Supplementary information

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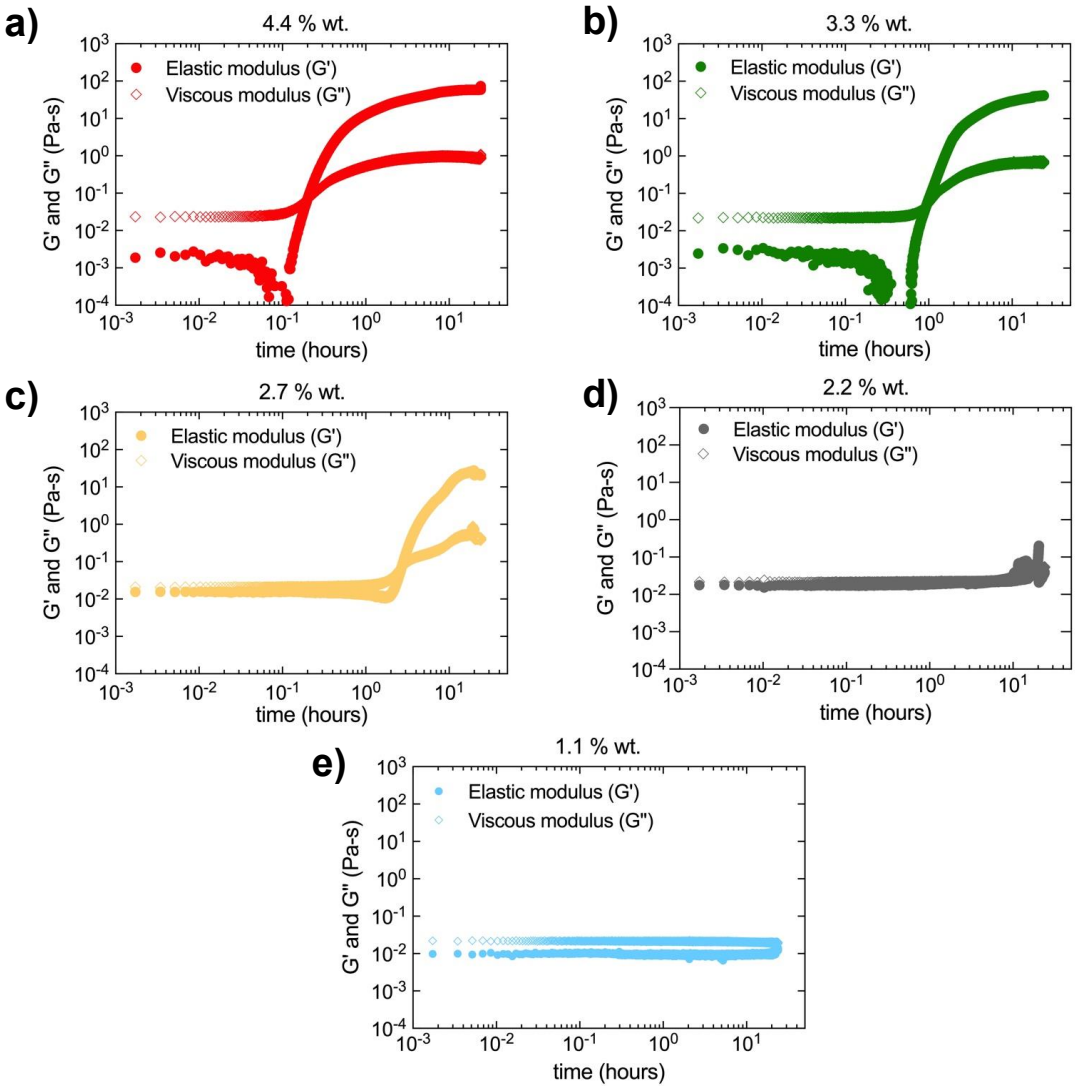

Figure S1: Elastic modulus (G', filled circles) and viscous modulus (G'', open diamonds) plotted as a function of time for samples prepared with 4.4, 3.3, 2.7, 2.2, and 1.1 wt.% reactant concentration, shown from (a) to (e), respectively, as in **Figure 1(c)**. The crossover points between G' and G'' shift to later times as the reactant concentration decreases. The gel point for the sample used in this study (4.4 wt.%) occurs at 0.16 hours.

