Supporting Information for

Shear-Induced Deformation and Interfacial Jamming of Solid-Stabilized Droplets

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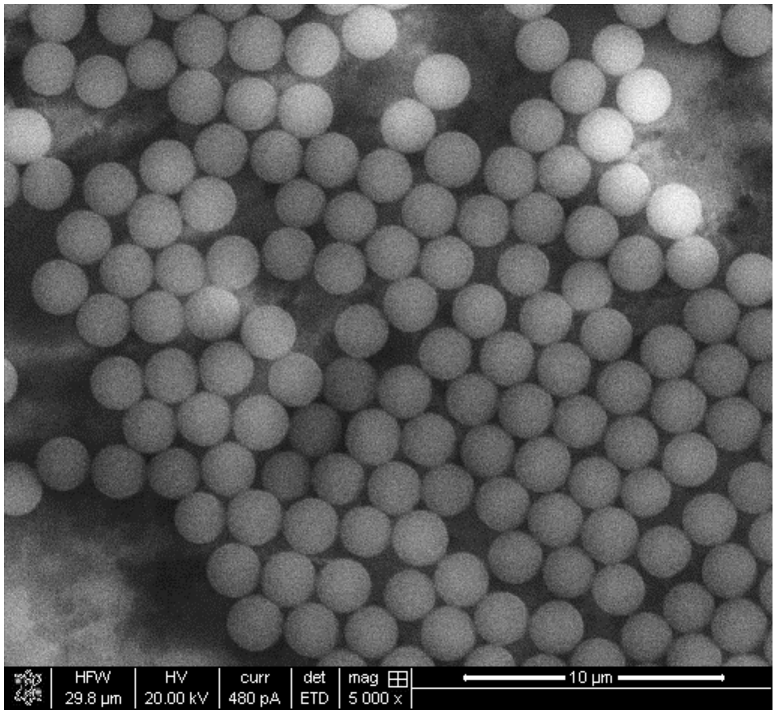

Figure S1. Scanning electron microscopy image of the particles utilized throughout the study. Particles were drop casted out of dodecane.

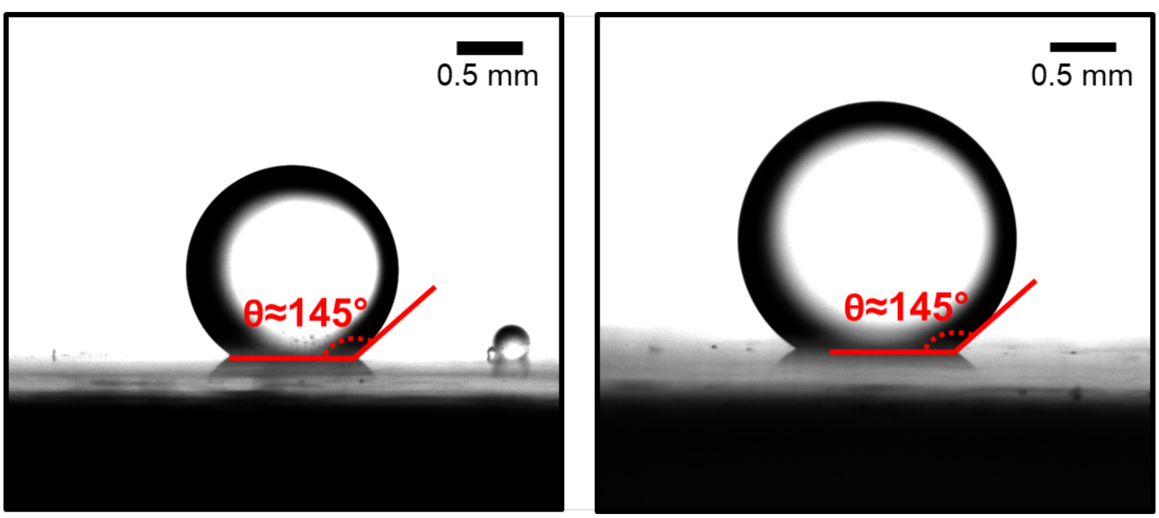

Figure S2. The static contact angle measured by the immersed droplet method for the particles used in the study. In this method an aqueous droplet sits on a glass coverslip, coated with particles by drop casting out of dodecane, within hexadecane (left) and a 95 wt% mixture of 10 cSt PDMS in hexadecane (right).

