

Trilateral German-Ukrainian-Russian Workshop

Analysis and control of surface modification applied to machinery parts under severe plastic deformations

Technische Universität Berlin

October 13-14, 2015



Organizers

Prof. Dr. Valentin Popov, Dr. Iakov Lyashenko, and Prof. Dr. Sergey Psakhie

Objectives

Burnishing treatment is widely used method of surface modification. Through this process, the mechanical properties of the sample can be significantly improved via plastic deformation of its surface by a hard sliding indenter. Due to a wide range of industrial applications of the nanostructuring burnishing numerous scientists developed and improved this method during last decades. Various theoretical approaches, based on nonequilibrium thermodynamics, linear elasticity, molecular dynamics, phase transitions and other were developed by different research groups. The main purpose of the workshop is to share an experience of different scientific groups, and discuss promising directions of investigation of the surface modification useful for further industrial applications. The workshop will have an interdisciplinary character. Of interest are issues at the interfaces between structural dynamics, contact mechanics, material science, friction, wear, modeling and simulation. An important issue is the coupling of simulation methods of different scales.

Topics

- Materials science aspects of burnishing
- Nonequilibrium processes at burnishing
- Discrete elements and molecular dynamics
- Method of Dimensionality Reduction
- Coupling simulation methods of different scales
- System dynamics and tribology: needs of burnishing
- Further related topics

Call for papers

If you are interested in the participation, please submit an abstract in English not later than September 30, 2015 (by e-mail).

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