Particulate Systems
a division of micromeritics

Leading in Desktop SEM Imaging and Analysis

Fast. Outstanding. Reliable SEM imaging and analysis.

The Phenom: World's Fastest Scanning Electron Microscope

With its market-leading Phenom desktop Scanning Electron Microscope (SEM), Phenom-World helps customers to stay competitive in a world where critical dimensions are continuously getting smaller. All Phenom desktop systems give direct access to the high-resolution and high-quality imaging and analysis required in a large variety of applications. They are affordable, flexible and a fast tool enabling engineers, technicians, researchers and educational professionals to investigate micron and submicron structures.

Phenomenal Imaging and Analysis Power

- Imaging power up to 130,000x magnification
- Unmatched ease of use by intuitive system control
- Fully integrated X-ray analysis
- Fastest time from loading sample to SEM image (< 30 sec) by using an integrated X, Y motor stage
- "Never lost" navigation by combination of optical navigation camera and low magnification SEM imaging

The Phenom: Awarded for Its Design and Innovation

The Phenom concept has proven to be an award winning design desktop electron microscope. Its innovatieve user interface, intuitive touch screen control, and unique and robust sample loading have drawn the attention of many professionals in the market.

Phenom Markets and Applications

From Biological Development to Pharmaceutics

The Phenom is a perfect tool for investigating mold spores or analyzing pharmaceutical powders. A vast variety of sample holders allows biological and pharmaceutical sample analysis without difficult sample preparation.

From Material Characterization to Metallurgy Analysis

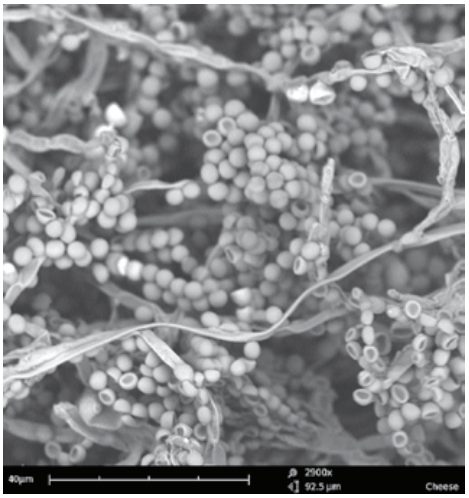
The Phenom allows operators to perform microstructural analysis and non-destructive testing of metals to identify variations that occur after treatment, and to determine compositional contrast.

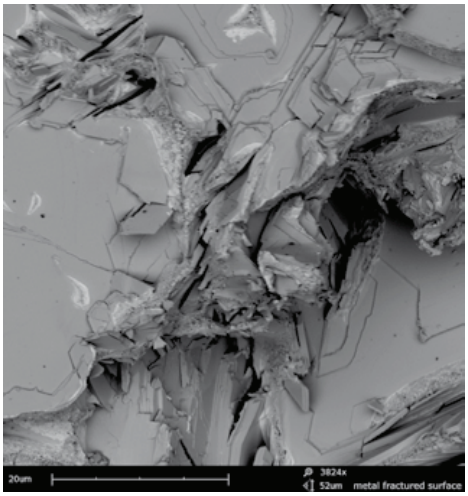
From Process Control to Quality Insurance

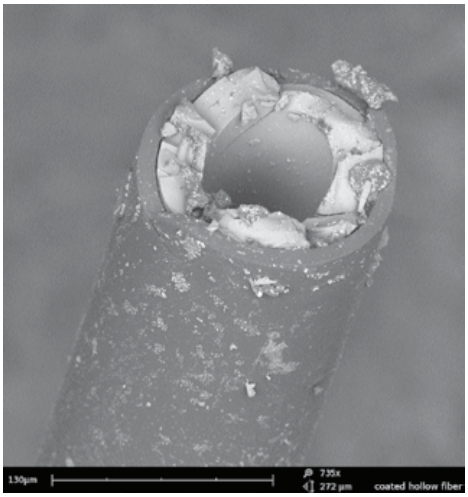
The Phenom desktop SEM is the ideal tool for processing samples and evaluating quality in a short span of time. The rapid sample preparation and the incredibly short feedback time improve the efficiency and effectiveness of the failure analysis.

