Next-Level Nanotechnology Tools swiss quality

Flex-Bio

The most flexible AFM for life science research

nanosurf

Versatile research AFM for life science

For success in life science research, scientists depend on professional tools that can readily provide the information needed, regardless of the tasks at hand. By combining key technologies and components, Nanosurf has made the Flex-Bio system one of the most versatile and flexible AFM systems ever, allowing a large variety of biological and life science applications to be handled with ease.

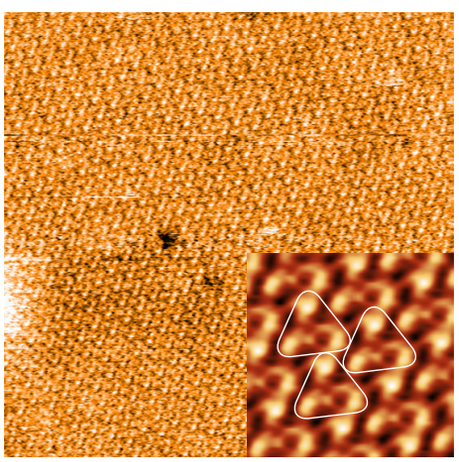
Key features & benefits

Compatible with inverted microscopes

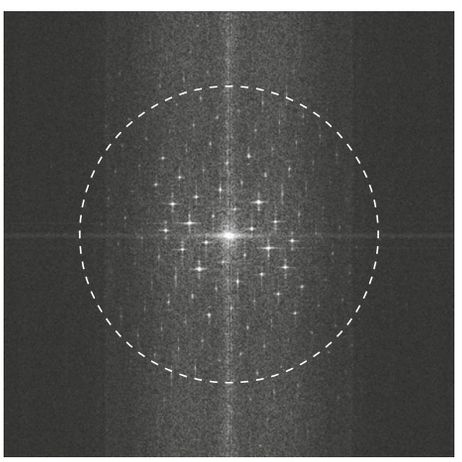
Flat and linear scanning thanks to flexure-based scanner technology

True flexibility with exchangeable cantilever holders for specialized tasks

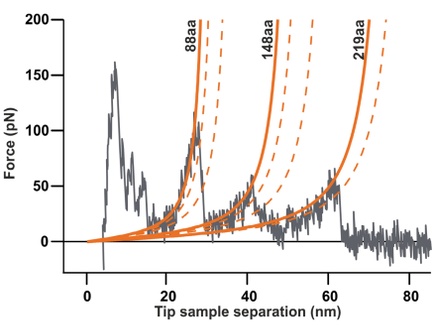
More measurement versatility with the FlexAFM's scanning capabilities in liquid and its additional measurement modes



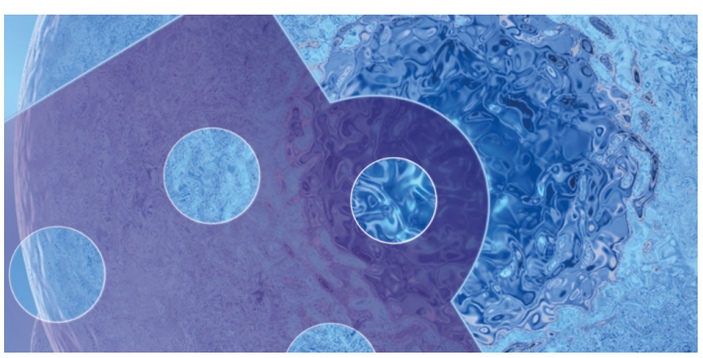
Unfiltered overview image with linear background correction. Scan size: 140 nm. Inset: Correlation average, with 3 trimers highlighted in white.



Power spectrum of the crystal latice, showing a lateral resolution well beyond 1 nm (dashed white circle).

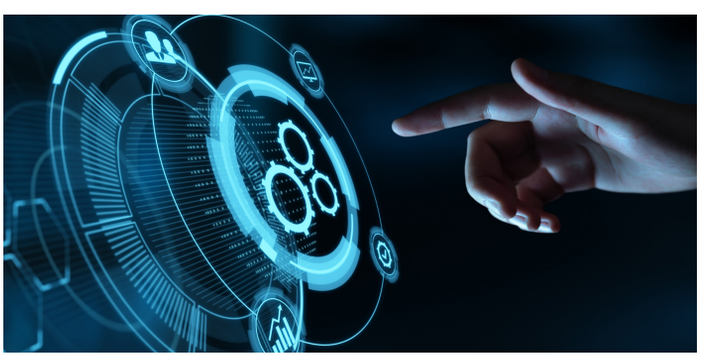


Single molecule force spectroscopy of bacteriorhodopsin. The force–distance curve reports the controlled C-terminal unfolding of a single membrane protein from its native environment, the purple membrane from Halobacterium salinarium. Solid and dashed orange lines represent the WLC curves corresponding to the major and minor unfolding peaks observed upon unfolding BR, respectively.



