SPIP

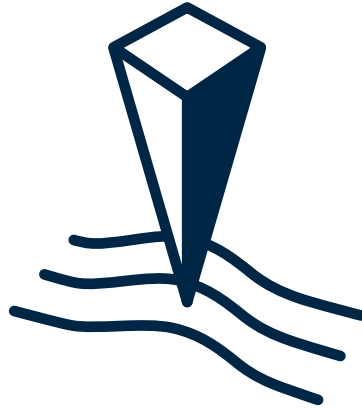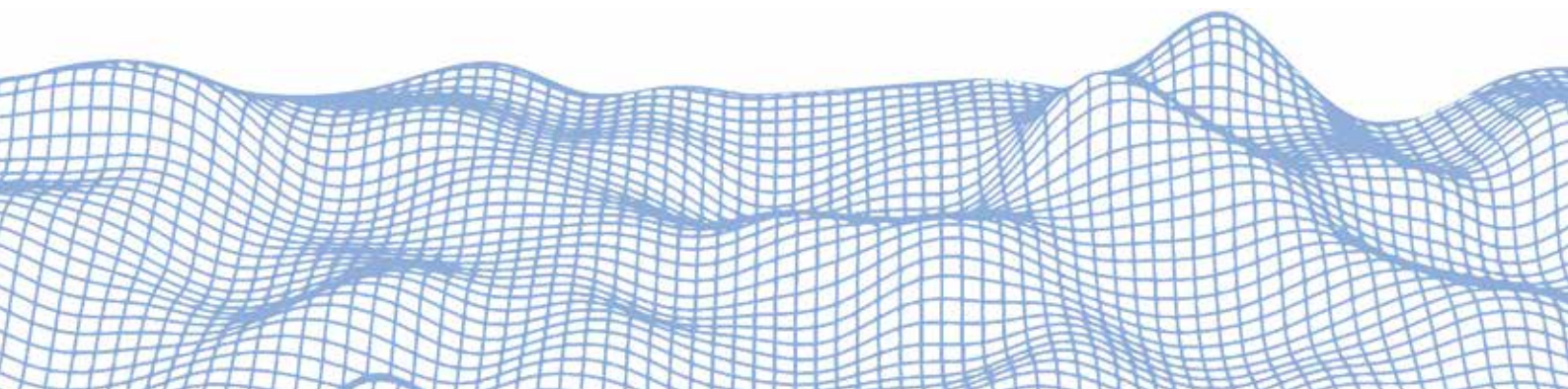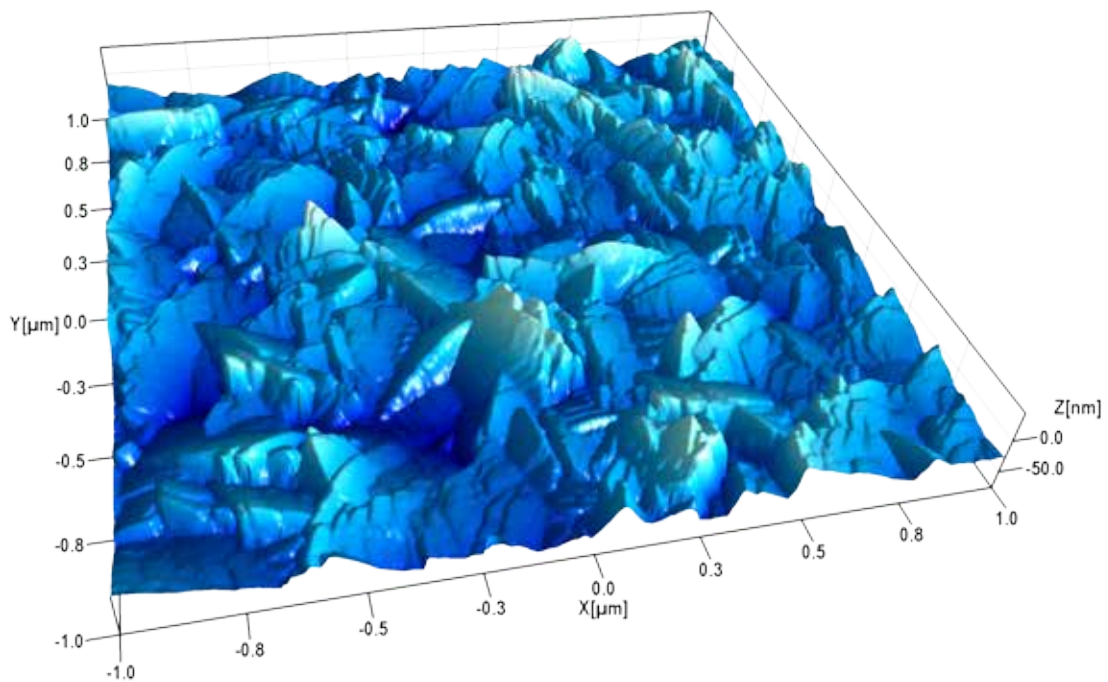## Your software for efficient and accurate image processing

