High Precision Stage
for ZEISS FE-SEMs and SEM/AFM hybrid systems
Position your sample with submicron precision

High precision stage: Find and refind your ROI with submicron precision

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Position your sample with submicron precision

Positioning of your sample is crutial for a fluent and effective workflow. Especially, when samples should be investigated by multiple methods or in automated processes.

By the integrated optical references, positioning with a precision of better than 500 nm is possible with standard ZEISS sample stages.

Find and refind procedures can be carried out with much higher reliability.
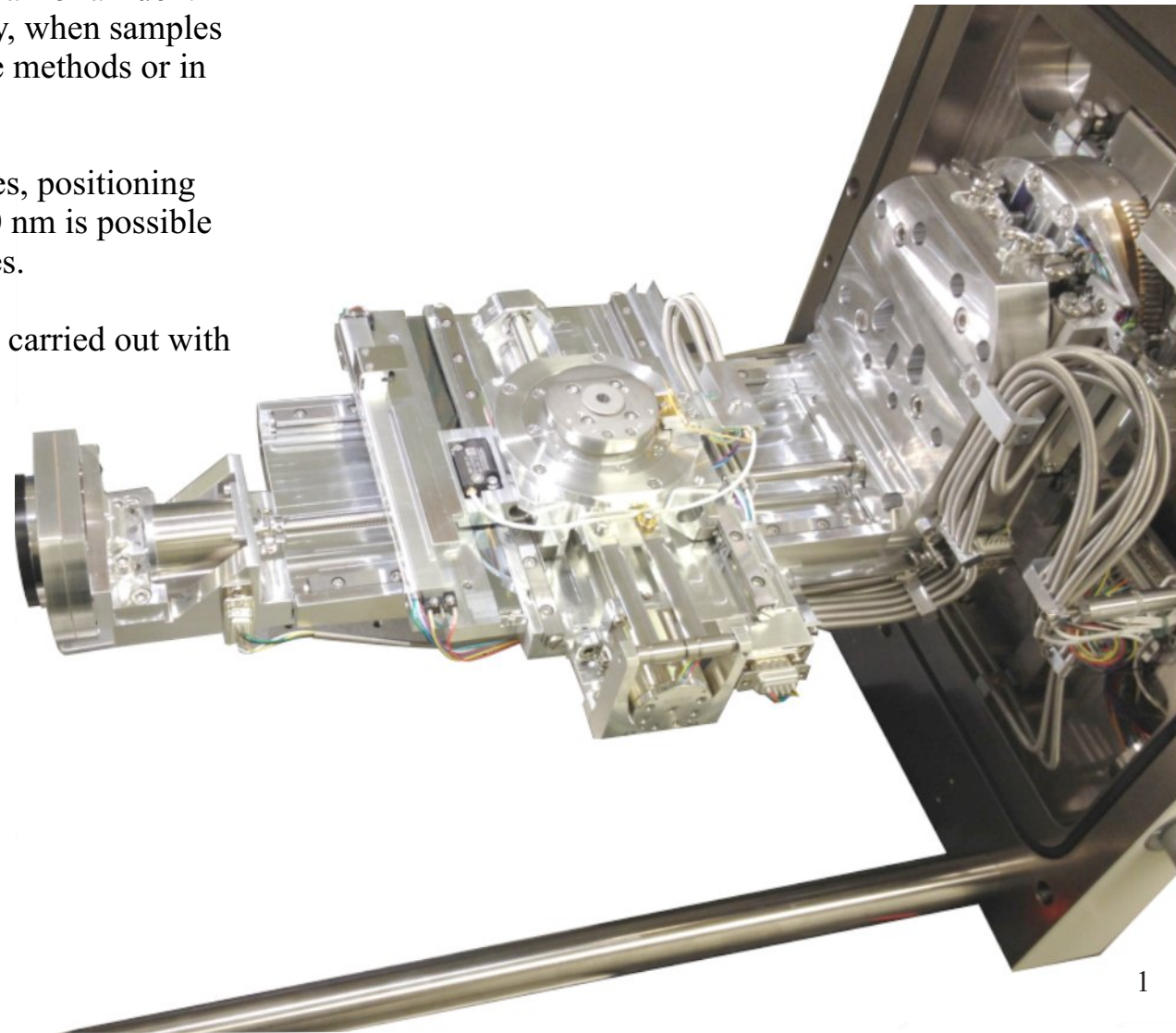
High precision stage: Simpler. More Intelligent. More Integrated.

Simple handling

Operate the high precision stage the same way as the standard ZEISS sample stage of your SEM and be supprized by its precision and liability.
All comands entered via Smart SEM or the joystic will be carried out with high precision accuracy.

