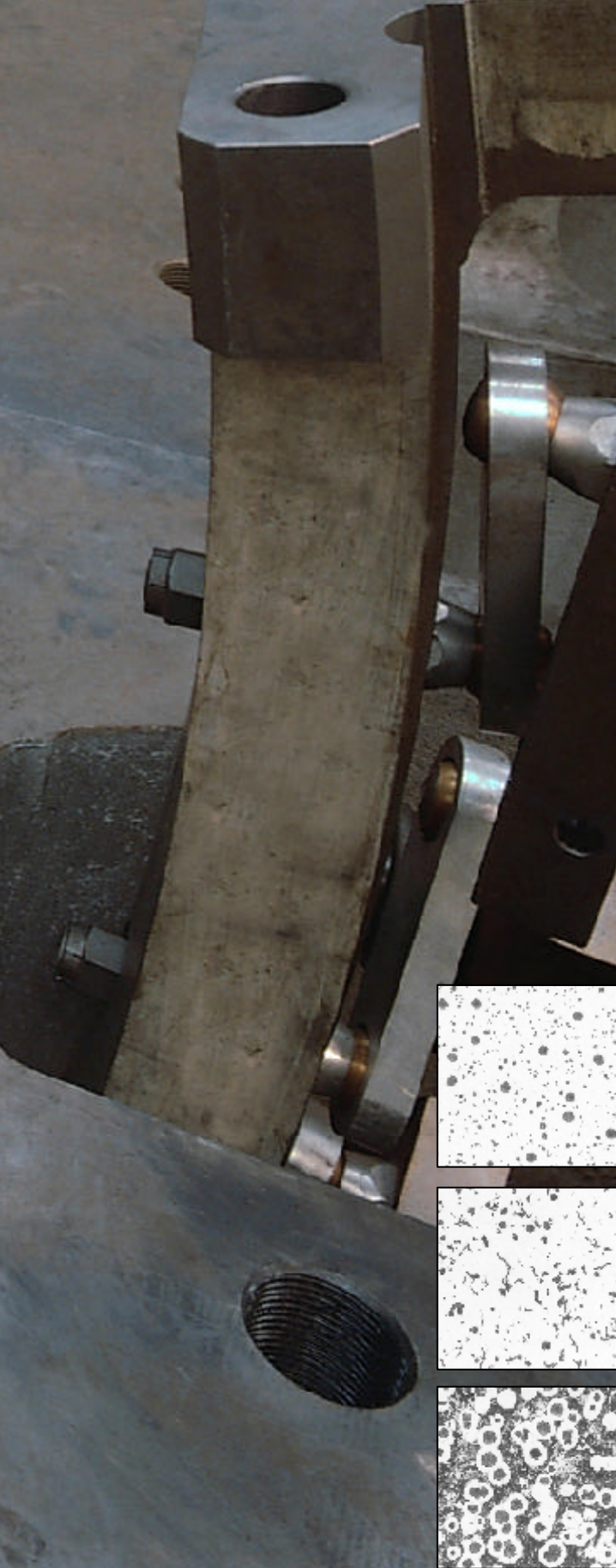


# analySIS® CastIron Solver

Using image analysis to evaluate  
the graphite in cast iron!



**analySIS® CastIron Solver** analyzes cast iron automatically or manually with regard to shape and size and determines the ferrite/perlite ratio in accordance with international and national standards. In addition to analyzing graphite, **analySIS® CastIron Solver** offers all of the following: intelligent image acquisition; ergonomical onscreen chart comparison; interactive object measurement; clearly structured data storage; and automatic report generation.

**analySIS® CastIron Solver** belongs to Soft Imaging System's series of materials-science software packages.

Digital Solutions for Imaging and Microscopy  
Soft Imaging System



analySIS®

# CastIron Solver

## Quantitative analysis of cast iron ..



One of cast iron's characteristics is its great strength. It is also ductile (a material that is easy to be molded or shaped – malleable) and is comparatively low in cost – compared with other raw materials. It offers flexibility in design and is inexpensive to shape. This has resulted in it becoming one of the metal-working industry's standard materials. Various norms – such as the ASTM A247 or the EN ISO 945 – define the standards for evaluating the material quality. **analySIS® CastIron Solver** analyzes, classifies and documents cast-iron properties according to the criteria of a whole range of relevant norms.

### ■ Well-conceived acquisition concepts

Working with **analySIS® CastIron Solver** means that microscopes, motor stages and various cameras can be integrated. Automated microscopes and motor stages can be controlled. And upon image acquisition, the settings of these components are documented fully automatically. This package also provides IntX (Intelligent eXposure) – integrated and automatic exposure control. This makes acquiring top-quality images at the mere click of a button easy for all users. The user does not have to have the extensive technical background normally required. **analySIS® CastIron Solver** supports all standard image formats. As a special feature, it offers importation of image files in third-party formats via predefined image-import filters. These import filters ensure – along with the correct calibration – that the acquisition parameters of the microscopes of all leading manufacturers are read out and appear in the image information – all automatically.

