Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

Liquid crystal (LC) droplet formation and anchoring dynamics in a microfluidic device BEN HAMLINGTON, AMY SHEN, Washington University, JAMES FENG, University of British Columbia, DARREN LINK, RainDance Technologies.com — Liquid crystal drops dispersed in a continuous phase of silicon oil are generated with a narrow distribution in droplet size in microfluidic devices both above and below the nematic to isotropic transition temperature. For these two cases, with fixed shear viscosity at both phases and altering the channel surface property, we observe not only the different LC droplet generation and coalescence dynamics, but also distinct droplet morphology. Our experiments show that the nematic liquid crystalline order is important for the LC droplet formation and anchoring dynamics.

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Date submitted: 28 Jul 2005 Electronic form version 1.4