



Product Information
Version 2.0

ZEISS Sigma Family

Your Field Emission SEMs for High Quality Imaging
and Advanced Analytical Microscopy



We make it visible.

Your Field Emission SEMs for High Quality Imaging and Advanced Analytical Microscopy

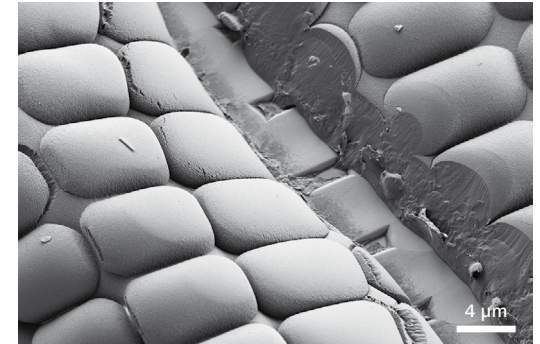
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The ZEISS Sigma family combines field emission SEM (FE-SEM) technology with an excellent user experience.

Structure your imaging and analysis routines and increase productivity with Sigma's intuitive 4-step workflow. You'll capture more data, faster than ever before. Choose from a variety of detector options to tailor Sigma precisely to your applications: you can image particles, surfaces, nanostructures, thin films, coatings and layers.

With the Sigma family you enter the world of high-end imaging: Sigma 300 delivers excellence in price and performance while Sigma 500's best-in-class EDS geometry delivers superb analytical performance.

Count on accurate, reproducible results – from any sample, every time.



Non-conductive CCD microlens array, 1 kV, Sigma 500.

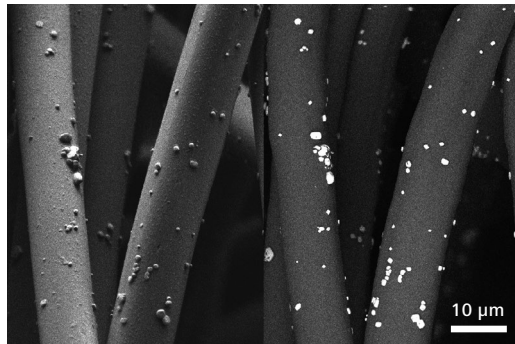


Simpler. More Intelligent. More Integrated.

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Use Flexible Detection for Clear Images

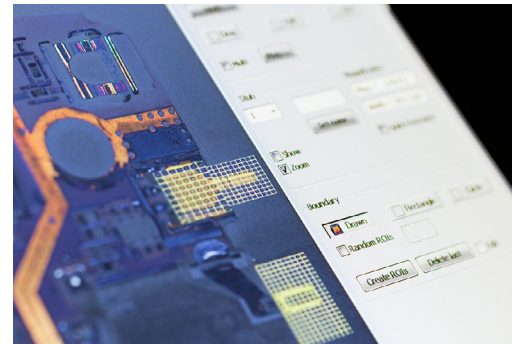
Tailor Sigma to your exact needs using the latest detector technology. Extract topography, composition and crystallographic information to characterize all of your samples. Expand imaging performance even further with the optional InLens Duo detector to acquire topographical and compositional information in a single detector. A new generation of secondary electron (SE) detectors delivers high contrast and high resolution images, depending on your sample with up to 50% more signal. Working at low vacuum, you can expect crisp images with up to 85% more contrast, thanks to Sigma's novel C2D and VPSE detectors.



Fibers with embedded silver, imaged at 1 kV at high vacuum, left: InLens Duo SE, right: InLens Duo BSE.

Automate and Speed Up Your Workflow

A 4-step workflow lets you control all the functionality of your Sigma. This gives you the benefit of fast time-to-image and saves time on training, too – especially in a multi-user environment. The first step is Image Navigation, enabling intuitive sample navigation and positioning under the beam. Then, a simple mouse click sets the optimal imaging conditions for your sample. Next, use Automated Intelligent Imaging to define free-form regions of interest (ROIs) and automatically acquire multiple datasets across multiple samples. Finally, SmartBrowse collects and presents your data as an interactive map so you can understand your sample completely.



Save time with Sigma's intuitive 4-step workflow.

Perform Advanced Analytical Microscopy

Sigma's best-in-class EDS geometry increases your analytical productivity, especially on beam sensitive samples. You will get analytical data at half the probe current and twice the speed. The Sigma family provides fast and complete X-ray analysis and mapping. By placing the detectors closer to the sample, you achieve complete shadow-free analytics. You'll profit from using a short analytical working distance of 8.5 mm and a take-off angle of 35°. You can rely on Sigma as your platform of choice for advanced analytical microscopy.



Speed up X-ray analyses with best-in-class EDS geometry.

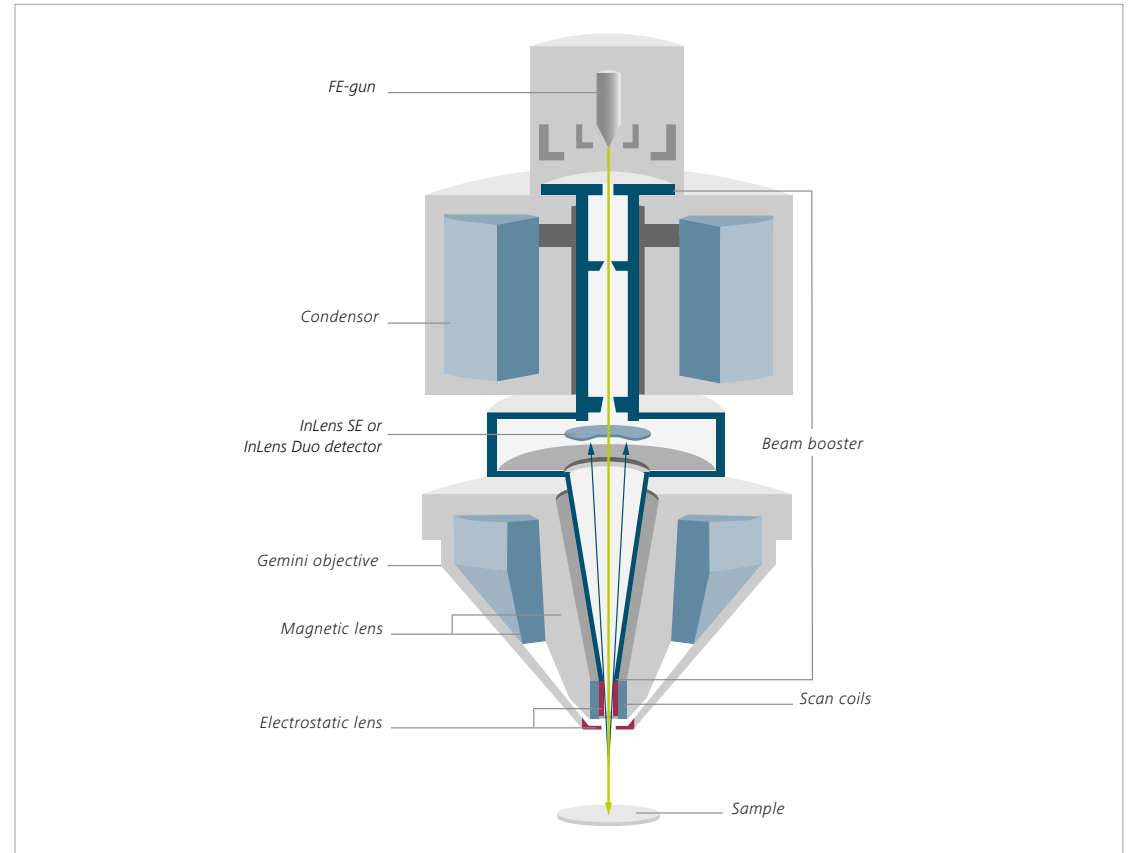
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Based on Proven Gemini Technology

The Sigma family is based on more than 20 years of perfecting Gemini technology. You can count on complete and efficient detection, excellent resolution and unsurpassed ease-of-use.

