Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Effect of applied load and jet dispersion on efficiency of needle-free injections[1] PANKAJ ROHILLA, JEREMY MARSTON, Texas Tech University — Intradermal delivery of vaccines with the jet injections is one of the leading alternatives to the needle injections for needle free drug delivery. However, effect of various parameters related to nozzle geometry, fluid properties and skin properties are still not well understood. In addition to design parameter such as the orifice diameter, jet speed, ampoule volume, and standoff distances, we must also consider applied load of the device on the skin, skin tension, and jet collimation. These three parameters are studied herein using an ex-vivo model (guinea pig and human skin), We investigate the effect of the skin support, viscosity of the liquid injected, ampoule volume, standoff distance and loading mechanism on the dispersion of the vaccine and the drug delivery efficiency into the skin.

[1]Inovio Pharmaceuticals, NSF-CBET

Pankaj Rohilla
Texas Tech University

Date submitted: 01 Aug 2019 Electronic form version 1.4