Electronic Supplementary Material (ESI) for Soft Matter
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Adsorption of Core-Shell Nanoparticles at Liquid-Liquid Interfaces
Electronic Supplementary Information

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1 Pendant drop tensiometry movie

isa-ESI-movie.avi shows a typical pendant drop tensiometry experiment. The shape of a drop of an aqueous NP suspension immersed in n-decane changes as a function of time as NPs adsorb at the interface and lower the effective interfacial tension. The movie corresponds to the $c = 1 \times 10^{-6}$ mol for the PEG 10000 NPs with $C = 2.1$ nm reported in Figure 1 of the main body of the paper.

2 Additional QCM-D data

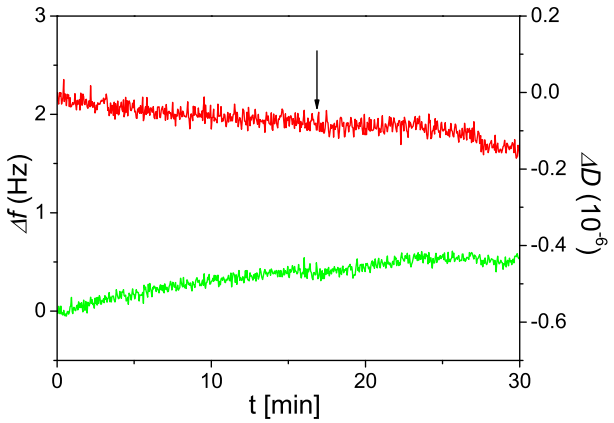

Fig. 1 Frequency shifts Δf (green line) and dissipation ΔD (red line) measured with QCM-D as a function of time upon exchanging water with n-decane on bare substrates. n-decane was pumped through the QCM-D chamber at a flow rate of 50μL/min at the time point highlighted by the arrow and no appreciable change is observed. The latter observation is confirmed by eight independent repetitions.

3 Additional numerical simulation results: size distributions of the adsorbed particles

In addition to the considerations on average size and polydispersity contained in the main body of the paper, we show below some examples of the complete particle size distributions at the interface $P(\sigma)$ as a function of time for low and high adsorption energies, Figure 2 and 3 respectively.

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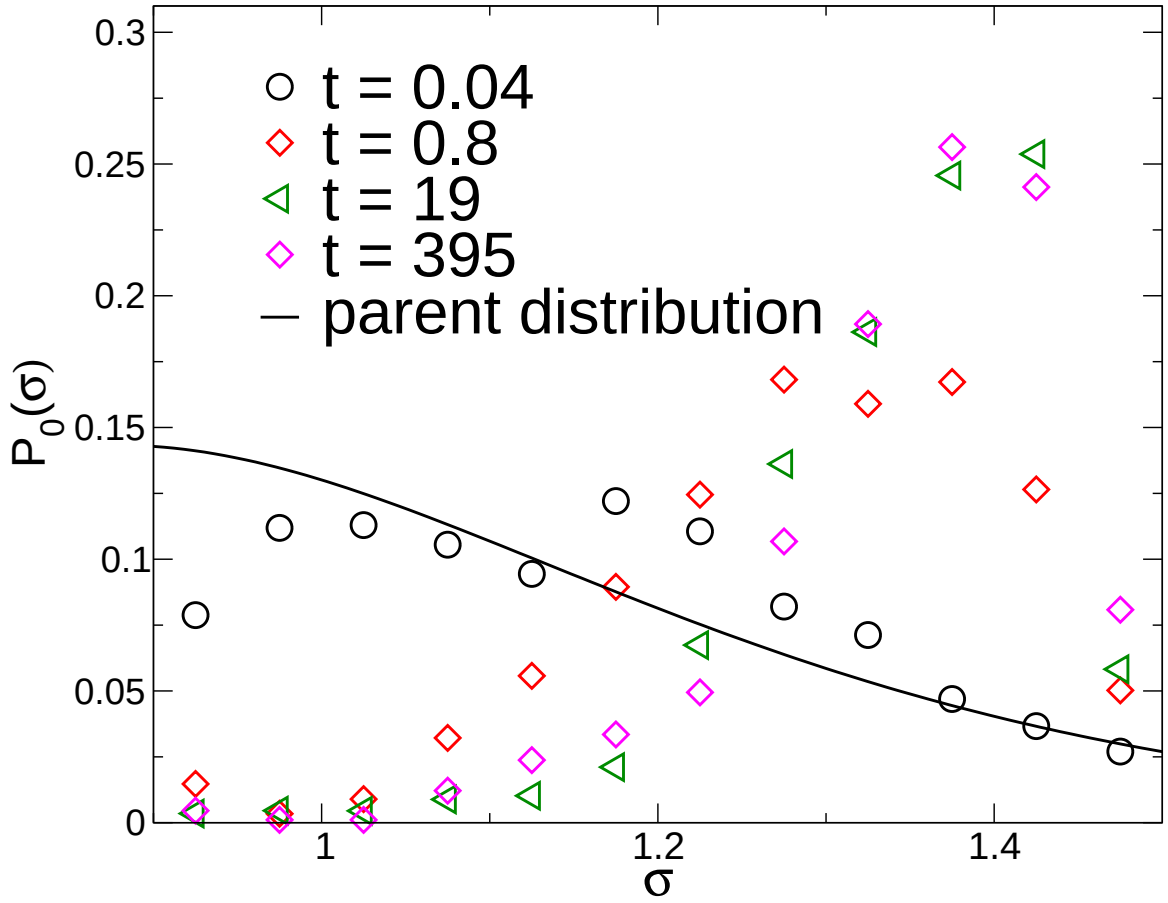

