

Abstract Submitted
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Deploying Liquid Filaments and Suspensions with an Electrohydrodynamic Liquid Bridge D.A. SAVILLE, S. KORKUT, H.F. POON¹, C.-H. CHEN, I.A. AKSAY, Department of Chemical Engineering, Princeton University, Princeton, NJ 08544 — We show that a dynamic liquid bridge can be formed by deploying the filament issuing from a Taylor Cone onto a surface with the nozzle and surface held at different electric potentials. This configuration differs sharply from the familiar ‘electrospinning’ configuration where the filament whips violently. Nevertheless, although the aspect ratio (length/diameter) exceeds the Plateau limit by more than two orders of magnitude the bridge is stable. Here we report on the stability characteristics and show that such a bridge can be used to ‘print’ sub-micron scale features on a moving surface with both clear fluids and suspensions.

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