

Bachelor/Master projects

Imaging of Microcontainers for Oral Drug Delivery



During the past years, our group has developed cylindrical-shaped polymeric microdevices, called microcontainers (seen in the image), for oral drug delivery. The microcontainers can be engulfed by the intestinal mucus layer where they are also able to attach, thereby improving and prolonging the drug release from the devices. In order to gain a better understanding of the gastrointestinal behavior of the microcontainers from oral dosing to drug release in the intestine, imaging with biomedical techniques like ultrasound imaging and x-ray imaging can be applied. Such imaging might include addition of contrast agents that are either loaded into the microcontainers or maybe even incorporated into the microcontainer shell.

Example of specific project topics:

- Preparation of drug-loaded microcontainers and subsequent characterizing.
- Development of *in vitro* and *ex vivo* (intestine) setups and biomedical imaging.
- Development of *in vivo* (rats) setup and biomedical imaging.
- Incorporation of contrast into microcontainer shell and biomedical imaging.

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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.