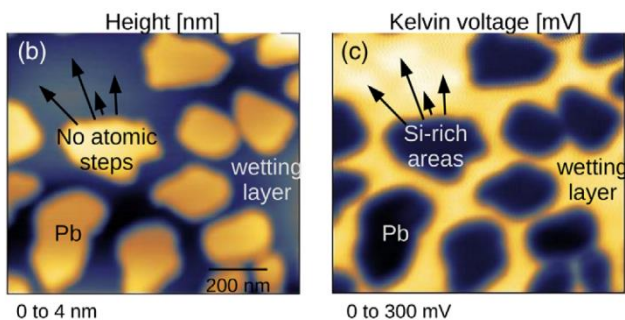


Nanometer-scale imaging and measurements: Atomic Force Microscopy and Kelvin Probe Force Microscopy

Description



The research team of Prof. Dr. Regina Hoffmann-Vogel, the Professor of Experimental physics of condensed matter at the University of Potsdam, aims to understand the relationship between atomic and mesoscopic structures as well as electronic transport in nanostructures. To

investigate these nanostructures, the research team uses atomic force microscopy and Kelvin probe force microscopy to conduct nanometer-scale imaging and measurements. To date, the group has successfully collaborated with several academic and industrial partners throughout Europe.

Details

Current research focus:

- Scanning Force Microscopy/Atomic Force Microscopy:
 - High resolution topographic imaging, up to atomic resolution, in non-contact measurement mode
 - Areas of development: insulators, semiconductors and metals
 - Active research:
 - Metallic nanostructures on semiconductors
 - Molecules on various substrates including insulators
- Kelvin Probe Force Microscopy:
 - Up to atomic resolution imaging, under ultra-high vacuum conditions, of electronic structure
 - Areas of development: internal atomic resolution of molecules
 - Active research:
 - Semiconductor surfaces

Infrastructure

- Equipment:
 - Specialized scanning force microscope for atomic resolution
 - Vacuum chamber
- Modelling software:
 - Modelling capabilities for tip-sample interaction on insulators

Applications

- Nanometer-scale imaging and measurement
- Topographic imaging of electronic structures
- Semiconductor materials
- Metallic nanostructures
- Nanometer-scale devices

Keywords

- Atomic Force Microscopy
- Kelvin probe force microscopy
- Wetting layer
- One dimensional systems
- Semiconductors
- Superconducting metals
- Insulators
- Thin film nanostructures
- Non contact imaging
- Atomic resolution

Interest in cooperation

- Research cooperation
- Contract Research

Scientific Literature

- <https://www.uni-potsdam.de/en/epkm/veroeffentlichungen/overview>

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