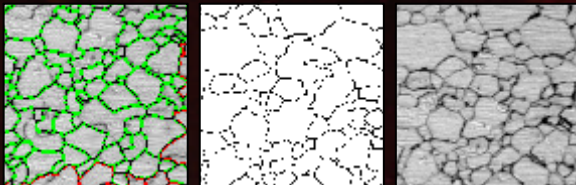
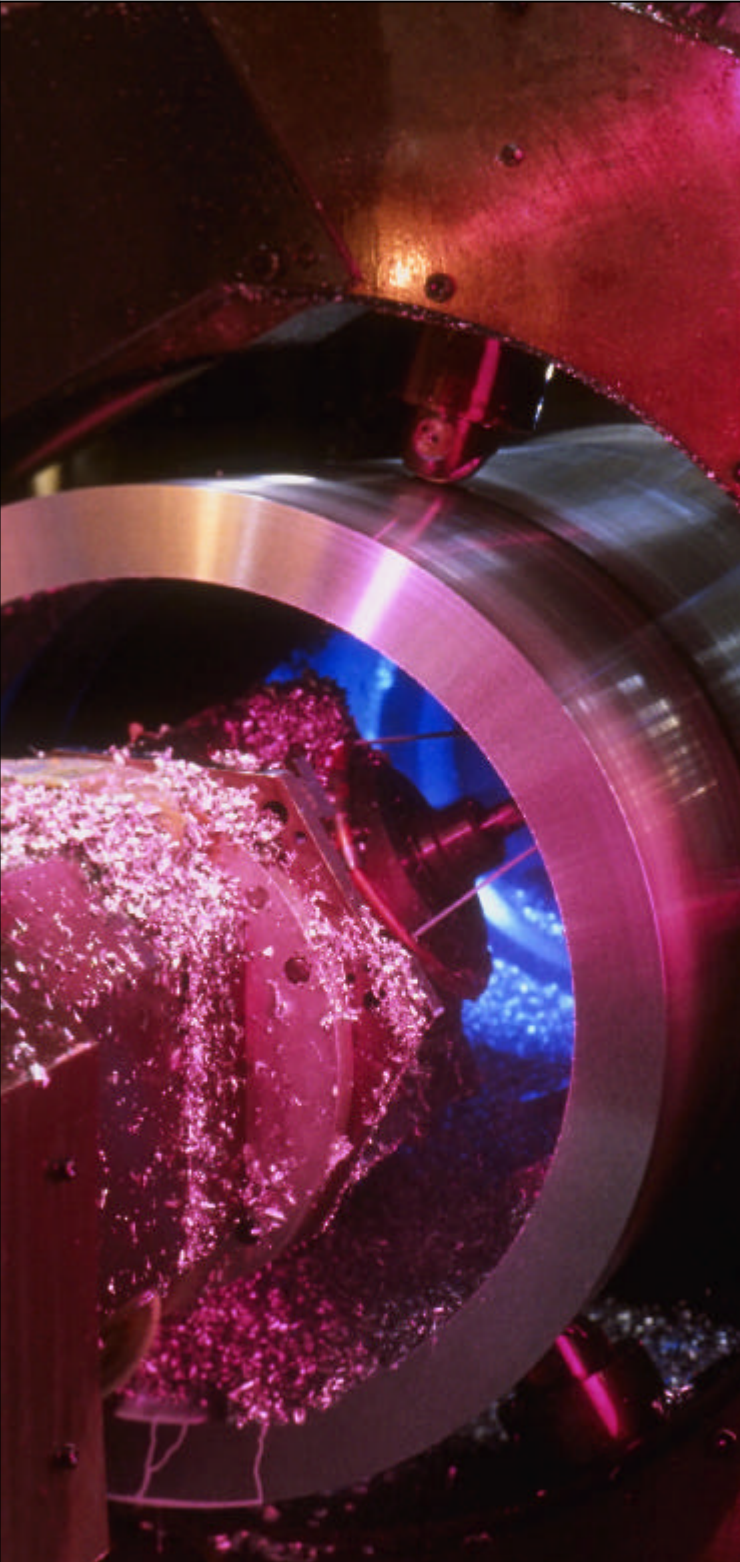


analySIS® Steel Factory

**Digital image-analytical evaluation
methods for the field of metallography!**



analySIS® Steel Factory analyzes and documents grain sizes compliant with DIN 50601, ASTM E 112, JIS G 0551, JIS G 0552, EN ISO 643...

