



Universität
Basel

Research Project

COST-MP1303 Nanoscale Friction: Friction on the atomic scale across phase transitions

Third-party funded project

Project title COST-MP1303 Nanoscale Friction: Friction on the atomic scale across phase transitions

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Organisation / Research unit

Departement Physik / Nanomechanik (Meyer)

Department

Project start 01.01.2015

Probable end 31.12.2017

Status Completed

The aim is to explore the influence of photonic vs electronic friction in small nanometer-sized contacts. Friction and energy dissipation are explored by state-of-the-art force microscopy under ultrahigh vacuum conditions at variable temperatures. The influence of the order parameter in phase transitions, such as superconductive and charge density waves, is investigated in contact and non-contact mode. Dissipation via phononic degrees of freedom is explored by the coverage of metallic and graphene samples with adsorbates. Damping on semiconductors with different doping concentrations and quantum dot systems is studied to probe the influence of electronic effects. Molecular systems in the form of single molecules or small aggregates are prepared to explore anisotropy effects and to determine the range of relevant interactions.

Keywords Atomic friction, nanotribology, atomic stick-slip

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Add publication

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Specify cooperation partners