Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Folding capsules with caged droplets[1] SAVERIO SPAGNOLIE, XUANRONG GUO, DAVID LYNN, University of Wisconsin - Madison — We will describe surfactant-induced changes in the shapes of polymerizable oil droplets which are "caged" inside of deformable capsules. Using experiments, numerical simulations, and theory, we examine the roles of interfacial energies, capsule bending stiffness, and volume fraction. We find regions of parameter space where competing forces result in a sequence of flower-like shapes with 6-, 5-, 4-, and 3-fold symmetries, which are then polymerized and observed using high magnification scanning electron microscopy (SEM). Theory and simulation capture a wider range of possibilities, offering further support of this avenue for templating the synthesis of cross-linked polymer "designer" particles in the near future.

[1]NSF DMS-1661900

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Date submitted: 01 Aug 2019 Electronic form version 1.4