

iWorks Series

Microscope Image Analysis Software

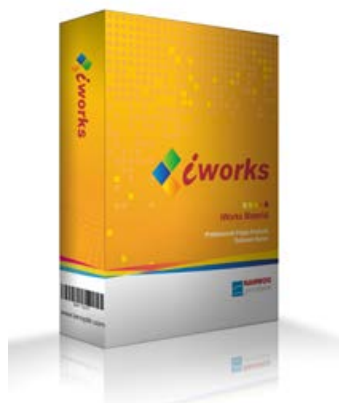
iWorks Series Software

TRUSTED BY MILLIONS



NEVER WAS SO EASY TO SAVE TIME

PRO IMAGE ANALYSIS



Ideal for Saving Time with Dynamic User-friendly Interface

With excellent user experience, iWorks software maximizes your productivity and makes your work more fun.

Benefits of Using iWorks Series Software

- ⚙ Instant Access
- ⚙ Simplify Workflow
- ⚙ Powerful Compatibility
- ⚙ High Performance and Price Ratio

Process and Manage Your Images

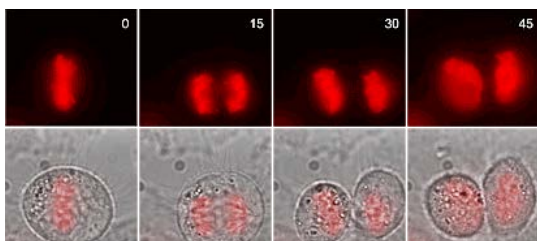
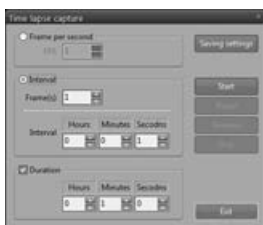
Use sophisticated image processing and enhancement tools to uncover details within your images.

- Tile a series of images
- Automatically align either individual or sequence images
- create a focused image from a series of unfocused images
- Apply dye tints to gray scale images
- Create composite images from source gray scale images
- Apply enhancement Image filters, edge filters, spatial filters and histogram of image
- Image geometry: rotate, flip, resize etc.
- Manage inputs and outputs for your entire imaging system to achieve true color fidelity
- Works with background subtraction and correction
- Image Segmentation



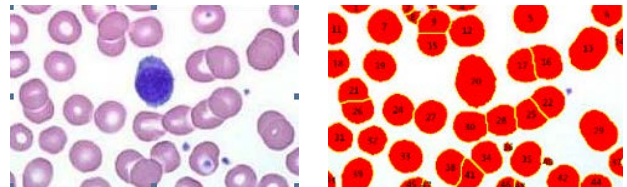
Time Lapse

The 'Time Lapse' function allows for simple configuration of data collection over time. The only parameters that must be entered for configuration are 'Interval' and 'Duration'. Time-lapse imaging is applicable to any microscopy technique used to image dynamics events. It is widely used to image biological events on the macroscopic scale and microscopic live cell dynamic events using techniques such as TIRF, FRAP, FLIP and FRET. It is also used in industrial environments to study materials, e.g., crystallisation events, fatigue testing, erosion.



Classify Objects

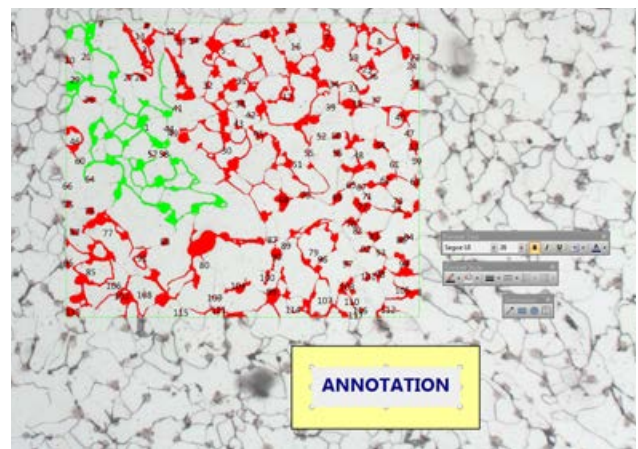
With iWorks software, you can manually or automatically characterize objects within your images. Count and size objects automatically, with the ability to identify over 100,000 objects per frame (memory dependent). Work with more than 30 measurement tools, including areas, perimeters, lengths, roundness, angles, etc.



