Automated image acquisition
and unique workflows

ZEISS Atlas 5

Easy-to-use, workflow-oriented GUI (graphical user interface) for automated imaging.

Atlas 5 makes your life easier: Create comprehensive multi-scale, multi-modal images with a sample-centric correlative environment. Atlas 5 is the powerful yet intuitive hardware and software package that extends the capacity of your ZEISS scanning electron microscopes (SEM) and focused ion beam-SEMs (FIB-SEM).
Use its efficient navigation and correlation of images from any source. Take full advantage of high throughput and automate large area imaging.
Unique workflows help you to gain a deeper understanding of your sample.
Its modular structure lets you tailor Atlas 5 to your everyday needs in materials or life sciences research. Extend your possibilities even further with modules e.g. for nanopatterning or array tomography.

Upgrade your ZEISS microscope

Upgrade your ZEISS microscope with the Atlas 5 option and benefit from automatic image acquisition, high throughput and a correlative workspace.

As technical requirements may apply on some systems, please contact us to learn more about Atlas 5 and how your process will benefit from an upgrade: microscopy@zeiss.com

Highlights

Images in multiple dimensions
Atlas 5 is an efficient way to analyze and correlate images from multiple sources – a powerful data hub that works with images from SEM, FIB-SEM, X-ray microscopes, light microscopes (LMs) and any optical images, even from your digital camera

Unique workflow
Design a workflow tailored precisely to the complexity of your experiment, no matter whether it's a simple one-step task or a compound experiment

Fast and easy image acquisition
Capitalize on Atlas 5's high throughput: automatic acquisition leaves you free to focus on results

Expand your possibilities
At the microscope or your desk, you have the tools you need to get better results in less operator time. Automated stitching tools let you pull tile-based acquisitions into seamless single images. You have complete control of the results and benefit from automatic corrections
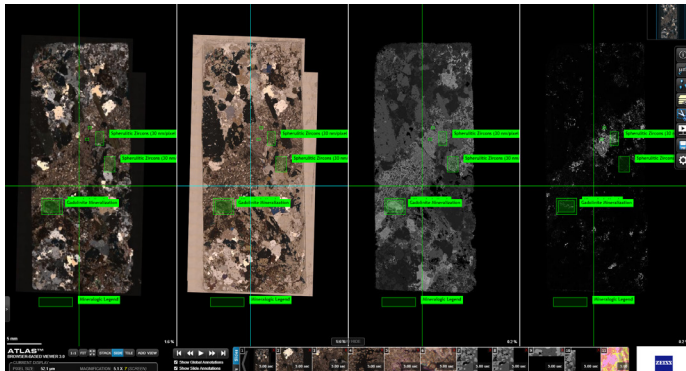
ZEISS

Seeing beyond

ZEISS Atlas 5
Simpler. More intelligent. More integrated.
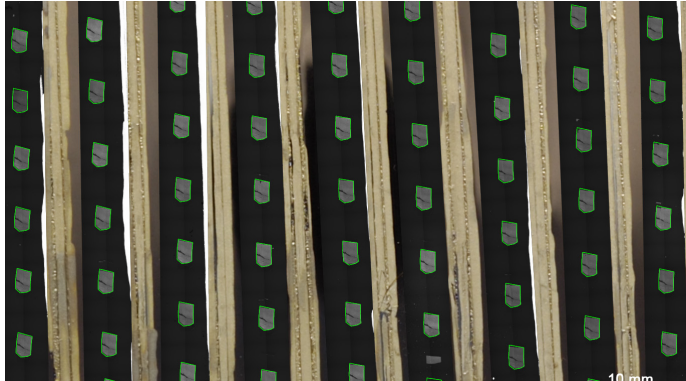
Identify serial sections quickly and perform an easy setup for automated array tomography applications.

Polished petrographic thin section investigated with multiple modalities e.g. LM and a ZEISS FE-SEM (field emission). Freely explore the dataset at its best resolution with full pan and zoom functionality.

3D reconstruction of neurons from ZEISS Atlas 5 dataset, mouse brain, ultra-thin sections on wafer.

