Quantum Technologies Lab
Physics Department
Technical University of Munich

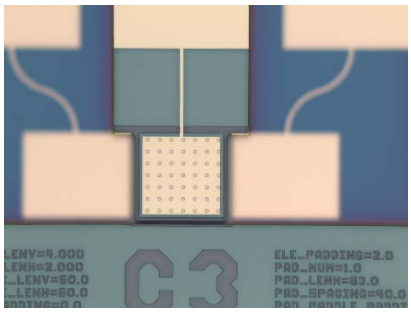
PhD position on Optomechanics

For our exciting nano- and optomechanics research topics, we are looking for an enthusiastic person who wants to make this his/her PhD project. The envisioned starting date is in April 2022.

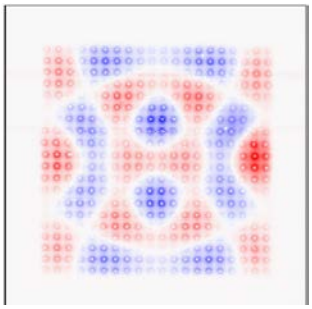
Project details

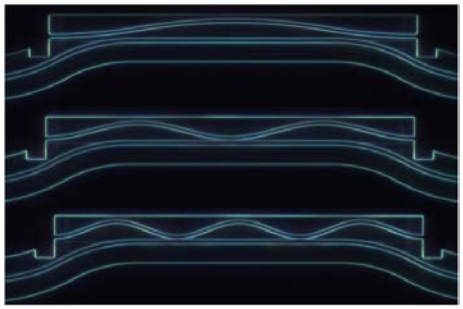
Optomechanics is the field where light is used to measure and alter the dynamics of mechanical resonators. In this project, you are going to have a lot of fun with nanomechanical devices – some you can see below - that you will make in our nanofabrication facilities. With our setups you will do measurements in ambient, in vacuum, and at cryogenic temperatures. In other words: really cool stuff! Still, you can be sure that you will contribute there too, as our state-of-the-art measurements require continuous improvements. Studying the interaction between mechanical motion and light – down to single photons - will be the overarching topic of your research.

During your PhD, you will encounter, and eventually master, all aspects of chip-based optomechanics, ranging from the concept phase, modelling, device design and nanofabrication, via measurements and data processing, to writing papers and presenting the results at international conferences. As part of all our positions, you are expected to take part in teaching, supervision of student projects, and in other supporting activities within our group. The pay is 75% TV-L 13 and funding comes from the State of Bavaria.



Electro-optomechanical cantilever


Mode map of a tiny membrane


Pre-displaced nano-strings for stress tuning

Who are we looking for?

You have a M.Sc. degree in physics or one a closely related subject, preferably with a focus on nanotechnology, photonics, semiconductors, electronics, or optics. Ideally, you already have experience in nanofabrication, free-space optics and photonics, high frequency and low noise measurement techniques, and you have programming experience. You can read the formal requirements on www.gs.tum.de.

What do we offer?

Our group works on experiments for quantum technology, focusing on nano- and optomechanics, and on on-chip photonics for integrated quantum optics experiments. We have an open, inclusive, and collaborative culture. We are very active in the excellence cluster Munich Center for Quantum Science and Technology and part of the Munich Quantum Center. As PhD student in our group, you will be part of TUM's graduate school and can join the IMPRS-QST. More information about us can be found on our website: www.qtech.ph.tum.de.

How to apply

We love to hear from you and will be more than happy to answer any questions that you may have on this PhD position. Applications should include your CV, transcripts and grades, pdf of your MSc thesis, and a cover letter detailing your relevant experience and motivation. Make sure to tell us why *you* are the person we are looking for and refer to this opening.

Professorship for Quantum Technologies
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