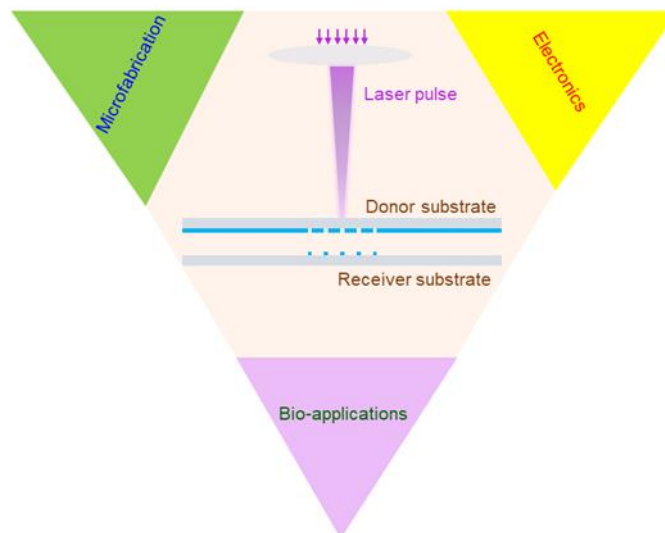


## Laser-induced forward transfer for SU-8 epoxy resin printing

### Semester project (Section: microengineering, material science)

Laser-induced forward transfer (LIFT) is a digital manufacturing technology which allows printing materials in a serial manner following a predefined pattern. It is a direct-write technique that enables the deposition of small volumes of material into user-defined, high-resolution patterns with a wide range of structural and functional materials. Compared to other printing techniques, LIFT is very competitive due to its mask/mold-free, non-contact, material diversity, nozzle-free nature. With such advantages, LIFT is a good candidate to print fluids with highly nonlinear rheological properties like polymers and colloidal suspensions, which might be challenging for other nozzle-based technologies.

The goal of this project is to investigate the printability of SU-8 epoxy resin by LIFT. We will study parameters that influence the printing results and take this as a reference for printing other viscous fluids by LIFT.



#### Work description:

- Prepare donor substrates (dynamic release layer + SU-8 inks).
- Investigate the parameters that influence the printing results such as the laser fluence, donor-receiver gap distance, receiver types, etc.
- Optimize the LIFT parameters to achieve stable LIFT printing of SU-8 and obtain a high printing resolution.

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