The Gemini objective lens design combines electrostatic and magnetic fields to maximize optical performance while reducing field influences at the sample to a minimum. This enables excellent imaging, even on challenging samples such as magnetic materials. The Gemini detection concept ensures efficient signal detection by detecting secondary (SE) and/or backscattered (BSE) electrons. This so-called InLens detector is arranged on the optical axis, which reduces the need for realignment and thus minimizes time-to-image. Gemini beam booster technology guarantees small probe sizes and high signal-to-noise ratios, right down to ultra-low accelerating voltages. It also minimizes system sensitivity to external stray fields by keeping the beam at high voltage throughout the column until its final deceleration.



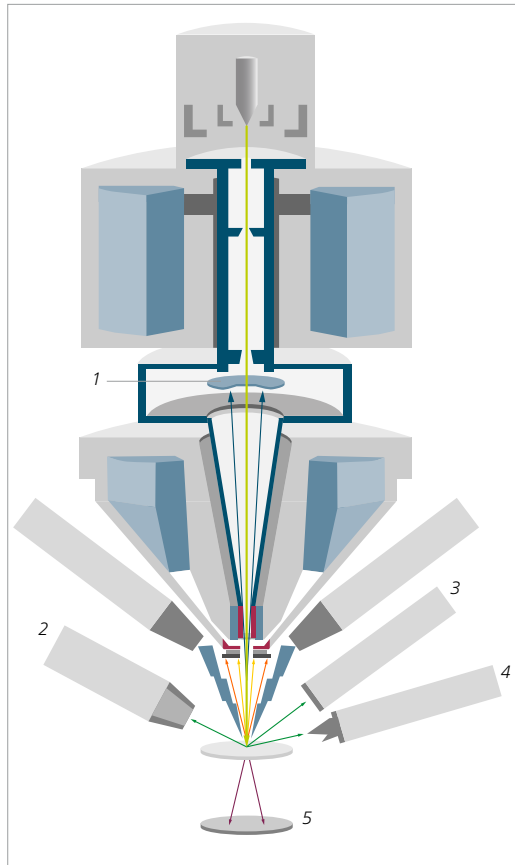
Gemini technology. Schematic cross-section of Gemini optical column with beam booster, InLens detector and Gemini objective.

Your Insight into the Technology Behind It

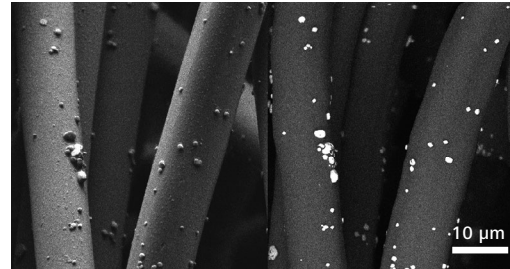
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Use Flexible Detection for Clear Images

Characterize all of your samples with the latest detector technology.

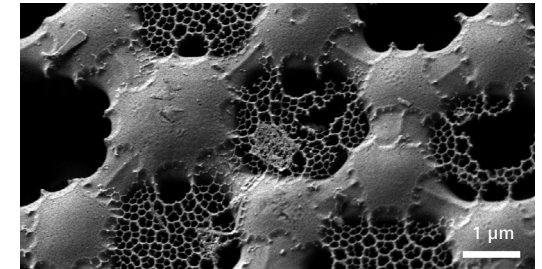


Schematic cross-section of Gemini optical column with detectors.



1 InLens Detectors

*InLens SE: A high resolution in-column SE detector.
InLens Duo*: InLens SE and BSE detector for sequential high resolution topographical and compositional imaging.*



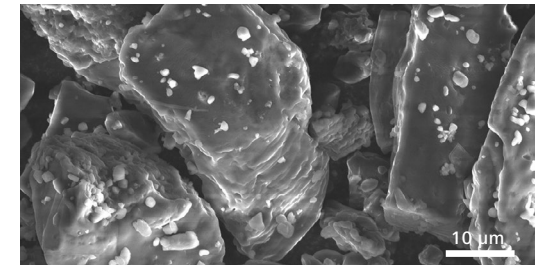
2 ETSE Detector

Everhart-Thornley Secondary Electron Detector for high resolution topographic imaging with increased signal-to-noise and reduced charging at low kV in high vacuum mode.



3 VPSE-G4

Our 4th generation Variable Pressure SE detector provides improved imaging performance in VP mode with up to 85% more contrast.



4 C2D

Cascade Current Detector that creates an ionization cascade and measures the resulting current. This provides crisp images in VP mode, even at higher pressures and lower voltages.



5 aSTEM*

Annular STEM detector for producing high resolution transmission images. Provides brightfield, darkfield and high annular darkfield (HAADF) modes, e.g. of thin films or biological sections.

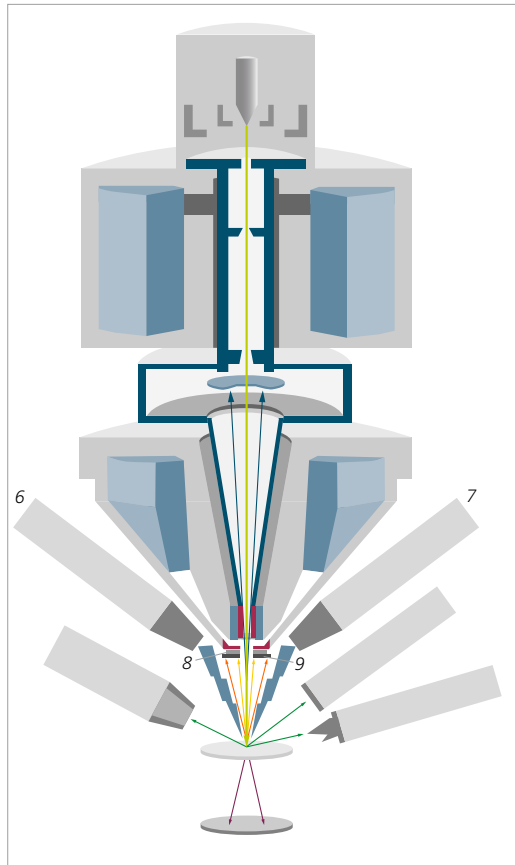
*only available for Sigma 500

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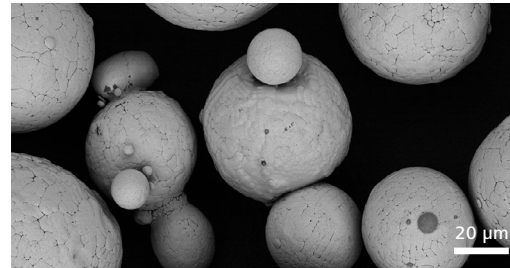


Schematic cross-section of Gemini optical column with detectors.



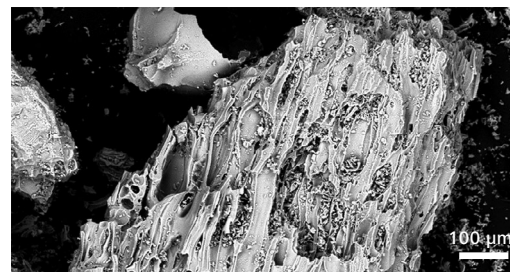
6 / 7 Advanced EDS Detection

Advanced EDS analysis geometry of 8.5 mm working distance and 35° take-off angle for delivering data at twice the speed or half the probe current, Sample: courtesy of University of Leicester.



