

# Atomic Force Microscopy Core Facility

**Atomic Force Microscopy (AFM)** is a key platform for studying the morphological and nano-mechanical properties of living biological systems. A wide range of samples, from tissues to single molecules, can be examined. AFM is an attractive tool for studying the dynamics of cellular endocytosis of nano-vectors, and the systemic response to biological processes. An area of major interest is to determine the stiffness of a sample (Young's Modulus). The elasticity of the sample surface changes as a function of growth, differentiation, disease or treatment. In addition, non-cellular structures can also be analyzed.

The Core uses a **NanoWizard V** atomic force microscope (JPK from Bruker-Nano) that requires minimal sample preparation. The *NanoWizard V* is integrated to a Nikon TE2000 inverted optical microscope to simultaneously acquire bright-field and fluorescence images.

## The services of the Atomic Force Microscopy Core include:

- Topographical imaging of samples in air or liquid environments
- High-resolution imaging at the nano-metric scale
- Time-lapse experiments that show real-time changes in sample morphology
- Nano-probing of samples to quantify interaction forces
- Studies of local micromechanical properties (elasticity, stiffness, adhesion, roughness)
- Data analysis for assessing homogeneity, size distribution, peak force quantitative imaging, spectroscopy mapping and 3D imaging of a sample

*(Services provided to internal, external and public sector partners)*

## FOR FURTHER INFORMATION CONTACT :

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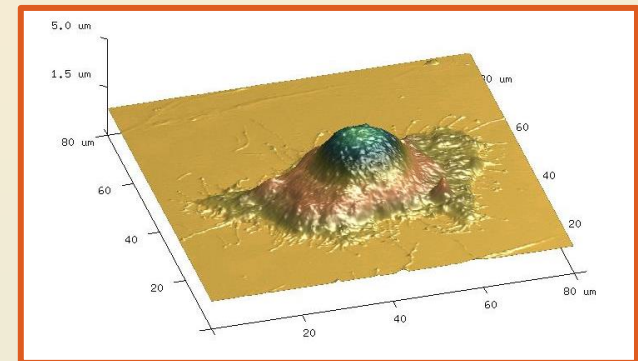
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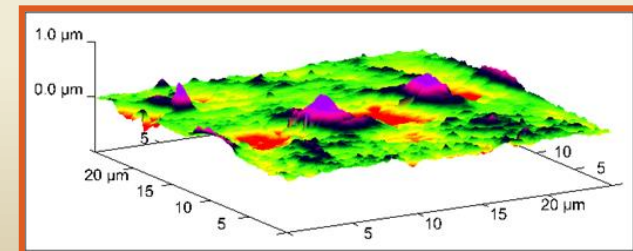
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*NanoWizard V scanner (JPK , Bruker)*



*3D AFM image of a HeLa cell*



*3D AFM image of liposomes during internalization*