

Abstract Submitted
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Controlling Active Liquid Crystal Droplets with Temperature and Surfactant Concentration¹ JAKE SHECHTER, PEKER MILAS, JENNIFER ROSS, University of Massachusetts, Amherst — Active matter is the study of driven many-body systems that span length scales from flocking birds to molecular motors. A previously described self-propelled particle system was made from liquid crystal (LC) droplets in water with high surfactant concentration to move particles via asymmetric surface instabilities. Using a similar system, we investigate the driving activity as a function of SDS surfactant concentration and temperature. We then use an optical tweezer to trap and locally heat the droplets to cause hydrodynamic flow and coupling between multiple droplets. This system will be the basis for a triggerable assembly system to build and couple LC droplets.

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