

MASTER'S PROJECT INVITATION

SUPERVISORS: M. RICHTER¹ & PROF.DR. S. MISRA²

Project Title: Design and development of hybrid-actuated in-vivo medical devices

Background: In-vivo manipulators describe a range of medical instruments such as endoscopes, guidewires, catheters, grippers, etc. Widely used techniques for steering the manipulators are manual and tendon-based, and a popular researched technique is using magnetic fields. In this project you will acquire knowledge in tendon- and magnetic-based actuation of manipulators and will apply this knowledge to develop and test a manipulator that combines these two principles (hybrid) at the clinical scale.

Tasks:

- Literature review on design and control of tendon/magnetic-actuated manipulators
- Quantitative design of a hybrid actuated manipulator
- Fabrication and assembly of a prototype
- Demonstrate hybrid actuation of the prototype in benchtop experiments.

Suited for: BME, ME, S&C