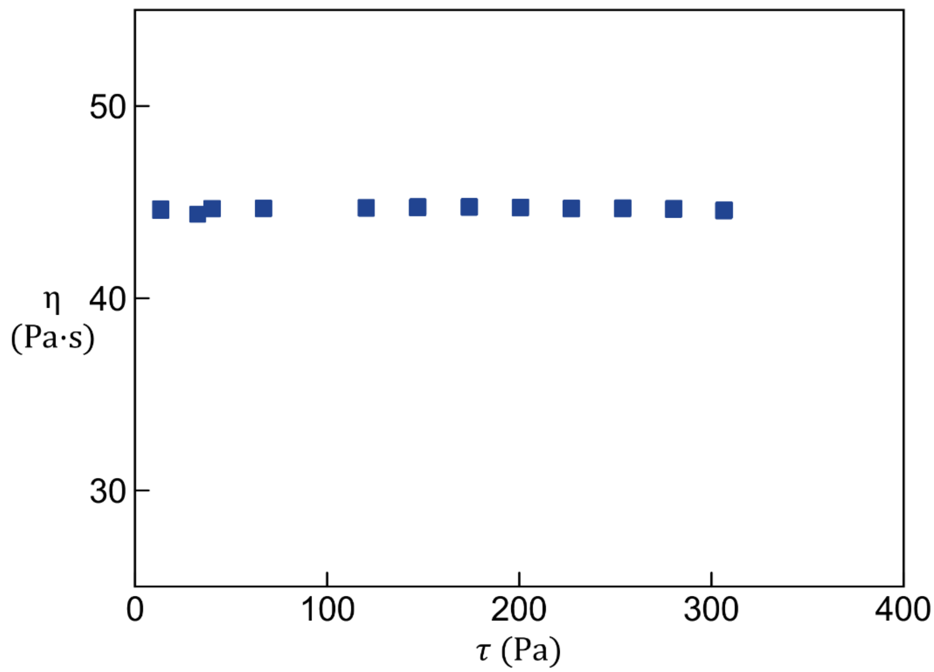

Figure S3. Viscosity of the continuous oil phase used in shear flow experiments measured over a range of shear stresses.

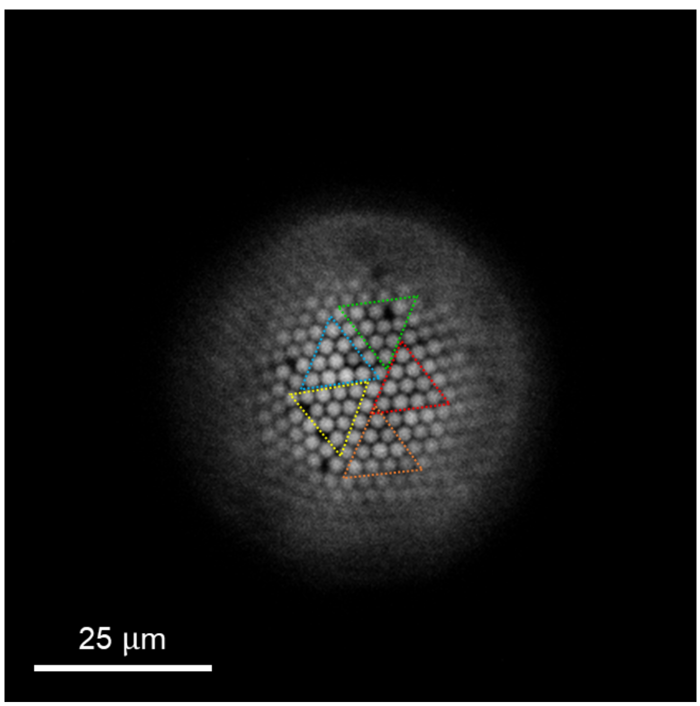

Figure S4. Particle surface coverage is estimated by assuming the imaged droplet interface to be flat and determining the fraction of area stabilized within each inscribed triangle.

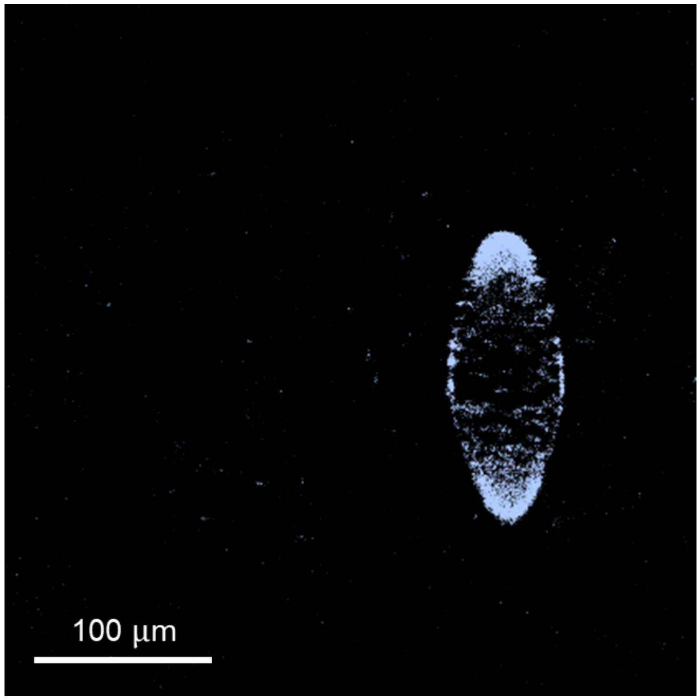

Figure S5. A partially-coated droplet under shear flow, illustrating the non-uniform distribution of particles on the droplet interface.

