



Showcasing research from Professor Arum Han's laboratory, Department of Electrical and Computer Engineering, Texas A&M University, USA.

Size-independent and automated single-colony-resolution microdroplet dispensing

This work introduces the first automated droplet dispensing platform capable of reliably achieving single-colony resolution under polydisperse conditions. By employing blank "spacer" droplets and a simple distance sensor, the system maintains separation between "hit" droplets during dispensing, addressing a critical challenge in polydisperse droplet dispensing. The platform enables highly accurate (99.9%) and high-throughput dispensing (up to 8,640 droplets per hour), effectively bridging droplet-based high-throughput screening assays with traditional biological workflows. Its utility was demonstrated in an antimicrobial susceptibility test, where resistant strains were successfully identified with high accuracy.

As featured in:



See Arum Han *et al.*,
Lab Chip, 2025, **25**, 6157.