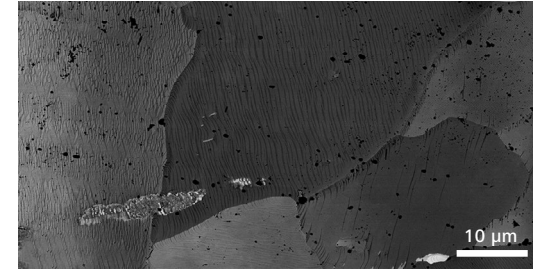
9 HDBSD

High definition BSE detector for excellent low kV compositional imaging of all samples in all vacuum modes.



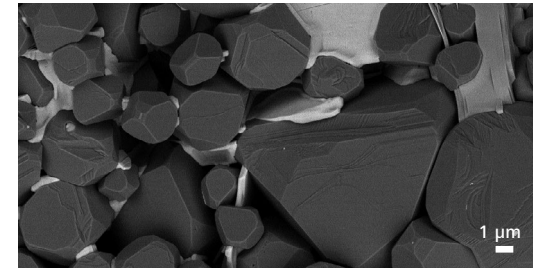
9 YAG-BSD

YAG crystal based scintillator BSE detector provides fast, easy compositional imaging.



8 AsB Detector

Angular selective BSE detector for crystallographic and channeling contrast imaging of metals and minerals.



9 BSD4*

Four parallel outputs of the BSE detector for real-time 3D imaging and surface metrology. Example of a compositional image of a ceramic.

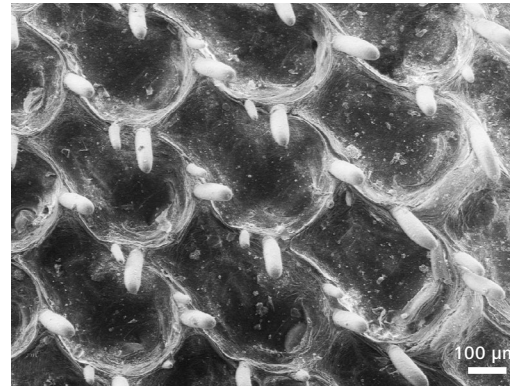
*only available for Sigma 500

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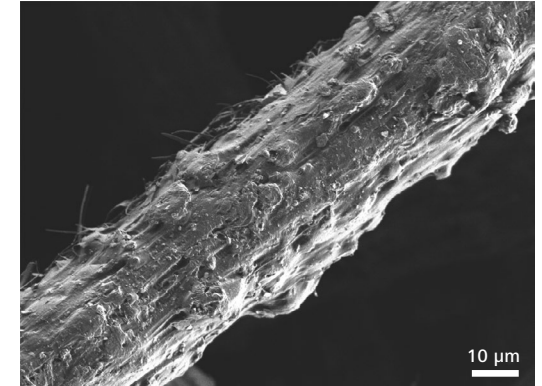
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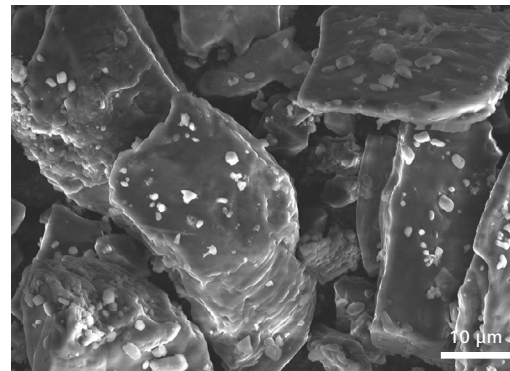
The novel Everhart-Thornley Secondary Electron (ETSE) detector maximizes electron collection while minimizing charging effects. It delivers high resolution, high contrast images of both conductive and non-conductive samples in high vacuum mode with an increase of up to 50% in signal-to-noise ratio. The latest fourth generation Variable Pressure Secondary Electron (VPSE-G4) detector compensates for charging effects by controlling the chamber pressure and captures clear, sharp images with up to 85% more contrast. The new Cascade Current Detector (C2D) creates an ionization cascade and measures the resulting current. Thus it acquires stable, low noise images of beam sensitive samples such as polymers, particles and biological samples up to 133 Pa. Sigma gives you a choice of three retractable backscatter detectors. The HDBSD is designed for high definition low kV compositional back-scattered electron imaging. The YAG-BSD provides ease of use and fast response times. The BSD4 provides real-time 3D surface reconstruction and surface metrology.



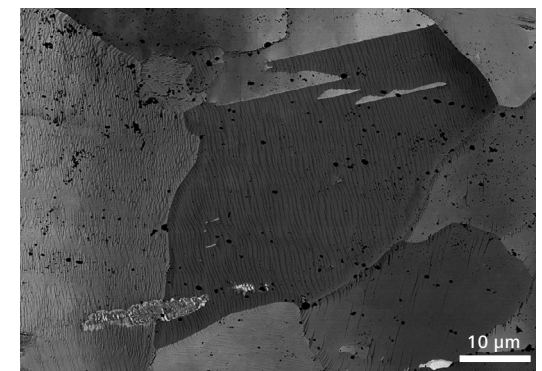
Seaweed, imaged with VPSE-G4, at 15 kV and 40 Pa.



The uncoated surface of a surgical face mask fibre imaged with ETSE at 1 kV, under high vacuum shows topographical information.



Uncoated anti-inflammatory drug shows excellent surface detail at 10 kV and 35 Pa chamber pressure with C2D.



Platinum grains showing grain boundary slip planes, imaged at 4 kV with AsB detector.

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Automate and Speed Up Your Workflow

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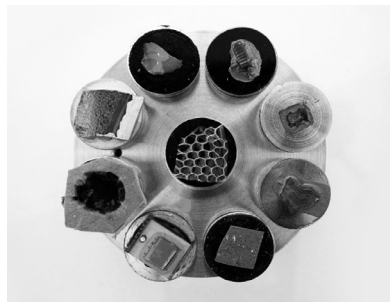
Navigate your sample quickly and easily with “real-world” digital camera images.

One click sets the optimal imaging conditions for your sample, opening up access to novice users.

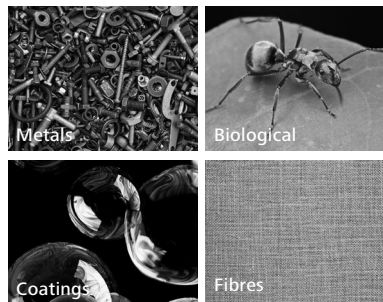
Identify and select regions of interest (ROIs) – automatically generate image datasets across batches of samples.

Review your data sets in context – collect and present your data as an interactive zoomable map.