It offers automatic grain-size analysis via the intercept method and the planimetric method. All the particle analysis and phase analysis functions are integrated along with onscreen chart comparison. If so desired, the results of all analytical methods are automatically integrated into pre-defined, standards-compliant reports. Furthermore, this package offers intelligent image acquisition, tools for interactive object measurement and well-structured data storage.

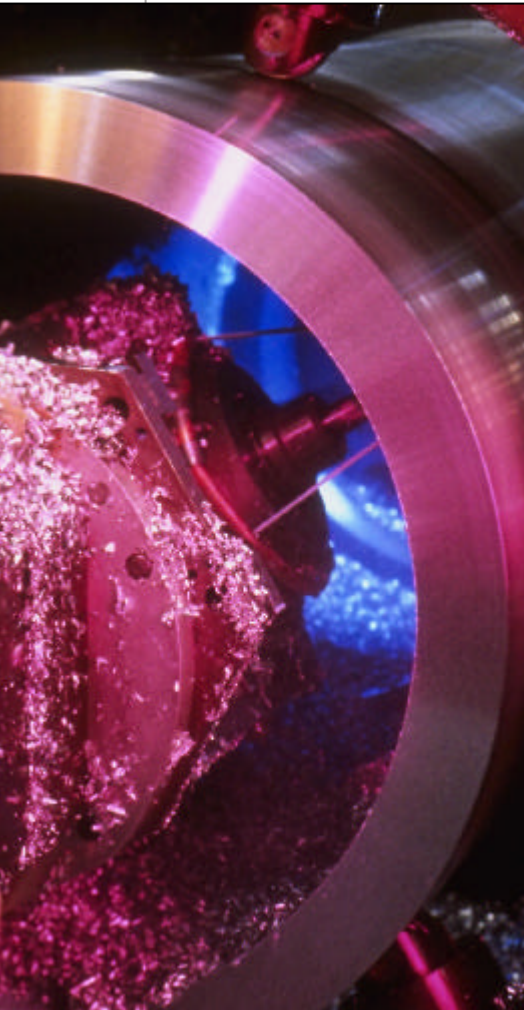
analySIS® Steel Factory is part of Soft Imaging System's series of materials-science software packages.

Digital Solutions for Imaging and Microscopy
Soft Imaging System



analySIS®

Steel Factory



Qualitative, digital, materials-analytical

Global competition and rising product quality have increased the demands on the work done by quality and development labs in the field of materialography. High levels of steel and iron product quality require testing methods and measurement series that become more and more complex. The quality testing, archiving of the associated testing data, generating reports lead to an ongoing increase in the amount of work that has to be completed within the required timeframe. Working with the **analySIS® Steel Factory** package allows you to take an integrated approach towards completing these tasks. And the workflow(s) everyone is accustomed to working with remain exactly the same.

On the analytical side of things, the **analySIS® Steel Factory** package contains: grain-size analysis; fully-automated particle analysis and classification; phase analysis; and class analysis. On the interactive side of things, it offers interactive measurement and digital chart comparison. Well-structured data storage and generation of standards-compliant reports make this product a premium materials-analytical workstation.

■ Versatile and innovative

Microscopes, motor stages and various cameras can all be integrated via **analySIS® Steel Factory**. Automated microscopes and motor stages can be operated. This makes a fully automatic documentation of all device settings as well as fully automatic analytical sequences feasible. Top-quality acquisitions can be made by all users via the IntX automatic exposure control (Intelligent eXposure). The extensive technical background usually required for doing so is not necessary. **analySIS® Steel Factory** supports all standard image formats. As a special feature, it offers predefined image-import filters. For labeling and marking the (live) images, an extensive library of functions for editing and inserting text and graphics is available. Furthermore, there are numerous integrated filtering functions.