Your software for efficient and accurate image processing

SPIP™ is an advanced software package for processing and analyzing microscopy images at nano- and microscale.

Today's research and development are dependent on advanced microscopy instrumentation and analysis, particularly in semiconductors, nanomaterials science, industrial R&D and life sciences.

SPIP™ provides industrial and academic researchers with an advanced toolkit for working with microscope images, incl. extracting data from most microscopy file types, cleaning and enhancing data, analyzing measurements, visualizing and reporting analysis results.

Professional Usage

Leading research institutes and high-tech companies worldwide use SPIP™ for their image processing applications.

The software is used for research and innovation in a variety of industries such as pharmaceutical, cosmetics, semiconductors, hard disk manufacturing, polymer and aluminium manufacturing.

Furthermore, SPIP™ is widely recognized as the standard software for research and education at leading universities, and has been cited in more than 1200 scientific publications.

Advantages

Quick & Efficient
Fast delivery of compelling visuals, and customized automation tools for reporting results

Easy to Use
Intuitive user interface with examples, video tutorials and Help-function.

Versatile
Reads most microscope file formats, and therefore serves as an analytical platform for laboratories with various types of microscopes.

Comprehensive
Covers all image correction and analysis needs with unrivaled detail and accuracy.

Professional
Our dedicated software development and technical support team has non-stop focus on enabling users to process data in the best possible way.

What customers think

"The (SPIP) package is extremely powerful and I have not found a type of data file that cannot be imported or read by the software.

The particle and pore analysis is particularly powerful and we have used it to statistically analyze nano and microparticle size and shape from atomic force microscope and electron microscope images...."

Greg Blackman,
DuPont R&D
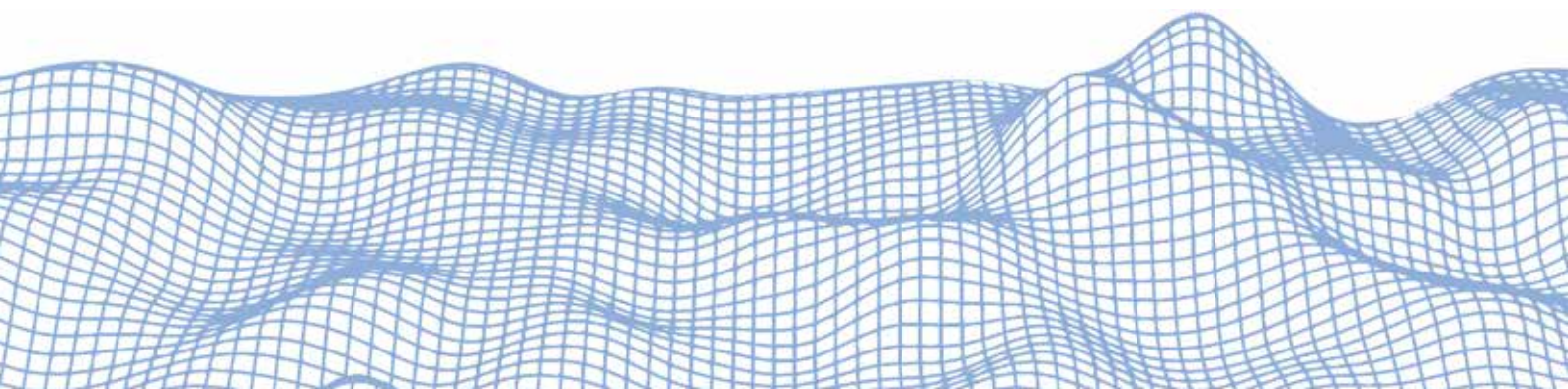
Wide range of applications

SPIP™ supports many microscope types including scanning probe microscopes (SPM, AFM, STM, SNOM, etc.), electron microscopes (SEM, TEM), interference microscopes, confocal microscopes, optical microscopes, and profilers along with their file formats.