Fig. 2 Particle size distribution for $\Delta E_0 = 1 k_B T$ at different times t in MD steps. The raw data from the simulations (symbols) are fitted by log-normal distributions (solid lines).

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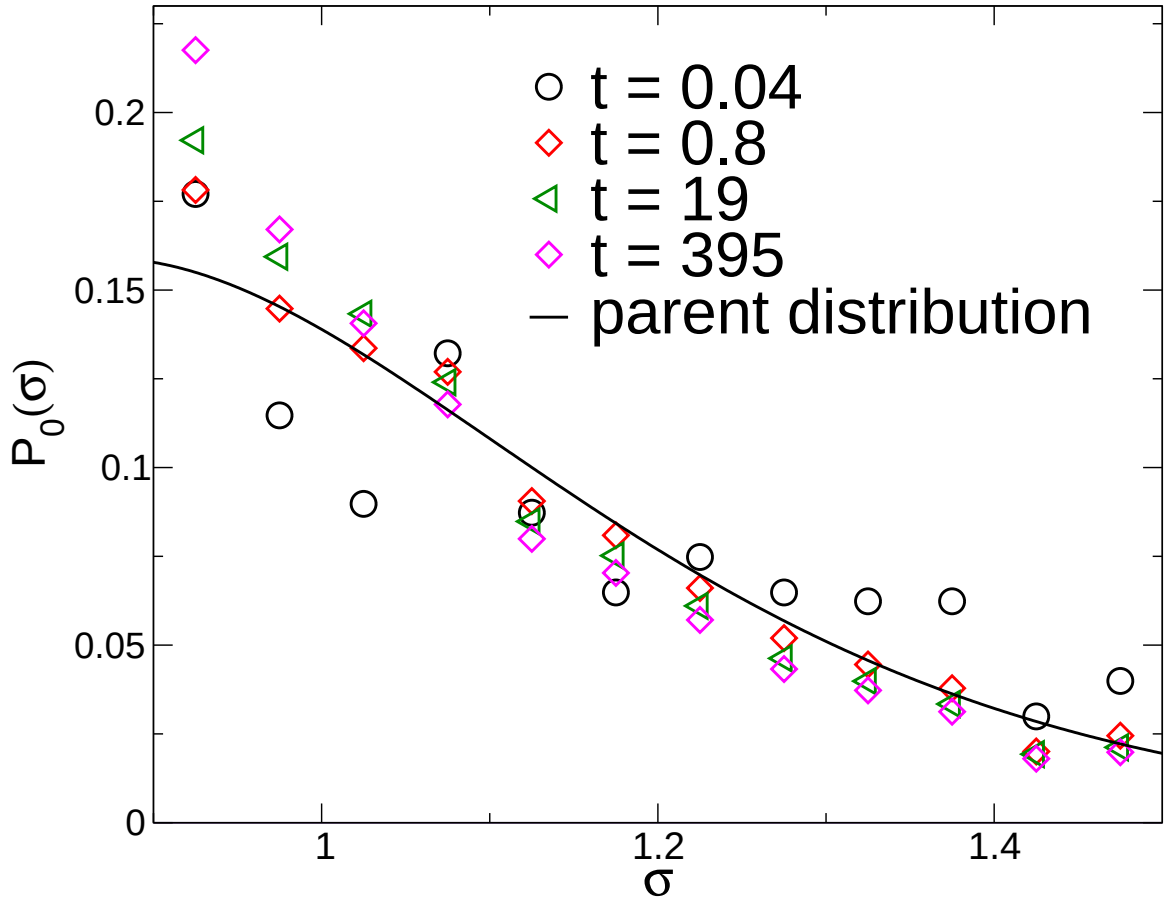

Fig. 3 Particle size distribution for $\Delta E_0 = 50 k_B T$ at different times t in MD steps. The raw data from the simulations (symbols) are fitted by log-normal distributions (solid lines).