



Institute of Quantum Optics

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Fakultät für Naturwissenschaften, Fachbereich Physik

Announcement

Seminar Nanoscopy in the range between 500 and 0.1 nm

Prof. Jelezko, Prof. Reineker

Description

In recent research and application projects nanostructures play an important role. For the construction and manipulation of these objects one should get a clear picture on the structure and functionality of the objects under construction and investigation. In this seminar various methods will be discussed that allow to investigate these nanostructures and their functionality.

Topics

1. Confocal Microscope, 4π -Microscope
2. Scanning Tunneling Microscope (STM)
3. Atomic Force Microscope (AFM, SFM)
4. Single Molecule Spectroscopy and Microscope
5. Near Field Scanning Optical Microscope (NCOM, SNOM)
6. Stimulated Emission Depletion Microscope (STED)
7. Reversible Saturable Optical Fluorescence Transition Microscopy (RESOLF)
8. Fluorescence Resonance Energy Transfer and Microscopy
9. Electron Microscopy
10. Optical Tweezers
11. Frequency Comb
12. Michelson Interferometry

Basic Knowledge and Literature

Basic knowledge of quantum mechanics is recommended.

Depending on the topic of the talk textbooks, review or research articles will be necessary for the preparation of the talk and the elaboration.

Additional Information

The module refers to bachelor and master students

Seminar: 3 ECTS

Advanced Seminar: 4 ECTS

Lecturer

Prof. Fedor Jelezko, Prof. Peter Reineker, Institute of Quantum Optics