

Abstract Submitted
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Observing liquid-gas nucleation in a colloid-polymer solution

RYAN MCGORTY, VINOOTHAN N. MANOHARAN, Harvard University, Dept. of Physics — We study liquid-gas nucleation in a colloid-polymer solution. Though the colloidal particles are too small to resolve, we are able to observe nucleating droplets due to the refractive index mismatch between the two fluid phases. By using digital holographic microscopy and thermally-responsive colloids we are able to observe the micron-sized nucleating droplets and their fluctuations in three-dimensions. From the droplets' fluctuations we can back out the interfacial tension. Additionally, our three-dimensional imaging technique allows us to capture individual nucleation events and their rate of occurrence. We hope that our data will allow us to better understand nucleation kinetics.

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