MediaCybernetics®
From Images to Answers®

INDUSTRIAL APPLICATIONS

Image-Pro® PLUS

Powerful and Customizable
Image Processing
and Analysis Software
for Industrial Applications

Image Analysis Software for Industrial Applications

Image-Pro Plus combines the latest tools for industrial imaging into one intuitive software package. Reflecting over 20 years of development, evolution, and user feedback, Image-Pro Plus accelerates discovery and includes the tools you need to easily acquire, enhance, process, measure and share your images.

Free Online Tutorials and Webinars

Acquire & Process

Accurate image analysis begins with acquisition. Utilize the full precision of your capture equipment with easy-to-use capture tools. Image-Pro Plus supports a wide range of digital cameras, image capture cards, and other devices.

Industrial Imaging Applications:

These are just a few of the many applications that use Image-Pro Plus software to analyze images.

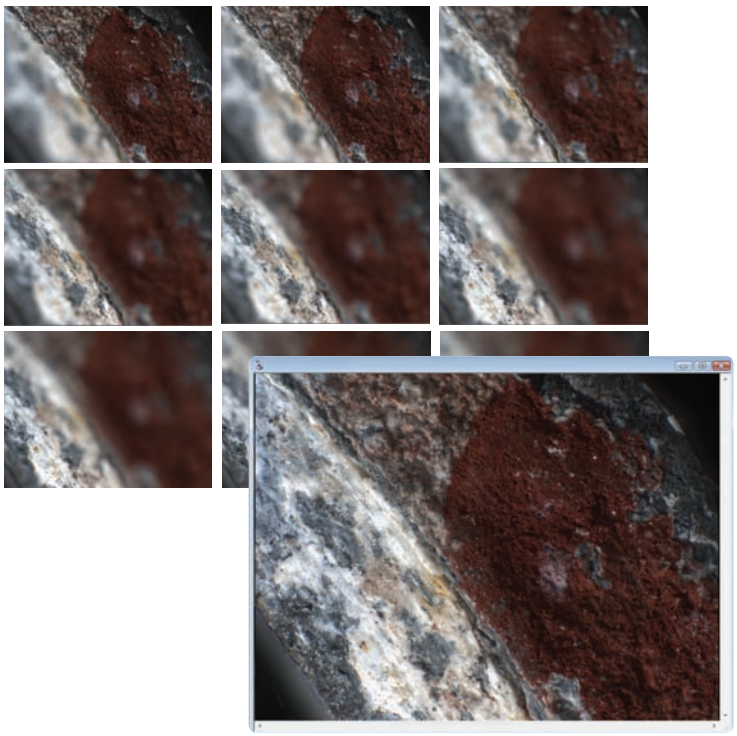
Aerospace
Automotive Manufacturing
Ceramics
Coatings and Corrosion
Concrete and Aggregate Analysis
Cosmetics
Failure Analysis
Geology
Metallurgy
Material Science
Mineralogy
Pharmaceutical Development
Polymers
Quality Control and Assurance
Semiconductors
Solar Cell Quality Control
Surface Characterization
Textile / Fiber
Wires and Connectors

Automated Microscope Control

Control complex microscopy equipment in a simple, repeatable manner for reproducible results. Automatically control your microscope stage in any X, Y, or Z direction and eliminate the need to manually adjust microscope settings.

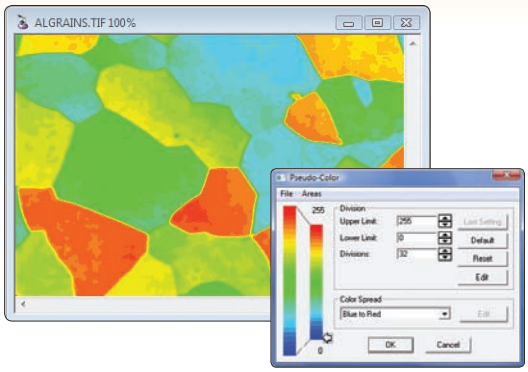
Live Analysis & Measurements

Analyze samples live, without the need to acquire. The Workspace Preview feature makes it easy to count objects, apply measurements and interact with online images. The optional Live Tiling and Live Extended Depth of Field tools make it easy to tile large images and perform EDF operations live - while acquiring your images.