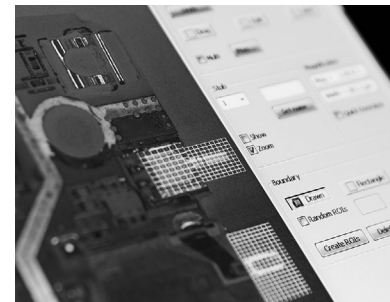
1. Image Navigation



2. Sample Type Selection



3. Automated Intelligent Imaging



4. SmartBrowse



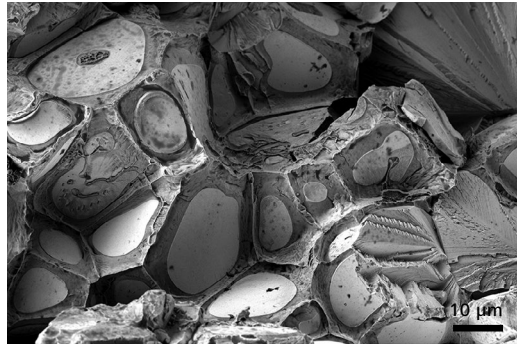
Tailored Precisely to Your Applications

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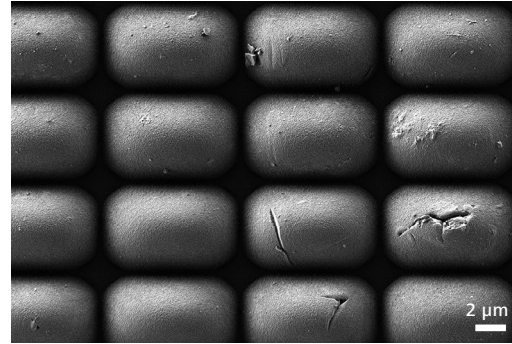
Application Example	Task	The Sigma Family Offers
Materials Research	High resolution imaging and analysis of novel nano materials	Sigma 500 characterizes nano materials comprehensively with a variety of detectors. You gain insights into topographical structure, compositional detail, crystallographic structure and elemental distribution of engineered and novel materials.
	Analysis of coatings and thin films	The novel ETSE reveals previously hidden surface detail of uncoated, non-conductive particles in high vacuum mode. The aSTEM provides high resolution transmission images of thin film structures and nano-particles. HDBSD delivers crisp compositional information about coatings at low voltage.
Life Sciences	High resolution imaging and high throughput analysis of cryo-fixed biological samples	Image cell structures at ultrastructural level with the aSTEM. The C2D delivers sharp images of beam sensitive and delicate biological specimens.
Natural Resources	Fast, accurate mineralogy of core samples	Sigma allows imaging and high speed analysis of non-conductive geological samples in variable pressure mode. Use HDBSD to provide high definition compositional data of shale and minerals. Get compositional X-ray data twice as fast with two diametrically opposed EDS detectors.
	Failure analysis of materials and manufactured components	Effortless acquisition of high resolution topographical information of failed engineered micro-structures and MEMs devices with InLens SE. Generate real-time 3D surface metrology of precision machined components with BSD4. Analyze and determine cause of fractures and defects with high contrast HDBSD imaging.
Industrial Applications	Imaging and analysis of steels and metals	The Cartesian stage accommodates large steel samples for analysis in the chamber. Maintain high image quality with <i>in situ</i> plasma cleaning and get crystallographic and channeling contrast of phases with the Angular selective BSE detector (AsB). The high definition BSE detector (HDBSD) simplifies identification of non-metallic inclusions.
	Medical device inspection	With the Sigma family you can inspect the structure and coatings on stents and surgical guide wires. Working in variable pressure mode, the novel C2D detector provides low-noise, highly detailed images of coating imperfections.
	Semiconductor and electronics QA/QC	The Sigma 500's large airlock enables fast loading of 5" wafers ready for inspection. Acquire high magnification compositional and topographical images of layered devices with the InLens Duo. With enhanced performance in high vacuum mode, the novel ETSE captures superb detail of semiconductor devices and resists at low voltage.

ZEISS Sigma at Work

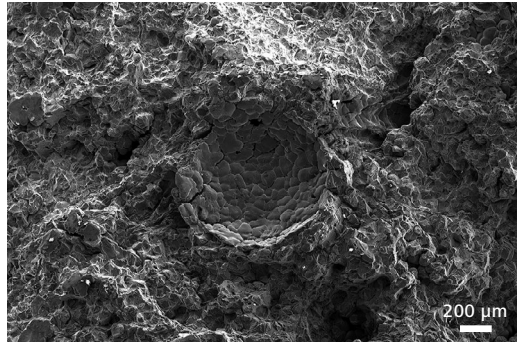
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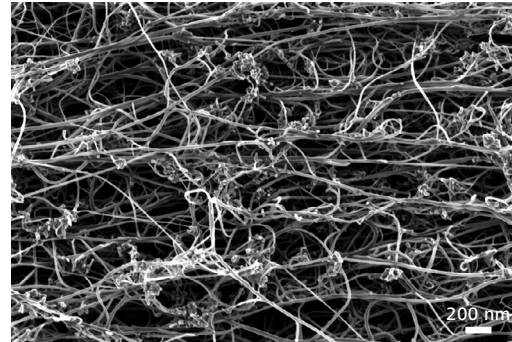
Advanced alloy material imaged at 3 kV in high vacuum shows the tungsten core material surrounded by a steel matrix.



Even at 300 V, the ETSE reveals high surface detail in surface defect inspection of non-conductive micro-lenses.



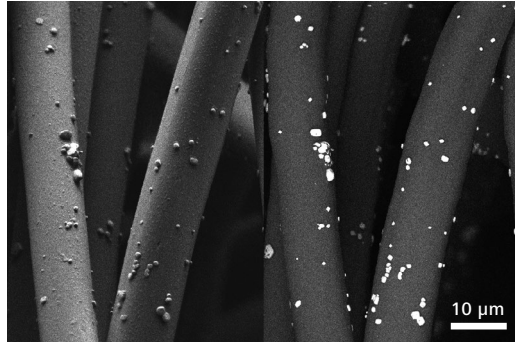
The ETSE detector image reveals fractured metal surface morphology, even at a long working distance.



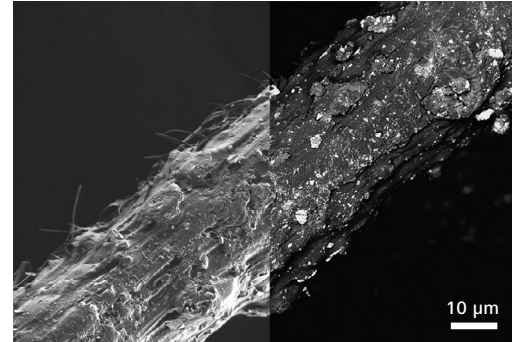
Carbon nanofibers can be imaged easily and without damage to their delicate structure using the InLens SE detector at 1kV in high vacuum.

ZEISS Sigma at Work

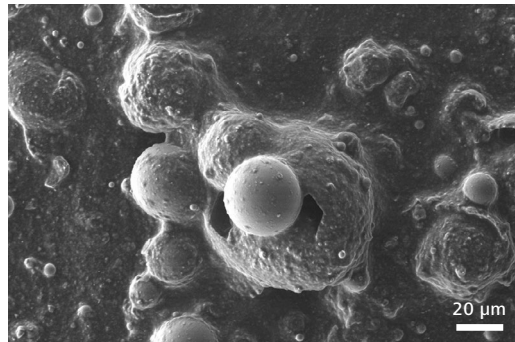
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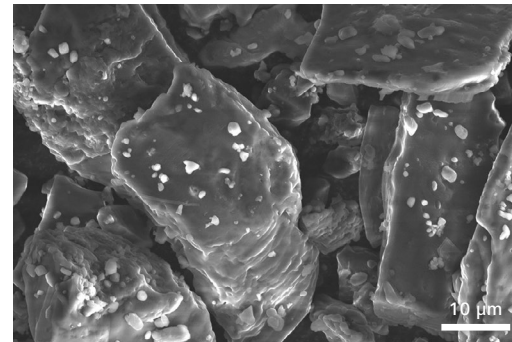
Fibres with embedded silver nanoparticles, 1 kV, left: InLens Duo SE, right: InLens Duo BSE. Originate from antimicrobial dressings in wound care.



The uncoated surface of a surgical face mask fibre imaged with both ETSE (left) and InLens BSE (right) detectors at 1 kV, under high vacuum conditions reveals topographical and compositional information.



