Leica
MICROSYSTEMS
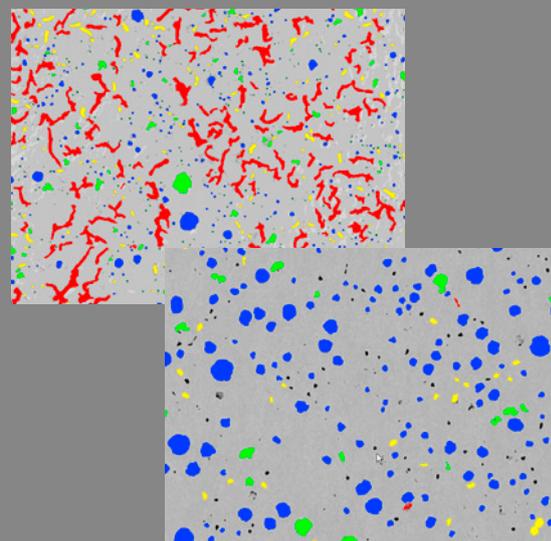

LAS X CAST IRON EXPERT NODULAR SOFTWARE

Structural analysis of nodular/ductile or compacted cast iron

LAS X Cast Iron Expert provides an environment for the quick analysis of graphite microstructures in cast iron, such as ductile/nodular or compacted. Operator interaction is minimized by a guided, easy-to-learn workflow. The module conforms to procedures described in various international standards. Unlike traditional comparison based approaches, the Cast Iron Expert module determines the type, shape, size, and distribution of graphite nodules automatically.

Results can be expressed according to multiple international standards (ASTM A247, ISO 945-2, JIS G 5502). Besides the analysis of graphite nodules on etched iron samples the software also assists in the determination of the ferrite/pearlite ratio. Utilizing high bit depth or HDR images and advanced contrast methods, the unique detection algorithms of Cast Iron Expert allows the rapid analysis of graphite, ferrite, and pearlite in parallel.

A wide variety of other geometrical and morphological parameters can be analyzed using the LAS X Cast Iron Expert module. By creating customized, Excel-based report templates this software offers the flexibility to also tailor analyses for advanced research purposes.

Covered Standards:

> ASTM A247
> ISO 945-2
> JIS G 5502

Sample Preparation

Selection of samples according to a standardized sampling process. Preparation of clean and even surfaces using abrasive methods or thin sections using microtomes.

Etching

Chemical, electrochemical, or physical enhancement of different phases and components by material specific etching methods.

Visualization / Acquisition

Applying optical contrast methods and microscopic imaging techniques to acquire digital images of the sample's microstructure.

Digital Graphite Shape Analysis

Analyze the sample's microstructure for size and shape of graphite nodules and classify them according to international standards (ASTM A247, ISO 945-2, JIS G 5502). Additionally analyze the area ratios of graphite, ferrite, and pearlite.

Reporting

Beyond traditional phase percentage and object count, a wide variety of other parameters can be analyzed, e. g. shape parameters and surface/interface areas. Create customized, Excel-based report templates to also tailor analyses for advanced research purposes.
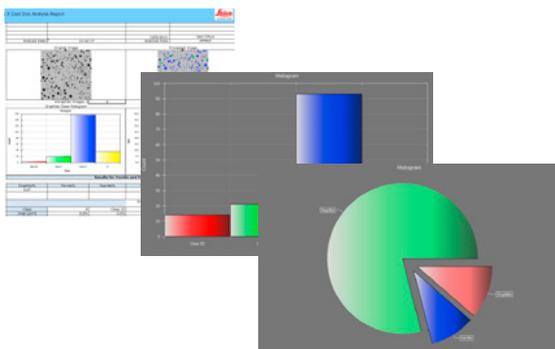
Delivery of Quality Products

Stay confident about your product quality. Ensure that your customers receive high quality products.

Your benefits: Easy-to-use workflow & customizable reports

The LAS X Cast Iron Expert Nodular software automatically and precisely analyzes ductile cast iron according to methods and parameters compliant with international standards for the classification of Graphite Nodules. In addition, the unique workflow also allows the analysis of the ferrite/pearlite ratio in one step.

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