

Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

Electro-flow focusing. The high conductivity, low viscosity limit

ALFONSO M. GANAN-CALVO, JOSÉ M. LOPEZ-HERRERA, ESI, Universidad de Sevilla — Electro-flow focusing, a technique combining the features of electro-spray (ES) and flow focusing (FF), provides a reliable tool to reach parametrical micro-jetting ranges not attainable by ES or FF alone under specific operational regimes (liquid properties and flow rate). In this work, we provide not only a closed theoretical model predicting the diameter of a high electrical conductivity electro-flow focused liquid micro-jet, but also its convective/absolute instability, linked to the jetting/dripping transition and the minimum liquid flow rate that can be issued in steady jetting regime. Our predictions are compared to experiments with good accord.

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Date submitted: 04 Aug 2006

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