Aluminum chlorohydrate from an aerosol antiperspirant obtained at 7 kV and 25 Pa chamber pressure with VPSE.



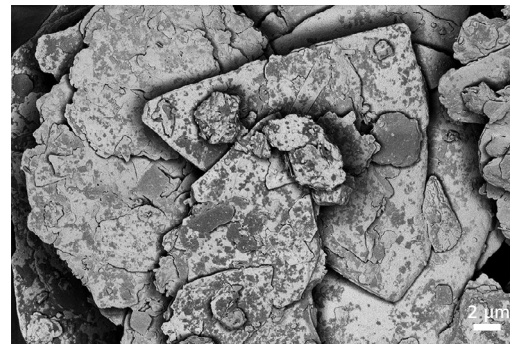
Uncoated anti-inflammatory drug shows excellent surface detail at 10 kV and 35 Pa chamber pressure with C2D.

ZEISS Sigma at Work

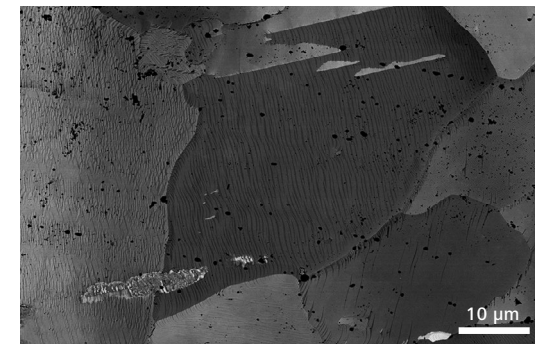
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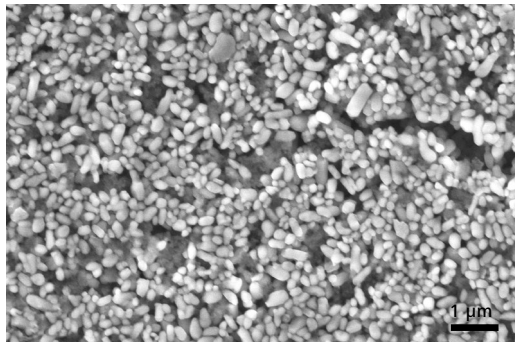
Lanthanum carbonate imaged at 1 kV with InLens Duo BSE. LaCO_3 is a phosphate binder used as a oral therapeutic agent for dialysis patients.



The InLens Duo in BSE mode at 1 kV reveals the structure and compositional information of delicate lamellas of sericite mica and kaolin clays used as cosmetic fillers.



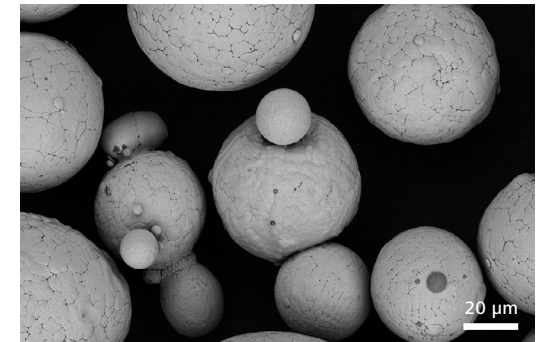
Platinum grains showing grain boundary slip planes, imaged at 4 kV with AsB detector.



Non-conductive titanium dioxide nanoparticles used as pigments and opacifying agents can be imaged easily at 40 Pa in VP mode with the C2D.



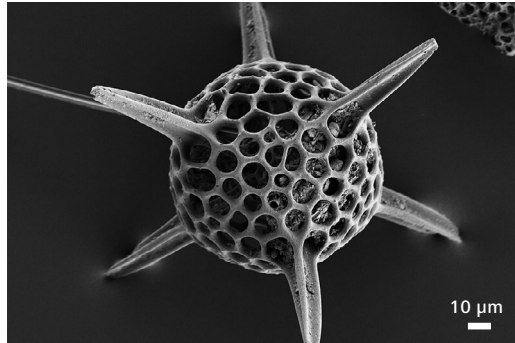
25 – 50 nm iron oxide particles imaged with the aSTEM detector in darkfield mode at 20 kV.



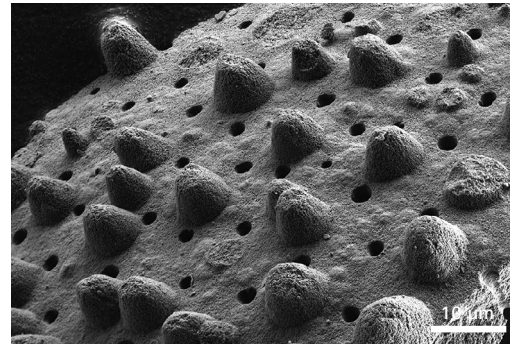
Ni-Cr-Fe metal spray powder coating imaged at 4 kV with HDBSD.

ZEISS Sigma at Work

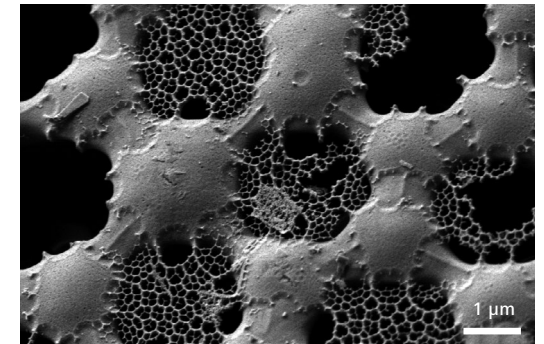
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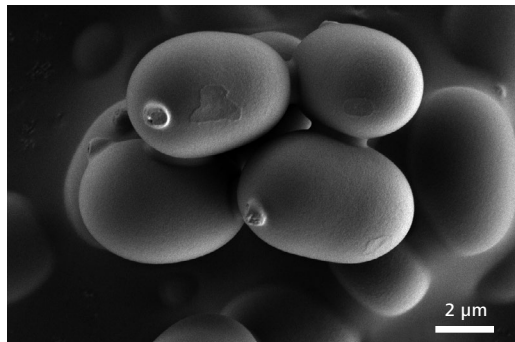
The delicate open structure of a radiolarian is imaged effortlessly by the ETSE detector at 1 kV under high vacuum.



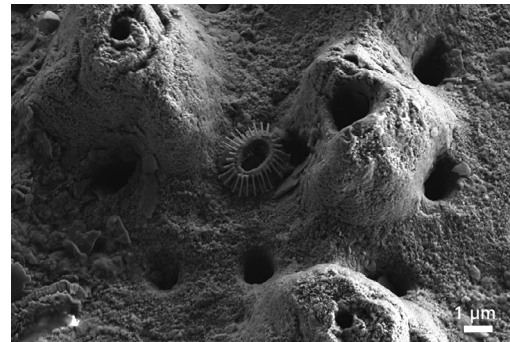
The ETSE detector used at 3 kV in high vacuum clearly reveals surface detail and pores in the calcite wall of the planktonic foraminifera wall.



The delicate open structure of a non-conductive diatom can be imaged at low kV in high vacuum without charging artefacts with the ETSE.



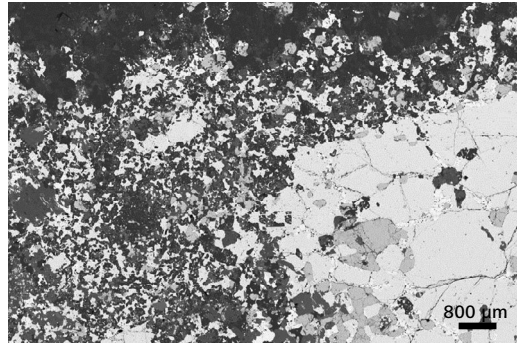
Mushroom spores imaged at 1 kV at high vacuum. These delicate, fragile structures can be imaged easily with Sigma 500 at low voltage.



