High resolution imaging of solid-liquid interfaces:

From single adsorbed ions to single cell nanomechanics

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This contribution introduces some of the main challenges faced by force microscopy to image at subnanometer-scale spatial resolution solid-liquid interfaces. The presentation is divided in three sections. The first section is devoted to introduce the capabilities of 3D-AFM to image with atomic resolution the **three-dimensional** interfacial structure of surfaces immersed in aqueous solutions. Those images enable the identification of ions on solid-liquid interfaces. The second section, will illustrate how bimodal force microscopy provides **high** resolution/high **speed nanomechanical** maps (1 frame/s) of proteins and polymer surfaces. The third section discusses some fundamental issues involving the imaging and nanomechanical characterization of **live cells** with the AFM.

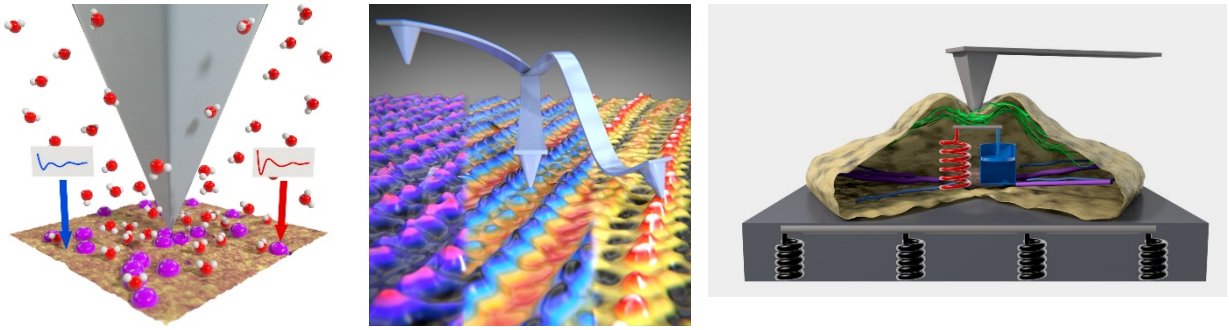

Figure. The left panel illustrates the identification of single ions on surfaces. The middle panel illustrates bimodal AFM mapping. The right panel shows a cell as a finite and linear viscoelastic system.

References

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