Whether you are an expert user or new to the field of image processing, SPIP™ lets you produce the results you need with just a few mouse clicks.

Use SPIP with:

Scanning Probe Microscopes (AFM, SPM, STM, ...)

Electron Microscopes (SEM, TEM)
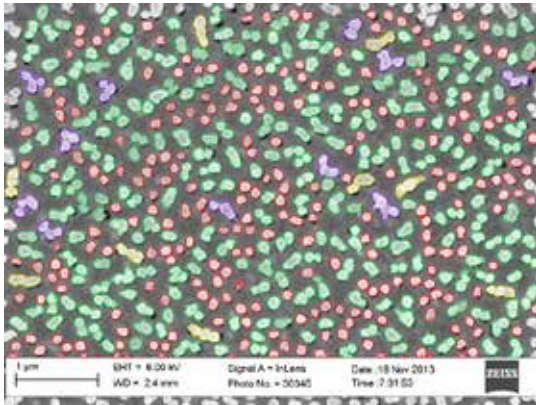
Profilers and 3D optical microscopes

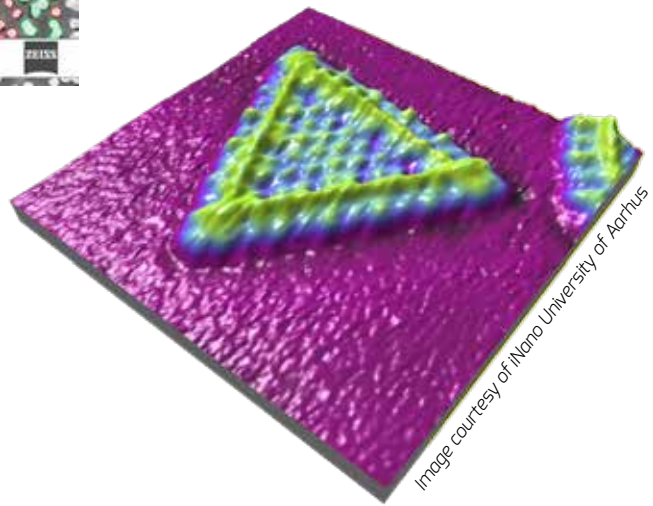Optical Microscopes

Other digital imaging devices
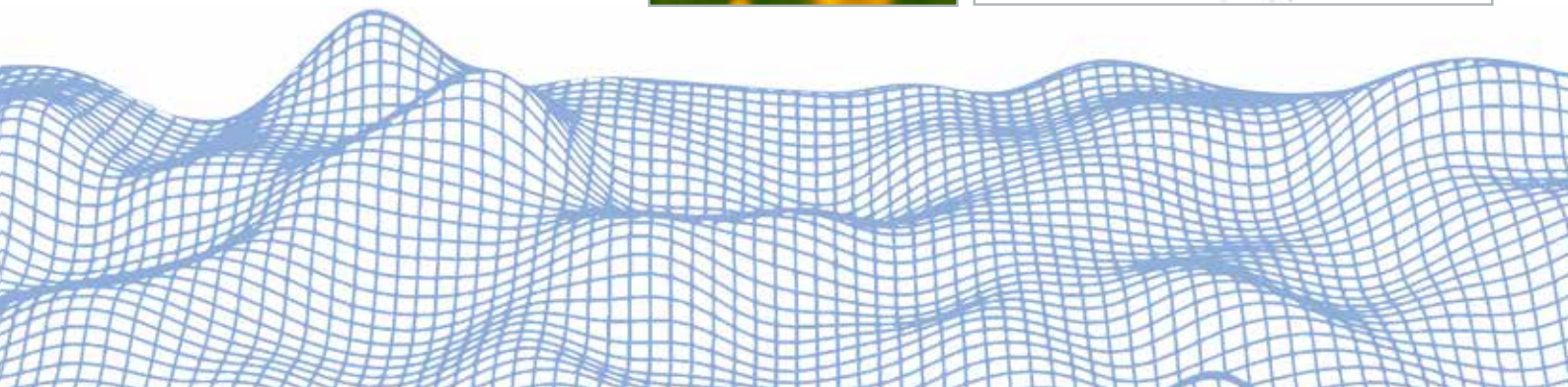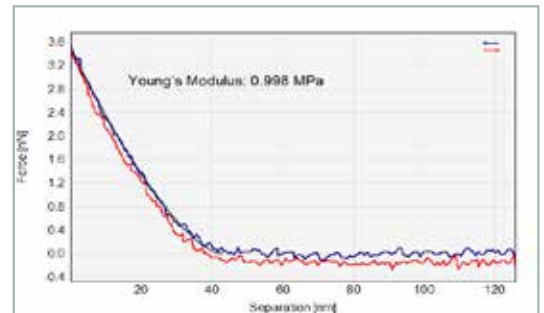
SEM images