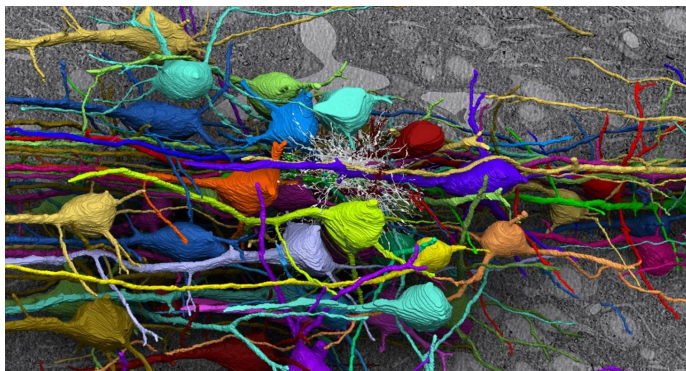### Array Tomography Module - the fast and efficient solution for imaging your serial sections

The Array Tomography Module lets you set up, acquire and export electron microscopical image stacks of serial sections quickly and efficiently. This software module is a productive tool for automated imaging of biological serial sections to enable 3D visualization of large volumes. Work with light microscope data for correlative workflows. Import datasets of light optical images acquired with ZEISS ZEN Correlative Array Tomography, that lets you acquire LM images of serial sections.

Enhanced Browser-Based Viewer Export Module

Being able to see all correlative data of your dataset at a glance gives you the advantage of simultaneous visualization of all modalities. This Browser-Based Export Module lets you exploit the correlative approach at its best, especially as you start your final analysis and report. Use it to present and share your results with research fellows or students. It's ideal for measurements, data export and creating annotated slide shows— as well as for training and education.

### 3D Tomography Module - maximum throughput for your FIB-SEM nanotomography applications

The 3D Tomography Module allows you to analyze sample volume from thousands to millions of cubic micrometers with nanometer-scale resolution in all three dimensions.
Drift correction, auto-stigmatization, auto-focus and dynamic 3D tracking algorithms give you fast and reliable automation.
Adaptive 3D tracking results in homogeneous slice thickness of a nanotomogram throughout the entire acquisition process, yielding optimized results.

ZEISS

Seeing beyond

ZEISS Atlas 5
Get better results faster
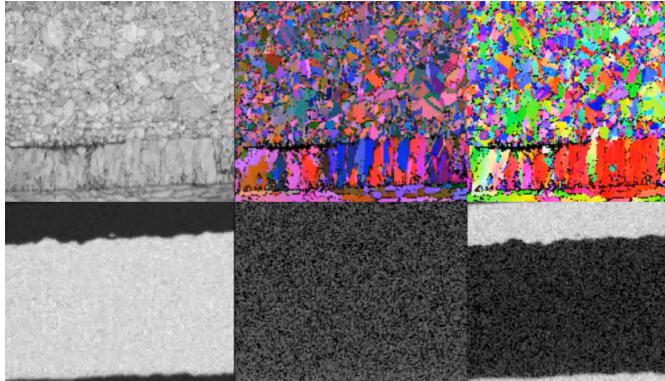
3D Tomography & Analytics of a multi-layered Metal System Canadian Coin, typical FIB-SEM workflow combining milling.

ZEISS Atlas 5 NPVE Advanced, A 1 um × 1 um square of pillars has been formed from silicon oxide using electron beam deposition.

Analytic Module: add comprehensive elemental and crystallographic information in 3D

3D FIB-SEM experiments let you investigate the internal structure of samples after slicing and imaging the sample's surface on a nano-scale. You can add information about elemental composition or crystallography to your experiment by using EDS (energy dispersive x-ray spectroscopy) or EBSD (electron backscatter diffraction) in 3D, to your high-resolution 3D tomogram.
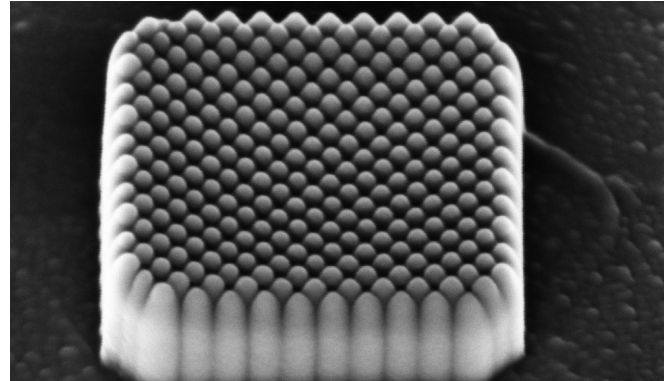
Advanced Nano-Patterning & Visualization Engine (NPVE Advanced) Module

