

Electronic Supplementary Information

I. Movies of the cascade partial coalescence for toluene and n-heptane droplets in neutral pH water (`toluene_in_water.mp4` and `heptane_in_water.mp4`) and in 1M salt solutions (`toluene_in_1MKCl.mp4` and `heptane_in_1MKCl.mp4`). The corresponding length scales are given by the diameter d of the rising drop: 304 μm , 316 μm , 346 μm , and 278 μm , respectively. The movie-time corresponds to a slowing down of the real-time by a factor of 33.

II. Pictures of the sequence of drops undergoing partial-coalescence events, up to the final stable drop, at various heptol - water (Fig. 1), toluene - salt solution (Fig. 2), and n-heptane - salt solution (Fig. 3) interfaces, respectively. d denotes the diameter of the corresponding droplet.

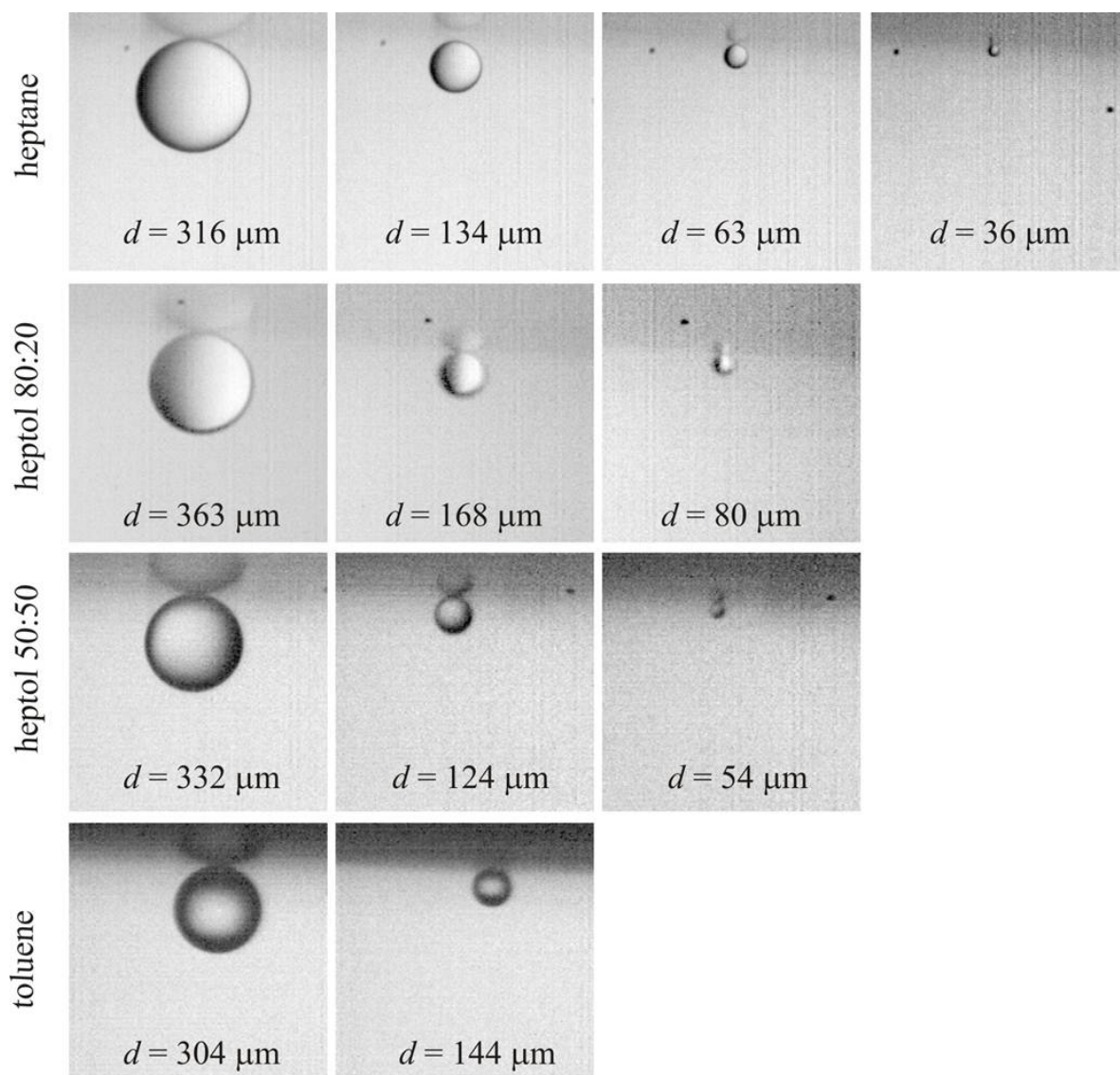


FIG. 1: The sequence of drops undergoing partial-coalescence events, up to the final stable drop, at various heptol - water interfaces.