Image courtesy of DTU Nanotech

SPM / AFM Images

Image courtesy of iNano University of Aarhus

Impact SPIP™

We take our customers advice when developing new features

Force maps and IV Curves


Young's Modulus: 0.998 MPa
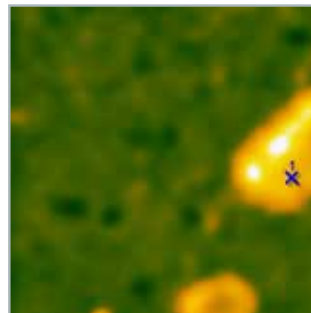
Designed for a streamlined workflow

The SPIP™ software is continuously developed by experts in order to provide users with state-of-the-art image processing software for microscopy. As a result of our in-depth working knowledge SPIP™ is designed to streamline our customers' workflow from beginning to end, and we therefore always recommend purchasing SPIP™ as a complete software package.

Thus, SPIP™'s unique features support microscopy users' need for:
· Correction tools for creating the most accurate representation of the "true" surface
· Interactive and automated analysis techniques ensuring high work efficiency
· Visualization and reporting tools enabling convincing and impressive communication of results

| Correction & Noise Reduction	>	Analysis & Inspection	>	Visualization & Reporting
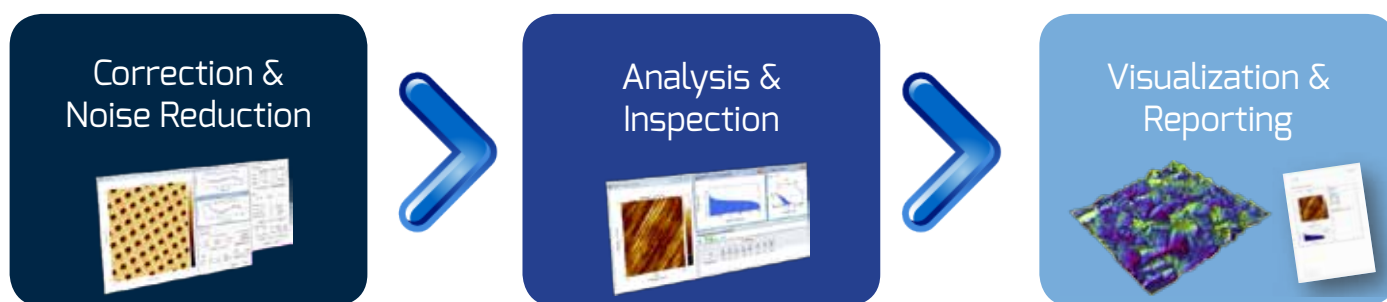
Step 1: Correction & Noise Reduction

Start by optimizing your data by removing noise, form or background structure from images and curves ranging from removing simple tilt in images to drag correction of force curves.

Step 2: Analysis & Inspection

Continue with analyzing and inspecting your images by using the wide variety of image analysis functions that SPIP™ offers, such as Particle & Pore analysis, Roughness analysis and advanced Fourier analysis.

