Kolloquium

physikalisches

Dr. Andreas K. Hüttel

Institute for Experimental and Applied Physics

University of Regensburg

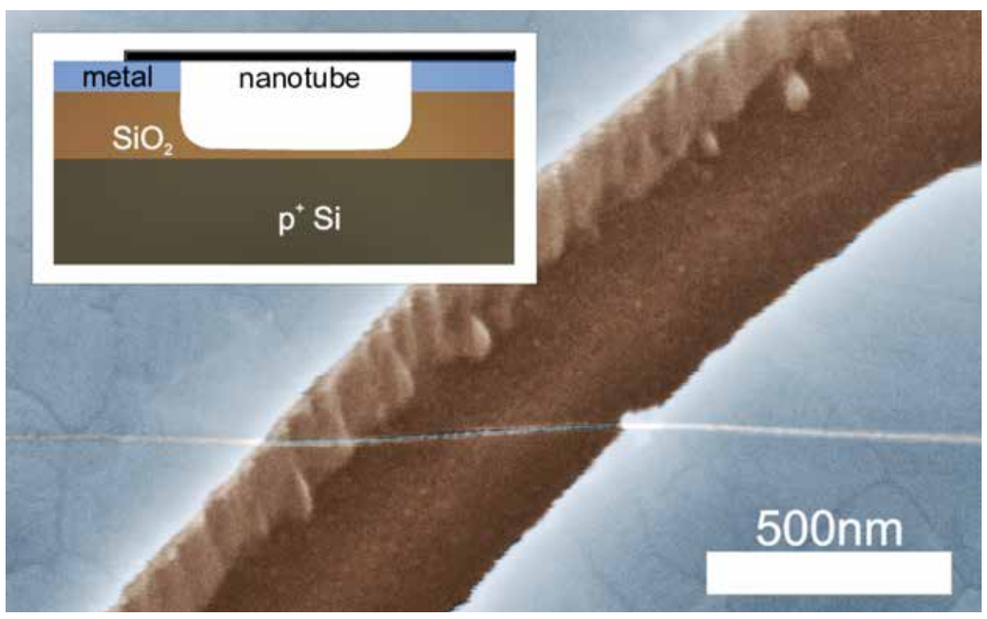
Millikelvin transport experiments on carbon nanotubes - nanoelectromechanics, spectroscopy, and more

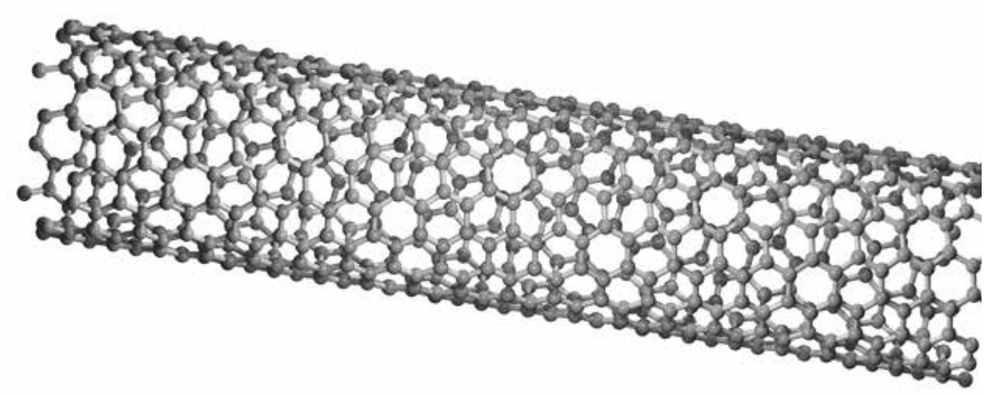
Mo. 15.05.17
16:00 Uhr
Ort: H34

Single wall carbon nanotubes are a fascinating material system. Thin, highly conductive, and mechanically strong, they lend themselves for many practical applications. At the same time, in terms of fundamental science, they provide insight into the physics of the „Graphene lattice“ with the best possible boundary conditions.

In our low temperature transport experiments, where the current of single electrons tunneling through such macromolecules is detected, we are investigating many different aspects. This ranges from mechanical resonator behaviour and the interaction between current and vibration all the way to the spectroscopy and manipulation of unperturbed one-electron quantum states in the macromolecular lattice.

So, let me tell you about nanotubes- about things we have seen and learned, about surprises and puzzles, and about phenomena noone has seen yet (we‘re still working on it).





Above, top: Electron micrograph of a carbon nanotube bridging an etched trench between two metal electrodes; bottom: carbon nanotube model.

Fakultät für Physik