Powerful Annotation Tools

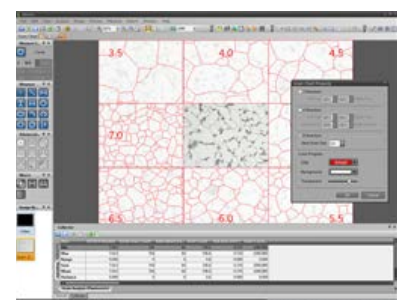
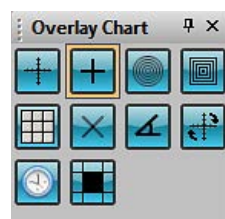
Annotation: Line, Rectangle, Circle, Textbox, Calibration Marker

Property: Font, Font size, Text color, Text align, Line color, Line weight, Line style, Fill color



Overlay Charts

Display overlay chart on your live image for guide image window. Cross, Circle, Grid, Time stamp and combination of different types of overlay chart are available.



Measurement Tools

Extract valuable data from your images using the live measurement functions with interactive metrology tools. The metrology tools allows you to measure best-fit line, arc, and circle. Detect edges and derive distance measurements using the caliper tool. Using live measurement tools, you don't need to capture images for measuring an object. Thanks to this useful function, you can save working time.

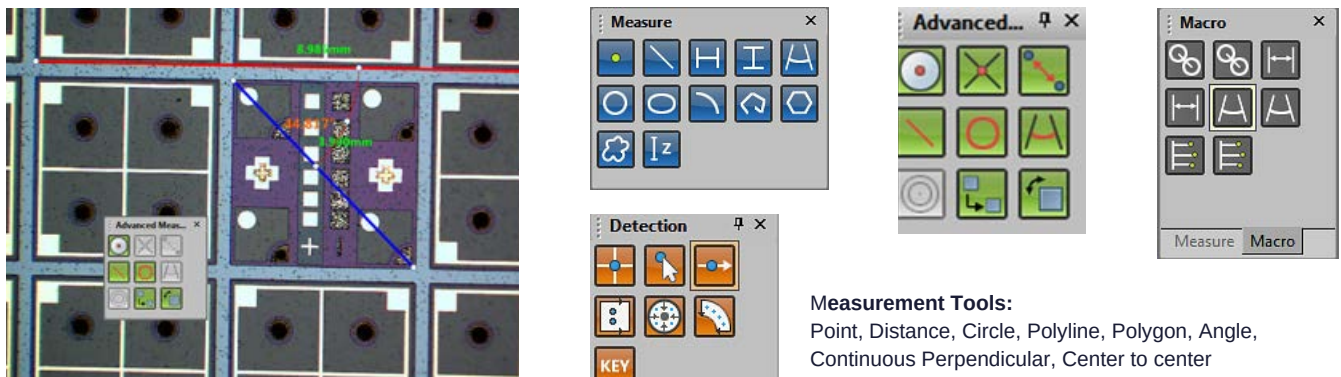
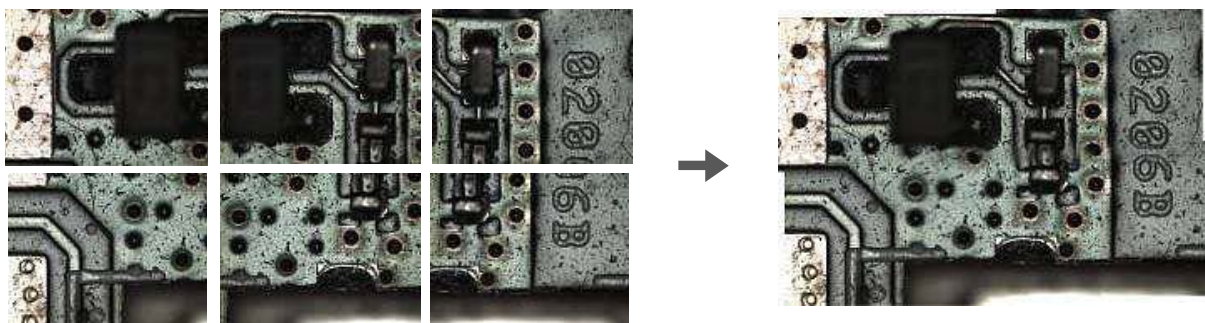