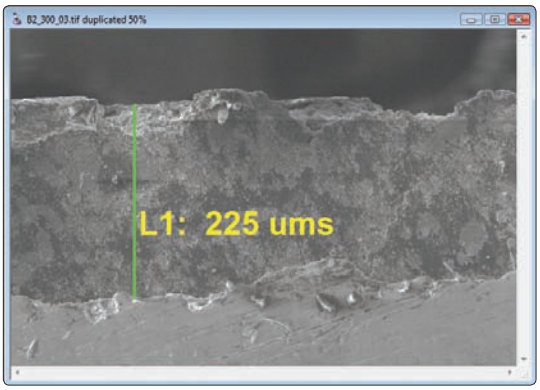


Create a focused image from a series of unfocused z-stacks with Live Extended Depth of Field.

Analyze & Visualize



Distinguish differences in gray scale images using pseudo-color.



Calibrate images, apply a range of measurements, and display measurement data. Image courtesy of André G. McDonald, Ph.D., P.Eng., University of Alberta, Edmonton, Alberta, Canada.

Morphology

Use a wide range of morphological filters to precisely segment structures and prepare images for automatic measurement.

Pseudo-color

Use pseudo-color to highlight features of interest in a gray scale image. Visually amplify specific intensities which are normally difficult to distinguish from their surroundings.

Filter and Enhance

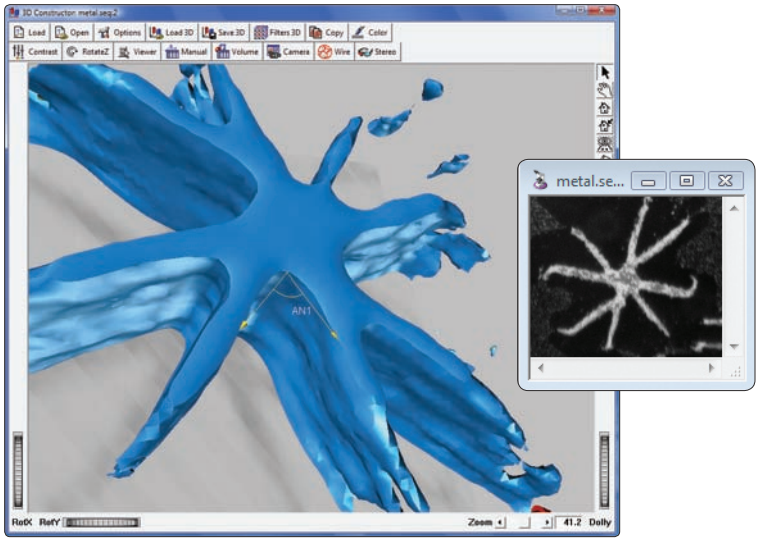
Choose from a variety of enhancement and edge filters to filter noise and improve image detail. Use built-in deconvolution features to remove haze and retrieve better data from your images.

Calibrate Your Images

Intensity and spatial calibration tools let you report measurement data in terms that are meaningful to your research. Create and display spatial calibration markers and system calibrations. Use pre-defined spatial calibration units and calculate derived calibrations automatically.

3D Rendering and Measurements

Explore the depth of your images by visualizing and interacting with them in three dimensions. Measure angles, distances and volumes to gain a more complete understanding of your microscope images.



3D rendering of metal with angle measurement applied.

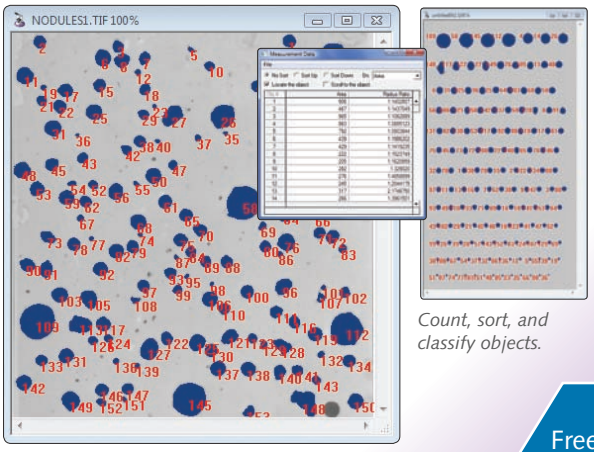
"Counting and sizing would take about 5 minutes (plus a break for eye fatigue). With Image-Pro, we acquire the same data within 15 seconds."

