

At the Heart of Digital

M I C R O S C O P Y

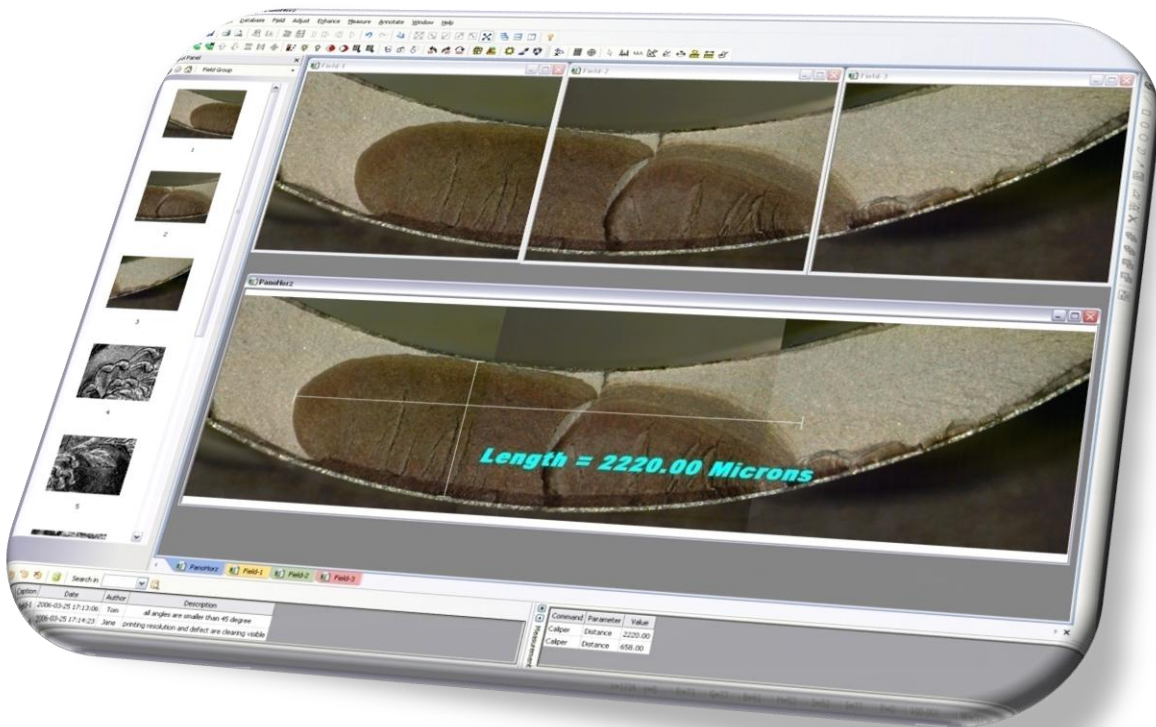
Micrometrics

Micrometrics[®] SE *Premium*

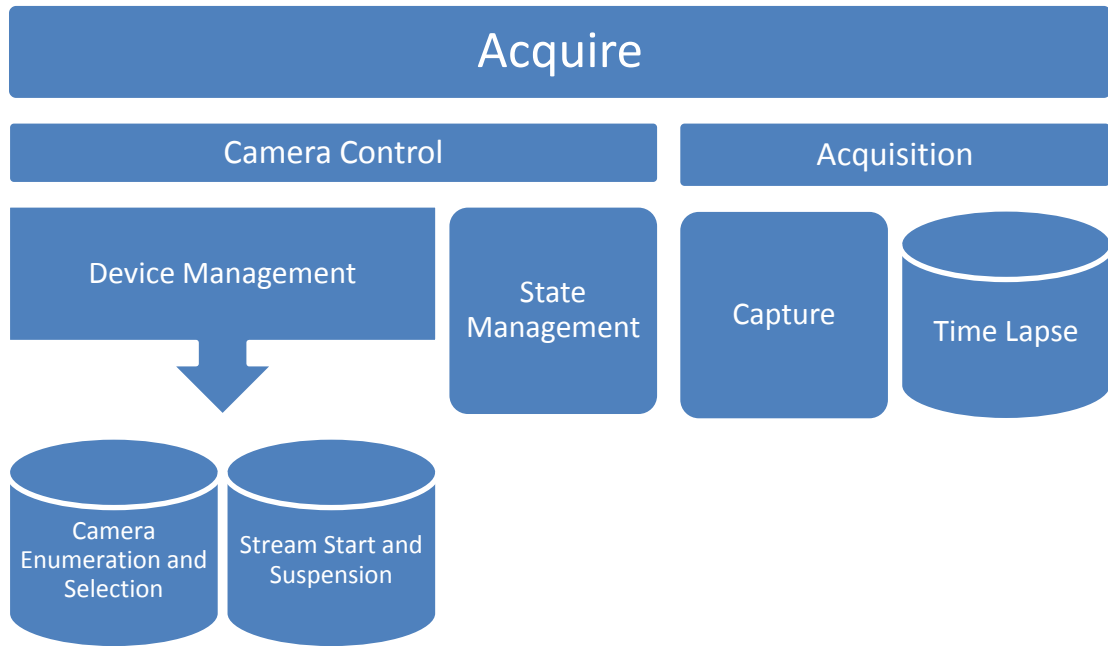
Acquire View Archive Compose Process Measure