Image Stitching

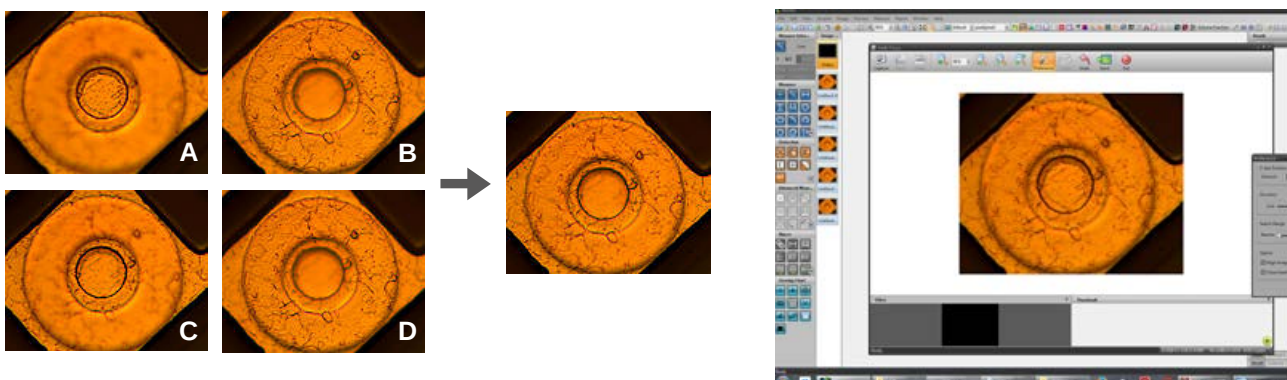
iWorks software allows you to create automatic composites of continuously captured images in order to minimize the reduction in the FOV that typically comes with increased magnification. Combined images display no trace of former edges, and any irregularities in the brightness of the images are automatically corrected.

- Overcomes the visible size limitation in high magnification
- Provides one large image in high resolution
- Tiling small captured area into a large field image
- Supports both captured image mode / real-time video mode



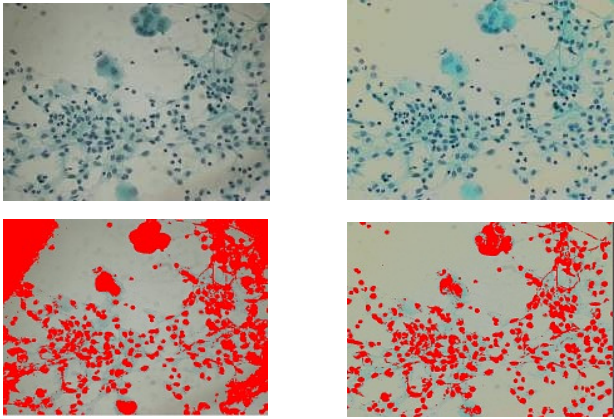
Multi-focus

Multi-focus is a useful tool for extended depth of field (EDF). Thanks to this EDF function, iWorks software provides perfect focus enhancement which utilizes advanced algorithm. EDF allows images that have been captured in a different Z-axis to be combined, creating an single all-in-focus image. Once the all-in-focus image has been created, it can be viewed and rotated as a virtual 3D image as well as displayed as a stereovision image. EDF also has an option to re-align images acquired through stereomicroscopes, correcting for parallax shift.