Table S1: Early-time apparent contact angles of different droplet types measured at first contact with the substrate during impact ($t \approx 1\,\mathrm{ms}$).

Sample	Apparent contact angle (°)
Heptane	89.0 ± 5.1
Micellar solution	87.5 ± 9.9
Water emulsions, 5% vol.	116.4 ± 16.0
Water emulsions, 10% vol.	120.6 ± 18.2
Water emulsions, 25% vol.	116.2 ± 23.8
Gel emulsions, 5% vol.	114.1 ± 25.7
Gel emulsions, 10% vol.	112.2 ± 8.5
Gel emulsions, 25% vol.	121.9 ± 19.9

Table S2: Density, viscosity (evaluated at $\dot{\gamma} \approx 280\ \mathrm{s}^{-1}$ and at low shear rate), dimensionless impact numbers (We, Re, Oh), measured spreading factors, and corresponding predictions from empirical and unified scaling laws ($a_1 \approx 1.24$) for all investigated liquids.

Sample	ρ ($\mathrm{kg\,m^{-3}}$)	μ @ 280 s^{-1} (mPa.s)	μ_0 @ 0.1 s^{-1} (mPa.s)	$D_{\max}/D_0$	We	Re	Oh	$We^{1/4}$	$\frac{Re^{1/5}P^{1/2}}{a_1+P^{1/2}}$
Heptane	684	0.37	0.37	2.32 ± 0.01	27.0	2440.2	0.00213	2.28	2.23
Micellar solution	701	0.46	0.46	2.29 ± 0.03	33.3	1965.8	0.00293	2.40	2.30
Water 5% vol.	710	0.79	1.25	2.17 ± 0.01	34.4	1159.4	0.00505	2.42	2.20
Water 10% vol.	724	1.07	4.78	2.16 ± 0.02	35.0	872.9	0.00678	2.43	2.14
Water 25% vol.	758	2.60	9.57	1.94 ± 0.01	36.7	376.1	0.01610	2.46	1.96
Gel 5% vol.	714	0.86	6.50	2.17 ± 0.06	34.5	1071.0	0.00549	2.42	2.18
Gel 10% vol.	720	1.13	33.88	1.96 ± 0.12	34.8	821.9	0.00718	2.43	2.12
Gel 25% vol.	750	2.52	88.23	1.80 ± 0.16	36.2	383.9	0.01569	2.45	1.96