Step 3: Visualization & Reporting

Finalize your analysis by visualizing your data for presentation, reports and scientific publications together with numerical results.
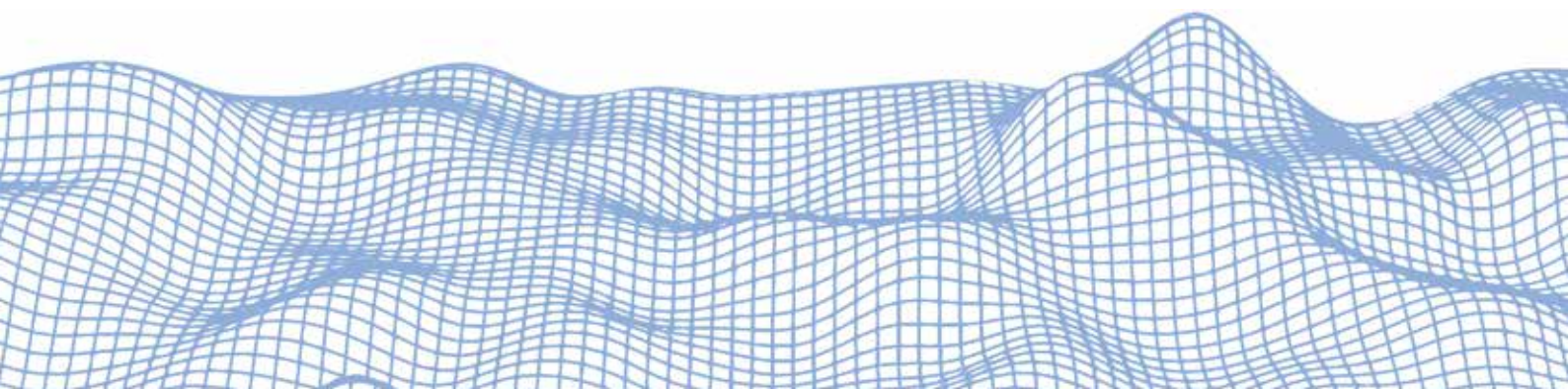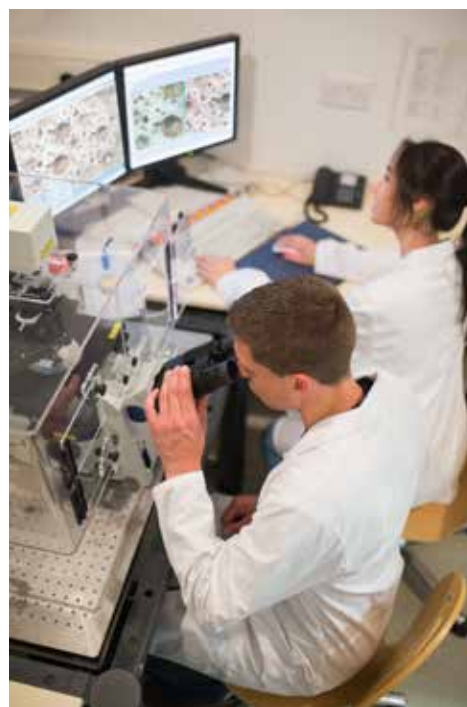
Correction & Noise Reduction

SPIP™ has a large palette of functions for removing noise, form or background structure from images and curves ranging from removing simple tilt in images to drag correction of force curves.

Noise reduction includes averaging techniques such as averaging of cross section profiles or advanced correlation averaging of repeated structures in images.

Last but not least, SPIP™ has unique methods for nanoscale calibration. These methods have served as inspiration for the ISO 11952:2014 written standard and are used by leading national metrology institutes.
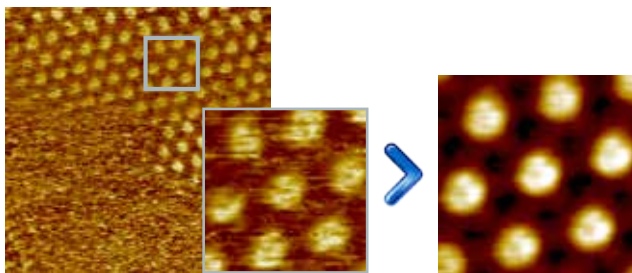
Plane Correction
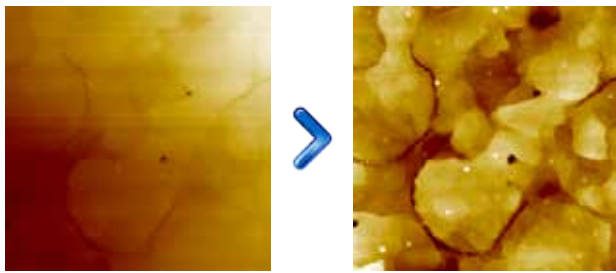
Plane correction or flattening is one of the most important aspects of SPM image analysis, and SPIP™ includes a set of powerful plane correction tools.

