



Master Thesis Project

Free from micro-optics for particle trapping in optical tweezers

Prof. Romain Quidant

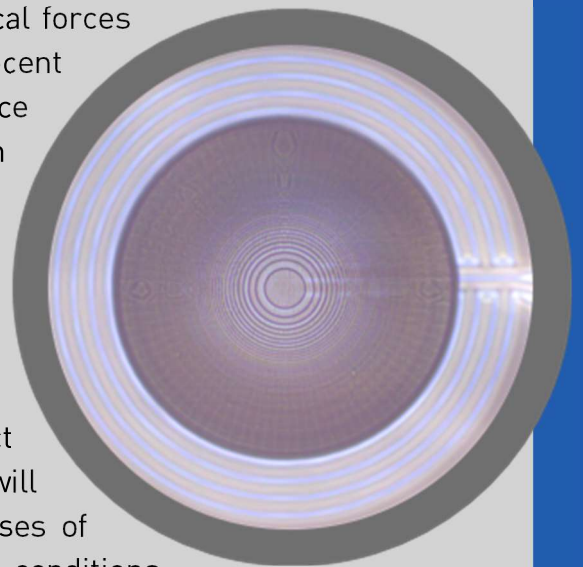
Nano-Photonic Systems Laboratory

We are seeking a curious and motivated master student to join our team and study micro-fabricated optical elements for applications to optical trapping in vacuum.

Project background – Optical levitation (also known as Levitodynamics) is an emerging and fast progressing field exploiting optical forces to trap and manipulate nanoparticles in vacuum. Recent developments have contributed to greatly advance both quantum physics and ultrasensitive sensing. In recent years, the community has striven for miniaturization as a way to boost physical effects and increase robustness of experimental platforms.

Project description – In this context, your project aims to design and characterize 3D printed microoptical elements, towards compact multipurpose optics for levitodynamics. You will characterize the properties of microfabricated lenses of different designs, under both ambient or vacuum conditions. Your work will be mainly experimental.

Working in our group – We offer you close supervision through PhD and Postdocs but also expect that you work independently. In your project, you will get into contact with a multitude of technologies like optics, lasers, microfabrication, data evaluation and vacuum technology among others. Experience with optical setups is beneficial but not mandatory.



Contact: rquidant@ethz.ch or nmeyer@ethz.ch

Period: 6 months

Place: ETH Zurich, CLA E11-19