Dean Neuberger, R&D Engineer
Sheldahl, Incorporated
Northfield, MN - USA

Measure & Classify

Count and Classify Objects

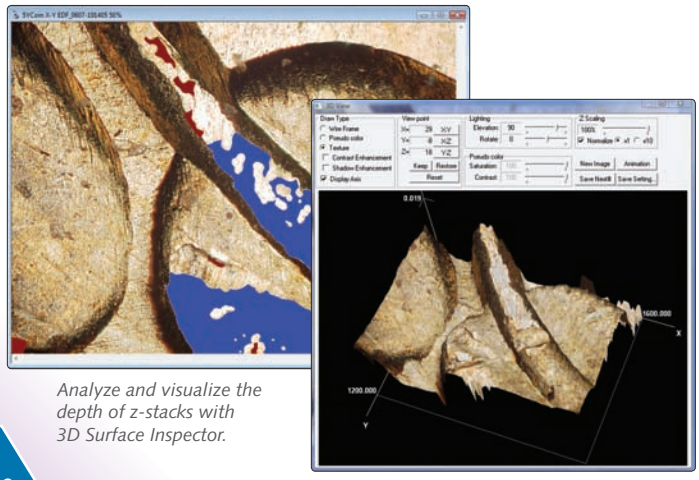
Count and characterize objects using over fifty manual and automatic measurement tools including areas, perimeters, lengths, roundness, major and minor axes, angles, centroids, holes, and population density. Tag objects of interest and easily sort by size or other measurement parameters.



Count, sort, and classify objects.

Measure and Visualize Surface Dimensions

Create beautifully illuminated 3D visualizations of your image stacks with the optional 3D Surface Inspector. Explore the depth of your z-stacks with manual measurements and easily create .avi animations.

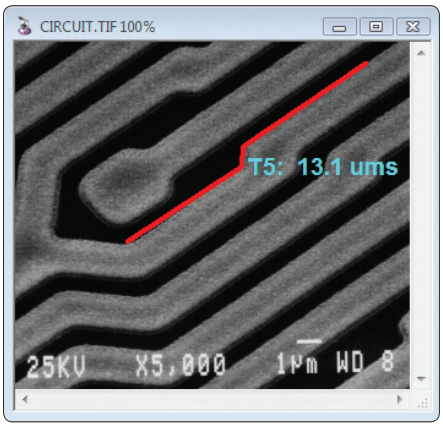


Analyze and visualize the depth of z-stacks with 3D Surface Inspector.

Free Online Tutorials and Webinars

Apply Interactive Measurements

Extract quantifiable data from your images using a variety of measurement options. Metrology tools allow you to measure best-fit line, arc, and circle. Detect edges and derive distance measurements using the Caliper tool. Easily trace around the edges of objects and measure distances using the Trace tool.



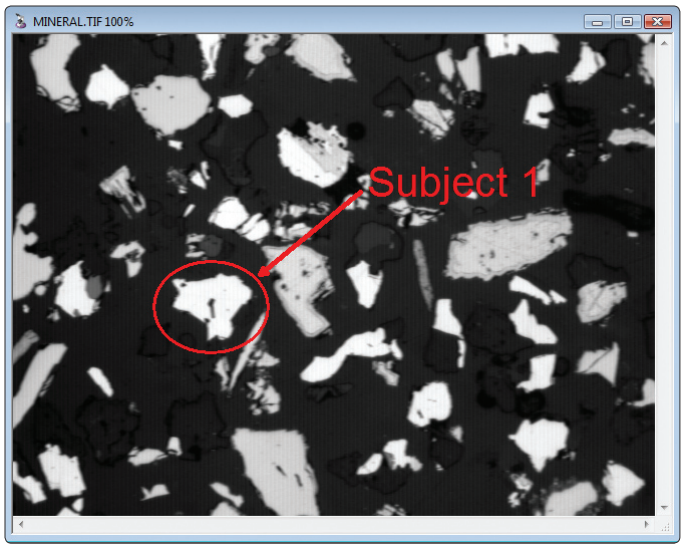
Outline and measure the perimeter of an object using the Trace tool.

Track Moving Objects

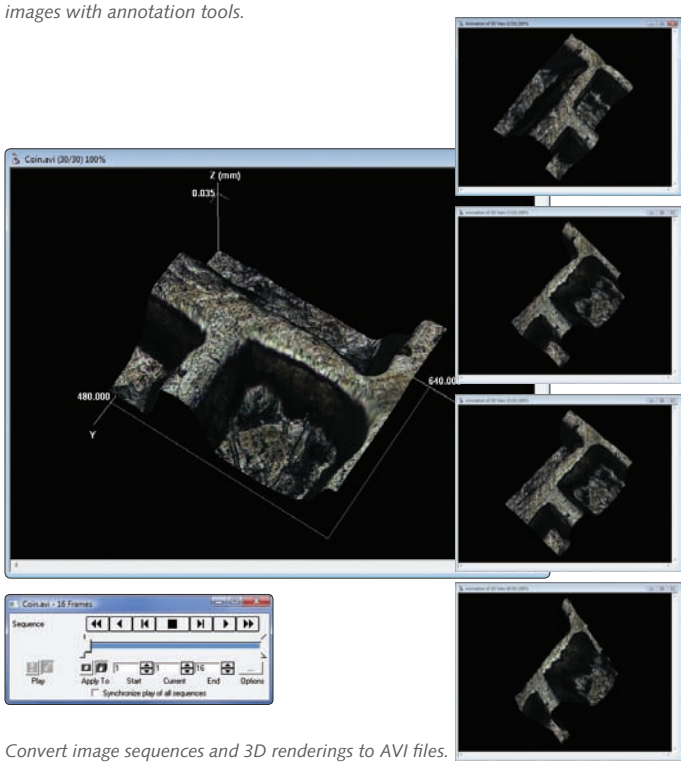
Manually or automatically follow objects as they move through time and space. Use correlation tracking to follow objects when image segmentation is difficult or not possible. Track and graph the changing of intensity parameters over time within an area of interest.