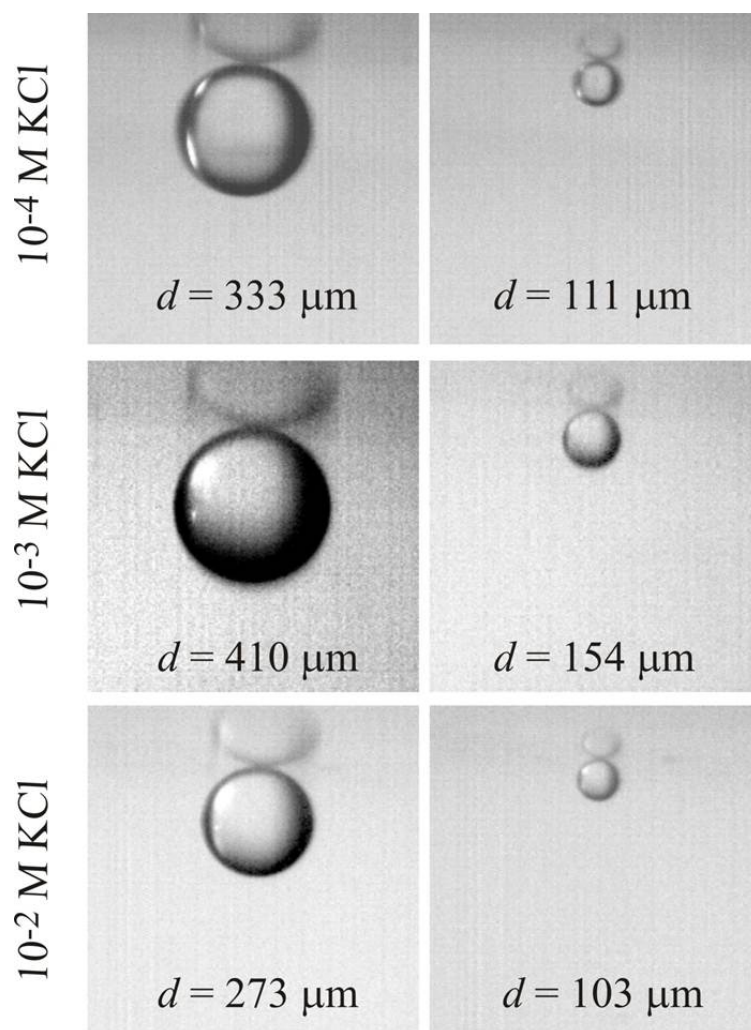


FIG. 2: The sequence of drops undergoing partial-coalescence events, up to the final stable drop, at various toluene - salt solution interfaces.

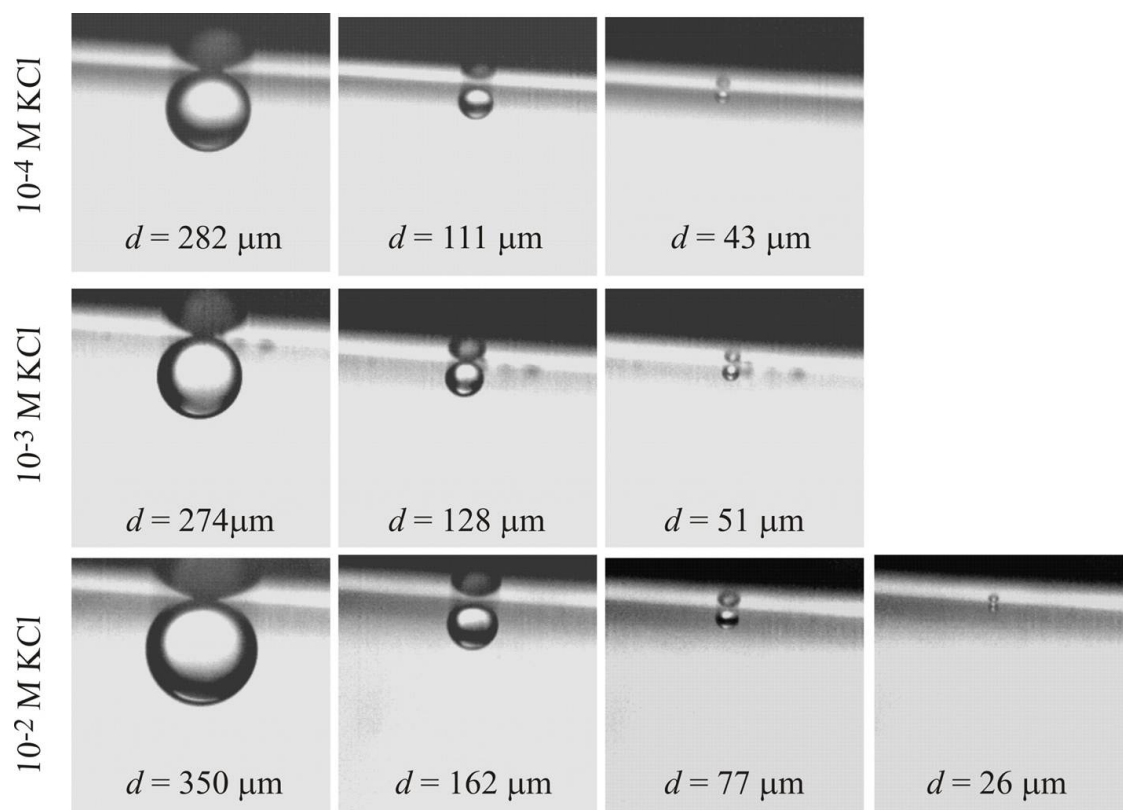


FIG. 3: The sequence of drops undergoing partial-coalescence events, up to the final stable drop, at various n-heptane - salt solution interfaces.