FluidFM®add-on: nanomanipulation and single-cell biology

FluidFM® probe microscope (FPM) combines the force sensitivity and positional accuracy of the Nanosurf FlexAFM with FluidFM® technology by Cytosurge to allow a whole range of exciting applications in single-cell biology and nanoscience.

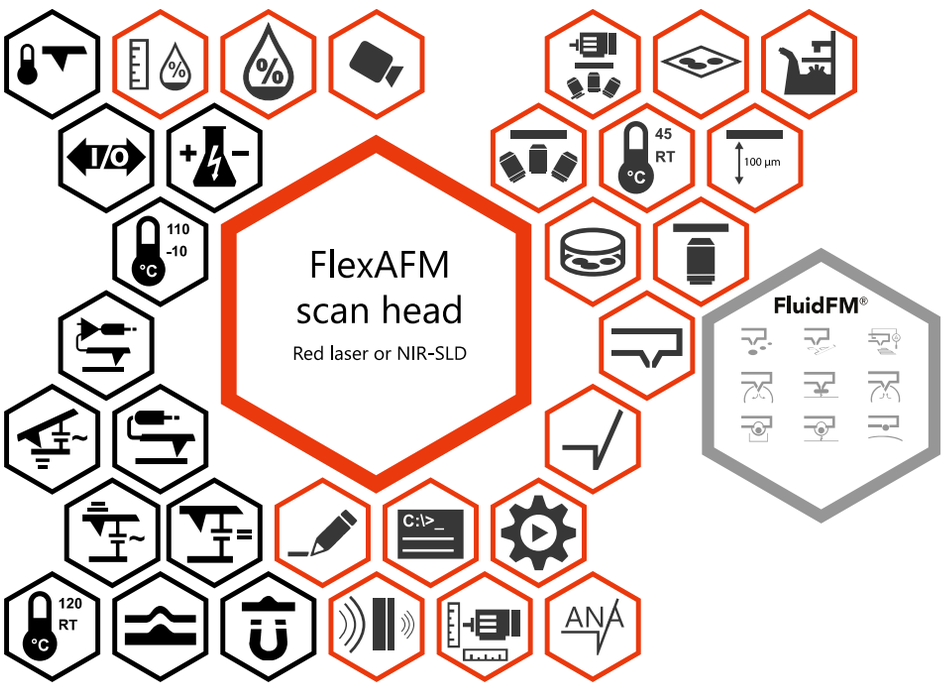


ANA add-on: Automated nanomechanical data acquisition and analysis

ANA - Automated Nanomechnical Analysis - is designed to investigate the nanomechanical properties of materials such as cells, tissues, scaffolds, hydrogels, and polymers on multiple or large samples in an easy-to-use fashion.

Functionality overview

The Flex-Bio system on can be modified and extended for different experimental requirements. Stages for mounting the AFM on an inverted microscope or for stand-alone operation are available, as well as functional stages and accessories that provide you with the instrument you need.



By adding different accessories, the FlexAFM scan head can be enhanced to fulfil your requirements. The modular concept allows you to quickly and easily change your system's setup to perform virtually any kind of AFM measurement.

FlexAFM NIR-SLD scan head specifications

Scan head type	110-µm
Laser class (wavelength)	Class 1M laser product (850 nm)
Maximum Petri dish height (fluid level)	9 mm (6 mm)
Manual approach range	3 mm
Motorized approach range	1.1 mm
Maximum scan range	100 µm(1)
Maximum Z-range	10 µm(2)
XY-linearity mean error	< 0.1%
XY-flatness at maximum scan range	typ. 5 nm
Z-measurement noise level (RMS, dynamic mode in air)	typ. 35 pm / max. 50 pm
Scan head dimensions	143 × 158 × 53 mm
Scan head weight	1.25 kg

(1) Manufacturing tolerances ±5%

(2) Manufacturing tolerances ±10%

(3) Maximum theoretical resolution; calculated by dividing the maximum range by 24 bits

- Sample heating
- Electrochemistry
- Signal I/O
- Scanning thermal microscopy
- Environmental control
- Top & side-view camera
- Relative humidity sensor
- Inverted microscope stage
- Motorized inverted microscope stage
- Petri dish
- Petri dish heating
- 100 µm Z-stage
- Digital inverted microscope
- Coverslip holder
- Advanced optics
- Cantilever holder FluidFM®
  - Spotting
  - Nanolithography
  - SICM
    - Single cell injection
  - Single bacteria adhesion
    - Single cell extraction
    - Single cell isolation
    - Single cell adhesion
  - Colloidal spectroscopy
- Advanced spectroscopy
- ANA add-on
- Automation
- Motorized translation stage
- Scripting interface
- Acoustic enclosure
- Variable magnetic field sample holder
- Advanced lithography
- Contour following mode
- Heater/cooler
- Conductive AFM
- Advanced conductive AFM
- PFM mode
- EFM mode
- KPFM mode

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