Supplementary Information

Injection molded nanofluidic chips: Fabrication method and functional tests using single-molecule DNA experiments†

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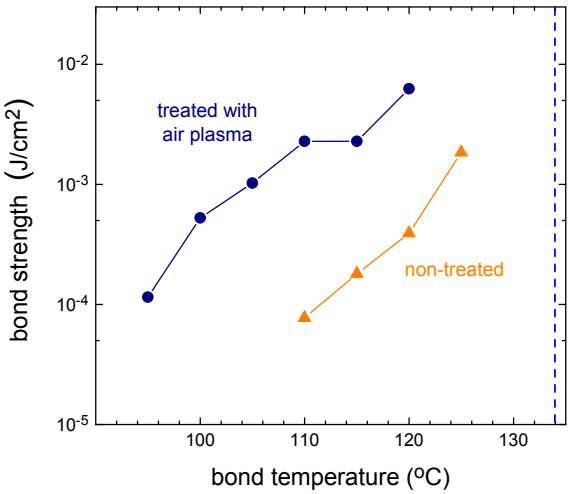

Fig. S 1 Bond strength with respect to bond temperature. Pairs of flat injection molded discs in Topas 5013 were bonded in a hydraulic press for 10 min at a piston force of 15kN. The bond strength $\gamma = 3Et_s^3t_b^2/(32L^4)$ was measured using a razor blade test,[1] for disc pairs that were either treated or non-treated with the air plasma as described in the main text. Here, $E = 3.2$ GPa is the Topas 5013 modulus of elasticity, $t_s = 2$ mm the thickness of a single disc, $t_b = 0.25$ mm thickness of the razor blade, and L is the length of the delaminated region. Solid lines guide the eye, whereas the vertical dashed line indicates $T_g = 134°$C of Topas 5013. Note semi-log scale.

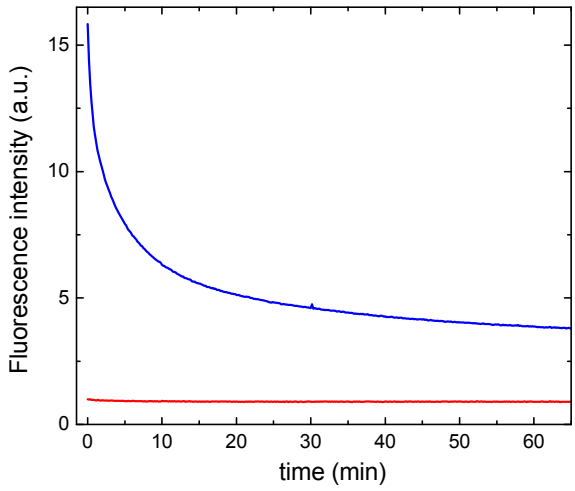

Fig. S 2 Autofluorescence intensity of nanochannel array area measured as a function of time under continuous illumination with metal halide lamp at 200 W output power. The same fluorescence microscopy setup with FITC filter cube (excitation: 465-495 nm, dichroic mirror: 505 nm, emission: 515-555 nm, Nikon) was used as for DNA experiments described in the main text. (Upper trace) Measurements taken for injection molded Topas 5013 chip sealed with 150μm thick Topas 6013 foil. (Lower trace) Measurements taken for Si/SiO_2 chip sealed with 550μm thick Borofloat glass lid.

References

1 W. P. Maszara, G. Goetz, A. Caviglia and J. B. McKitterick, *J. Appl. Phys.*, 1988, **64**, 4943–4950 .