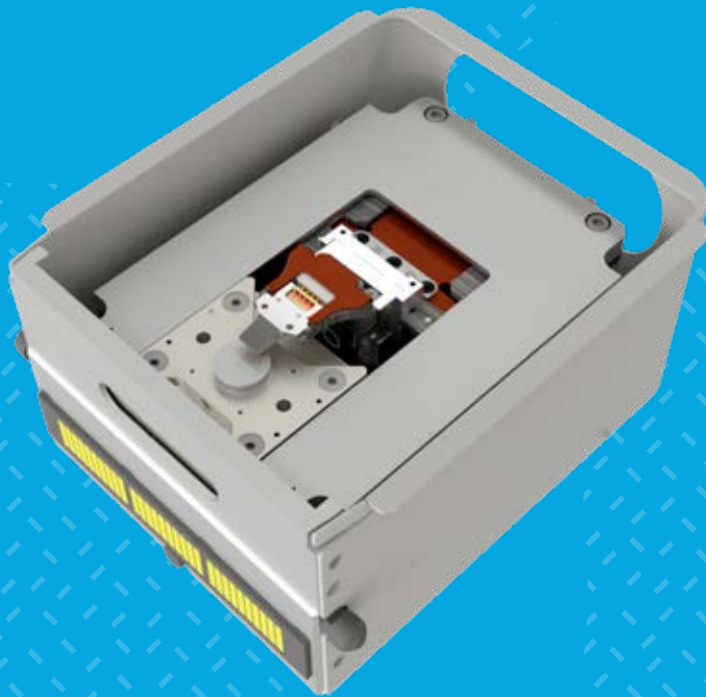




NenoVision



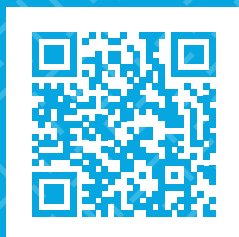
LiteScope Phenom

The versatile Phenom desktop SEM
enhanced with in-situ AFM

Contact us!

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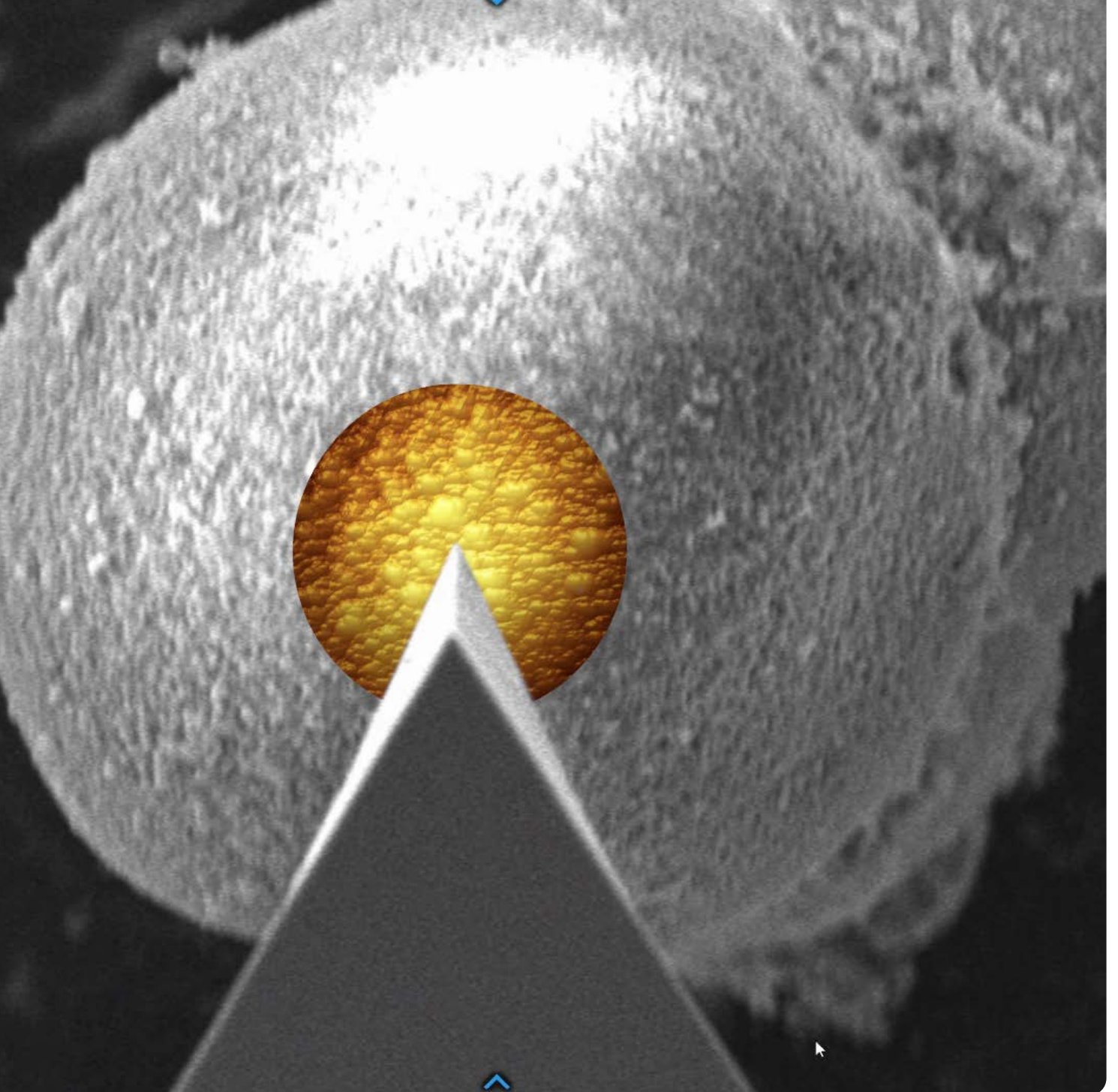




