

Supplementary Information

3D depth profiling of the interaction between an AFM tip and fluid polymer solutions

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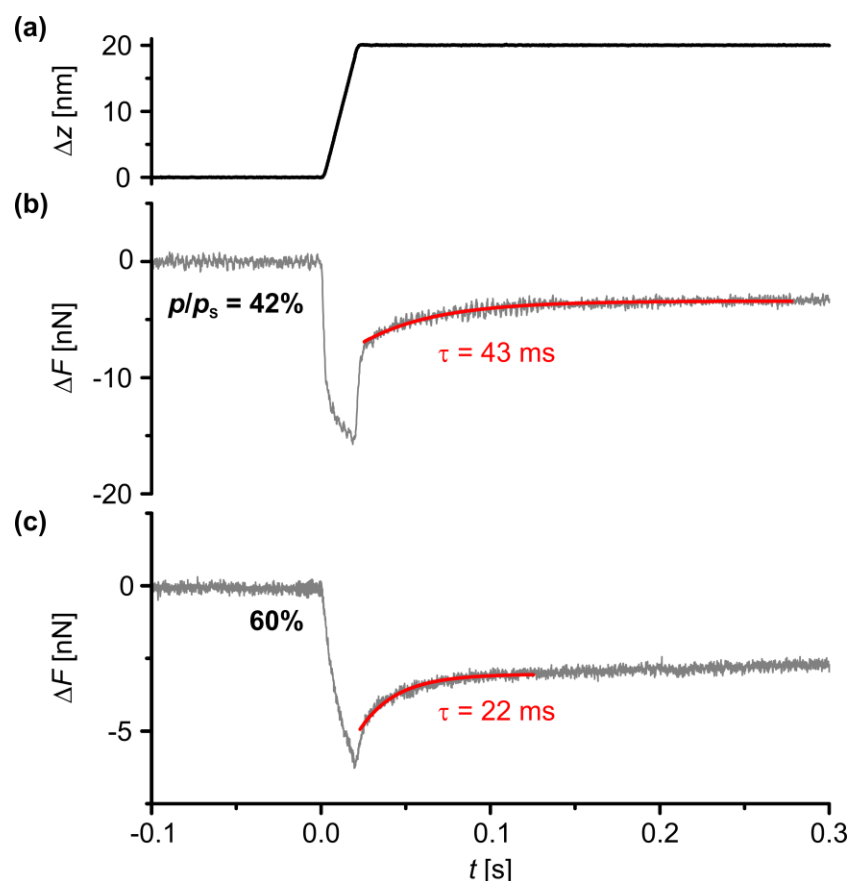


Fig. S1 Step-strain experiment on a PS film with $M_w = 184 \text{ kg mol}^{-1}$ at a solvent vapour pressure of $p/p_s = 42\%$. (a) The piezoelectric actuator's position as a function of time t . (b) The average force response (for 64 individual curves) during the force relaxation is described with an exponential decay (red curve). (c) Same as (b) for $p/p_s = 60\%$.

