

Friction of Self-Assembled, Polyaromatic Monolayers

M. Ruths, Department of Chemistry, University of Massachusetts Lowell, MA 01854

- Fundamental aspects of **friction** and its dependence on the strength of **adhesion**
- Aromatic and **polyaromatic** compounds: **natural lubricants in mineral oils and fuel.**

⇒ **Non-linear F vs. L in adhesive contacts** can be investigated by taking the size of the **contact area** into account.

A contact mechanics model (SJF) for a compliant elastic film and a spherical probe can be applied.

- Higher packing density => lower friction in these systems.
- At high loads, transitions occur in the self-assembled monolayers, causing a different friction response.