LiteScope Phenom combines the proven Thermo Scientific Phenom XL G3 Desktop SEM with the in-situ correlative power of NenoVision LiteScope AFM-in-SEM. The result is a practical all-in-one solution for rapid materials imaging and analysis with true 3D surface information and local material property mapping. Without moving the sample between instruments. It brings correlative AFM-in-SEM characterization to an accessible desktop platform, without the cost and footprint of a separate high-end SEM and a standalone AFM.

Designed for quality control, failure analysis and advanced materials research, LiteScope Phenom adds true 3D nanoscale surface insight to the fast and intuitive Phenom XL workflows.

It is a compact correlative microscopy solution for users who want faster decisions, richer data and less sample handling.



A large chamber in a compact SEM with true 3D correlative insight

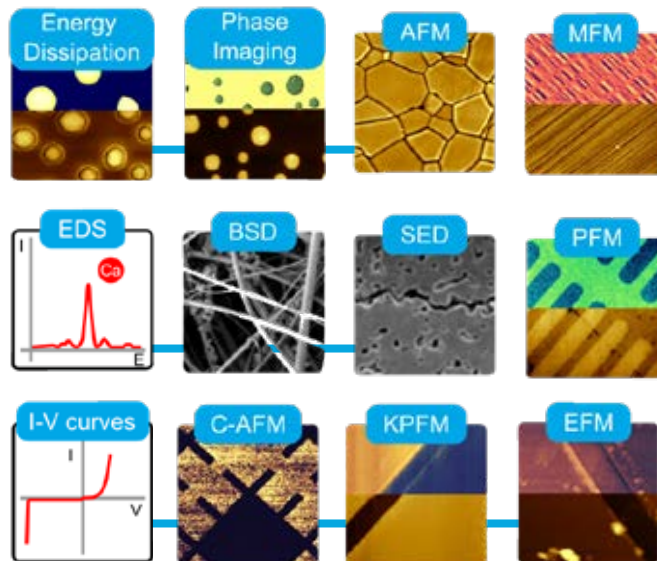
The Thermo Scientific Phenom XL G3 Desktop SEM sets the stage for faster and more efficient quality control and failure analysis. Its larger stage accommodates samples up to 100 mm × 100 mm, while automation for routine analytical tasks delivers accurate, reproducible results with an average time to image of 60 seconds. LiteScope AFM-in-SEM extends this workflow with in-situ AFM at the same location, so complementary AFM and SEM datasets are correlated without moving the sample.

- Large sample stage up to 100 mm × 100 mm
- Average time to SEM image: 60 seconds
- In-situ AFM inside the SEM chamber
- Correlative AFM + SEM in one workflow

Why LiteScope Phenom?