Intelligent Solution

Carry out automated, multidetector analysis of your sample. Increase speed, resolution and decrease data volume by being able to select a small field of view in automated processes. Navigate your sample more precise over large distances.

Fully integrated system

Hardware and electronics are fully integrated into the standard Zeiss equipment. No additional feedthroughs are needed. When the eletronics are disconnected a fallback on standard Zeiss operation is possible.

SEMILAB
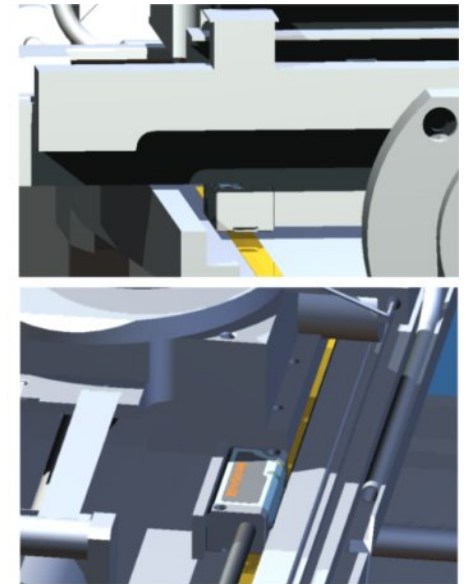
Your Insight into the Technology Behind It

High precision stage

The accuracy of a mechanical positioning system is depending of different facts. First its mechanical stability, this means how well it is designed and built. Second, the resolution and reliability of the motion generating system, its motors an gearings. And 3rd its possibility to readout its own momentary position.

The standard Zeiss SEM sample stage fulfills already the first 2 facts. DME has added the ability of high precision position readout to the X and Y axis of the sample stage. This is realized by optical reference systems.

An electronic box interprets the comands send by the SEM and translates them to enable the stage to position itself at the user determined position or follow joystick movements. The movement of the stage is in time and without delay.

Specifications

Effective precision: 300 nm (bearing precision)
Repeatability large moves: 500 nm (bearing precision)
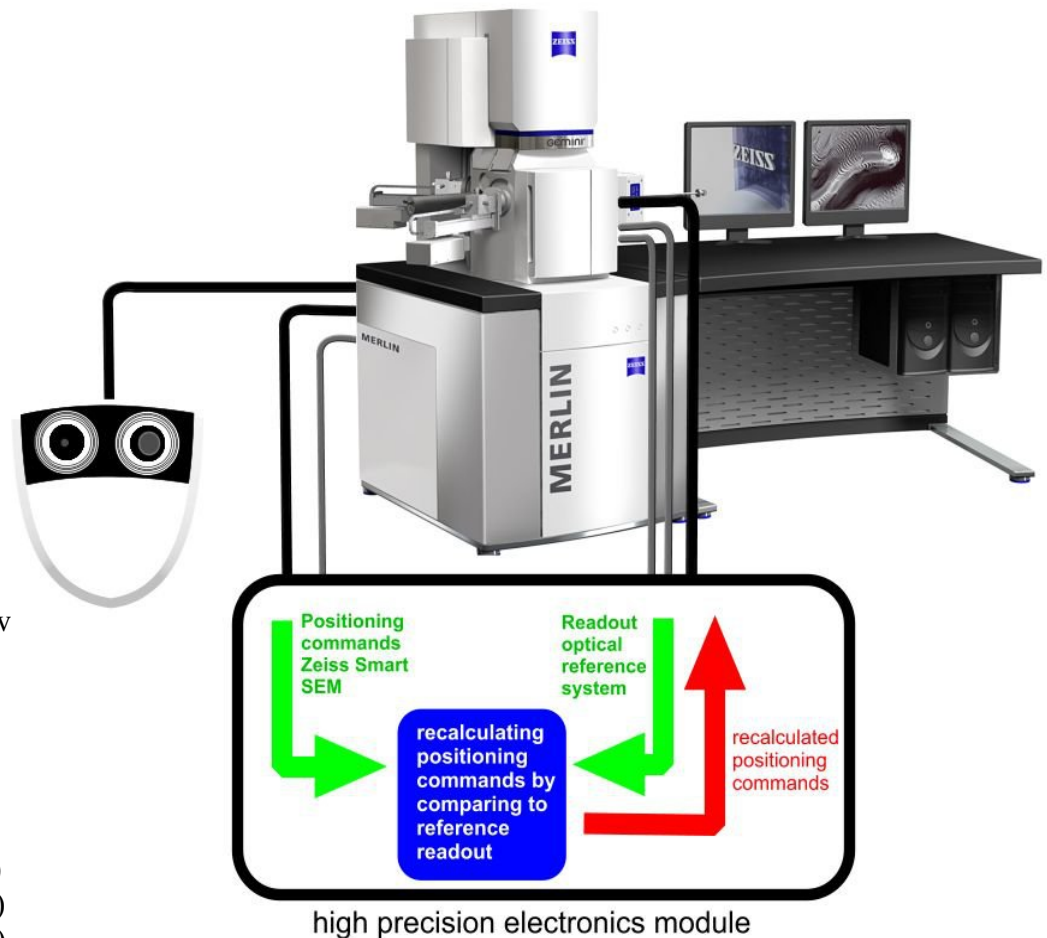Repeatability short moves: 15 nm (bearing precision)

