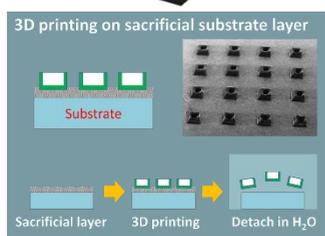
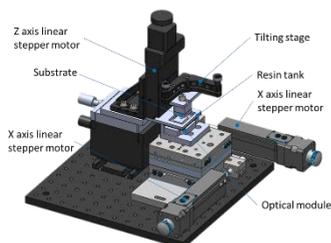


Master project

3D printing on a sacrificial substrate layer



In this project, we are going to develop a sacrificial substrate layer as a non-harmful approach for carrying and releasing 3D printed micro/nanostructures. The layer with special geometry texture might significantly raise the surface roughness, generating a tight connection of printed structure and substrate. Simultaneously, we select water-soluble polymers, such as polyvinyl alcohol (PVA), Pulullan, etc. to prepare the layer. After the layer dissolves in the water solution, the printed structure can depart from the substrate directly.

You are going to learn polymer substrate layer preparation, high-resolution stereolithography 3D printing, electronic scanning microscopy imaging.

Project topics:

- Water-soluble substrate layer preparation and optimization
- 3D printing on water-soluble substrate layer process development
- Adhesion evaluation and releasing mechanism optimization

Supervisors: Tien-Jen Chang

Contact: Tien-Jen Chang, PhD student, tiech@dtu.dk, 345C-116

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.