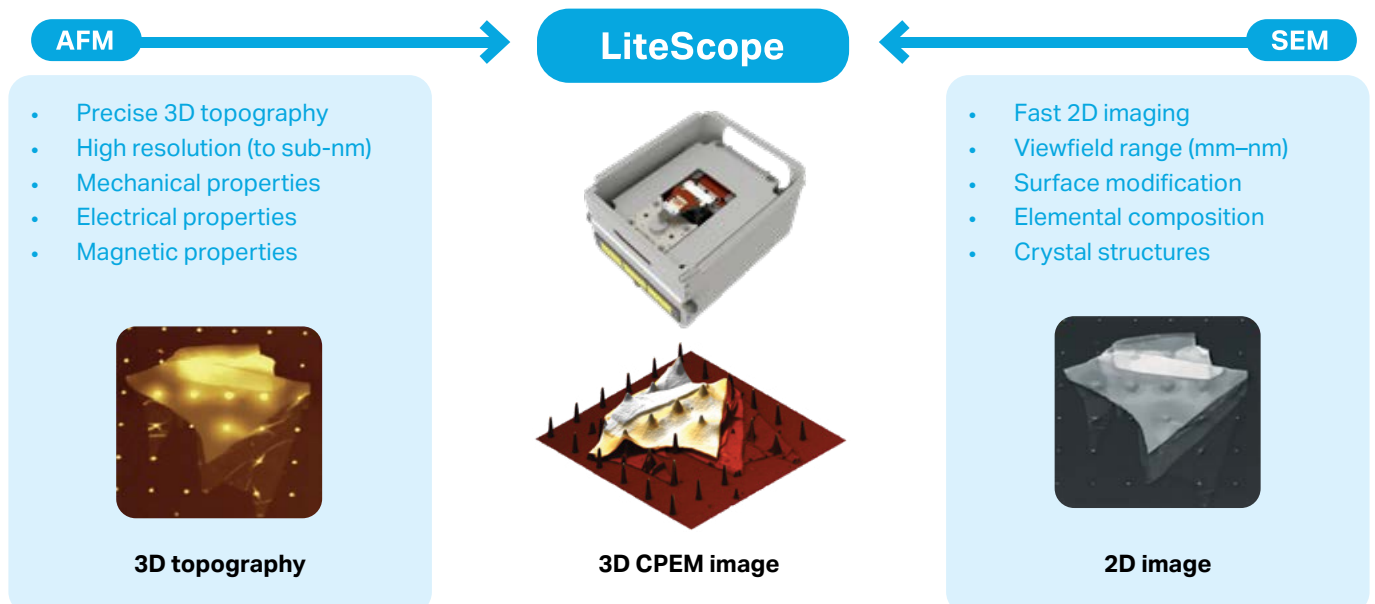
Analyze larger or multiple samples efficiently with a stage that accommodates samples up to 100 mm × 100 mm

- Automate routine SEM imaging and analysis while adding correlative AFM topography and roughness data.
- Acquire SEM and AFM data in situ to reduce transfer-related contamination, oxidation and drift.
- Use SEM navigation for precise localization of the AFM probe at the region of interest.
- Expand 2D SEM imaging with local mechanical, electrical and magnetic property mapping.



Key benefits

- Rapid materials imaging and analysis
- Easy-to-learn workflow with high throughput
- In-situ correlative analysis: locate once in the SEM, then acquire and correlate AFM and SEM data in place, with no sample transfer or re-localization
- Expanded surface characterization with topography, roughness, mechanical, electrical and magnetic contrast
- Ideal for routine QC, failure analysis and advanced materials research

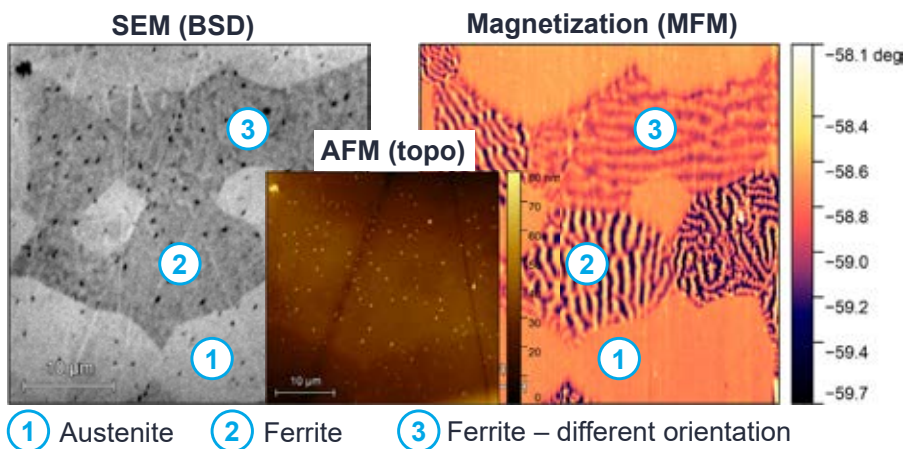


Applications

Metals and alloys

Ideal for metallography, coating analysis, wear studies and failure analysis. LiteScope Phenom combines fast SEM screening with AFM-based topography, roughness and local mechanical contrast on critical surface features.

