



Polymer- & Soft-Matter-Seminar

Tuesday,
11th September
2012

at: **10.00 am**

VDP 1.27
Seminarraum
Chemie,
Von-Danckel-
mann-Platz 4,
06120 Halle

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"New Science on the Back of a Scotch Tape"

Polymers with long alkyl side chains are used as release coatings in pressure sensitive adhesives. The alkyl side chains crystallize and form an all-trans ordered structure at the air interface and resulting in low surface and adhesion energies, and a good release liner for pressure sensitive adhesives. Although these side-chain comb polymers have been used in the applications for decades, it is only recently that we have discovered that these materials exhibit surface freezing, where surface remains ordered above the bulk melting temperature (T_m). We have used combinations of surface tension, x-ray reflectivity, x-ray diffraction, x-ray photon correlation, and surface-sensitive sum-frequency generation spectroscopy measurements to study the structure and dynamics of this unique surface phase.

The range of surface freezing temperature depends on the length of the alkyl side chain. For blends containing two different side chain lengths the long alkyl side chains segregate at the air interface. The consequences of this surface ordering on wetting dynamics will also be discussed.