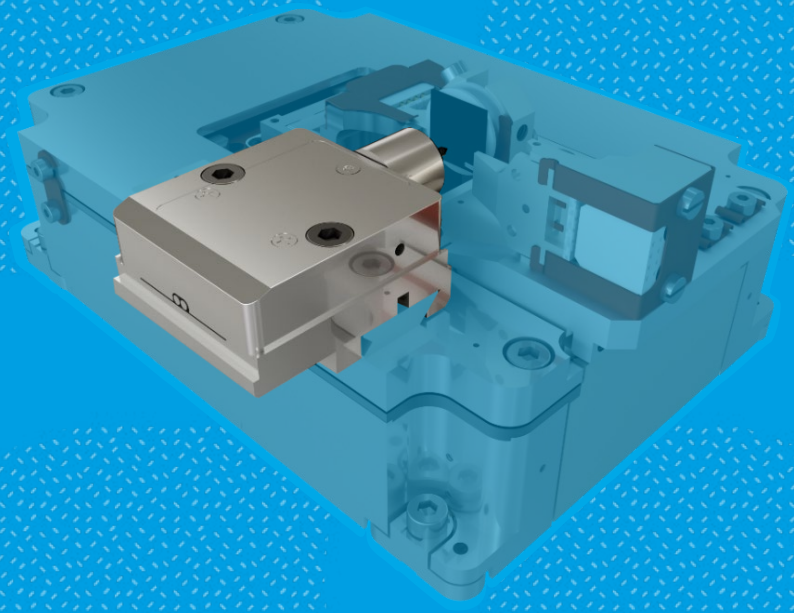
NenoVision

Nanoindenter accessory for Atomic Force Microscope LiteScope™

Nanoindenter



The Alemnis nanoindenter module represents an optional accessory for atomic force microscope LiteScope, designed for integration into scanning electron microscopes.

The resulting combination of three complementary techniques enables micromechanical experiments to be performed while observing the specimen with superb SEM magnification and analysing the indented specimen with sub-nanometer resolution using LiteScope. This unique solution is designed for maximum versatility and enables a wide range of novel and complex applications.

Product values

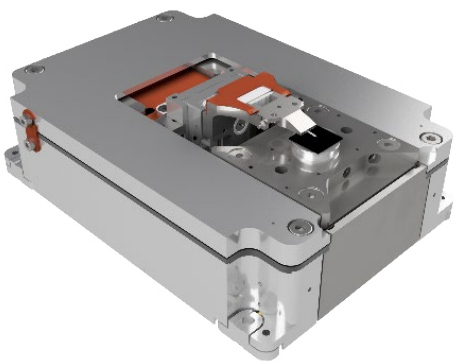
- Quantitative analysis of mechanical properties (hardness, Young's modulus, activation volume).
- Precise analysis of nanoindent topography (pre-indented sample roughness.
- Utilization of SEM and AFM analysis for optimal place selection for nanoindentation.

Product values

- material science
- semiconductors
- metallurgy (multiphase metals)
- Surface engineering (coatings and thin films)
- Biomechanics, MEMS/NEMS

Atomic Force Microscope LiteScope

This microscope can be integrated into a Scanning Electron Microscope (SEM), which significantly extends measuring capabilities, especially correlative imaging – the unique technique Correlative Probe and Electron Microscopy™ (CPEM). CPEM makes it possible to acquire both AFM and SEM images of the same area at the same time and in the same coordinate system.



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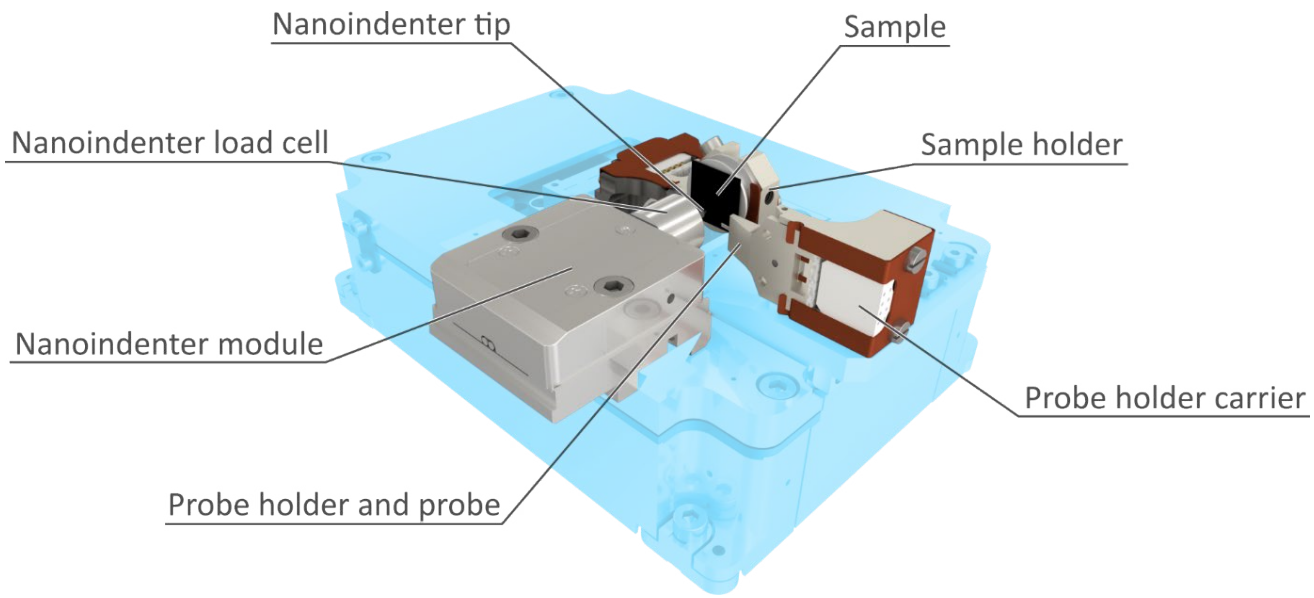
Key features	Benefits
Comprehensive analysis of multiple techniques	Understanding of mechanical properties at nanoscale in relation to sample composition and surface topography
Nanoindent characterization	Time efficient and high-resolution analysis
Real-time SEM observation	Optimal ROI selection, imaging and recording of nanoindentation process
Specific nanoindentation tips	Quantitative analysis of mechanical properties
Modular system	Simple switch between configurations of AFM and nanoindentation

Product description

Nanoindenter in combination with LiteScope requires the sample and probe to be reversed: sample holder carrier is mounted on the z axis micromotor, probe holder carrier is placed on the scanner. Nanoindenter module is mounted opposite of the sample holder.



Technical specification:

Nanoindenter parameters

- Recommended maximum indentation force 16 mN
- Force noise floor 4 μN
- Displacement range 20 μm
- Displacement resolution <1 nm

Sample parameters

- Maximum size 10x10x7 mm
- Maximum weight 5 g (except STUB sample holder)
- Minimum material grain size 1 um² (due to positioner step length)

NenoVision s.r.o.
Purkyňova 649/127
612 00 Brno, Czech Republic

info@nenovision.com
+420 605 287 732

www.nenovision.com