

Master project

Photo Inkjet Printer for Precision Drug Dispensing



Consumer photo inkjet printers adopt a high-performance piezoelectric print head (6 channels 540 nozzles), which is capable of printing full-color photos rapidly (40,000 droplets/s, 5 pages/min) and precisely (1.5 pico liter droplet on demand, 5760x1440 dpi). Minor printer modifications can improve the printing repeatability 27~55 times. This project aims to load drugs and dispense lid material into microfabricated containers precisely.

You are going to learn the inkjet drug loading process, SEM imaging, Drug/lid sample preparation and drug release profile measurement.

Project topics:

- Optimum solvents and drug concentrations for container loading
- Optimum concentration for lid material dispensing
- Inkjet loaded containers drug release characterization

Supervisors: Edwin En-Te Hwu

Contact: Edwin En-Te Hwu, Associate Professor, etehw@dtu.dk, 345C-115

Location: IDUN center of Excellence, DTU Health Tech

About IDUN

IDUN is a center of excellence funded by the Danish National Research Foundation and the Villum Foundation. The center is divided into two parts: IDUN Drug and IDUN Sensor, focusing on drug delivery and nanomechanical sensors, respectively.