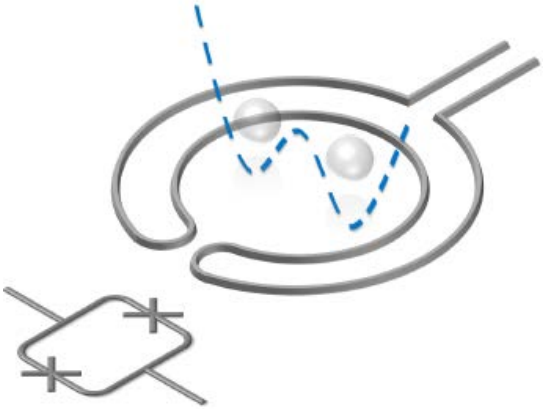
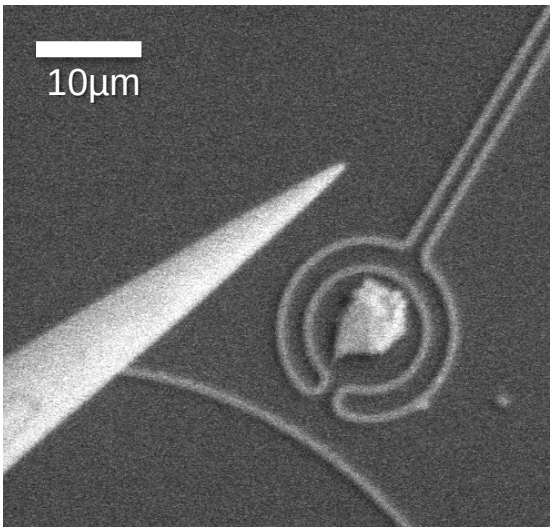
CHALMERS UNIVERSITY OF TECHNOLOGY
Department of Microtechnology and Nanoscience (MC2)
Quantum Technology Laboratory

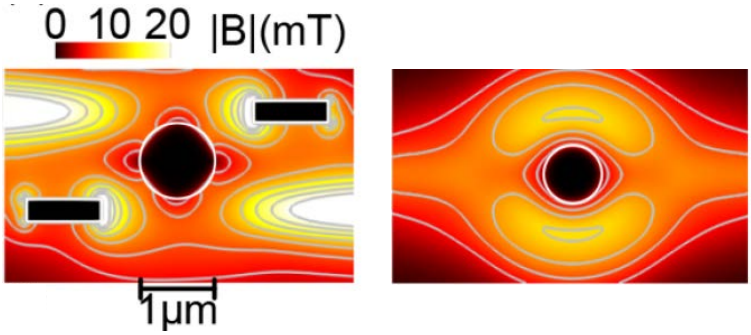
Master thesis project

A levitated particle for macroscopic quantum experiments



An object levitated in vacuum is the ideal means to minimize mechanical dissipation. Therefore, such an object constitutes an ultra-sensitive device for measuring external forces or accelerations, and provides also an opportunity to bring macroscopic objects into quantum states





The goal of this Master thesis project is to use integrated superconducting structures for detecting the motion of a levitated microparticle using a DC-SQUID magnetometer.

The project includes:

- FEM magnetic field simulations,
- Design and fabrication of integrated superconducting circuits,
- SQUID-based magnetometry.

The project is suitable for students with interest in superconductivity and/or cleanroom facilities.

For more information: www.wieczorek-lab.com

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