Filtering
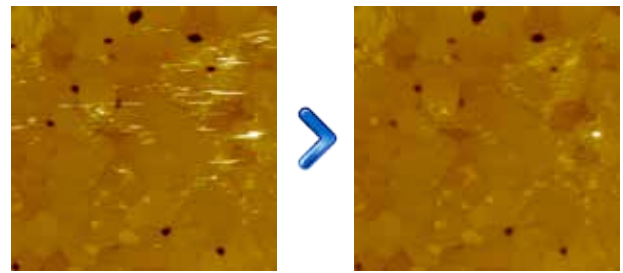
Filtering is important in order to eliminate noise and to obtain robust measurements and correct representations of the images.
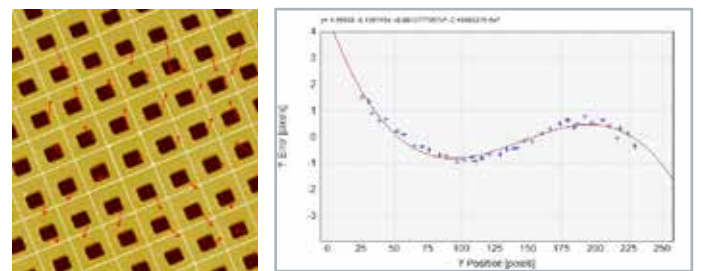
Correlation Averaging

Coronene molecules, Courtesy of K.W. Hipps, WSU

Correlation averaging allows the user to enhance weak structures in repeated patterns, such as atomic crystals, self-assembled molecules and etched patterns.

Calibration

Calibration of microscope images is done easily with the SPIP™ Calibration feature, which also includes automatic measurement of critical dimensions including step height, width and side wall angle.

Analysis & Inspection

SPIP™ offers an extensive palette of image analysis functions, such as Particle & Pore Analysis, Roughness Analysis and Fourier Analysis. Additionally, there are analytical functions available for other SPM related data types, such as force curve analysis and force volume analysis including e.g. Young's modulus mapping.

The wide range of interactive tools include cross section profiling, shape measures, 3D visualization and zoom.

Flexible area of interest markers serve not only for inspecting and quantifying images and curves in detail, but also as valuable assistance during the process of correcting and reducing noise in data.

Roughness
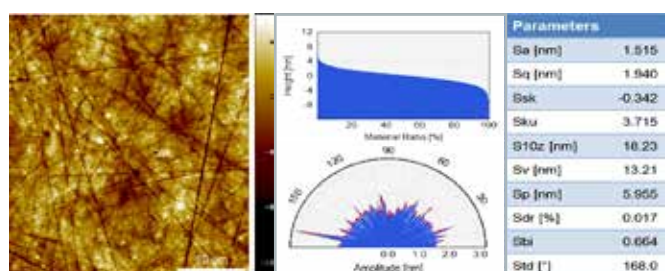
Roughness Analysis makes it possible to characterize images and cross section profiles by more than 40 parameters, including ISO standard parameters, and to visualize the results by various graphs.

Fourier
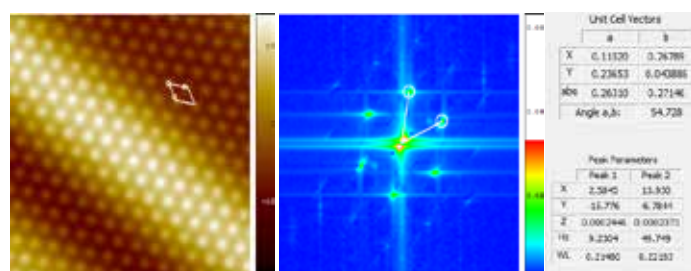
The Fourier Analysis enables users to detect and quantify repetitive patterns with high accuracy, such as atomic lattice structures, as well as to perform advanced filtering.
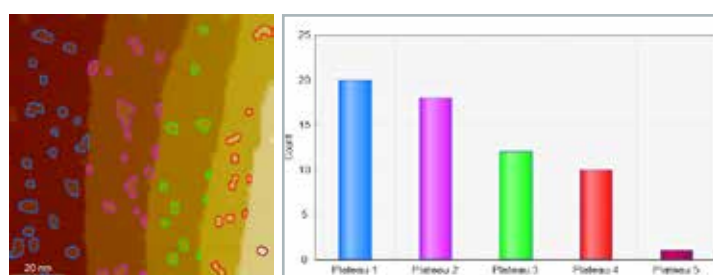
Particle & Pore

