

Abstract Submitted
for the DFD15 Meeting of
The American Physical Society

Hydrodynamics of jets in needle-free injections¹ JEREMY MARSTON, MOMENE MORADI, Texas Tech University — We present results from an experimental study of jets used in needle-free injections. Ultra-high-speed imaging at frame rates over 300 kfps was used to study the jet formation time, initial contact stage and penetration depth evolution when fired into gel substrates. Both commercial devices using gas and spring mechanisms and custom-made devices were tested, exhibiting some key differences. We also explored a range of liquid physical properties, in particular viscosity, in order to quantitatively explore the parameter space for this intriguing process.

¹Supported by Bioject.

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Date submitted: 01 Aug 2015

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