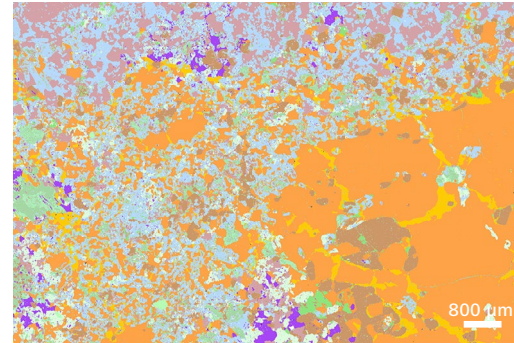
Fine filtered, mixed sediment imaged with the ETSE under high vacuum at 3 kV.

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Nickel sulphide ore imaged in high definition by the BSE detector (HDBSD). Sample: of courtesy of the University of Leicester, UK.



Nickel sulphide ore. Mineralogic mineral map generated from the HDBSD image on the right. Sample: courtesy of the University of Leicester, UK.



Rock sample imaged with the YAG-BSD at 20 kV.

Expand Your Possibilities

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Configure Your Stage – Choose from Eucentric or Cartesian

To allow complete flexibility of sample handling, Sigma 500 can be configured with either the eucentric or the Cartesian stage option. The eucentric stage offers a very stable, vibration-damped platform that delivers high resolution. Its mechanical eucentricity makes it easy to tilt your sample under the electron beam and is perfectly suited to high resolution imaging applications. The Cartesian stage with computerized movement comes into its own when you need to navigate bulky samples. Its modular design will accommodate extremely large and heavy samples – up to 150 mm in height and 5 kg in weight. The Cartesian stage is your first choice for demanding applications in fields like automotive, aerospace, metals or machinery.



Sigma 500 with Eucentric Stage.

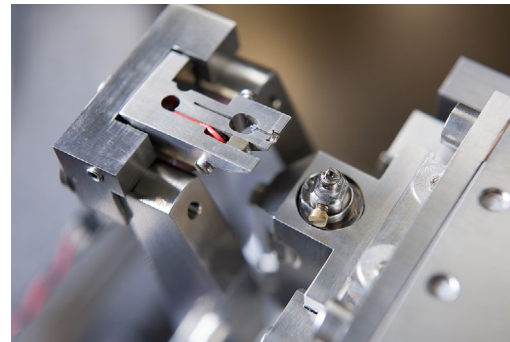
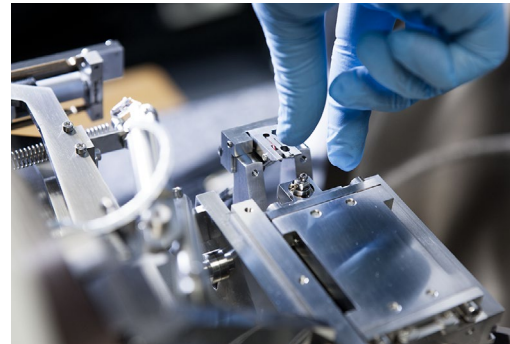
Parameter	Eucentric Stage	Cartesian Stage
Tilt	-3 to 70°	-10 to 90°
XY travel	130 mm	125 mm
Z travel	50 mm	50 mm
Weight	0.5 kg	0.5 kg XYZTR, 2kg XYZR, 5 kg XY
Best for	High resolution imaging	Large, heavy samples
Applications	All high resolution applications (nanoparticles, thin films, etc.)	<ul style="list-style-type: none"> ■ Automotive piston QAQC ■ Aerospace turbine blade failure analysis ■ Inspection of large machined surfaces

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Fast and Convenient 3D Imaging for Tissue Samples in the FE-SEM

Combine your Sigma 300 with 3View® technology from Gatan Inc. to acquire high resolution 3D data from resin embedded cell and tissue samples. In the shortest possible time and in the most convenient way, 3View® is an ultramicrotome inside the SEM chamber. The sample is continuously cut and imaged to produce thousands of serial images in a single day – each perfectly aligned because they are all generated from one fixed block. Sigma 300 from ZEISS is ideally suited to support this application. The unique Gemini column technology delivers high resolution transmission images and allows fields of view of hundreds of microns at nanometer resolution.



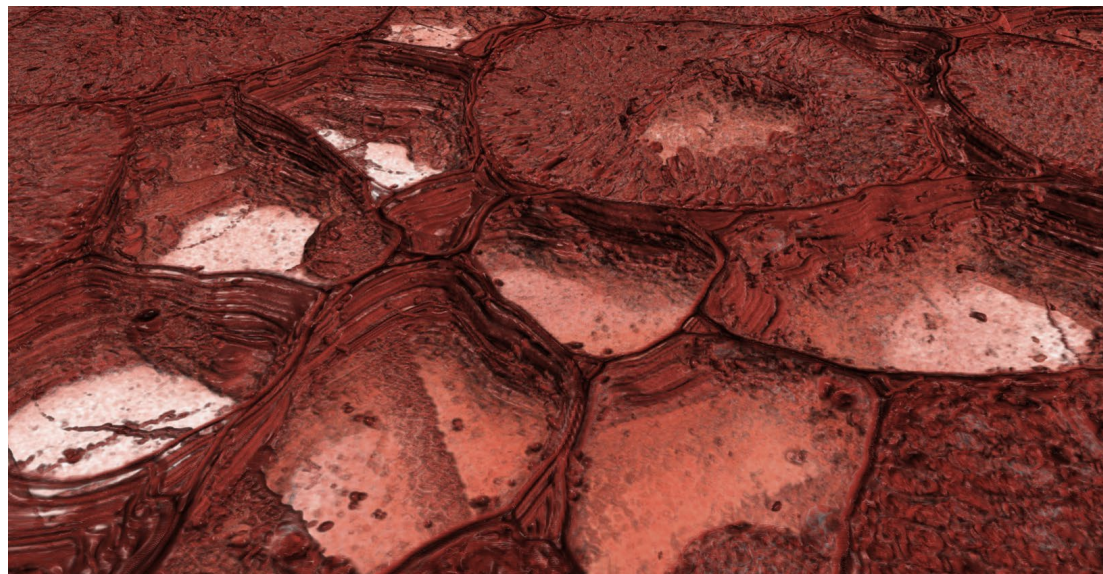
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Atlas 5 – Large Area Automated Imaging

Atlas 5 turns your Sigma into a solution for rapid, automated mapping of large areas. With a 16 bit scan generator and dual super-sampling signal acquisition hardware, you can acquire single images up to 32 k × 32 k pixels, with dwell times from 100 ns to >100 s, adjustable in 100 ns increments. The solution lets you create large image montages resulting in a large Field of View image, at SEM nanometer scale resolution.

Efficient workflow-driven software guides you effortlessly through all imaging tasks while its many automated functions let you acquire data easier and faster than ever before. The optional Atlas 5 Array Tomography module is specifically designed for automated imaging of serial sections of biological tissue to enable 3D visualizations of large volumes.



3D visualization, Medicago sp., root nodules, serial sections, 25 nm pixel size, 3D spatial symbiotic relationships between nitrogen-fixing bacteria rhizobia and the host legume plant. Sample: courtesy of J. Sherrier, J. Caplan and S. Modla, University of Delaware, US.

