

Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

An application of the focused liquid jet: needle free drug injection system¹ AKIHITO KIYAMA, CHIHIRO KATSUTA, SENNOSUKE KAWAMOTO, NANAMI ENDO, AKANE TANAKA, YOSHIYUKI TAGAWA, Tokyo Univ of Agri Tech — Recently, a focused liquid jet draws great attention since it can be applied to various applications (e. g. Ink jet printing, medical devices). In our research, in order to discuss its applicability for a needle-free drug injection system, we shoot a focused liquid jet (Tagawa, et al., Phys. Rev. X, 2012) to an animal skin with very high-speed. Previously, the penetration of this jet into a gelatin and an artificial skin has been performed in order to model of the jet penetration process (Tagawa, et al., Lab. Chip., 2013). However, experiment for jet injection into the animal skin has not been conducted yet. In this presentation, we inject ink as the liquid jet into the skin of the hairless rat. We observe the top/back view and the cross-sectional view of the injected (ink-stained) skin. We capture the stained area of the skin in order to find characteristics of the jet penetration. We discuss the criteria for the jet penetration into the skin.

¹This work was supported by JSPS KAKENHI Grant Numbers JP26709007, JP16J08521

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Date submitted: 01 Aug 2016

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