

Master thesis in Mechanical Engineering: “Development und design of a multifunctional Laparoscope”

The medical engineering market is one of the most innovative ones in our economy. In this interesting field, big players work alongside small business to design top-notch medical devices to improve and save the life of thousands of patients.

Keywords: Laparoscope, multifunctional, medical engineering

Project background:

This project results from first hand experiences of surgeons during their work with laparoscopic devices in the operation room. While using the existing laparoscopic tools, we have discovered so far untouched improvements to the existing functional principles. Most of the currently existing tools have exactly one function and are single use devices. Therefore, we have conceptualized a multifunctional, multiuse laparoscopic device to improve the workflow of laparoscopic surgery. Together with a Master Student in Mechanical Engineering at ETH Zurich we are right now designing (CAD / Solid Works) the key components of the device and will be building our first prototype in 5:1 format.

Goal is to finally bring this device to the market within the next three years. Therefore, we are looking forward to you joining us with your expertise. Are you excited to build things that matter? Together with some of the leading experts of the Department of Biomedical

Engineering of the University of Basel you can move this project from the prototype phase towards a real product for market entry.



Your task:

You will be responsible for the further testing and evaluation of our first prototype. Furthermore, you will support the project in the phase of transforming the first 5:1 sized prototype into a 1:1 one and improving its design. This includes the software based design as well as building a physical prototype. With your Master Thesis you will therefore contribute largely to the main design and construction of this new surgical device.

We offer:

You will get hands-on experience in developing and designing a surgical device while working together with young and highly motivated colleagues from engineering, medicine and research. By bringing in your ideas and expertise, you will be in charge for the design and function of the device. With your contributions you have the possibility by the end of your thesis to be part of a team launching a MedTec Start-up. Finally, you'll have a great sense of accomplishment, having contributed to building something completely innovative. Work in a young and motivated team, where you will have both close mentoring when necessary and large extend of freedom.

Start of project:

Autumn 2020

Student background:

Engineering, Mechanics, Required knowledge: CAD-design (Solid works)

Further information:

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