MICROMETRICS

Micrometrics® SE Premium has all the tools for professional microscopy imaging and planimetry. Designed for research and quality assurance, it combines ease of use and flexibility without compromising performance



Windows Vista™



State Management

Continuous Auto Exposure							
Area Auto Exposure						Area White Balance	
Auto Exposure				Intensity Window		White Balance	
Preset							
Bias	Light Source Frequency	Exposure Time	Gain Saturation Contrast Mirror	Lookup Table		Gamma	Channel Gains
							Temperature

Capture

- Average consecutive frames.
- Sub-sample acquired images.
- Store images to internal buffer or disk or both.
- Preview acquired images automatically.
- Verify names of files to store images.
- Name image files automatically.
- Integrate in extended exposure mode.

Flat-Field Correction

- ✓ Remove effects of uneven shading.
- ✓ Set up automatically.
- ✓ Apply to live and still image.

View

Hard Copy

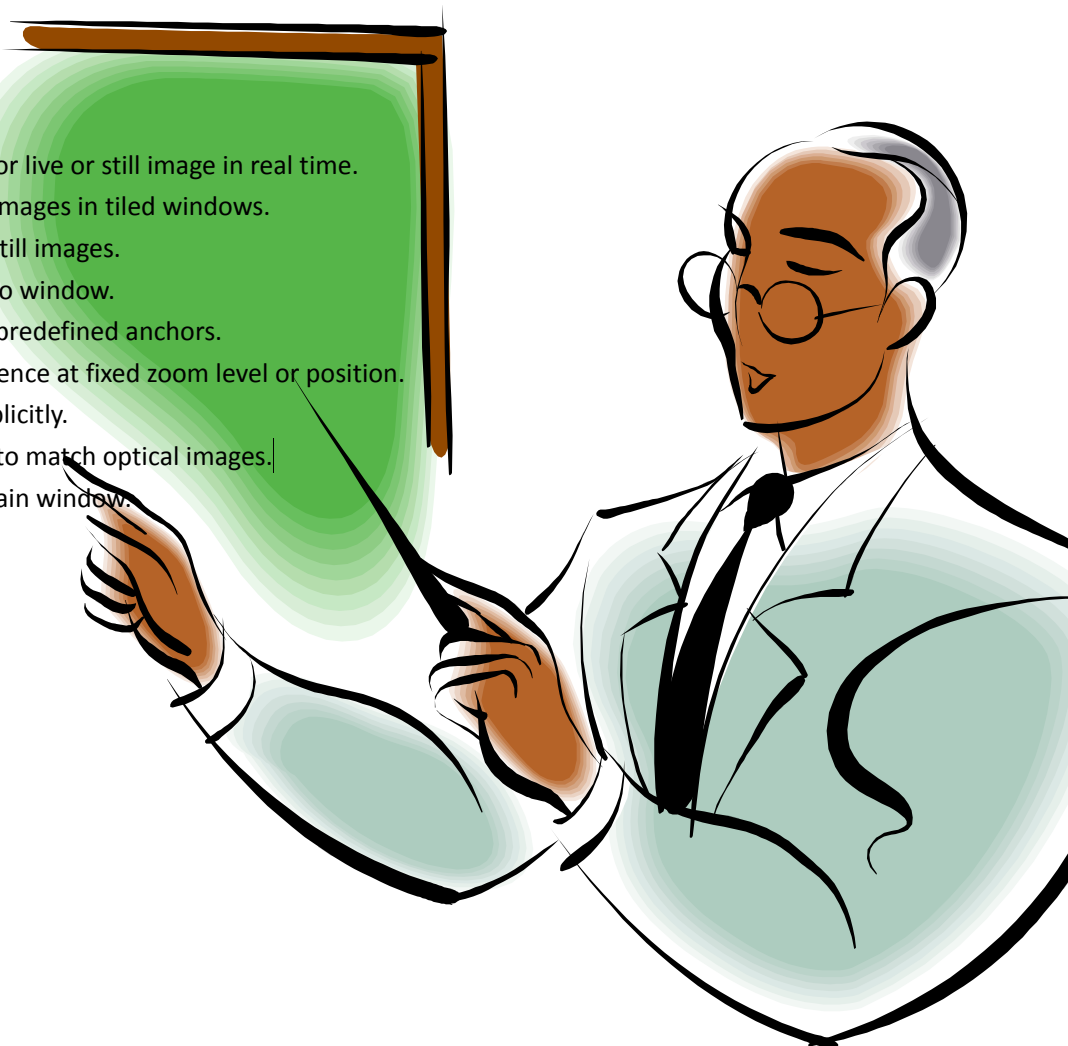
On Screen

Hard Copy

- Print multiple images with automatic layout and pagination.
- Print image at designated position and magnification.
- Print image with automatic positioning and zooming.
- Print image in controllable size through third-party

On screen

- Update histogram for live or still image in real time.