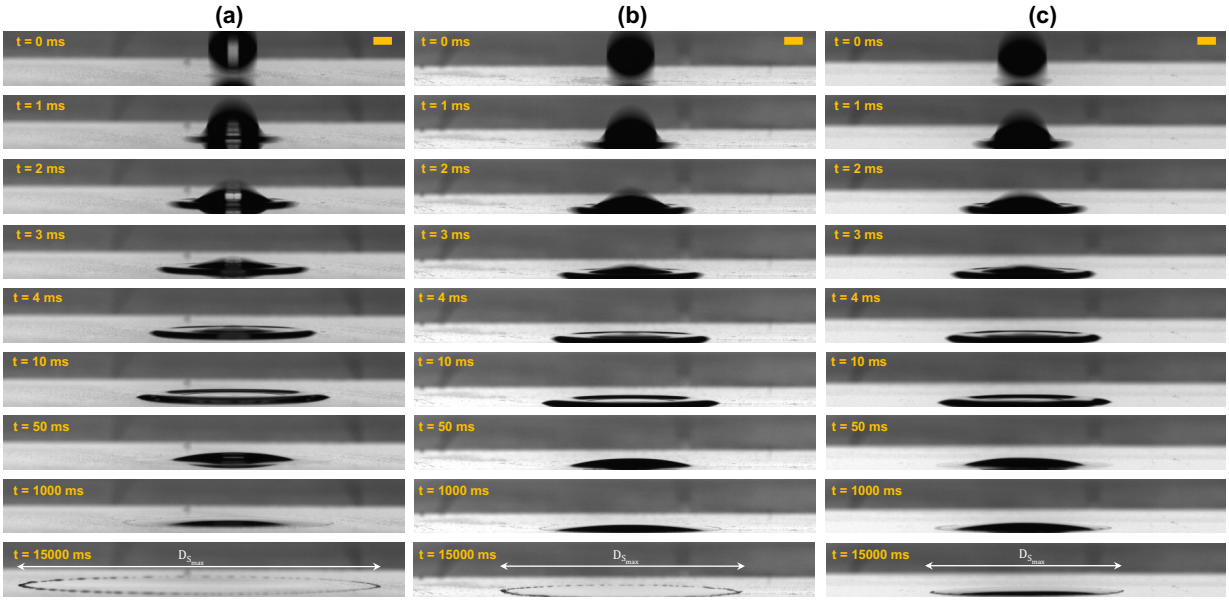

Figure S2: Impact and spreading of (a) a micellar solution drop, (b) a water-emulsion drop, and (c) a gel-emulsion drop at 10 vol.% aqueous phase. The injected volume for drop detachment is 5.2 μL for all cases. The maximum spreading diameter, $D_{S_{\max}}$, decreases for gel emulsions. The scale bar represents 750 μm.

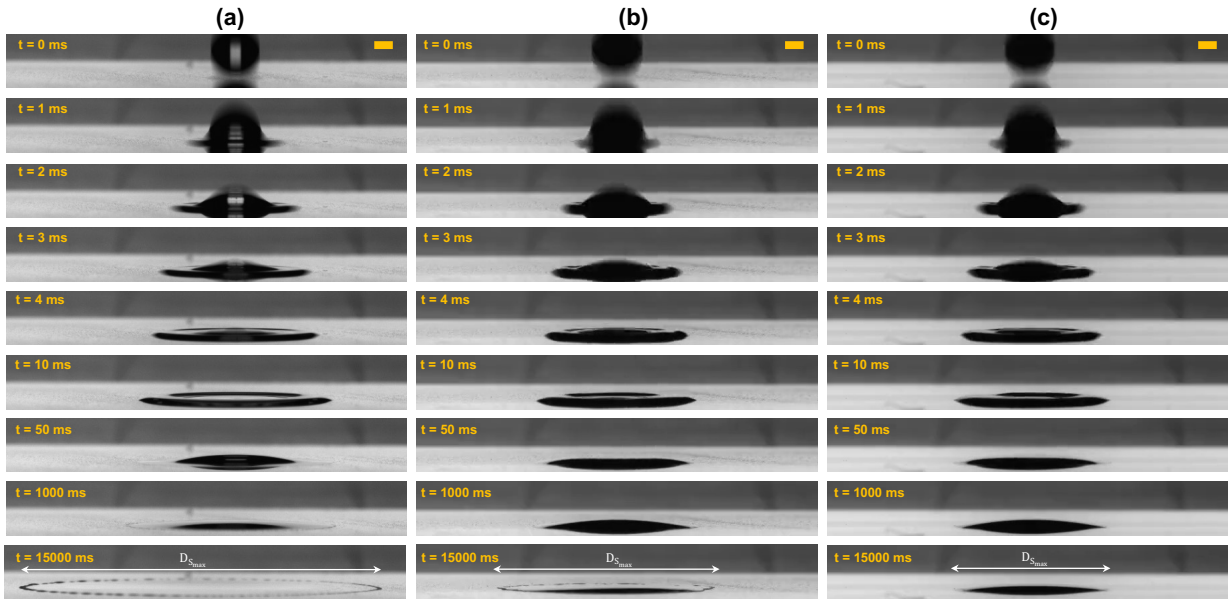

Figure S3: Impact and spreading of (a) a micellar solution drop, (b) a water-emulsion drop, and (c) a gel-emulsion drop at 25 vol.% aqueous phase. The injected volume for drop detachment is 5.2 μL for all cases. The maximum spreading diameter, $D_{S_{\max}}$, decreases for gel emulsions. The scale bar represents 750 μm.