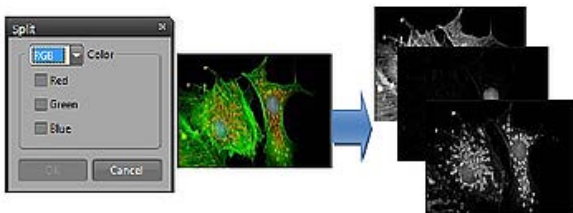
Background Correction

Image correction for vinetting aspect, decrease outside shade of an image. It helps to increase the accuracy of analysis data. The edge parts of captured image by low magnification have background shading frequently, which can be removed by the background correction function of iWorks. The color of the original image remains the same though.

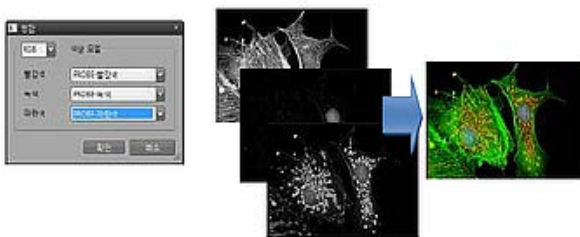


Split and Merge Planes

Split: This feature is used for extracting one or several R/G/B channels from a color image.

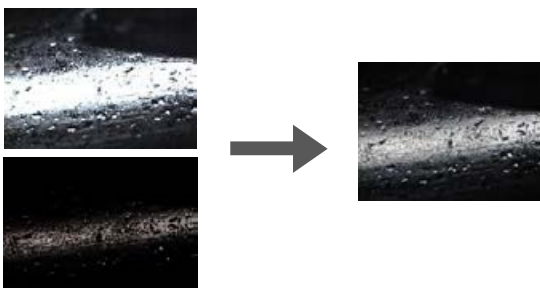


Merge: Generate one or several R/G/B grayscale images to a new color image.



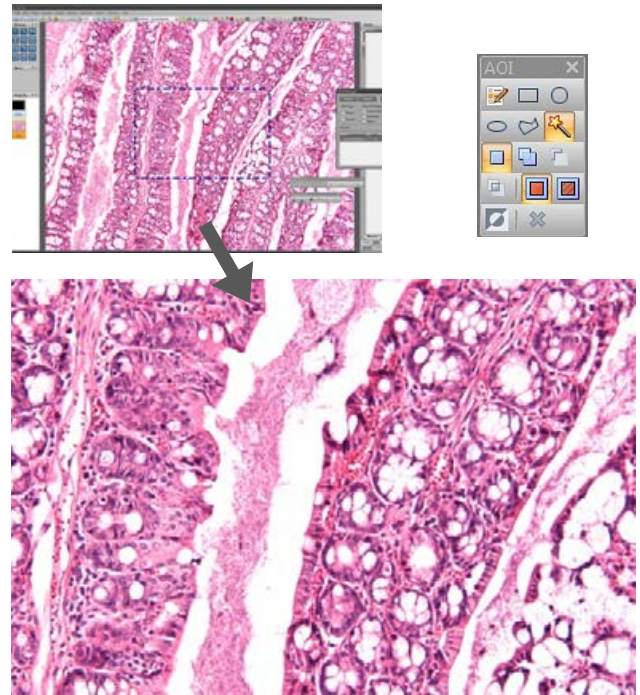
Reflected Light

This application corrects the diffused reflection on the specimen. Diffused reflection usually occurs while using metallic specimen. You can decrease the aspect by using the Reflected Light function.



AOI Manager

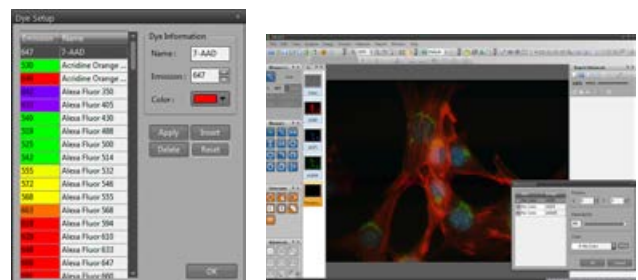
AOI: Area of Interest. Define your preferred area with several tools. The AOI manager allows you to measure and analyze a specific area of your images.



