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Flight Behavior of a Charged Droplet in Electrohydrodynamics (EHD) Inkjet printing using DC and AC signal[1] HADI TEGUH YUDISTIRA, VU DAT NGUYEN, DOYOUNG BYUN, Department of Aerospace Information Engineering, Konkuk University, Seoul, Republic of Korea, NANO/MICRO SYSTEM LABORATORY KONKUK UNIVERSITY TEAM — Flight behaviors of charged droplets such as reflection, deflection, and retreat, are presented for electrohydrodynamic (EHD) inkjet printing. Experimental results show that the flight paths of charged droplets may deviate from their regular straight route, i.e., directly from the nozzle to the substrate. Depending on the droplet charge and applied electric field, droplets may deflect and reflect on a substrate, or retreat back to the meniscus. The retreat phenomenon is one of the behaviors of the charged droplet due to interactions between a droplet, meniscus, and a substrate. The droplet reversely moves back to the meniscus due to loss of charges after the second fission. To estimate the amount of charge on both the droplet and the meniscus, the Rayleigh limit was used.

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Hadi Teguh Yudistira
Konkuk University

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