- Compare arbitrary images in tiled windows.
- Compare live with still images.
- Resize image to fit to window.
- Place image at five predefined anchors.
- Browse image sequence at fixed zoom level or position.
- Set window size explicitly.
- Set screen Gamma to match optical images.
- Set full screen as main window.



Archive

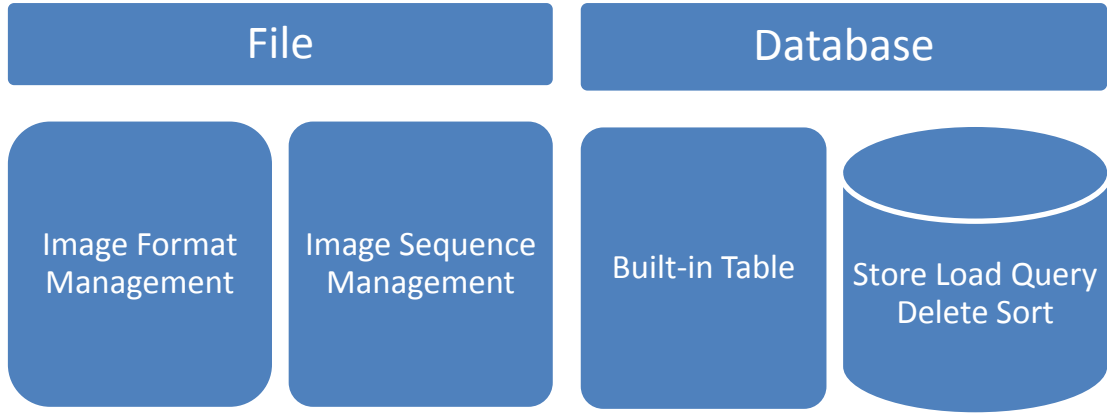


Image Format Management

- Native file format records complete information.
- Standard file formats include BMP, JPEG (quality factor specifiable), TIFF, PNG and numerous others facilitating image export and import.

Image Sequence Management

- Image sequence load and save in single file of native file format.
- Images in standard file formats load as image sequence.
- Image sequence saves as separate images in standard file formats.

Built-in Table

		Sort in ascending or descending order.		
		Search by Keyword.		Search by time interval.
Image	Numerical Measurement	Author Name	Description	Entry Date

Compose

Pixel-wise Algebra

Channel-wise Algebra

Panorama

Multi-Focus Composition

Average
Min
Max

Subtract
Divide

Channel-wise Algebra

- Split color image into individual channels.
- Combine last three images in the sequence automatically.
- Combine selected images in the sequence.



