Electronic Supplementary Information for Soft Matter manuscript: Cavity dynamics after the injection of a microfluidic jet onto capillary bridges

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Figures in Supporting Information

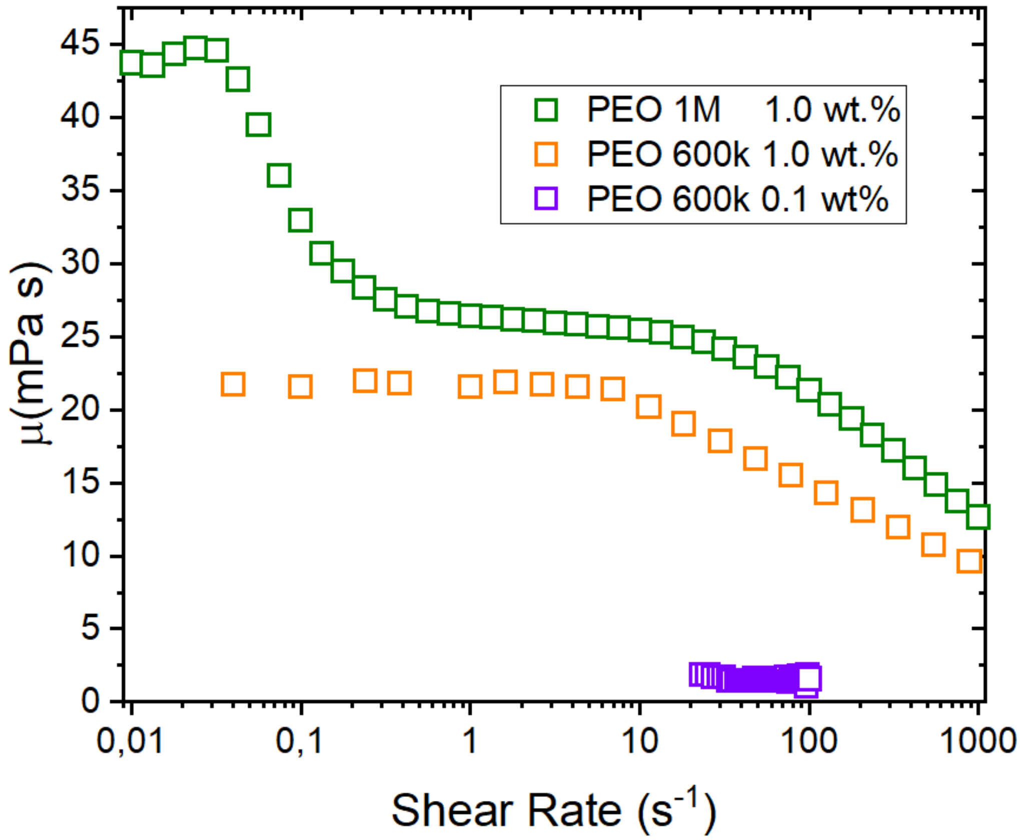

Fig S1. Rheology of aqueous PEO viscoelastic solutions of different molecular weights PEO 1M at 1 wt.% and PEO 600k at 1 wt.% and 0.01 wt.%. The measurements show a constant zero shear viscosity for shear rates 0.01-0.03 s^{-1} for PEO 1M and 0.04-9.00 s^{-1} for PEO 600k, followed by a shear thinning behaviour. For PEO 600k 0.1 wt.%, the rheometer has problems measuring its viscosity for low shear rates. since it is a low viscosity liquid.

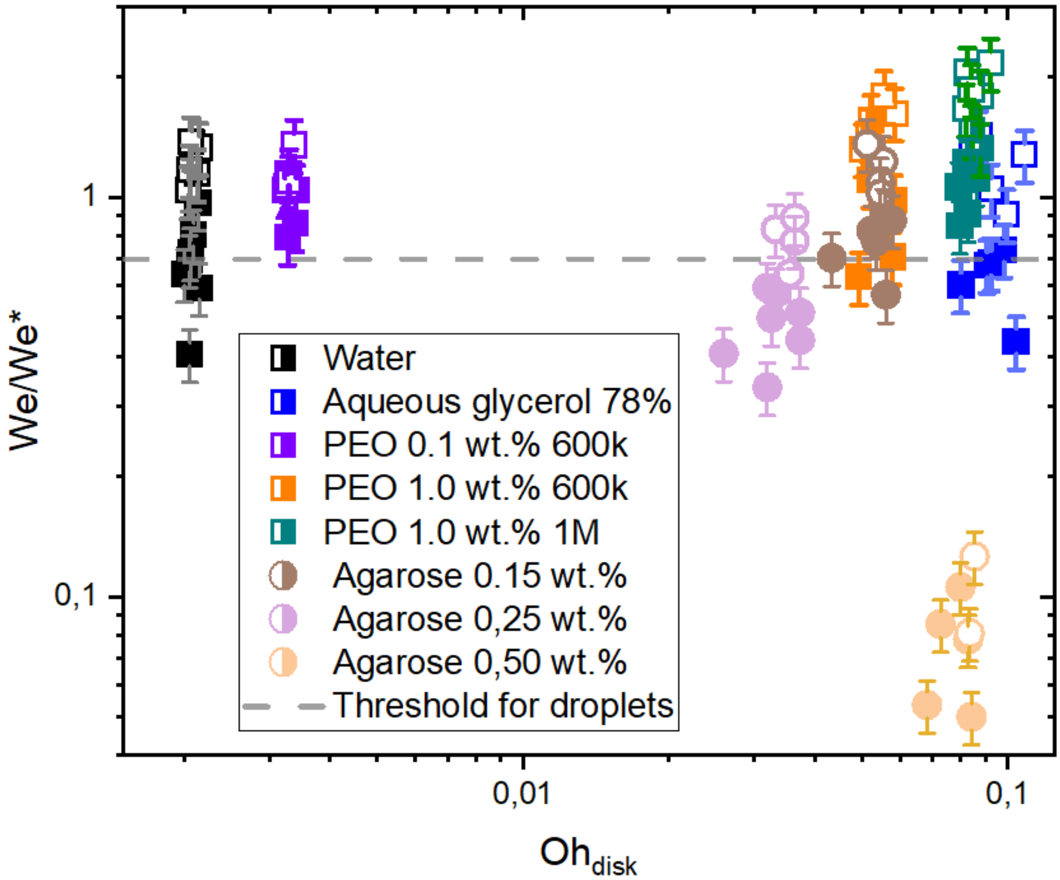

Fig S2. Phase diagram in log-log scale comparing the critical Weber number for traversing obtained experimentally (We) and from equation 11 (We∗). Each liquid and agarose gel are represented by their respective Oh number. Open symbols show cases where the jet traverses the droplet, while solid ones stand for the embedding case. The dashed line is We/We∗ = 0.7 the threshold found for droplets in[46]. The model is in good agreement with the experimental data for liquids and agarose 0.15 wt.%. In contrast, the threshold is underestimated for the agarose 0.25 wt.% and 0.5 wt.%. Where for agarose 0.5 wt.% the threshold is one order of magnitude lower.