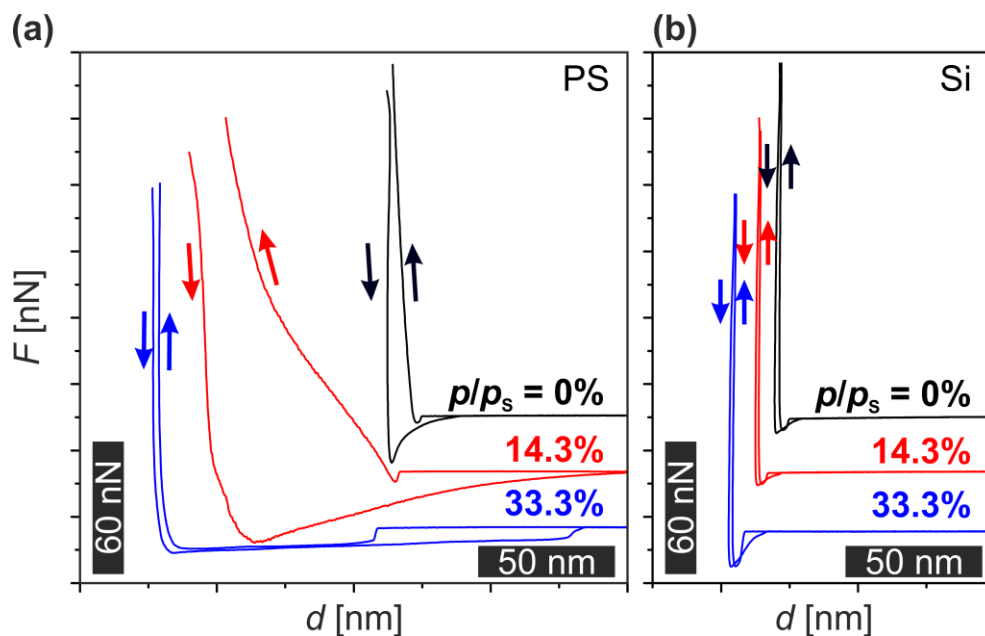


Fig. S2 (a) Average FD curves measured in the approach and in the retract direction on a PS droplet ($M_W = 1.3 \text{ kg mol}^{-1}$) swollen in CHCl_3 vapour. The curves measured at different CHCl_3 vapour pressures are shifted vertically and horizontally for clarity. (b) Average FD curves measured on the Si substrate next to the PS droplet swollen in CHCl_3 vapour.

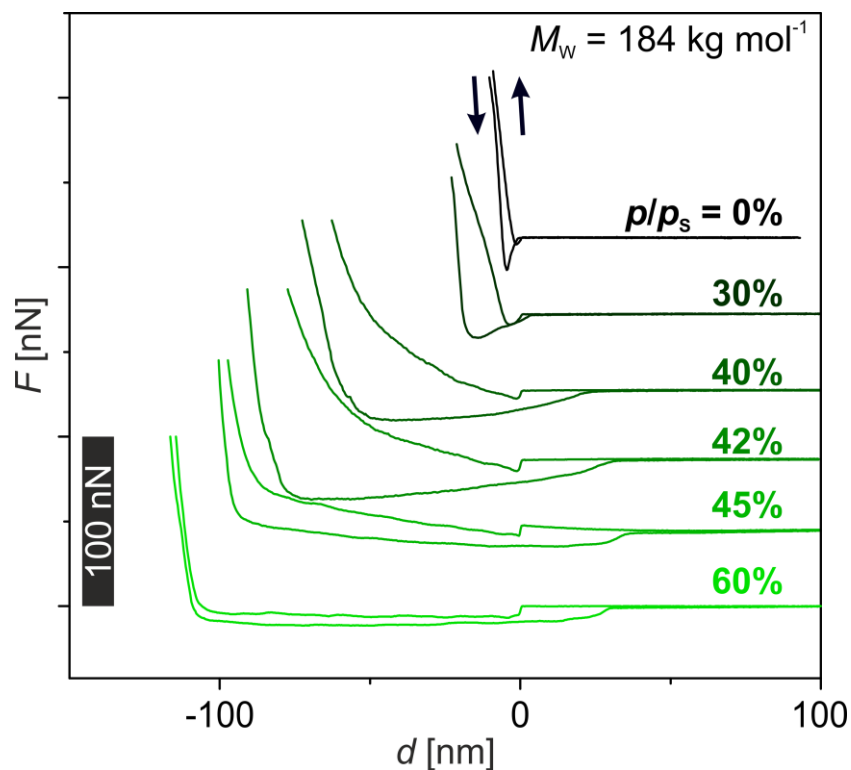


Fig. S3 Average FD curves measured in the approach and in the retract direction on a PS droplet ($M_W = 184 \text{ kg mol}^{-1}$) swollen in CHCl_3 vapour. The curves measured at different CHCl_3 vapour pressures are shifted vertically for clarity.