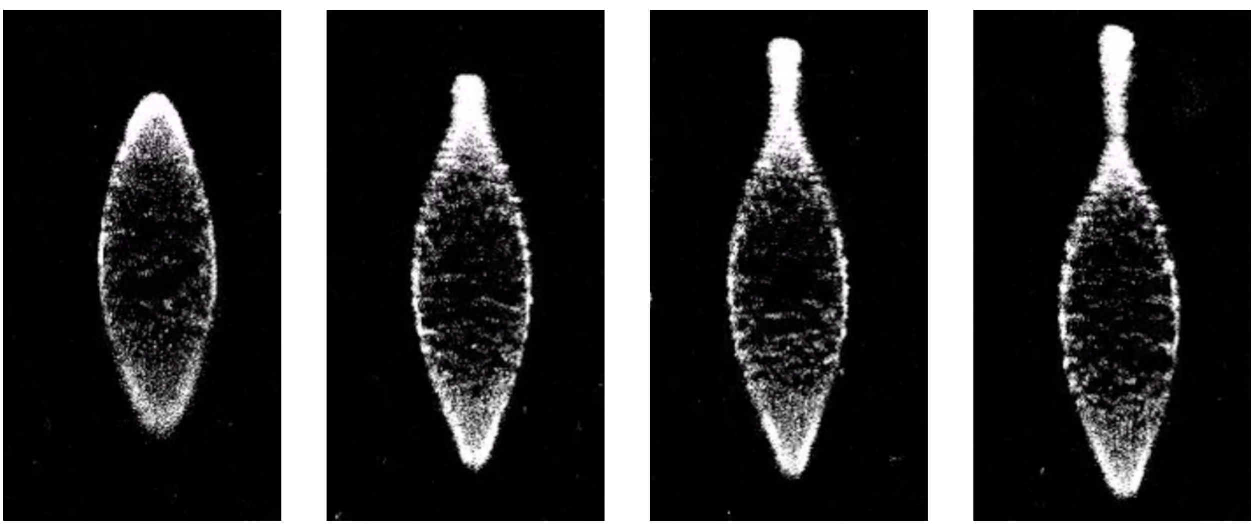

Figure S6. Tip streaming in a partially coated droplet under shear flow at Ca = 0.38

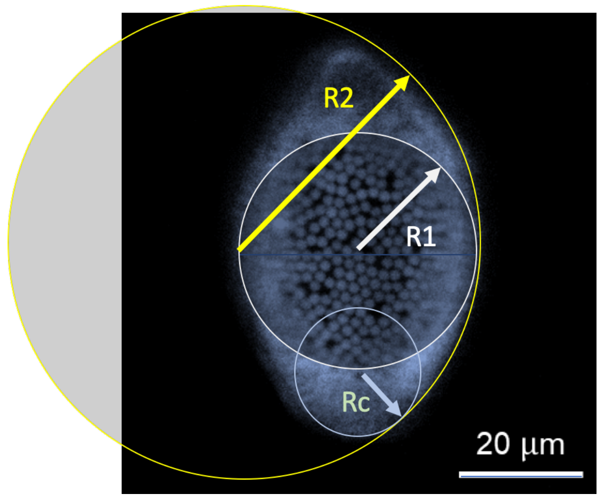

Figure S7. Estimation of curvatures relevant to the rudimentary analysis of the mechanics of the jammed droplet in Figure 8.

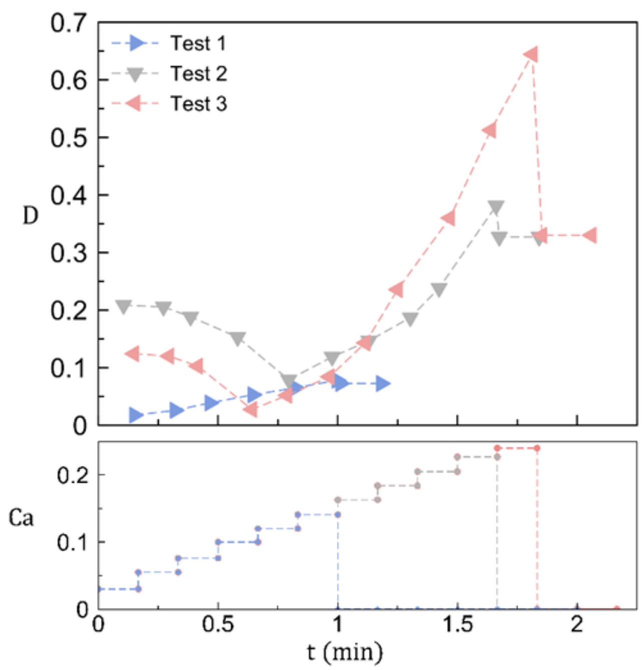

Figure S8. The change in droplet deformation, D, during shear ramp-up and cessation experiments (top). Each test spanned a different range of capillary numbers (bottom). All tests are done on the same droplet and though tests are labeled 1,2, 3; additional tests were run in between these tests, but not shown for brevity. The initial decrease in D in tests 2 and 3 is due to them starting with a deformed droplet caused by the cessation of shear in an earlier test. The dashed lines are drawn to guide the eye.