Track and compare the movement of objects.

Automate & Share



Point out features of interest and add notes to your images with annotation tools.



Convert image sequences and 3D renderings to AVI files.

Visualize Image Data

Visualize image data with scattergrams, histograms, and line profiles.

Annotate

Point out features of interest and add text to your images with Annotation overlay tools.

Report and Publish Your Results

Export image data via DDE to Origin® and Microsoft Excel. Create custom reports with images, data and text.

Create AVI Movies

Easily convert sequence files and 3D rendered images to AVI files.

Customize Your Workflow

Image-Pro Plus includes a variety of features that allow you to alter the application to fit your workflow. Create a personalized Workflow Toolbar with buttons for your most frequently used tools.

Automate with Macros

Image-Pro Plus offers convenient customization tools and a built-in programming language to streamline your imaging research. Save frequently performed operations using the Macro Recording tools and easily edit macros. Use the time-saving macros included in Image-Pro Plus and download macros from our user-contributed Solutions Zone section of our website - www.mediacy.com.

For more advanced customization, Image-Pro Plus' built-in IP Basic programming engine offers a debugger, full editor, and dialog builder. Use with COM objects such as Microsoft® Word® or Excel®, and integrate and customize macros with Microsoft Visual Basic or Visual C++.

Image-Pro Plus Features Comparison

	Offline Analysis		Online Acquisition & Analysis		
Features by Product	Image-Pro Analyzer	Image-Pro Analyzer 3D	Image-Pro Plus	Image-Pro Plus Inspector	Image-Pro Plus 3D
Description	Advanced processing and measurement. Does not include acquisition.	Image-Pro Analyzer with 3D rendering/ measurement.	Image acquisition, advanced processing and measurement.	Image-Pro Plus with surface analysis.	Image-Pro Plus with 3D rendering/ measurement and surface analysis.
Image Acquisition & Device Control					
Basic capture			•	•	•
Scan			•	•	•
Time-lapse			•	•	•
Microscope automation			•	•	•
Filter wheel and shutter control			•	•	•
Triggered device control			•	•	•
Port I/O and IO-Pro			Optional	Optional	Optional
Live Preview & Analysis					
Live preview			•	•	•
Automatic exposure/white balance			•	•	•
Dynamic auto-range			•	•	•
Live measurements			•	•	•
Real-time 2D deconvolution			•	•	•
Live tiling & Live Extended Depth of Field (EDF)			Optional	Optional	Optional
Image Processing					
Annotate	•	•	•	•	•
Color correction / management	•	•	•	•	•
Contrast enhancement	•	•	•	•	•
Apply contrast / invert image	•	•	•	•	•
Background correction	•	•	•	•	•
Basic filters	•	•	•	•	•
Morphological filters	•	•	•	•	•
3D filters	•	•	•	•	•
Large spectral filters (4000 x 4000)	•	•	•	•	•
Extended depth of field	•	•	•	•	•
Align images	•	•	•	•	•
Tile images	•	•	•	•	•
2D AutoQuant deconvolution	•	•	•	•	•
3D Blind AutoQuant Deconvolution		•			•
Image math	•	•	•	•	•
Test strips	•	•	•	•	•
Image Auditing & Regulation					
Audit trail	•	•	•	•	•
Image signature	•	•	•	•	•

