Physikalisches Kolloquium

Universität Konstanz

Di 30.05.17
15:15 Uhr
14:45 Uhr, Kaffee/Tee
R 513

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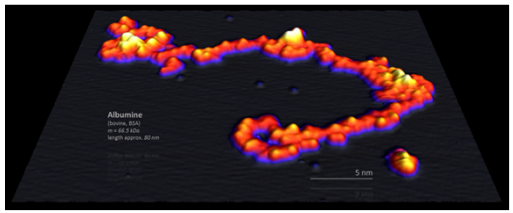
High Resolution Imaging of Individual Macromolecules and their Assemblies via Preparative Mass Spectrometry



Scanning tunneling microscopy image of a partially unfolded protein (bovine serum albumin) with submolecular features visible on the length scale of the single amino acid.

Preparative mass spectrometry with soft ionization sources like electrospray ionization has the capacity to serve as a link between the worlds of large, biological molecules and surface science, enabling atomic scale chemical control of molecular deposition in ultrahigh vacuum.
In this lecture I will introduce the experiment combination of electrospray ion beam deposition with scanning tunneling microscopy. Ranging from small peptides over unfolded and folded proteins to protein complexes, I demonstrate the capacity of the preparative mass spectrometry approach to fabricate nanostructures by sequence controlled folding and provide samples for single molecule imaging. As an outlook I show how this approach may contribute to the current questions in structural biology.