Fluorescence Manager and Pre-defined Dye List

Multiple single channel images (captured with different optical filters or under different camera settings) can be merged together simply by using Fluorescence Manager of iWorks.

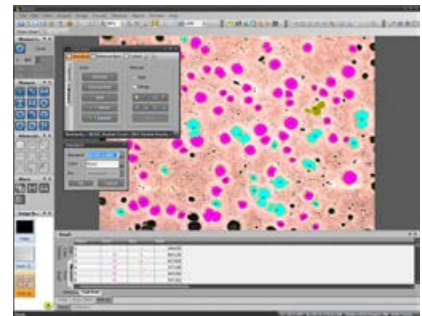
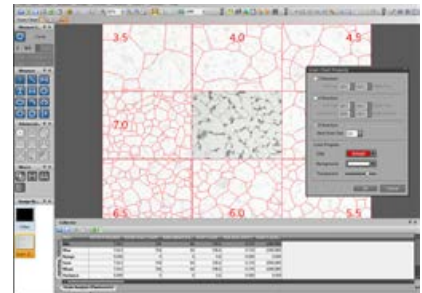
The combined images can be stored to a file while maintaining their original bit depths or optionally can be converted into a RGB image.



Software for Your Metallographic Analysis

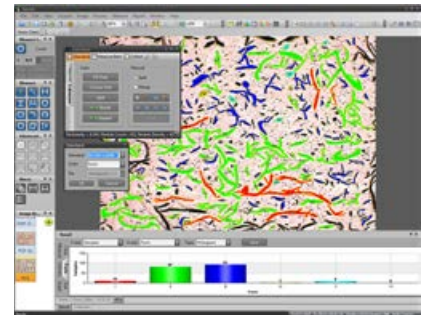
Grain Size Analysis

According to the standard of ASTM E 112(2000), iWorks software can measure Grain size and grain size number. You can select one method out of intercept method or planimetric method. Intercept method: Ries can be calculated as the average lot is a way to use the Intercept, as the number of detected crossing the line by the length of the ASTM test to measure the degree of grain. Intercept method can be calculated directly, and is most commonly used. ASTM grain size number is measured by the length of the line and the number of the detected intersection point. Planimetric method: Using the average grain size and in accordance with ASTM E 112 standard, you can easily and quickly measure without boundary reconstruction procedures.



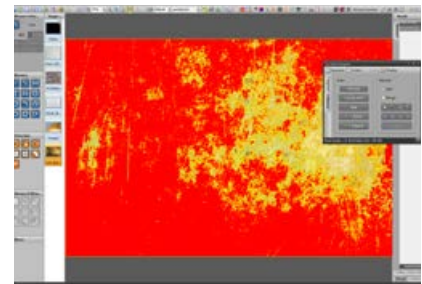
Cast Iron Analysis

Cast Iron Analysis is used for ductile irons and incorporates industry standards including ASTM A 247-40, ASTM E 2567-11, ISO 945-1:2008, ISO TR 945-2:2011, ISO 16112:2006, JIS G 5502:1995, JIS G 5502:2001, KS D 4302:2006 and KS D4302:2011. Graphite nodules can be identified and placed into shape and size classes. Moreover, the ferrite and pearlite content of the sample may be optionally assessed. Nodule and ferrite identification is performed simply by sophisticated image processing which allows the operator to review the results in seconds.



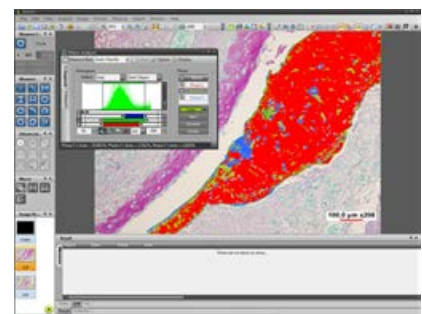
Non-metallic Inclusion Rating

Non-metallic Inclusion Rating function can be used with an automated materials microscope and high resolution digital camera to create an integrated systems solution. It allows the verification as per up to 8 standards ASTM E 45-97(2002), ISO 4967:1998(E), JIS G 0555:2003 and KS D 0204:2007) for non-metallic inclusions in steel alloys.