Expand Your Possibilities

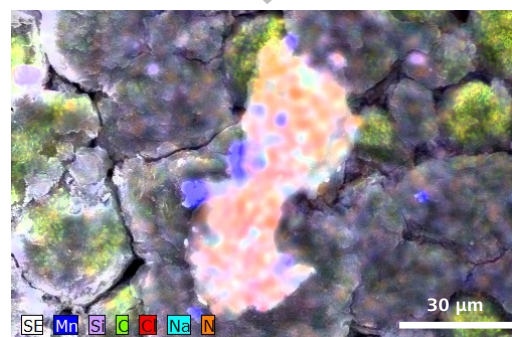
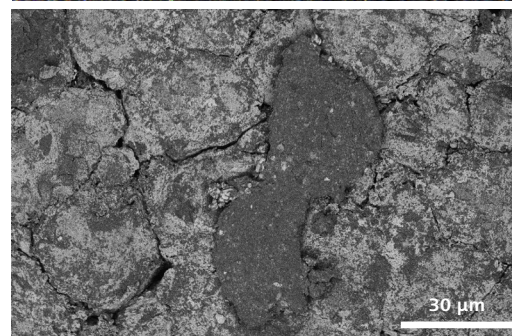
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Correlative Microscopy with Shuttle & Find

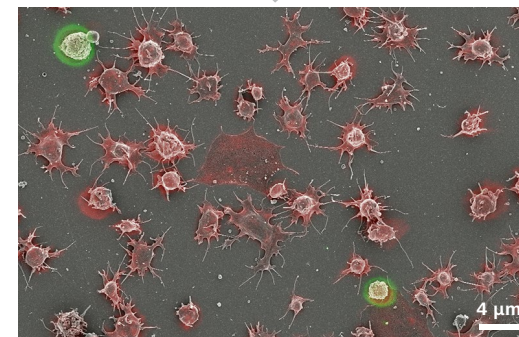
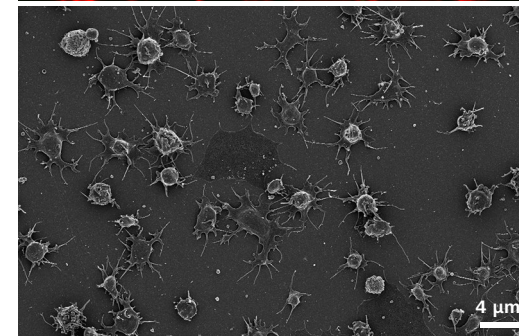
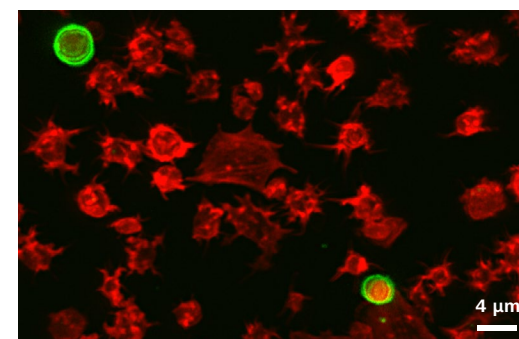
The Shuttle & Find software module allows an easy-to-use, productive workflow to overlay data from your light microscope and scanning electron microscope. Combine the optical contrast methods of your LM with the analytical methods of your SEM. Discover information about the function, structure and chemical composition of your sample.

How it Works:

Using a special specimen holder with three fiducial markers, a coordinate system is generated within seconds. Use the light microscope to define interesting regions in your sample. Then relocate the defined regions in the SEM where you will be able to improve the resolution by several orders of magnitude. Now you continue examining the sample more extensively. Finally, perform the correlation of the images taken by the different microscopical techniques with the Shuttle & Find software.



Lithium Ion battery. Top: light microscope image. Center: SEM image. Bottom: Overlay of both, combined with EDS analysis.



Platelets stained with AF647 (cellular platelet protein, false color: green) and AF555 – Phalloidin (false color: red). Top: Laser Scanning Microscopy fluorescence image. Center: SEM image. Bottom: Overlay. Courtesy: of D. Woulfe and J. Caplan, University of Delaware, Newark, USA.

Expand Your Possibilities

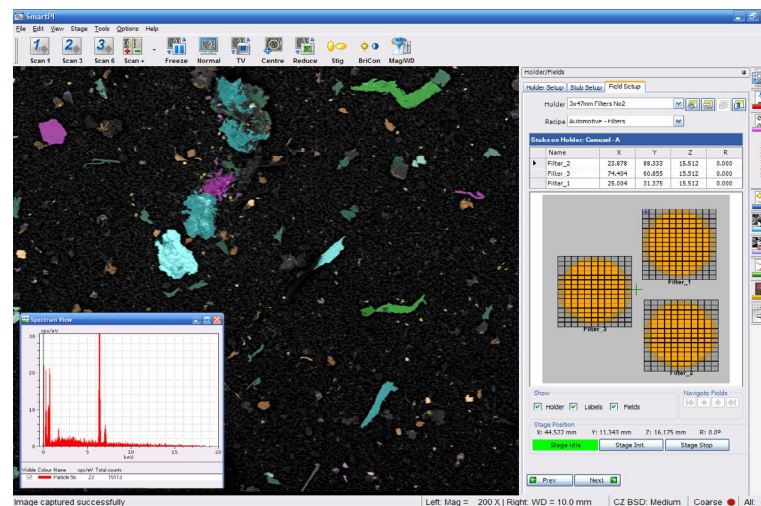
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Automated Particle Analysis

From manufacturing cleanliness and engine wear prediction to steel production and environmental management, particle analysis solutions from ZEISS automate your workflow for increased reproducibility.

SmartPI

SmartPI (Smart Particle Investigator) is a powerful particle analysis tool for your ZEISS Sigma family. It automatically detects, investigates and characterizes particles of interest in your sample. Gain additional productivity from your ZEISS Sigma family through automated analysis – for example, by running it fully unattended overnight and at weekends. Generate standard reports automatically, or interactively investigate your data. Advanced particle analysis allows you to optimize industrial processes by quantifying samples rapidly and objectively. Application specific plug-ins provide pre-built recipes and report templates tailored specifically to the industry you are working in.



Either use Image Analysis (IA) on its own or combine it with EDS data for rapid particle identification and classification.

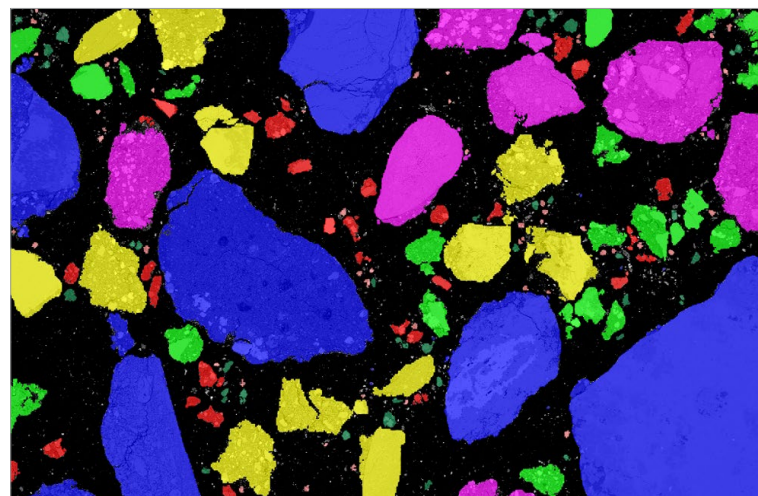


Image from SmartPI IA, displaying particles of different size ranges in which the size range is defined by a unique color.

Automatically locate and characterize particles using image analysis and identify them using IA and EDS.

Store your particles in a database along with a full suite of modal data ready for investigation and reporting.

