Supporting Information for

Characteristics of Pickering Emulsion Gels Formed by Droplet Bridging

Matthew N. Lee, Hubert K. Chan, and Ali Mohraz
Department of Chemical Engineering & Materials Science
University of California, Irvine
Irvine, CA 92697
Email: mohraz@uci.edu

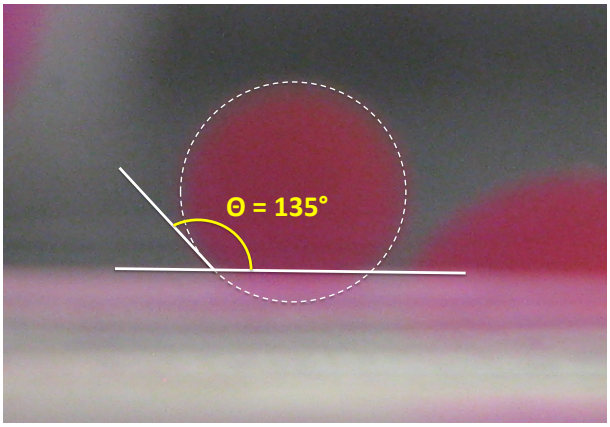

Figure S1. Measurement of the equilibrium three-phase contact angle by the buoyant droplet method. The bottom surface is a microscope slide that is spin-coated with the modified silica particles.

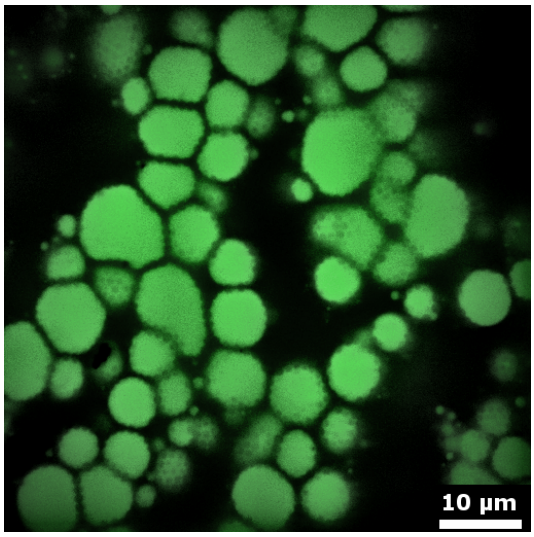

Figure S2. Confocal microscopy image of a Pickering emulsion gel prepared with η= 20/80 and ϕ_P= 0.08. The aqueous phase has been labeled with fluorescent rhodamine B dye to illustrate the water-in-oil droplet arrangement.

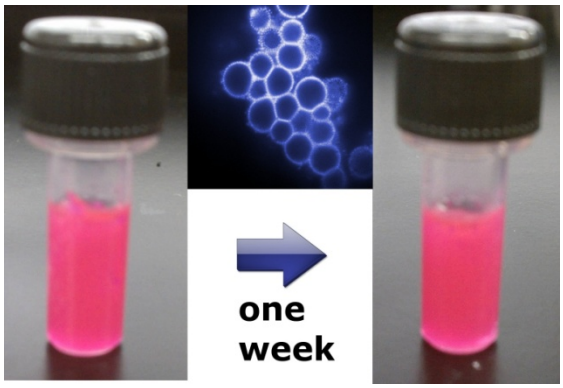

Figure S3. Digital and confocal images of a Pickering emulsion gel, demonstrating the macroscopic homogeneity of the sample, and its mechanical stability over a 7-day period.

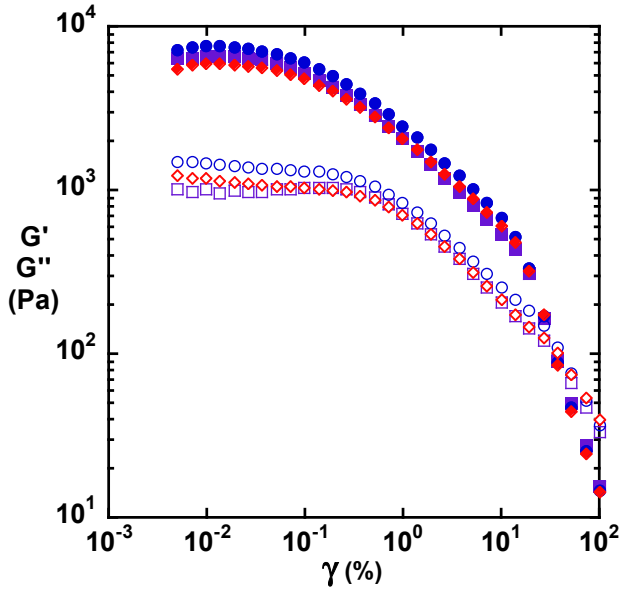

Figure S4. Strain sweeps on a number of Pickering emulsion gels prepared at η = 50/50, ϕ_p = 0.08, demonstrating the reproducibility of the rheological measurements.