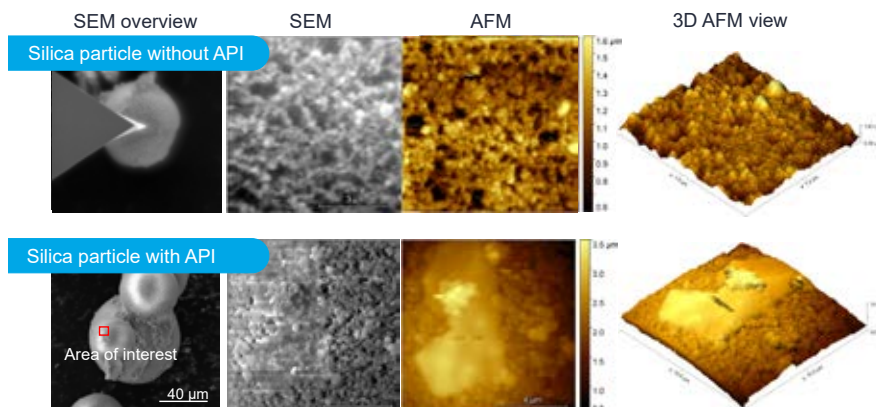
Correlate microstructural SEM contrast with AFM topography and roughness on inclusions, cracks, coatings and wear tracks.



Particles and powders

For particles and powders, LiteScope Phenom delivers a fast route from SEM overview imaging to nanoscale surface characterization. It supports morphology, agglomeration, surface texture and height analysis within the same region of interest.

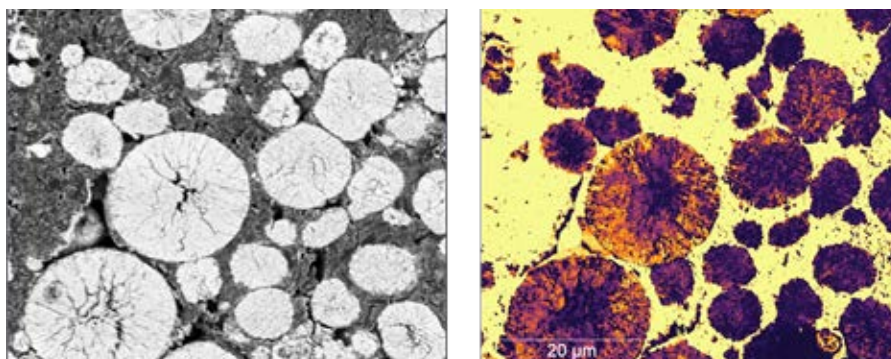
Screen particle populations rapidly with SEM and zoom in on nanoscale texture and height detail with in-situ AFM.



Battery materials

Battery workflows benefit from correlating particle structure with nanoscale surface and functional information in one environment. LiteScope Phenom supports the analysis of cathodes, anodes, coatings, and degradation mechanisms with less sample handling.

Combine rapid SEM imaging with AFM topography and local functional characterization for battery particles, coatings, and interfaces.



From rapid imaging to correlative characterization

By combining the speed and ease of Phenom XL G3 with the multimodal power of LiteScope AFM-in-SEM, users gain a richer understanding of surface structure and function for faster decisions in quality control, troubleshooting and R&D.

System highlights

| | |
|------------------------------|--|
| SEM platform | Thermo Scientific Phenom XL G3 Desktop SEM |
| Stage capacity | Samples up to 100 mm × 100 mm |
| Average time to SEM image | 60 seconds |
| Average time to AFM image | 10 to 15 minutes |
| Magnification range | 160x–200,000x |
| Acceleration voltages | Default: 2, 5, 10, 15 and 20 kV; Advanced mode: adjustable 4.8–20.5 kV |
| SEM resolution | <9 nm |
| AFM scan range | Up to 100 × 100 × 20 μm (XYZ) |
| AFM resolution | <10 × 10 × 4 nm (XYZ) |
| Standard SEM detector | Four-segment backscattered electron detector (BSD) |
| Optional SEM detectors | Secondary electron detector (SED), integrated EDS |
| Electron source | Long-life CeB ₆ source, 3,000 hours |
| AFM integration | NenoVision LiteScope AFM-in-SEM |
| In-situ correlative analysis | SEM and AFM (and EDS) acquired at the same location inside the chamber and correlated, with no sample transfer |
| AFM capabilities | 3D topography and roughness, local mechanical contrast, electrical (C-AFM, KPFM, PFM) and magnetic (MFM) property mapping, plus I/V and time spectroscopy. |
| In-situ workflow | Same place and same conditions, with no sample transfer |

Why users choose LiteScope Phenom

- Analyze more samples more efficiently
- Gain true 3D surface information inside the SEM
- Improve confidence in quality control and failure analysis
- Extend routine SEM into advanced multimodal characterization

LiteScope Phenom brings together rapid, high-throughput SEM imaging and in-situ AFM-based correlative analysis in one practical solution for modern materials laboratories.

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