Research & Services | Measuring the Electronic Properties of Nanoparticles and Nanoscale Systems (Yissum)
code: 34-2010-2359
Oded Millo, HUJI, Faculty of Science, The Racah Institute of Physics

Determination of electronic, structural, and mechanical properties of nanostructured semiconductor and superconductor systems high spatial resolution

Categories	Fundamental and Applied Solid State Physics, Nanoscience, Nanostructured Semiconductor, High Temperature Superconductivity, Composite and Solar-Cell Materials

Condensed Matter Group, **Racah Institute of Physics, Faculty of Science**

Research Capabilities

- Studies of individual and arrays of hybrid colloidal semiconductor nanocrystals
- Studies of high temperature superconductors (HTSC) and HTSC-ferromagnetic composites
- Studies of micro- and nano-crystalline solar-cell materials
- Focusing on scanning-probe and transport studies using cryogenic scanning tunneling spectroscopy (STS) and conductive atomic force microscopy (C-AFM) and other AFM related techniques
- Development of a novel method to contact semiconductor nanorods for transport measurements

Advantages

Professor Millo's experience with the following techniques enables his lab to conduct cutting edge research:

- Scanning tunneling microscopy and spectroscopy, cryogenic STM
- Scanning force microscopy and related spectroscopic techniques
- Low temperature transport measurements
- Sample fabrication: e-beam lithography, optical lithography, thin-film deposition

Research Background

Providing fundamental microscopic insight into the complex electronic and transport properties in nanostructured systems, contributing to the development of nano-technological applications

Researcher and Research Interests

Professor Oded Millo, **Condensed Matter Physics, Racah Institute of Physics**. Professor Millo is a long-time member of the management team of the Hebrew University Center for Nanoscience and Nanotechnology. His research interests include low temperature and nanoscale aspects of solid state physics and he has expertise in scanning probe microscopy and spectroscopy, especially in relation to: quantum transport and single electron tunneling effects, electronic properties of semiconductor nanoparticles and composite materials, and high temperature superconductivity, ferromagnetic-superconductor hybrids

Laboratory Contact

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