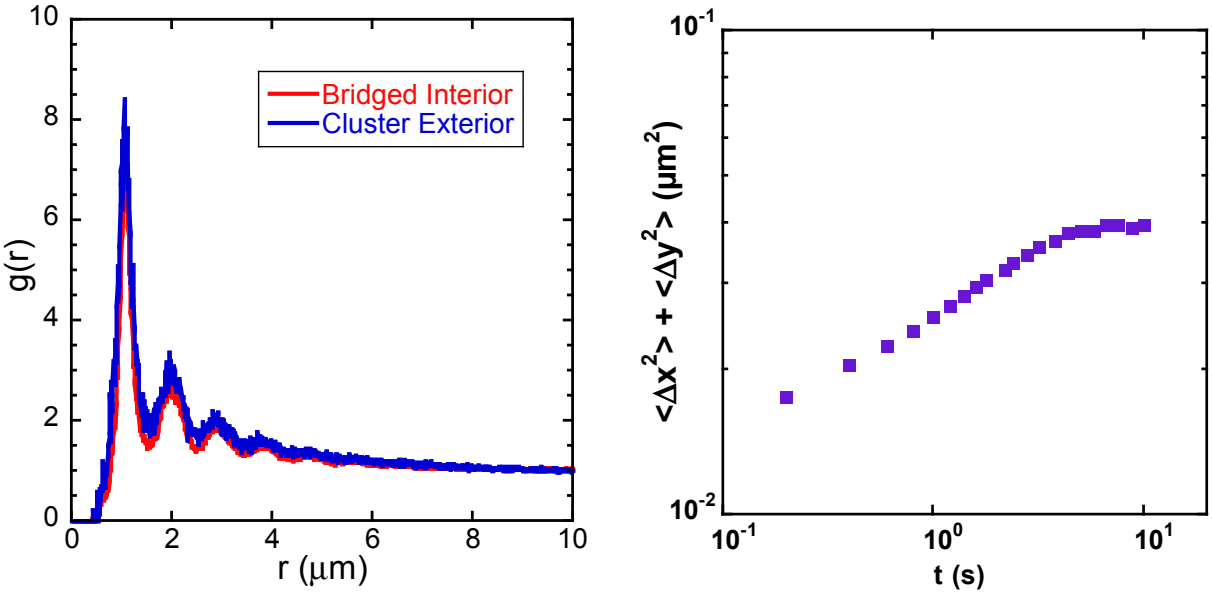

Figure S5. a) Radial distribution function of particles in the cluster interior and exterior. The first peak in both populations corresponds to r = 1.05 μm or r/D = 1.08. b) Mean squared displacements of particles in the cluster interior. The sub-diffusive behavior at short delay times leads to a plateau at long t, indicative of caged dynamics in the concentrated particle monolayer.

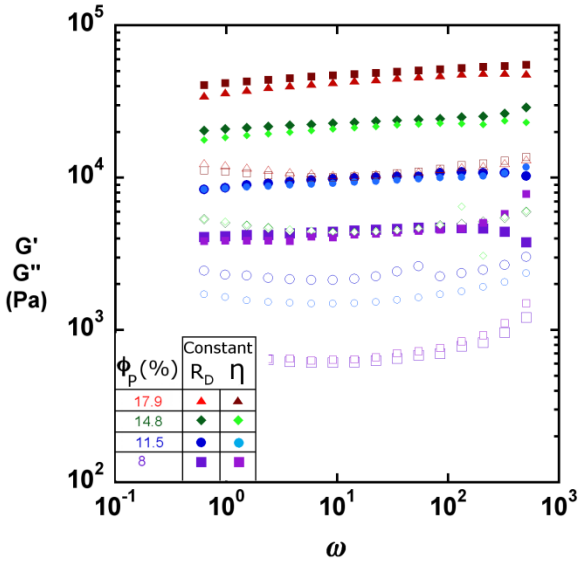

Figure S5. Frequency sweep profiles for the Pickering emulsion gels shown in Figure 4b and 4c in the main text.

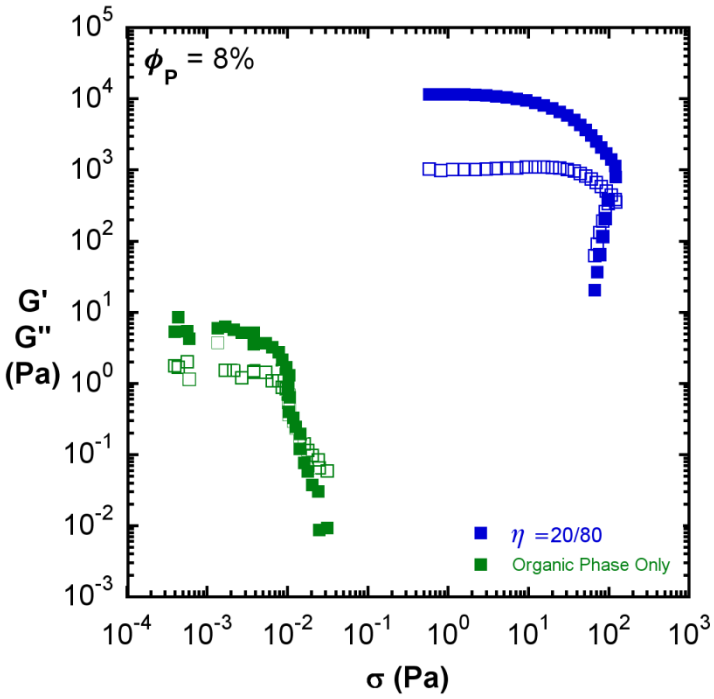

Figure S6. Stress sweep profiles for a Pickering emulsion gel prepared with η= 20/80 and ϕ_P= 0.08 and for a sample prepared with the same number of particles in the organic phase alone (η= 0/100).