
Scanning Probe microscopies for Soft matter and nanoparticles

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Abstract

In this talk I will provide an overview of Scanning Probe Microscopies when they are devoted to the study of organic materials, spanning from organic monolayers, where mainly Scanning Tunneling Microscopies (STM) are used, organic films where mainly Atomic Force Microscopies (AFM) are used to biological materials where a new mode of AFM can be used, the so-called "peak force mode". I will show in particular that AFM constitutes a useful tool for topography characterization, underlining as well a number of possible artifacts, but also that spectroscopies can be associated with the various modes of Scanning Probe Microscopies. I will indeed show that the density of state of a material can be locally probed, but also the Hamaker constant and even the Young modulus or the hydrophobic/hydrophilic character of an interface.

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