Rust Grade Analysis

Rust Grade Analysis is used to evaluate the rust grade of a painted steel surface by employing the international standards such as ASTM D 610-08, ISO 8993:2010(E) and ISO 8994:2011(E). It provides a standardized method for quantifying the amount and distribution of visible surface rust.



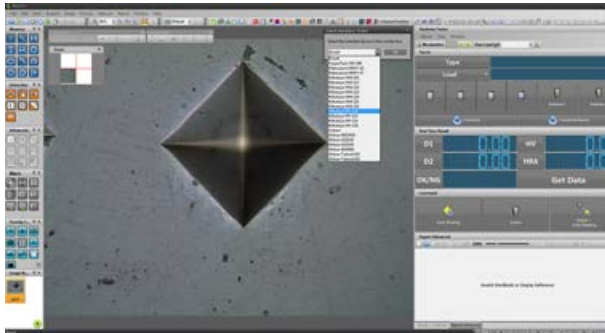
Phase Analysis

Phase Analysis allows you to sort images by using Gray Scale, RGB, HSB or YUV to achieve analysis on a whole image or a specified area of interest (AOI). It can determine the occurrence of these phases with reference to the overall image or to one of the selected phases.

Software for Your Hardness Tester

iWorks H Series Software

iWorks H Series software is designed for hardness testing machine. With various options of testing standard, you can measure the penetrator from Micro-Vickers, Vickers, Brinell, etc. This software provides 3 different versions for different demand. For the requirement on the grade of automation, iWorks H series software are provided with 4 different versions: iWorks HL, iWorks HS, iWorks HX and iWorks HXS.

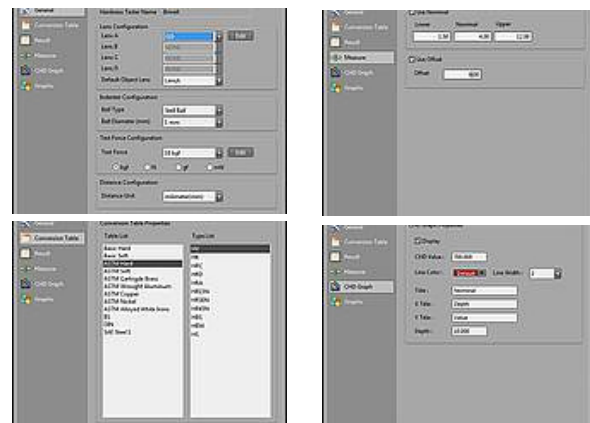
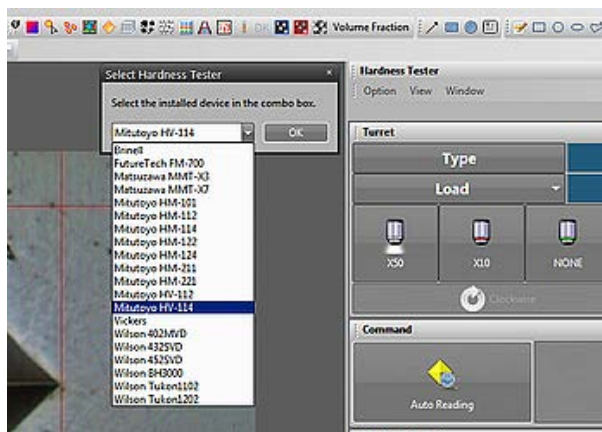


With the measurement tools of iWorks EX, iWorks HL is the basic version software for hardness test machine. You can measure the penetrator from Micro-Vickers, Vickers, Brinell under various standard selection.