Image courtesy of Yun Liu, Dalian Institute of Chemical Physics

With Particle & Pore Analysis it is easy to detect and quantify particles, pores, grains, and other image features with boundaries. To achieve statistical significance, detected particles from several images can be accumulated.
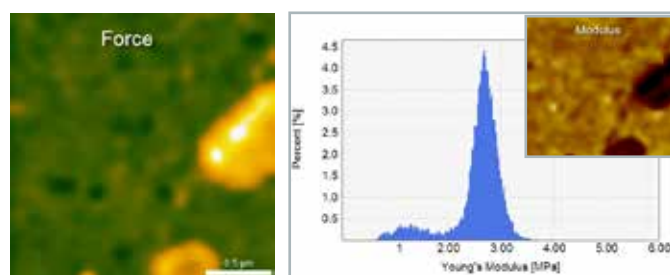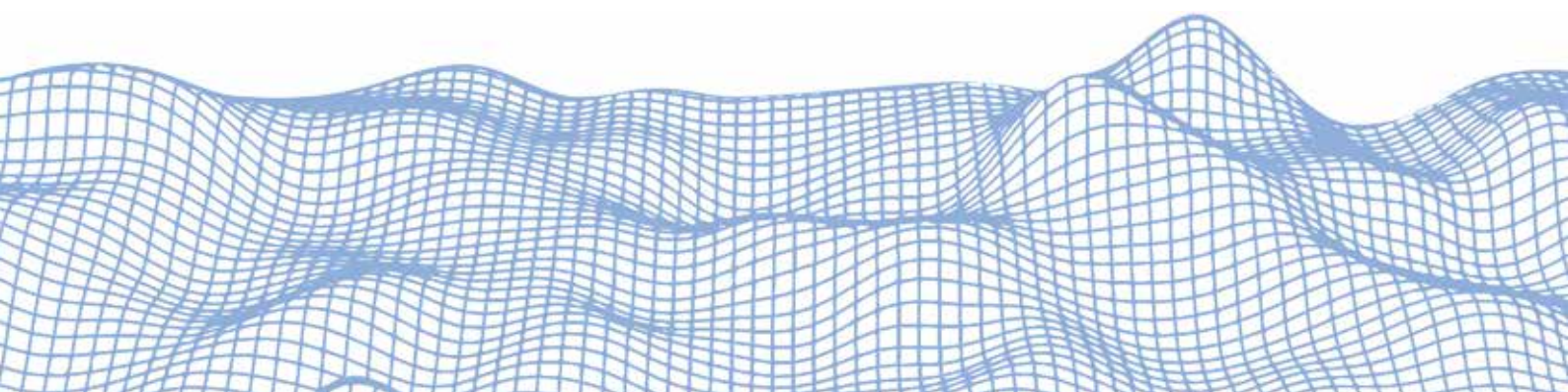
Force Curves & Maps

Image courtesy of Terry McMaster, University of Bristol

Force Curve Analysis provides dedicated tools for analyzing force curves and force volume images, and enables users to calculate e.g. Young´s Modulus maps with just a few mouse clicks.

Visualization & Reporting

In order for data to be used in presentations, reports, and scientific publications, all data views in SPIP™ have comprehensive visualization settings and export options available. In particular the 3D Visualization feature generates stunning projections which can be brought to "live" in 3D animation movies. Additionally, movie making in SPIP™ includes time series animations.

The reporting feature allows users to report their data to Word using fully controllable templates. In combination with the Batch Processing scripting feature, image bundles, force curves or other data can be processed and reported automatically.

