

Seminář odd. 26

Tenkých vrstev a nanostruktur

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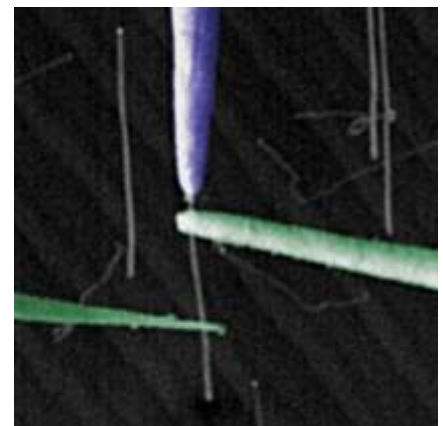
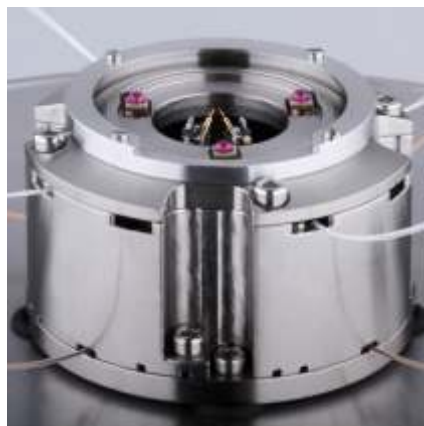
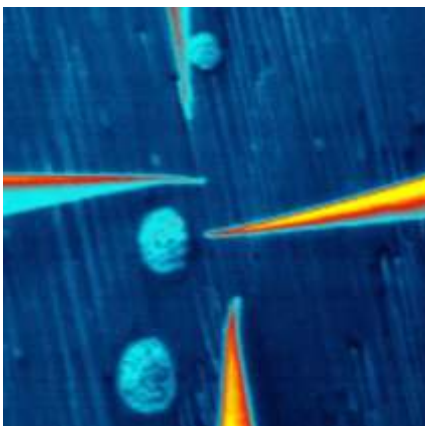
TÉMA

Charge Transport Measurements at the Nanoscale using a Multi-Tip STM

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Recently we developed an ultra-compact, ultra-stable four-tip STM for charge transport measurements at the nanoscale. The capabilities of this instrument are demonstrated in two case studies. First, electrical measurements on freestanding GaAs nanowires are presented. III-V semiconductor nanowires are promising building blocks for novel semiconductor devices in future electronic and opto-electronic applications such as solar cells. While the growth morphology of these nanowires is easily characterized, the electrical characterization is much harder. The distribution of the dopant over the nanowires is of great importance. With regard to this, resistance profiles of as-grown freestanding GaAs nanowires were measured, from which the doping profile can be deduced. In a second study distance-dependent measurements of the four-point resistance on Si(111)-7x7 allow the separation of the surface conductance from other contributions. We also determine the conductivity of a single step and the step-free surface.



odborný garant: Ing. Pavel Jelínek, PhD.