Illustration of the integration of the electronics modules: Green arrows indicate read in functions and red arrows output functions of the module.

High precision stage: Your Flexible Choice of Components

Correlative Measurement Software

The Software DME Correlative Measurements provides functionality for collecting microscopic information from different measurement sources, like optical microscope, SEM and AFM, and correlating this information with a particular location on a sample.

This functionality is divided into mainly three parts.
1. The software can synchronize the coordinate system of a sample stage with a coordinate system defined by the sample itself. The software takes over the control of the sample stage and allows direct addressing individual positions on the sample.

2. The software combines the acquired images with certain locations on the sample. Multiple images from different information sources are stored together with their position information. The acquired images are graphically shown according to their physical sizes and position on the sample.

3. The software can run automatic processing for image acquisition and reporting, based on the position information on the sample.
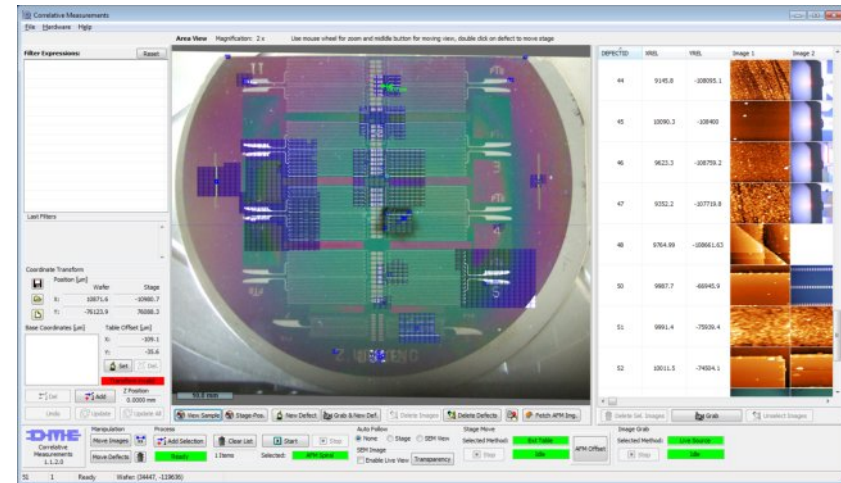
Imported image of a digital cameta with light microscope images
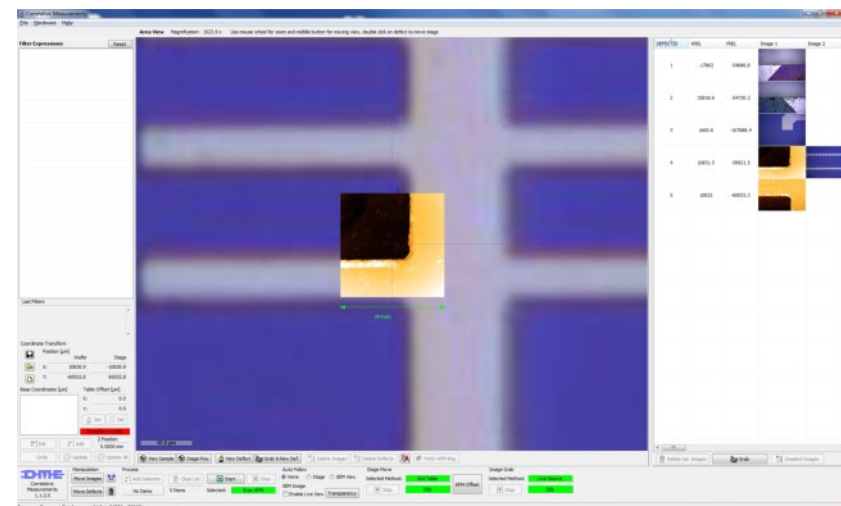
Zoom in: light microscope image with afm image

SEMILAB

4

High precision stage: A high quality product from DME

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