	Offline Analysis		Online Acquisition & Analysis		
Features by Product	Image-Pro Analyzer	Image-Pro Analyzer 3D	Image-Pro Plus	Image-Pro Plus Inspector	Image-Pro Plus 3D
Image Analysis					
Area / Region of Interest	•	•	•	•	•
Spatial and intensity calibration	•	•	•	•	•
Lens list / calibration management	•	•	•	•	•
Auto-calibration	•	•	•	•	•
Histogram	•	•	•	•	•
Line profile	•	•	•	•	•
Sequence processing	•	•	•	•	•
Display range	•	•	•	•	•
Threshold	•	•	•	•	•
Operations	•	•	•	•	•
Segmentation	•	•	•	•	•
Pseudo-color	•	•	•	•	•
Bayer interpolation	•	•	•	•	•
Registration	•	•	•	•	•
Fast Fourier Transform (FFT)	•	•	•	•	•
Grid mask	•	•	•	•	•
Count / size objects	•	•	•	•	•
Sort objects	•	•	•	•	•
Classify objects	•	•	•	•	•
Manual tag	•	•	•	•	•
Manual measurements	•	•	•	•	•
Distance & thickness measurements	•	•	•	•	•
Data collector	•	•	•	•	•
Caliper (Edge detection)	•	•	•	•	•
Auto trace	•	•	•	•	•
2D object tracking	•	•	•	•	•
Bitmap analysis	•	•	•	•	•
Surface plot	•	•	•	•	•
3D Rendering and Analysis					
Basic 3D viewer	•	•	•	•	•
Advanced 3D rendering		•			•
3D measurements		•			•
4D object tracking		•			•
Volume measurements		•			•
Z Profile & Surface Measurements					
Measure Z-profile				•	•
Export & Share					
Report	•	•	•	•	•
Animation/AVI Creation	•	•	•	•	•
Export data to Excel	•	•	•	•	•
Automation & Customization					
Customizable menu & toolbar	•	•	•	•	•
Macro recording	•	•	•	•	•
Macros / scripting	•	•	•	•	•
Extensible through SDK	•	•	•	•	•
IQbase database support	•	•	•	•	•
Image & batch conversion	•	•	•	•	•

Exceptional Service and Support

Training

Our image analysis training courses provide valuable information you can apply towards your imaging research. Whether you are new to Image-Pro Plus or you are a more experienced imaging professional, our courses are designed to help you make optimum use of the latest imaging software techniques.

Technical Support

When you register your copy of Image-Pro Plus, you are entitled to 90 days of support through our Technical Support Program. Receive installation and configuration troubleshooting from our Technical Support Engineers via phone or email. Extend your technical support beyond 90 days to receive expert support year-round.

www.mediacy.com

Free Online Tutorials and Webinars

View online video tutorials to pick up quick tips for a variety of features in Image-Pro Plus. You can also attend live imaging webinars or access our online Webinar Library to learn the latest image processing techniques.

Collaborative Imaging Forum

The Media Cybernetics Image Analysis Forum is an online community of Image-Pro software users, Media Cybernetics technical staff, and other imaging professionals. Register today to start sharing ideas and learning from the experiences of other imaging software users.

User-contributed Solutions Zone

Explore the Media Cybernetics Solutions Zone website to find a wealth of useful information about Image-Pro Plus. The Solutions Zone is an easily searchable online database of macros, device drivers, plug-in modules, application programs, and development consultants that support Image-Pro Plus and other Media Cybernetics software programs.

Supported File Formats

- Read Support: TIFF, IPW, JPEG, JPEG 2000, EXIF JPEG, Flat (binary), GEL, TGA, BMP, PhotoCD, HDF, QED, FITS, AVI, RAW and SEQ files.
- Stack & Confocal Read Support: SEQ (Image-Pro and StreamPix), STK (MetaMorph), PIC (Bio-Rad Confocal), LSM & ZVI (Zeiss), DEB and AVZ (AutoQuant Stack), LEI and LIF (Leica), DM3 (Gatan), DV (DeltaVision), and Fluoview 1000 (Olympus) files.
- Write Support: TIFF, IPW, IPS, JPEG, JPEG 2000, Flat, TGA, BMP, FITS, EPS, AVI and SEQ files.
- Support for 24-, 36-, and 48-bit color; 8-, 12-, and 16-bit grayscale as well as 32-bit floating point images.

System Requirements

Operating System	Computer	RAM	Storage
Windows® XP Pro (SP3)	750 MHz or better	1GB RAM*	20 GB**
Windows® Vista Business and Ultimate (32 and 64 bit) †	2.1 GHz	2 GB RAM*	40 GB**

* 2GB RAM is recommended on all operating systems. 4GB is best on Vista operating systems.
** Suggested storage size for large image files generated by advanced cameras.
† Image-Pro Plus is a 32-bit application. It will run on 64-bit machines.

Specifications are subject to change. Please contact Media Cybernetics or your local reseller for the latest features.

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