

Abstract Submitted
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Auto-ejection of liquid jets and drops from capillary tubes HADI MEHRABIAN, JAMES J. FENG¹, Department of Chemical and Biological Engineering, University of British Columbia — Capillary imbibition through a tube and nozzle assembly can build enough momentum to eject droplets. Such an auto-ejection process is studied using Cahn-Hilliard diffuse-interface simulations to capture the dynamic contact angle, interface deformation and drop pinch-off. The breakup process is studied and a criterion for ejection is proposed. We investigate the dependence of this criterion on geometric parameters and fluid properties. Finally, we estimate the size of the produced droplets and compare the numerical results with experiments.

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