■ Standards compliant: grain-size analysis

analySIS® Steel Factory analyzes and documents grain size using the intercept and/or planimetric measurement methods – in compliance with standards such as DIN 50601, ASTM E 112, JIS G 0551, JIS G 0552 und EN ISO 643. The mean intercept length is the basis for determining grain size with the intercept method, which applies all standard norm intercept patterns. The planimetric measurement method determines grain size via the surface of the grains. For automatic analysis, grain boundaries must be continuous – ie, unbroken. To ensure that boundaries are continuous, the planimetric method includes a high-performance algorithm for reconstruction of grain-boundaries. The planimetric method offers the opportunity for conducting analyses that go beyond the usual level of standard analysis. You are able to determine the following: g values; g values parallel and vertical to the roll direction; bimodal g values; g values of sandwich layers; g-value histograms; and elongation are all calculated. Thanks to integrated task automation, it is easy to define fixed task sequences for frequently recurring analysis tasks - differentiated according to sample class and preparation method. When using motorized stages, multiple samples can be analyzed automatically – and all in one step.

■ Particle analysis

Using the analytical functions offered by **analySIS® Steel**

cal testing methods...

Factory, images can be evaluated quickly, easily and flexibly. Thousands of image objects can be quantitatively detected and analyzed within seconds. The analyses can be applied either to the entire image or to image segments. Particle detection supports the analysis of multi-phase objects. This means that, eg, when evaluating porous materials, both pores and grains can be investigated simultaneously and classified. The selection of measurement criteria on offer in this software is practically unlimited. Conducting evaluations according to multiple criteria can be carried out in a single operation. It is easy to verify the analytical data because the data is linked to the particle within the image.

■ Make the comparison

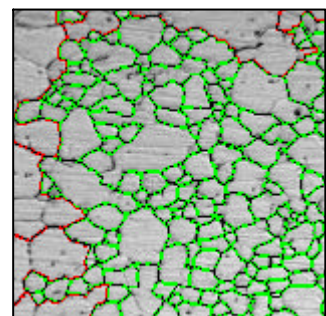
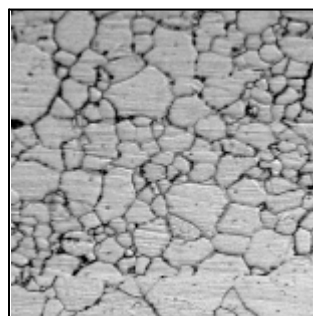
Assigning the live image to the relevant reference images and documenting object properties is taken care of quickly and in a straightforward way with **analySIS® Steel Factory**. Chart images are compared directly within the software with the live image of the camera. Working with **analySIS® Steel Factory** 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 to the results sheet. Various EN ISO, DIN and ASTM charts are also available. Furthermore, users may define their own charts.

■ 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 is network-able and has been designed to make data access fast. Its network capacity requirements are also low.

■ Get your reports – the easy way

analySIS® Steel Factory 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. Text fields are automatically filled out with analytical results and/or the contents of database field contents. 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® Steel Factory**. 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.



	A	Reference Value	Std. Dev.	param002	param023	param01
Image Area [µm²]		0.00	0.00	0.00	0.00	0.00
Image Size [µm]		0.00	0.00	0.00	0.00	0.00
Area [µm²]	11100.54	11107.41	10744.70	10740.70	10740.70	10740.70
Number of the grains	57	57	57	57	57	57
Area of the grains [µm²]	355295.65	114365.65	3129.45	31174.25	35.6427	35.6427
Number of the pores	21810	21810	21810	21810	21810	21810
Area of the pores [µm²]	12560.29	12560.29	12560.29	12560.29	12560.29	12560.29
Area of the pores [µm²]						
Grain size (D50) [µm]	9.52	9.45	9.52	9.52	9.52	9.52
Grain size (D80) [µm]	9.52	9.52	9.52	9.52	9.52	9.52
Grain size (D90) [µm]	1.51	1.51	1.51	1.51	1.51	1.51
Grain size (D95) [µm]	1.51	1.51	1.51	1.51	1.51	1.51
Grain size (D99) [µm]	0.07	0.44	0.09	0.41	0.70	0.70
Grain size (D99.5) [µm]	1.38	1.37	1.38	1.38	1.38	1.38
Grain size (D99.9) [µm]	0.00					
Grain size (D99.95) [µm]	1.11					