Visualization

Image courtesy of Kai Dirscherl, DFM
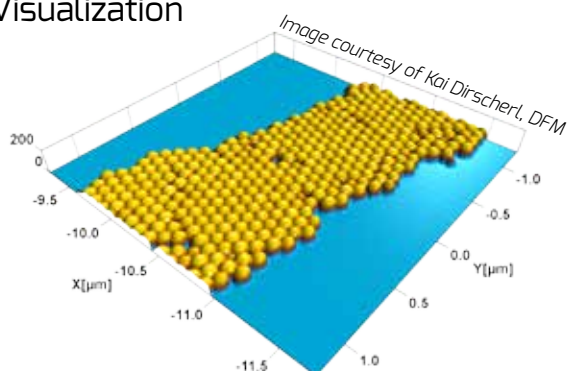
The 3D Visualization Studio offers the possibility of inspecting image details by interactive rotation, positioning, lightning and image scaling.
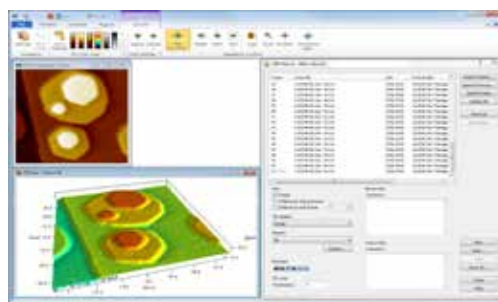
3D Animation and time series movies

Image courtesy of iNANO, University of Aarhus

Movie & Time Series Analysis enables users to combine image series into drift corrected movies and study time dependent behavior.
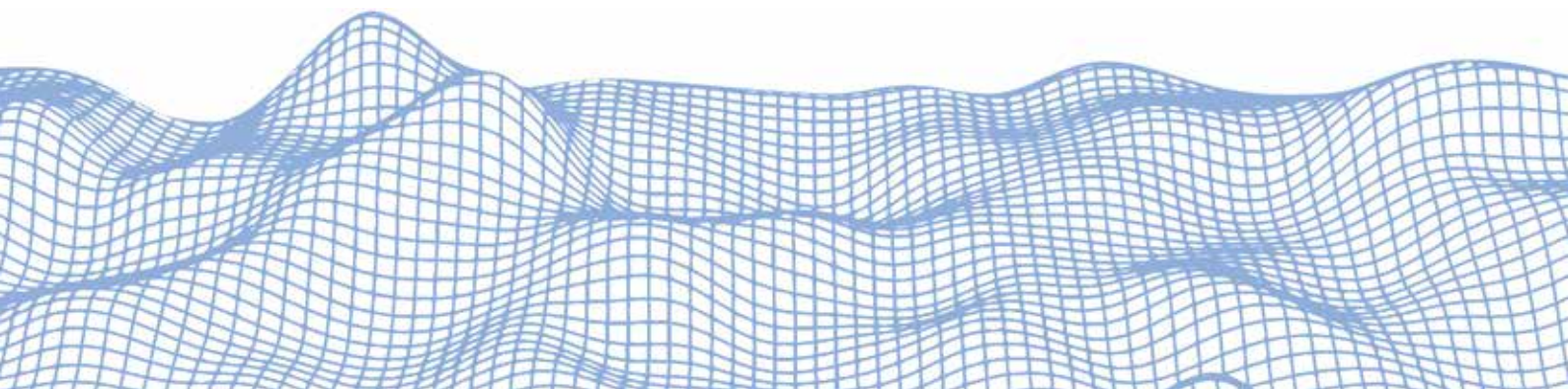
Reporting & Automation

The Batch Processing and Reporting features provide the perfect tools and time savers for analyzing large series of data files and creating comprehensive and impressive reports.

Publication Output

The results and data produced with SPIP™ can easily be exported for publication purposes, both print and online.

Help & Support

Free support & Software Updates

Our experienced Customer Service and Technical Support team is available to answer any queries and requests. Additionally, a worldwide network of knowledgeable distributors ensures that local assistance is always nearby.

Every SPIP™ license includes one year of free support and software updates, which can be extended according to customer wishes.

Moreover, the software is designed with an online help function, which is accompanied by a range of video tutorials.

Welcome screen with examples
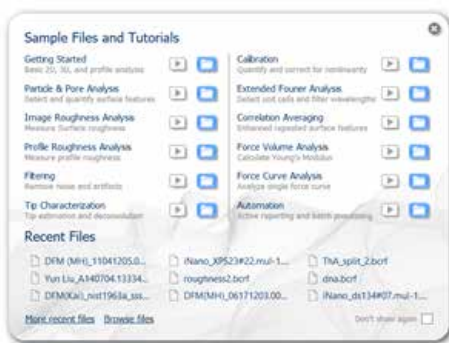
Comprehensive Help function

Online video tutorials

University & Network Installation

With more users in the same group, you can obtain a customized solution for your university or company.

Contact us to learn more about what could be the optimal solution for your company or institution!

Want to try it out?

Download Free Trial
www.imagemet.com