### ■ Versatile and innovative

For labeling and marking the (live) images, **analySIS® CastIron Solver** offers an extensive library of functions for editing and inserting text and graphics. In addition, widely varied functions for filtering, interactive measurement and evaluation of images are integrated. All measurement data is automatically transferred into sheets and can be displayed directly as diagrams or histograms.

### ■ Standards compliant: analyze it - classify it

**analySIS® CastIron Solver** offers both automatic and manual cast iron evaluation. Take your pick. It's up to you, the user. Each graphite particle is automatically detected and evaluated with regard to shape and size. Results appear as size and shape distribution in sheets or diagrams. Classification according to various national and international norms – such as VDG, EN ISO, JIS or ASTM – are all integrated. Other norms can be added by the user. **analySIS® CastIron Solver** supports the determination of a carbon-corrected ferrite/perlite ratio. All evaluatory criteria and analytical settings can be saved and adjusted for use with various preparation techniques.

### ■ Make the comparison

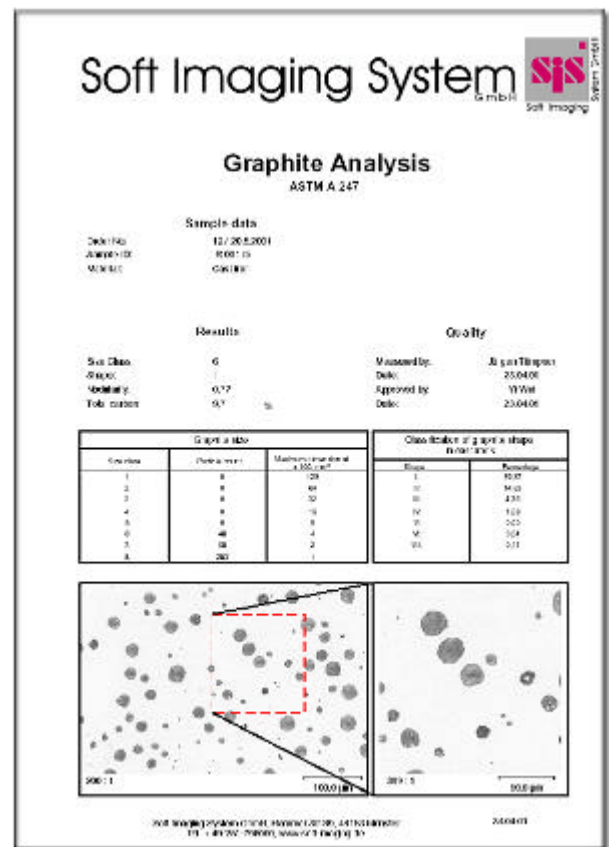
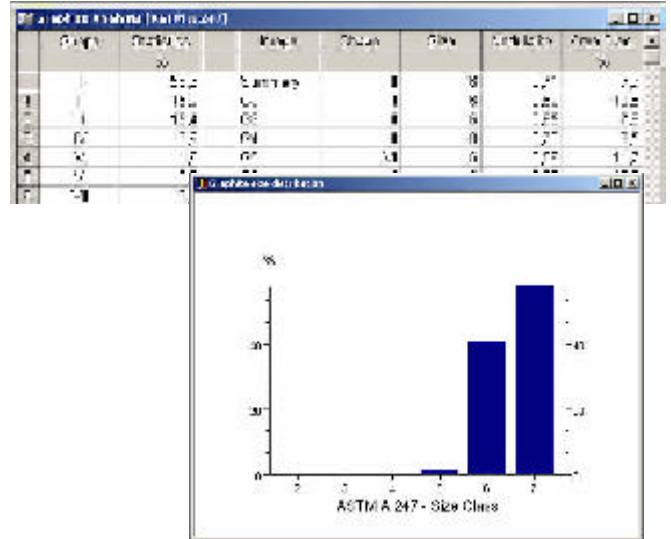
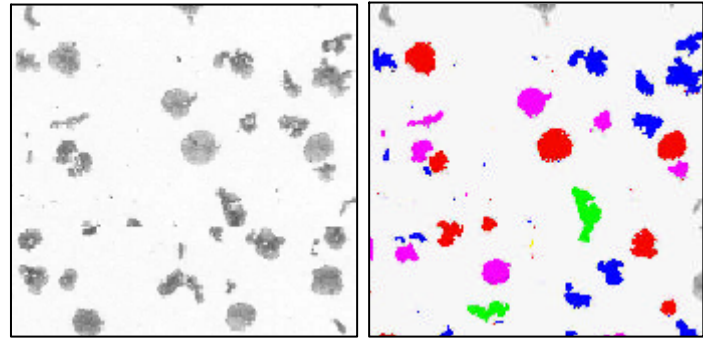
**analySIS® CastIron Solver** contains tools for chart comparison. Assigning live image to the relevant reference images and documenting object properties is thus taken care of quickly and in a straightforward way. Chart images are compared directly within the software with the live image of the camera. Working with **analySIS® CastIron Solver** is ergonomic because the entire monitor is used (for displaying reference images and live image) – even with highly detailed images. Characteristic data – such as numbers and texts – can be assigned to each reference image (eg, grain sizes and type classifications). This data can be transferred at a click of the mouse into the results sheet. Various EN ISO, DIN and ASTM charts are also available as extensions. Furthermore, users may define their own charts and integrate them into the chart picklist.

