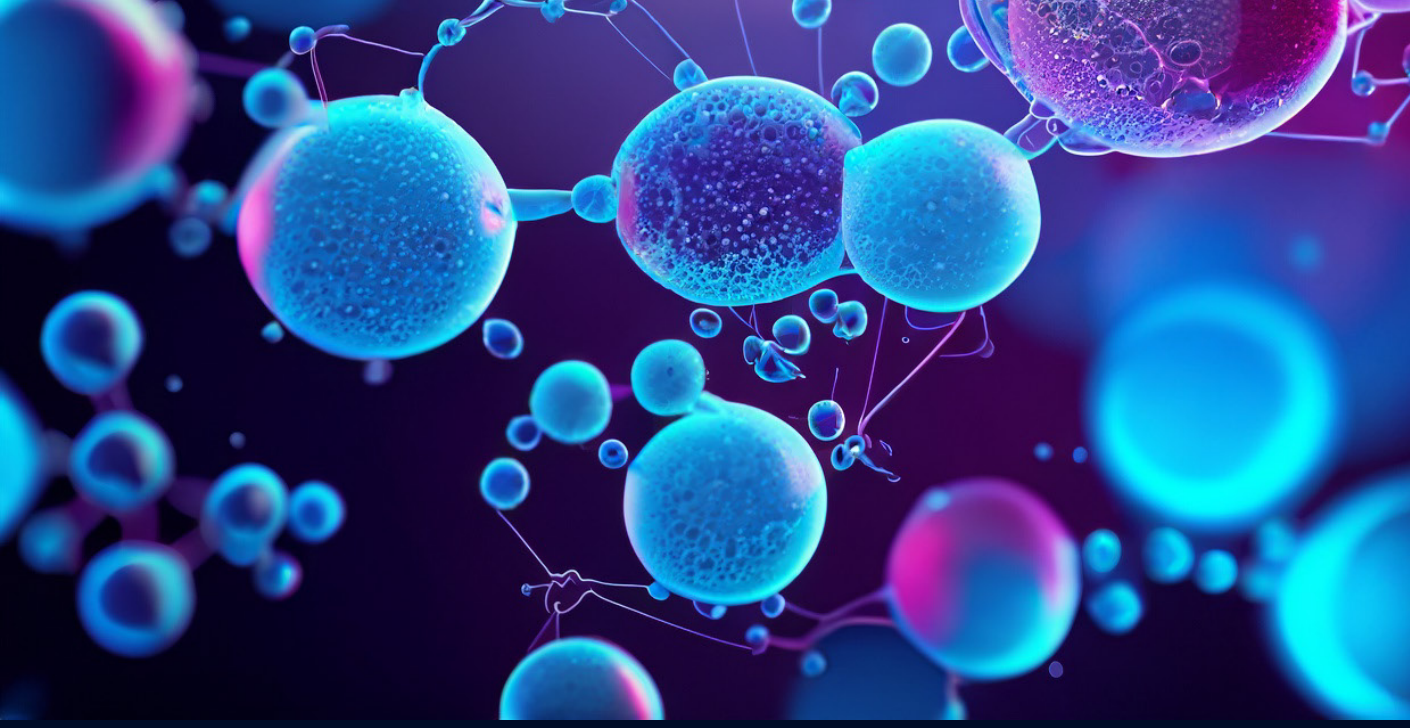

RESPONSIVE ULTRASOUND CONTRAST AGENTS FOR MOLECULAR IMAGING

Ultrasound imaging with contrast agents such as microbubbles and nanodroplets is a promising tool to diagnose and monitor diseases at the molecular level. In our lab, we are interested in detecting soluble molecular targets such as proteases *in vivo*. To achieve this, we aim to modify the acoustic properties of microbubbles in response to protease activity by altering their shell properties using tight peptide-crosslinked networks.

Through this project, you will have the opportunity to learn and apply a series of different techniques including:

- Organic synthesis (lipids, polymers, and peptides)
- Fabrication and characterization of liposomes and microbubbles
- Acoustic measurements
- Potentially also electron microscopy or atomic force microscopy
- How to design, carry out and analyze experiments independently

As the project might involve chemical synthesis, prior theoretical and pratical experience in this area would be beneficial but is not required.

Curious? Join our team! We have opportunities for bachelor theses, semester projects and master theses. Contact **ines.oberhuber@hest.ethz.ch** if you want to learn more about the project!

ETH zürich

MEDICAL MICROSYSTEMS

Gloriastrasse 37/39
8006 Zürich