



## Dresden 2014 – scientific program

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### CPP: Fachverband Chemische Physik und Polymerphysik

#### CPP 16: Interfaces and Thin Films II

##### CPP 16.4: Talk

**Tuesday, April 1, 2014, 10:15–10:30, ZEU 114**

selection status for this contribution:

**Investigation of stretching and force-induced desorption of polymer chain anchored to repulsive and inert surfaces** — •ZORYANA USATENKO — Cracow University of Technology, 30-084 Cracow, Poland

The investigation of stretching and force-induced desorption of ideal and real polymer chain with excluded volume interactions in a good solvent anchored to repulsive and inert surface are performed. The calculations of the stretching and desorption force applied to free end of real polymer chain anchored by other end to repulsive and inert surface are performed up to one-loop order of the massive field theory approach in fixed space dimensions  $d=3$ . The obtained results are in good agreement with previous theoretical results obtained for the stretching force in "Z" ensemble calculated for the case of ideal chain anchored to the surface and have important practical applications for understanding of the elastic properties of the individual macromolecules, networks, gels and brush layers. Besides, the obtained in the framework of the massive field theory approach results are in good agreement with results of density functional theory approach for the region of small applied forces.