- Manual measurement tools (length, area, angle, etc.)
- Annotation tools
- Excel report export
- Carburization graph

Powerful Compatibility

Pre-installed devices are available in the list of hardness tester: Vickers, Brinell, FutureTech FM-700, Mitutoyo HM series, Wilson etc. More hardness tester models can be integrated with SDK.



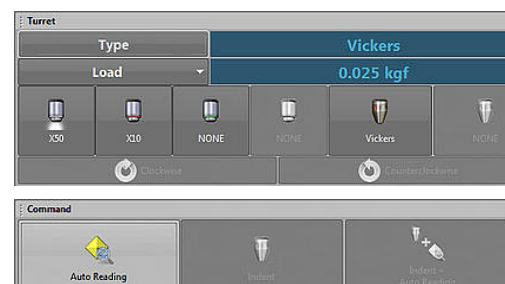
Customized Measurement Tools

Different from other hardness tester software, iWorks H series supports measurement tools. It can increase utilization not only in hardness testing but also in simple measurement system. The measurement tools are customizable specifically for simplifying your workflow.



Automation is Better

iWorks H series software provides full automatic measurement system. iWorks HXS is the advanced version of software with auto reading functions for hardness test machine. With an auto stage included, iWorks HXS is compatible with Mitutoyo hardness testing machines.



Auto Turret

Auto Reading

Software for Your Measuring Microscope

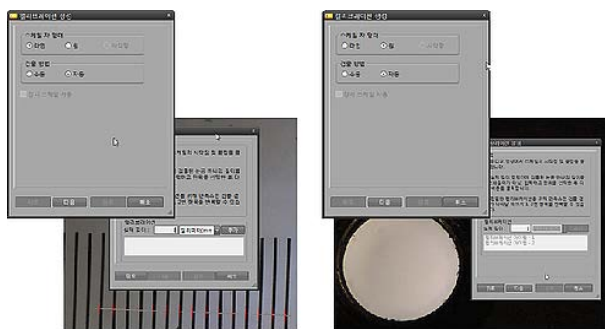
iWorks MM Series Software

iWorks MM series software works with measuring microscope connecting with a camera to detect, measure and analyze the images in real time. Offering variety of functions to analyze the fast high-resolution image, It features an intuitive user interface which allows you to perform tasks quickly and easily. It is compatabile with variety of cameras and various models of measuring microscopes such as Nikon MM, Mitutoyo MF, Olympus STM6, STM7 etc.



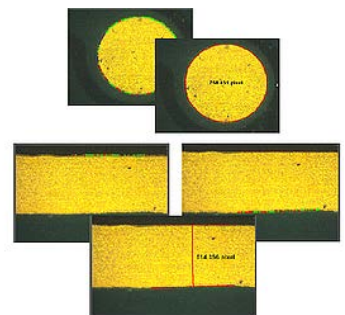
High Precise Automated Calibration

iWorks offers automated calibration function, with accurate calibration regardless of the operator or facility. It supports automatic and manual calibration, using a variety of scales such as lines or circles, etc.



Automatic Edge Detection Tools

This feature allows you to minimize errors that may occur by the user in the inspection and measurement process. It supports a variety of options for detecting the detection precision in the various images.



Multi Focus and 3D Plot Output

iWorks offers the function to extend the focus to overcome the limited focal depth of the high magnification microscope. The resulting image provides a 3D output function which can be observed in three dimensions.

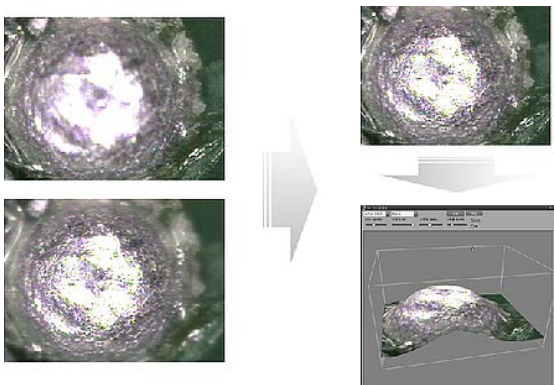
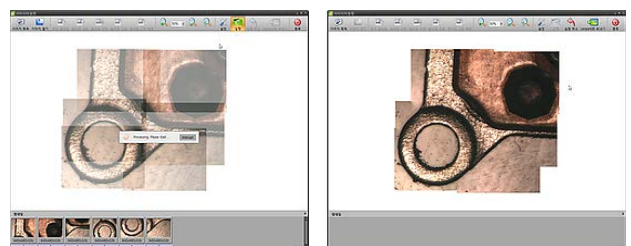


