

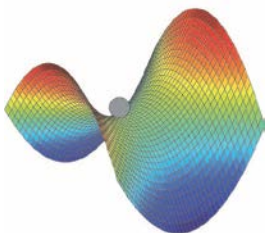
Open Ph.D. Position

Optomechanical interactions in single levitating nanoparticles

In the Nano Optics group we study light-matter interactions at the nanoscale in both fundamental and applied physics research. One of our main interest is the investigation and manipulation of single photon emitters like defect centers in diamonds and quantum dots. These emitters in the appearance of nano-sized particles have numerous applications in quantum optics and quantum information applications.

With a quadrupole ion trap integrated in an optical microscope setup we levitate single nano- and microparticles. Minimized interaction with surroundings is mandatory for experiments aiming at optomechanical interactions. This is achieved best by stabilizing isolated particles in vacuum. The coupling of light to internal mechanical modes allows for control of the vibrational states and should enable cooling of the trapped particles by laser light.

For this experiment, we are looking for a motivated Ph.D. student. Applicants with a Masters or Diploma degree should be interested in studying (quantum) optical problems on nanoparticles. The work includes further development of the current trap and microscope setup, performing measurements and simulations of optomechanical problems. We expect some experimental experience with optics setups and electronics.



For more information, please contact:

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