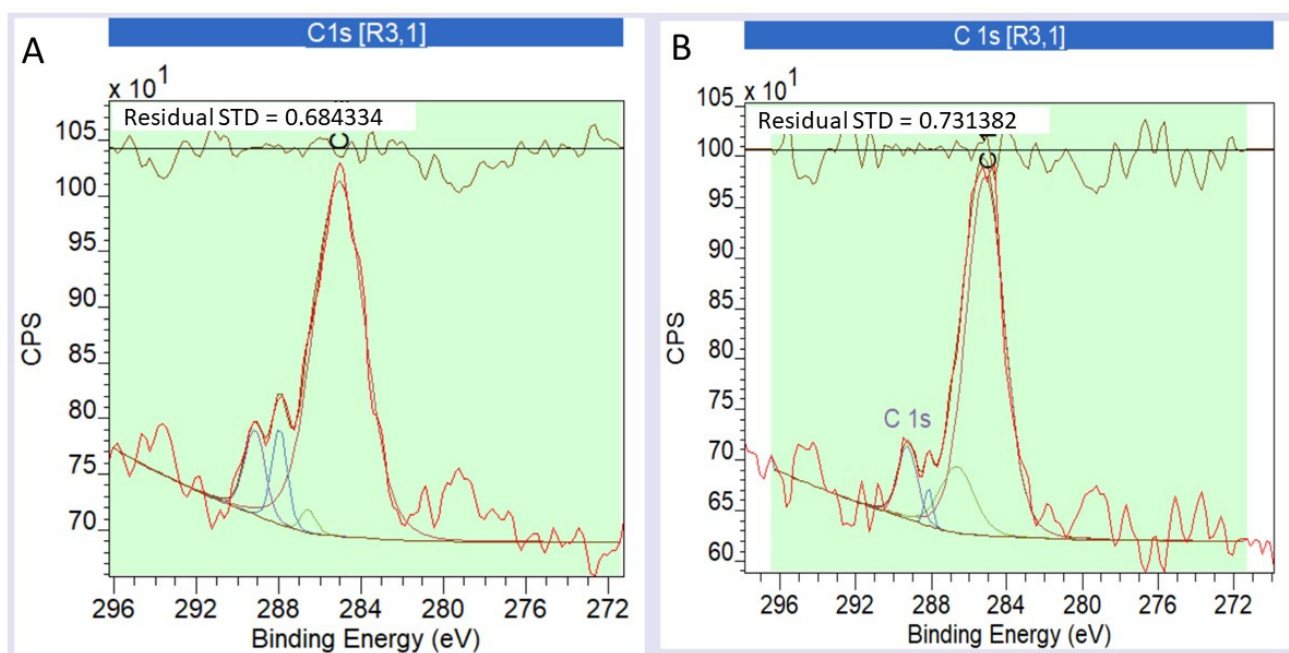


Figure S4. Deconvoluted representation of peaks C1S for freshly printed sample at day 1 (A) and aged sample day 25 (B).

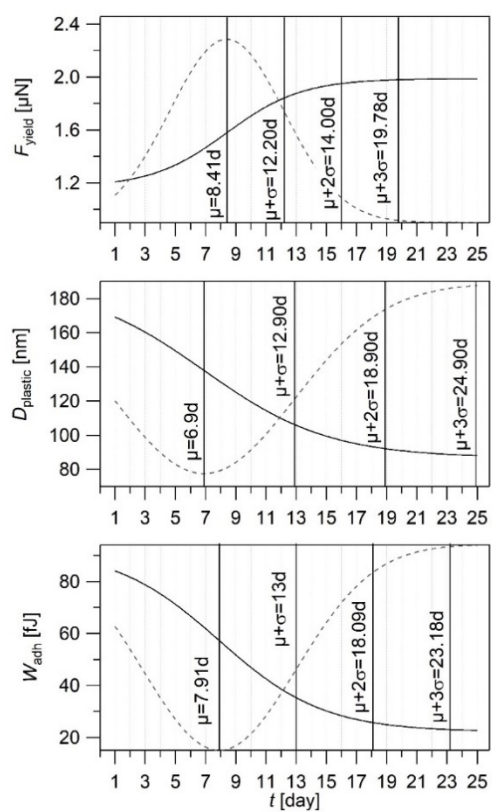


Figure S5. Statistical analysis, including the bell curve with its characteristic areas μ and $\mu+(n*\sigma)$.