Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Highly-viscous microjet induced by an impact HAJIME ONUKI, YOSHIYUKI TAGAWA, Tokyo University of Agriculture and Technology — Ejection of a liquid microjet with high viscosity is essential for various novel technologies such as 3D printers, printed electronics and bio printers. To generate such a microjet, we focus on utilizing an impulsive force. Thanks to a short-time impact, the viscous dissipation in the liquid can be suppressed, resulting in the ejection of viscous microjets. In this study, we investigate ejection mechanism of the viscous jet experimentally and numerically. The jet velocity decreases with increasing the viscosity of a liquid. Remarkably it is found that all the data of jet velocities normalized by initial velocities of the liquid as a function of Reynolds number, the balance between the inertia force and the viscous force, collapse onto a single master curve.

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Date submitted: 01 Aug 2017 Electronic form version 1.4