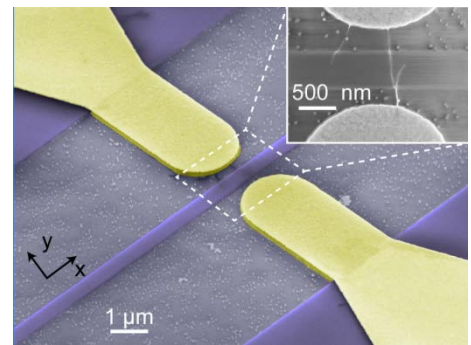
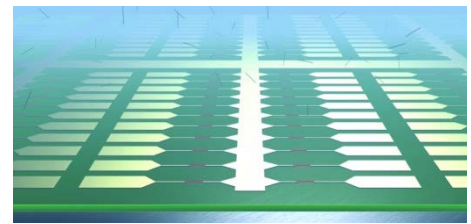


Master Thesis on Light-Emitting Carbon Nanotubes (CNTs)

We offer a master thesis based on the study of electrically driven light-emitting CNTs in the research unit of Prof. Ralph Krupke at the Institute of Nanotechnology.

CNTs exhibit a direct structure-dependent bandgap and exceptionally high thermal conductivity, which confer them a great potential for future active photonic devices [1]. As was recently shown in our experiments, waveguide-integrated electrically driven CNTs demonstrate high coupling efficiency [2], ultra-short response time [3] as well as non-classical emitting properties [4]. One of the most important research directions for the development of competitive CNT-based light sources is the improvement of their emission intensity, which is the key goal of the advertised master thesis.



What you will learn

You will develop and characterize new CNT-based optoelectronic devices and investigate their fundamental physical properties. You will learn the use of the equipment and facilities of the Institute for Nanotechnology (electron beam lithography, sputtering, dielectrophoresis, near infrared spectroscopy, etc.).

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