

Abstract Submitted
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Two-Dimensional Microfluidics: Stable Island Emulsions in Freely Suspended Smectic Liquid Crystal Films¹
CHEOL PARK, ZOOM NGUYEN, CHANEY CRANFILL, SARAH RADZIHOVSKY, JOE MACLENNAN, MATT GLASER, NOEL CLARK, University of Colorado at Boulder, LCMRC TEAM — Islands (circular regions of greater thickness) in smectic films are easily created and manipulated, but are generally unstable, tending to grow or shrink over time. We have recently created stable emulsions of smectic islands by “work hardening” of the smectic film using shear and extensional flow to form a dense, mechanically stable network of edge dislocations. In this talk, we discuss this novel type of two-dimensional colloidal system, in particular the island size distribution, network of edge dislocations and topological defects that form stable two-dimensional emulsions.

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