### ■ Structures clear as crystal

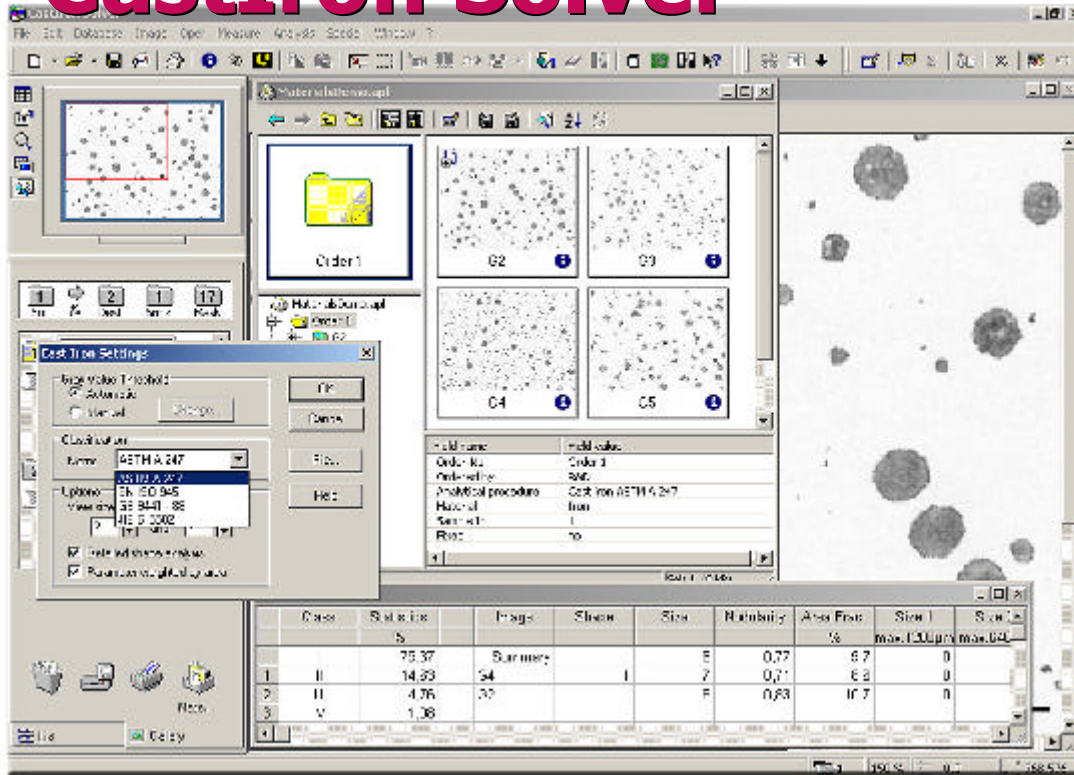
The integrated database archives images, spectra, analytical data, reports and associated documents. And this is done in a well-structured, easy-to-navigate and easy-to-access manner. The structure of the database is easy to adapt to suit the respective workflow. The user decides which criteria are the most important for classifying data. This means that all documents and data can be classified according to order number, batch number, customer, experiment, and so on and so forth. User input helps (such as picklists or text prompts for selected database fields) significantly minimize user effort. They also minimize the possibility of mistakes being made. The database has been designed to make data access fast. Its network capacity requirements are also low.

### ■ Get your reports – the easy way

**analySIS® CastIron Solver** has an integrated report generator. Using it to create norm-compliant reports is convenient, quick and easy. The report generator supports graphical elements such as images, sheets and diagrams. It also offers easy text input. Placeholders are automatically filled out with the contents of various fields – from the archive or from analytical results. Simply dragging & dropping images, sheets and database content is all that is necessary to generate a report within seconds. To make everything even more convenient, predefined report templates (compliant with the most common norms) are already integrated into **analySIS® CastIron Solver**. Thinking about using a variety of layouts for the cover page, sheet pages, image appendices and conclusions? No problem. Using multiple report templates to make your report is no trouble at all in **analySIS® CastIron Solver**.



# analySIS® CastIron Solver



## Key features

- automatic and manual analysis of graphite in cast iron
- nodular, dendritic and flake graphite particles
- classification according to shape and size
- graphite area fraction in percent (%)
- graphite-corrected phase analysis of ferrite and pearlite – in percent
- standards: EN ISO 945; ASTM A247; JIS G 5502; GB 9441-88
- onscreen chart comparisons with live image
- user-definable charts
- various camera types can be integrated (digital, analog)
- IntX (Intelligent eXposure) - automatic exposure control
- operation of external devices such as motor stages, microscopes, etc
- various image formats supported
- image labeling
- image filterings
- interactive measurement methods
- well-structured data storage (archiving)
- report generation
- macro recorder

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