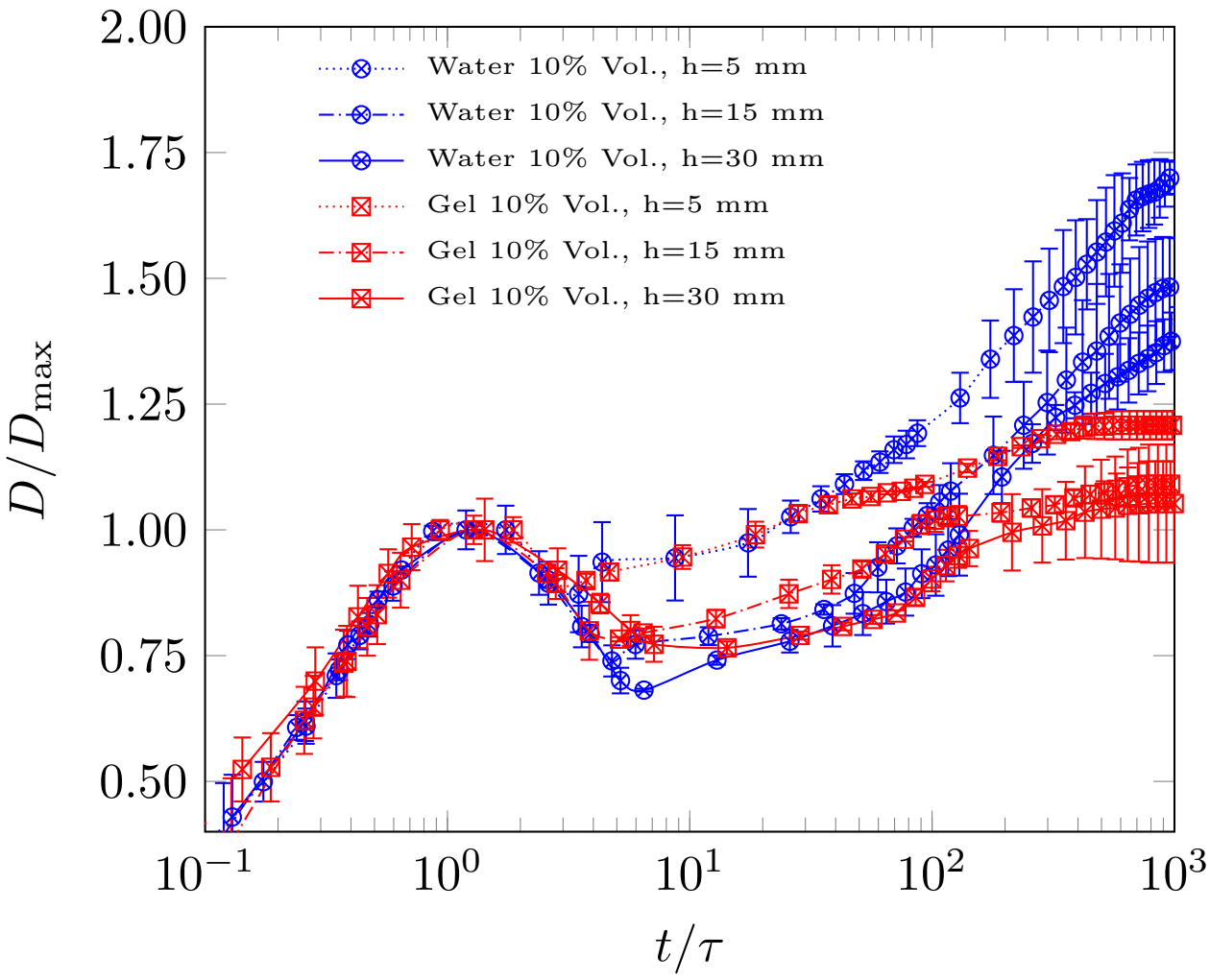

Figure S4: Normalized spreading diameter $D/D_{\max}$ versus dimensionless time t/τ for water and gel emulsions at 10 vol.% internal phase concentration, impacted from heights of $h = 5$, 15, and 30 mm.