All-Round Forensic Investigation

The Phenom is used to perform ballistic research, identify scratches and indents from tool marks, human and animal hair classification or scrutinizing residues such as sand and diatoms.







Phenom Desktop SEM

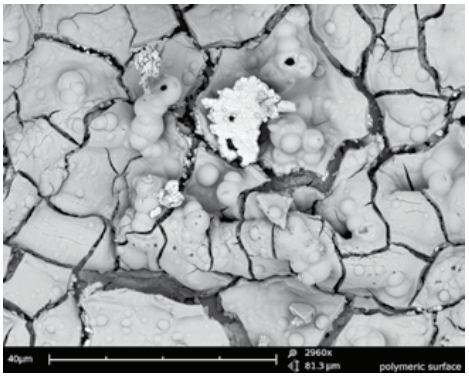
The Phenom desktop SEM is equipped with a long lifetime, high brightness CeB6-source. This allows the user to create state-of-the-art images with a minimum of maintenance intervention. The Phenom Pure is an ideal tool for the transition from light optical to electron microscopes. It is the most economical solution for high-resolution imaging, providing the best imaging results in its class.

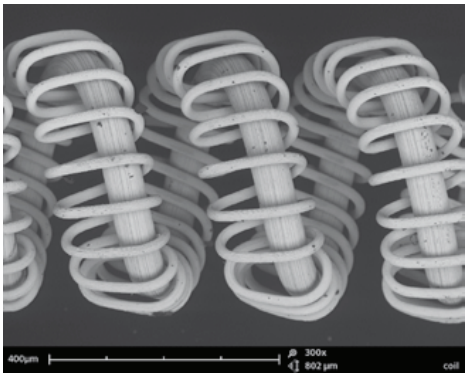
Phenom Pure

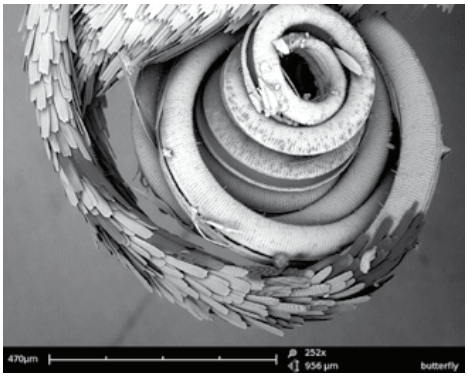
- Intuitive user interface, maximum employability
- Magnification range: 70–30,000x
- Images up to 2048 x 2048 pixels
- Resolution: ≤ 30 nm
- Acceleration voltage: 5 kV

Phenom Pro

- Magnification range: 80–130,000x
- Full color navigation camera: 20–135x magnification
- Resolution: < 10 nm
- Acceleration voltages: 5 kV and 10 kV
- Optional: ProSuite software application



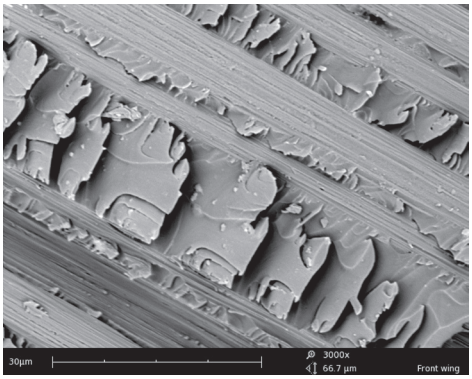


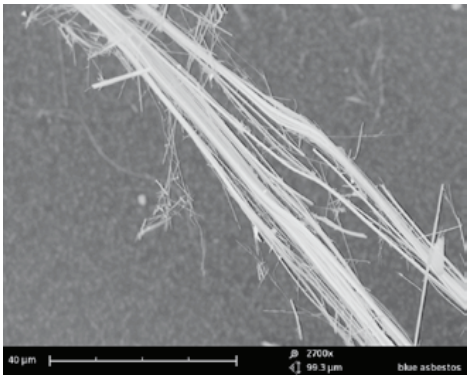


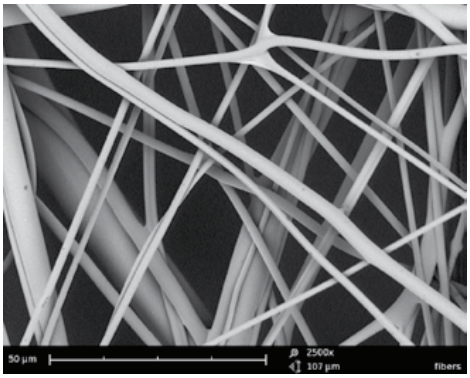
Phenom ProX: The Top-of-the-Range for High-Resolution Imaging and Analysis

