MICROSCOPY

Metallographic microscope

ZEISS
Axio Observer 7m

Brightfield

Darkfield

Polarization Contrast

Polarization with Additional Lambda Plate

The Axio Observer inverted microscope allows to investigate, develop and analyse the materials. The inverted construction promotes the study of a large number of samples in no time at all.
Using dedicated software, it is possible to analyse, for example, non-metallic inclusions, grain sizes and phases in automatic way.
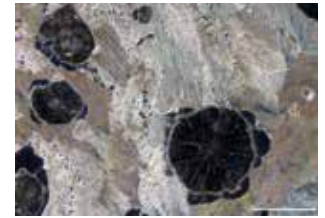
Thanks to the inverted platform, the Axio Observer can analyze a large number and heavy samples. In fact, its inverted design facilitates parallel alignment to the objective lens: simply, it is possible to put the specimen on the stage, focus once and keep the focus for all further magnifications and samples.

The Axio Observer allows to correlate the light and electron microscopes thanks to the Shuttle & Find tool. It is a correlative micro copy interface useful in materials analysis.
A combined hardware and software solution allows transferring the specimen from one microscope system to another and analyse the same region of interest.
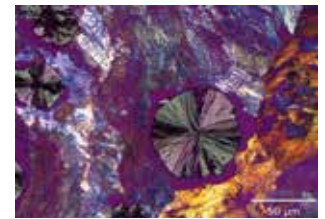
Specifications

TYPE	Inverted Reflected light
SAMPLE HOLDER	<30 mm diaphragm Motorized/Manual
SEM CORRELATIVE	Yes
SAMPLE GEOMETRY	<50Kg
ANALYSIS	Bright field/Dark field Polarized light (Interference contrast)
ELABORATION	Image analysis software module/particle analysis
OPTICS	2.5x, 5x, 10x, 20x, 50x, 100x

Applications

Typical Applications, Typical Samples	Task	ZEISS Axio Observer Offers
Grain Size Analysis	Analyze grain size supporting ASTM E 112, ASTM E 1382, DIN EN ISO 643.	Perform a standard-supporting grain size analysis using variable methods: automatic reconstruction of grain boundaries and determination of individual grain sizes; semiautomatic linear intercept methods; comparison to reference series images; present the result of the analysis in a report.
NMI (Non-Metallic Inclusions)	Determine steel purity level supporting EN 10247, DIN 50602, ASTM E45, ISO 4967, JIS G 0555, GB/T 10561; determine the percentage of non-reflective inclusions and rate non-metallic inclusions.	Analyze steel purity in accordance with current international standards; overview of results in image and chart form; selection of various gallery views with corresponding analysis and classification data; storage and management of all analysis data such as charts, images, galleries, reports, testing procedures in the asset archive.
Birefringent Samples: Ores, Metals, Metal Alloys, Coals, Ceramic	Analyze anisotropic samples such as Barker etched aluminum alloys, zinc alloys, graphite, titanium alloys and magnetic materials.	Analyze anisotropic samples under polarization contrast with a range of polarization accessories such as analyzer and polarizer.
Analyze Layer Thickness	Measure layer thickness and geometric properties of e.g. electrodes	Analyze simple and complex layers; identify layers by color value or gray scale; precise, individual and automatic calculation of the course of measuring axis for each layer, regardless of the number of layers; presentation of results in an easy-to-read report with sample data and findings such as maximum and minimum axis length, mean value and standard deviation.
Analyze Graphite Particles	Analyze of shape, size and distribution the graphite particles.	Analyze the shape, size and distribution of the graphite particles and classify them in line with standards using automated image analysis. Determine size and shape in accordance with EN ISO 943 or nodularity in accordance with SAE J 1887; present the results with all classifications in a report.
Multiphase Analysis	Measure phase distribution in multiphase samples.	Analyze your samples' phase distribution; measure up to 32 phases and determine phase percentages or other parameters like size, shape and orientation of particles; classify the detected particles and document the results in a report.