



International Workshop  
**Contact Mechanics and Friction**  
**Foundations and Applications**  
14.-17. October 2019

**Organizer:** Prof. Dr. Valentin L. Popov

**Venue:** The main building of TU Berlin, rooms H 1035 und H 1036 (Senate meeting rooms)

**Objectives**

In the last decades, contact mechanics and tribology have expanded to qualitatively new fields of applications, which are at the forefront of global development trends of technology and society, in particular micro- and nanotechnology as well as biology and medicine. At the same time, tribology developed experimental methods, theoretical concepts and numerical tools allowing effectively mastering the seemingly complicated physics and mechanics of interconnections. The goal of the workshop is to review the recently established concepts, tools and research activities and to outline the most important tasks for the future.

**Topics**

- Applications of FFT-based Boundary Element Method (BEM)
- FFT-based BEM beyond the half-space approximation
- BEM for adhesive contacts, for viscoelastic contacts, for layered and gradient media
- Method of Dimensionality Reduction (MDR) – applications for multi-body systems
- MDR – hybrid simulations coupled with BEM und Finite Element Simulations.
- Molecular dynamics and discrete element methods
- Understanding of the third body
- New approaches in simulation of adhesive wear
- Recent advances in simulation and understanding of the rubber friction
- Elastohydrodynamic lubrication
- Fretting, fatigue, structural damping
- Active bio contact mechanics
- Contact, friction and adhesion at the nano scale
- Contact, friction and adhesion in tectonics
- Generalized frictional laws: Friction beyond Amonton's law, internal variables
- Active control of friction by vibrations and external fields
- Historical aspects of contact mechanics and friction

**Call for papers**

If you are interested in participation, please submit an abstract in English not later than July 15, 2019 (preferably by e-mail).

**Contact**

Prof. Dr. Valentin Popov  
Technische Universität Berlin  
Institute of Mechanics, Sekr. C8-4  
Str. des 17. Juni 135  
D-10623 Berlin  
GERMANY

Tel: +49 (30) 314 21 480  
Fax.: +49 (30) 314 72 575  
E-mail: v.popov@tu-berlin.de

Dr.-Ing. Jasminka Starcevic  
Technische Universität Berlin  
Institute of Mechanics, Sekr. C8-4  
Str. des 17. Juni 135  
D-10623 Berlin  
GERMANY

Tel: +49 (30) 314 21 493  
Fax.: +49 (30) 314 72 575  
E-mail: j.starcevic@tu-berlin.de