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Grain Size
ASTM E 112

Order No.	Sample No.	Material	Grain Size	Measurement Results
0	1100	Steel	9.52	9.52
1	1101	Steel	9.52	9.52
2	1102	Steel	9.52	9.52
3	1103	Steel	9.52	9.52
4	1104	Steel	9.52	9.52
5	1105	Steel	9.52	9.52
6	1106	Steel	9.52	9.52
7	1107	Steel	9.52	9.52
8	1108	Steel	9.52	9.52
9	1109	Steel	9.52	9.52
10	1110	Steel	9.52	9.52
11	1111	Steel	9.52	9.52
12	1112	Steel	9.52	9.52
13	1113	Steel	9.52	9.52
14	1114	Steel	9.52	9.52
15	1115	Steel	9.52	9.52
16	1116	Steel	9.52	9.52
17	1117	Steel	9.52	9.52
18	1118	Steel	9.52	9.52
19	1119	Steel	9.52	9.52
20	1120	Steel	9.52	9.52

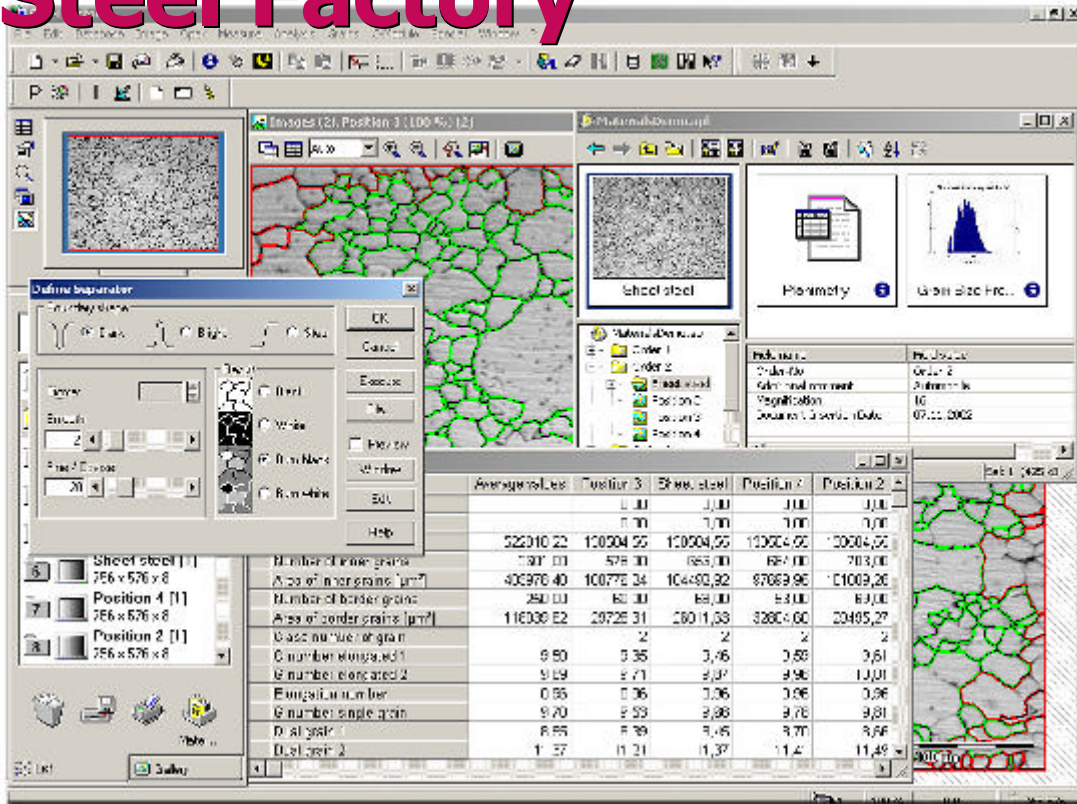
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Digital Solutions for Imaging and Microscopy

Soft Imaging System



analySIS® Steel Factory



Key features

■ Planimetric method

measurement based on: grain-boundary reconstruction
grain boundaries: light, dark or etched grain surfaces
results: g values and statistics, sandwich-layer analysis, bimodal structural analysis, statistics on grain sizes and grain-size histograms, detailed single-grain analyses, elongation

■ Intercept method

measurement lines: horizontal, vertical, diagonal, circular, combinations thereof
grain boundaries: light, dark or etched grain surfaces
results: g values and statistics

■ norms supported

ASTM E 112, DIN 50601, JIS G 0551, JIS G 0552, EN ISO 643
extension of norms to comply with other national, international or company and/or industry norms

■ onscreen chart comparison with live image

user-defined extension of charts

■ automatic particle analysis, class analysis

■ well-structured data storage (archiving)

■ automatic and standards-compliant report generation

■ operation of external devices such as motor stages, microscopes, etc.

■ and much more

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