

Master Thesis - Closed Loop Positioning on the Nanoscale

Quantum systems that are accessible using optical means are particularly interesting as a bridge between photon-based and semiconductor-based or solid state-based quantum circuits. To achieve a high degree of reproducibility while investigating such tiny systems an utmost precise position control of the optical setup is necessary. An additional challenge are the ultra low temperatures that are necessary for semiconductor-based quantum dots.

Tasks:

- Implement an interferometric readout
- characterization of position reproducibility at liquid helium temperatures

You will learn and need:

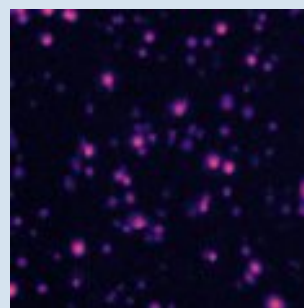
- Python programming
- CAD drawing
- Laser optics
- Data management and evaluation

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sample insert



single QDs

AG Oestreich



We are looking forward to your application!