Expand Your Possibilities

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Automated Mineralogy

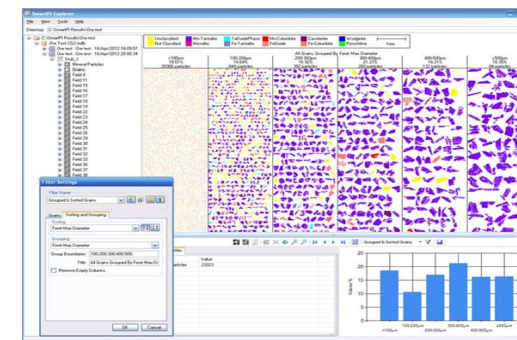
ZEISS Mineralogic combines an advanced mineral analysis engine with a range of application-specific outputs to your Sigma, enabling you to characterize and quantify even the most challenging geological samples with submicron precision.

Oil & Gas

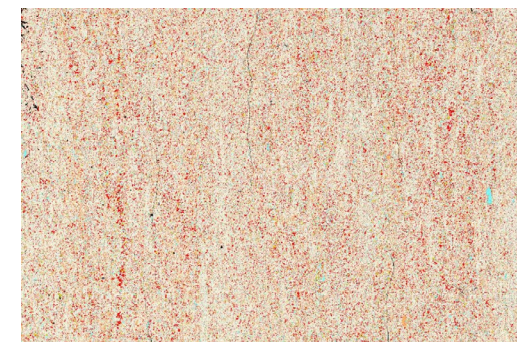
Use Mineralogic Reservoir as a part of your digital rock petrophysics workflow suite to gain a deeper understanding of your reservoir. This lets you automatically map and characterize the minerals, the porosity and the organics. Tailor your system to analyze any type of rock, from conventional sandstone reservoirs to highly heterogeneous shale and mudrocks. Your automated petrological system provides unique insights into reservoir rocks, playing a vital role in characterizing samples from the centimeter to the nanometer scale.

Mining

Mineralogic Mining provides quantitative mineralogy for geometallurgy, optimization of mineral processing plant and ore characterization. Generate valuable understanding to support process modelling and decision-making, thereby reducing risks and costs. Target process improvements with quantitative mineralogy, elemental department, grain size distribution, and liberation and locking characteristics. Your automated mineralogy system is an essential part of the modern mining operation.



Particle Analysis: Quickly and simply investigate plant products, identify trends and highlight process improvements. For example, identify causes for tailings losses and concentrate dilution



Section Analysis: Typical Mineralogic digital mineral map of a section of rock identifying and quantifying mineralogy, porosity, organics and texture. Sample: courtesy of University of Texas, Austin, US.

ZEISS Sigma Family: Your Flexible Choice of Components.

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Selected Detectors and Accessories		Detectors and Accessories Offer	ZEISS Sigma 300	ZEISS Sigma VP 300	ZEISS Sigma 500	ZEISS Sigma VP 500
InLens SE Detector	High resolution in column topographical imaging		●	●	●	●
InLens Duo Detector	High resolution in column sequential topographical or compositional imaging (replaces InLens SE Detector)		X	X	○	○
ETSE Detector	High vacuum topographical imaging at longer working distance		●	●	●	●
VPSE-G4 Detector	Fourth generation Variable Pressure SE detector		X	●	X	●
C2D	Current detector for high performance Variable Pressure imaging		X	○	X	○
AsB Detector	Compositional and crystallographic orientation imaging		○	○	○	○
4Q HDBSD Detector	4 quadrant high definition BSE detector for compositional imaging		○	○	○	○
5S HDBSD Detector	5 segment high definition BSE detector especially for low kV compositional imaging		○	○	○	○
YAG-BSD Detector	YAG crystal scintillator BSE detector for fast, easy-to-use compositional imaging		○	○	○	○
BSD4	BSE detector with 4 parallel outputs for real-time 3D surface metrology capability		X	X	○	○
MMSTEM Detector	Multimode STEM detector for transmission images of biological and thin film samples		○	○	○	○
aSTEM Detector	Annular STEM for transmission imaging		X	X	○	○
CL Detector	Cathodoluminescence detector		○	○	○	○
3DSEM	Generate 3D images of your sample with traceable surface metrology measurement		○	○	○	○
Airlock	Fast loading of samples up to 80 mm diameter		○	○	○	○
Large Airlock	Fast loading of samples up to 130 mm diameter		X	X	○	○
Plasma Cleaner	Remove hydrocarbon contamination for high resolution imaging		○	○	○	○
3View	Serial block face imaging of biological samples		X	○	X	X
EBSD Detector	Electron backscatter diffraction detector for microstructural-crystallographic analysis		○	○	○	○
EDX Detector	Energy dispersive X-ray analysis for high resolution compositional analysis		○	○	○	○
WDS Detector	Wavelength dispersive spectroscopy for high resolution low artefact compositional analysis		○	○	○	○

● Standard ○ Option available X Not available

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	ZEISS Sigma 300	ZEISS Sigma 500	
Electron Source	Schottky Thermal Field Emitter	Schottky Thermal Field Emitter	
Resolution @ 15 kV	1.2 nm	0.8 nm	
Resolution @ 1 kV	2.2 nm	1.6 nm	
Backscatter Detector (BSD)	HD BSD	HD BSD	
Maximum Scan Speed	100 ns/pixel	50 ns/pixel	
Accelerating Voltage	0.02 – 30 kV	0.02 – 30 kV	
Magnification	10x – 1,000,000x	10x – 1,000,000x	
Probe Current	4 pA – 20 nA (40 nA & 100 nA Option)	4 pA – 20 nA (40 nA & 100 nA Option)	
Image Framestore	3 k × 2 k pixels	32 k × 24 k pixels	
Ports	10	14	
EDS Ports	2 (1 dedicated port)	3 (2 dedicated ports)	
Vacuum Modes			
High Vacuum	Yes	Yes	
Variable Pressure	2 – 133 Pa	2 – 133 Pa	
Stage Type	5 axis compucentric stage	5 axis eucentric stage	5 axis compucentric stage option
Stage travel X	125 mm	130 mm	125 mm
Stage travel Y	125 mm	130 mm	125 mm
Stage travel Z	50 mm	50 mm	50 mm
Stage travel T	-10 to +90 degrees	-3 to +70 degrees	-10 to +90 degrees
Stage travel R	360° Continuous	360° Continuous	360° Continuous

Count on Service in the True Sense of the Word

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Because the ZEISS microscope system is one of your most important tools, we make sure it is always ready to perform. What's more, we'll see to it that you are employing all the options that get the best from your microscope. You can choose from a range of service products, each delivered by highly qualified ZEISS specialists who will support you long beyond the purchase of your system. Our aim is to enable you to experience those special moments that inspire your work.

Repair. Maintain. Optimize.

Attain maximum uptime with your microscope. A ZEISS Protect Service Agreement lets you budget for operating costs, all the while reducing costly downtime and achieving the best results through the improved performance of your system. Choose from service agreements designed to give you a range of options and control levels. We'll work with you to select the service program that addresses your system needs and usage requirements, in line with your organization's standard practices.

Our service on-demand also brings you distinct advantages. ZEISS service staff will analyze issues at hand and resolve them – whether using remote maintenance software or working on site.

Enhance Your Microscope System.

Your ZEISS microscope system is designed for a variety of updates: open interfaces allow you to maintain a high technological level at all times. As a result you'll work more efficiently now, while extending the productive lifetime of your microscope as new update possibilities come on stream.



Profit from the optimized performance of your microscope system with services from ZEISS – now and for years to come.

>> www.zeiss.com/microservice



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



We make it visible.