



LMU Munich – Prof. Habs / Max Planck Institute for Quantum Optics

Diploma thesis position

in the framework of the excellence cluster
“Munich Centre for Advanced Photonics”

Levitated microtargets for the generation of high-intensity laser accelerated ion beams

In this work a Paul-trap will be developed to levitate microscopic targets for the high-intensity laser based acceleration of ions. Those miniature targets are the basis for an optimized generation of high-energy monoenergetic ion beams and will have a major impact paving the way towards cost-effective ion cancer-therapy in the near future (<http://www.map.uni-muenchen.de/res-areas-A23.en.html>). The project will be conducted under supervision of Prof. Habs in a close collaboration with the Max Planck Institute for Quantum Optics. The main tasks are:

- Getting familiar with the basis of levitation of microscopic objects in a quadrupole trap
- Designing and setting up a Paul trap located in a vacuum chamber
- Participating in ion acceleration experiments

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