

Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Effect of Nozzle shape on droplet generation stability in EHD Inkjet JIYOUNG KIM, VU DAT NGUYEN, JIHOON KIM, SI BUI QUANG TRAN, DOYOUNG BYUN, Konkuk University — This study reports an effect of nozzle shape that offers better uniformity and stable operation in jetting performance. The stability of a liquid meniscus is important for the ability to eject a small liquid droplet. We investigated jetting performance in term of uniformity of patterns for different nozzle shapes in DC based EHD inkjet. To generate droplet with nozzles which have different shape, two types of glass capillaries are used in this study; one is a circular capillary and the other is a square capillary. The square edges are shown to keep the liquid inbound better. When the liquid is supplied to the circular nozzle, it grows and limits by the outer edge of the nozzle. However, in the case of the square nozzle, the meniscus can be sustained stably by the square edges. The ejections were recorded with a high speed camera and analysed to examine the difference in dynamic movement of meniscus. The repeatability of jetting is more periodic in the case of the square nozzle.

Jiyoung Kim
Konkuk University

Date submitted: 05 Aug 2010

Electronic form version 1.4