Image Tiling

Provides a two-dimensional image synthesis function that can overcome the limited viewing area of the high magnification microscope. The automatic synthesis can minimize the discomfort. You can also get a more complete high-resolution image by performing shading correction and correction of the border area.



iWorks Series Software Technical Summary

Image Acquisition

- Acquire images directly from camera by Directshow or Twain
- Acquire, create video and time lapse images
- Live image preview with measurements
- Set color balance exposure parameters
- Acquire images with AOI

Image Processing

- Tile a series of images
- Extended Depth of Field (EDF) tools
- Split and merge planes
- View entire image and magnified area with local zoom
- Create composite color images
- 3D image visualization

Image Enhancement

- Image type convert
- Enhancement filters, Edge filters and Spatial filters
- Arithmetic/Logic operation
- Brightness, Contrast, and Gamma settings
- Binary settings
- Geometry settings
- Histogram and Segmentation
- Apply dye tints to gray scale images by choosing emission wavelength

Object Characterization

- Automatic Count and Size tools
- Measure length, roundness, aspects, angle, area, etc.
- Auto Threshold
- Manually tag, count, and classify objects

Measurement

- Manual calibration and Automatic calibration
- Basic measurement tools
- Advanced measurement tools
- Detection tools
- Auto edge detection
- Macro tools

Image Analysis

- Image Stitching
- Multi-focus
- 3D Display
- Reflected Light
- Background Correction
- Noise Reduction
- Particle Analysis
- Fluorescence Manager
- Cast Iron Analysis
- Grain Size Analysis
- Non-metallic Inclusion Rating
- Rust Grade Analysis
- Copper Analysis
- Volume Fraction
- Auto Merging System
- Conduction Ball
- Thermo Record System
- Hardness Measurement

Documenting and Reporting Features

- Annotation tools
- Printing and batch save features
- Excel Report export
- Create customized report with image, data and text

System Requirements

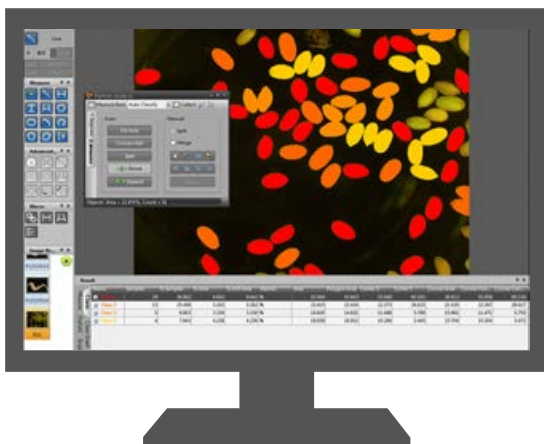
- Microsoft Windows XP, Windows VISTA, Windows 7, Windows 8 and Windows 10
- 512MB of RAM or More Recommended
- 150MB Hard-disk Space
- CD-ROM drive
- 32M Video Memory or More Recommended
- Microsoft Mouse or Compatible Pointing Device
- USB-Port for Hardware Key

The above information is subject to change. Please contact Lanoptik Technologies or your local reseller for the latest features.

Technical support: iWorks@lanoptik.com

Interactive UI / Functional Analysis & Measuring Tools

Experience advanced imaging solutions



- Automatic object analysis
- Object editing with threshold
- Fluorescence image manager
- Customized measurement tools
- Phase analysis & advanced threshold
- Automated stage control with AMS
- Auto/manual grain size analysis
- Graphite analysis in nodular cast iron
- Compatible with Windows 7, 8, 10



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