As an add-on to your ZEISS FIB-SEM, the NPVE Advanced Module enables rapid prototyping of structures from nanometers to millimeters in size. The module provides not only precise simultaneous control of your beam(s) for patterning, but also patterning parameters with real-time visualization of the patterning operation from the perspective of each beam. Advanced Operation Recipes make it simple to control all patterning parameters and sequences for each shape, giving you complete control of your beam(s).

ZEISS Atlas 5: Modular software structure

	SEM	FIB-SEM	Offline
Atlas 5	○	○	○
Array Tomography	○	○	○
Enhanced Browser-based Viewer Export	○	○	○
3D Tomography	X	○	○
NPVE Advanced	X	○	○
Analytics	*	**	X

○ option
X not configurable
*   available for FE-SEMs
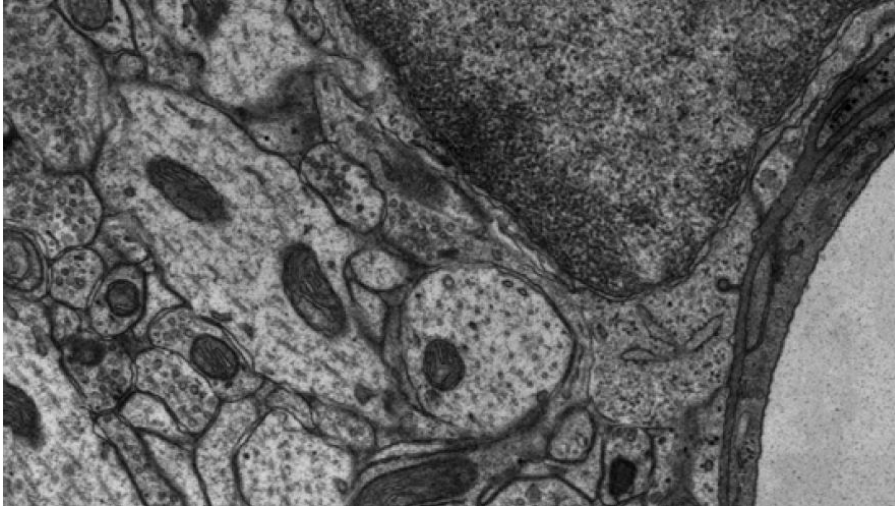** available for Crossbeam

Use Analytics Module on SEMs

Adopt the Atlas 5' Analytics Module on SEMSs to integrate 2D EDS mappings into your workflow, select regions of interest (ROI) for 2D EDS mappings and automatically acquire multiple selected ROIs.

ZEISS

Seeing beyond

ZEISS Atlas 5
Expand your possibilities

Chemically-fixed and osmium-stained ultra-thin section of mouse brain, investigated in transmission mode with the STEM Detector.

Availability

- Crossbeam series*
- GeminiSEM series*
- MERLIN series*
- Sigma series*
- EVO series*
- AURIGA series*
- ULTRA series*
- SUPRA series*
- NEON series*

Upgrade feasibility must be checked in any case.

Automated STEM imaging

With Atlas 5 you are now able to accelerate your STEM detection. The STEM holder and software are perfectly aligned with each other.

Workflow

- Prepare your sample as you normally do for TEM grids
- Fix your TEM grids in the multiple STEM grid holder
- Mount the STEM grid holder into the SEM
- Set up your STEM experiment and start
- Locate the single TEM grids automatically, then image them at different resolutions as defined

microscopy@zeiss.com
www.zeiss.com/microscopy