The Phenom ProX desktop SEM is the ultimate all-in-one imaging and EDS analysis system. The advanced system identifies different elements in a specimen by using the fully integrated Element Identification software and specially designed EDS detector. The optional Elemental Mapping and Line Scan software provides information on the distribution of elements within the sample or the selected line. The results of the analysis can easily be exported and reported.

- Fully integrated X-ray analysis
- Element detection range: B–Am
- Magnification range: 80–130,000x
- Resolution: < 10 nm
- Acceleration voltages: 5 kV, 10 kV and 15 kV
- Standard ProSuite application software installed
- Optional: Elemental Mapping and Line Scan software application







Phenom Software Applications

Automated and market-specific software solutions

The Phenom ProSuite has been developed to enable Phenom users to extract maximum information from images made with the Phenom desktop Scanning Electron Microscope (SEM). The software is installed on a monitor-mounted PC, leaving the Phenom imaging unit in its original state and guaranteeing maximum system stability.

ProSuite

- Automated collection of images
- Real-time remote control
- Intuitive single-page user interface
- Standard applications included: Automated Image Mapping & Remote User Interface

PoreMetric

- Fully automated visualization and analysis of pores
- Detection of pore size range 100nm–0,1mm
- Statistical data with high-quality images

ParticleMetric

- Morphology and particle size data for submicron particle applications
- Detection of particles from 100nm to 100µm
- Easy data to export to histograms and scatter plots

3D Roughness Reconstruction

- Intuitive user interface, maximum employability
- Based on "shape from shading" technology, no stage tilt required
- Fast reconstruction

FiberMetric

- Fast and automated collection of all statistical data
- Large range of fibers and pores can be measured
- View and measure micro and nano fibers with unmatched

Element Identification (EID)

- Fully integrated software for X-ray analysis
- Precise spot mode analysis to identify hidden elements
- Optional: Elemental Mapping and Line Scan software application

Phenom Accessories

Large Variety Of Sample-Loading Accessories

For all Phenom desktop SEM a large variety of sample holders is available in order to extend the sample application range. These holders are designed for optimizing sample loading speed and guarantee the fastest time to image available in the market. In addition to the sample holders, Phenom-World has two inserts for specific sample types. These inserts enable fast sample preparation and speed up the sample throughput times.

Standard Sample Holders & Inserts

Standard Sample Holder

Charge Reduction Sample Holder

Metallurgical Sample Holder

Metallurgical Charge Reduction Sample Holder

Micro-Tool Sample Holder

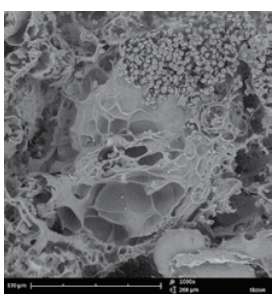
X-view Insert*

Micro-Electronics Insert*

** Requires Metallurgical Sample Holder or Metallurgical Charge Reduction Sample Holder*

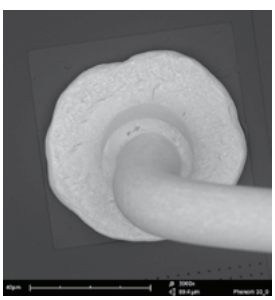
Temperature Controlled Sample Holder

- Temperature range -25°C to +50°C
- Temperature accuracy ±1.5°C
- Maximum cooling rate 20°C/min
- Water-cooled by a self contained closed-loop water chiller box



Motorized Tilt & Rotation Sample Holder

- Continuous 360° compucentric rotation
- Tilt range -10° to +45°
- Tilt adapted focus
- Controlled by dedicated Motion Control



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To request a quote or additional product information, visit
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Contact your local Micromeritics sales representative
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