



Technische Universität
Berlin



Institute of Strength Physics and
Materials Science
Russian Academy of Sciences



German-Russian Workshop

Active control of friction by vibrations and ultrasonic actuators: Simulation methods and applications

Moscow National University of Science and Technology "MISIS" and
Skolkovo Institute of Science and Technology

September 6-8, 2012

Organizers

Prof. Dr. Valentin Popov, Prof. Dr. Sergey Psakhie and Prof. Dr. Evgeny Levashov

Location

The workshop will take place at the National University of Science and Technology "MISIS" in Moscow and at the Skolkovo Institute of Science and Technology in the Innovation area "Skolkovo" near Moscow.

Objectives

Vibrations of varying frequency and amplitude are used in many technological areas to control and reduce friction as well as to produce and to control directed motion. In particular, most types of actuators on the micro and nano scale are based on the interplay of friction and vibrations. The knowledge of the correct frictional law is an important prerequisite of correct understanding and simulation of such devices. Methods of simulation of dynamic tangential contacts and friction in the presence of oscillations as well as the formulation of advanced friction laws with applications on various scales from macro to nano will, therefore, be at the center of the Workshop.

Topics

- Active control of friction by oscillations (experiment and theory)
- Contact mechanics of rough surfaces (including adhesion)
- Simulation of dynamic tangential contacts
- Method of reduction of dimensionality
- Shakedown and creep in frictional joints in the presence of vibrations
- Micro- and nano-motors and actuators
- Tribocoatings

Meeting with representatives of industry

In the frame of the workshop, a meeting with representatives of big industrial companies of Russia will take place:

- Russian Railways
- S.P. Korolev Rocket and Space Corporation Energia
- Petroleum companies
- AVTODOR Russian highways
- Other companies of mechanical engineering

The meeting will take place on September 8, 2012 at the Skolkovo Institute of Science and Technology

Call for papers

If you are interested in participation, please submit an abstract in English not later than August 3, 2012 (preferably by e-mail).

Contact:

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