★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

- ◇ Channels compose separately.
- ◇ Channels select arbitrarily from image sequence.
- ◇ Constant values assign to composite image channels.
- ◇ Three-segment piecewise linear mappings apply to input channels.
- ◇ Logarithmic and exponential transforms apply to input channels.
- ◇ Histogram stretching applies to input channels.
- ◇ Input channels inverts or resets.
- ◇ Composite image displays in true color or primary color or grayscale.
- ◇ Linear mapping constructs on the fly or resets to identity.
- ◇ Linear mapping loads from or saves to external file.
- ◇ Linear mapping plots over histogram.

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Panorama

- Stitch a matrix of images automatically.
- Blend overlapped regions optionally.

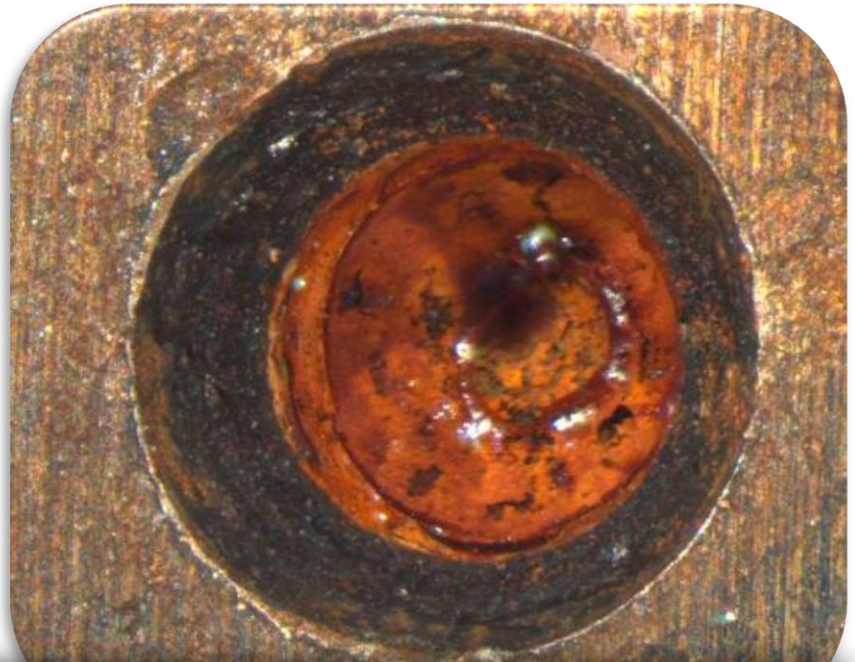


Eight (2x4) images are stitched automatically (left). Overlapped regions are blended (right).

Multi-Focus Composition

- Extract and reconstruct focuses automatically.
- Preview instantly with draft mode.
- Detect and correct translations from images alone.

Break depth of field limitations in photomicrography! Fracture (right, <0.6mm, focus rebuilt from 12 images) and insect (below, <0.8mm, focus rebuilt from 51 images) imaging have never been easier!



Process

Color Transform

Geometric Transform

Filtering

Annotation

Color Transform

- Adjust intensity, saturation and hue interactively or incrementally.
- Apply Gamma transform.
- Equalize histogram
- Retouch tint.
- Maximize contrast.
- Change to grayscale or negative.

Geometric Transform

- Rotate by 90, 180 or 270 degrees.
- Flip horizontally or vertically or both.

Annotation

Layer depth order adjustable.						
All configurations automatically persist and instantly update.						Text alignment selectable.
						Font selectable.
			Corner roundness adjustable.			Box shape selectable.
	6 shapes for arrowhead	Boundary width set to 0 or 1-200.				
Interior filled with color (customizable, 48 predefined) or transparent.						
	Arrow	Rectangle	Round Rectangle	Ellipse	Polygon	Text Box
Line	Style (9)		Color (customizable, 48 predefined) Width Round End			

Filtering

- Offset uneven shading by Flat-Field Correction.
- Reveal low-contrast features by compressing dynamic range.
- Suppress noise by median filter.
- Boost contrast by generalized un-sharp masking filter.
- Boost contrast by adaptively enhancing edges.
- Simulate pencil drawing.
- Simulate darkfield.
- Remove bad pixels.
- Remove haze by Spherical Aberration Correction.

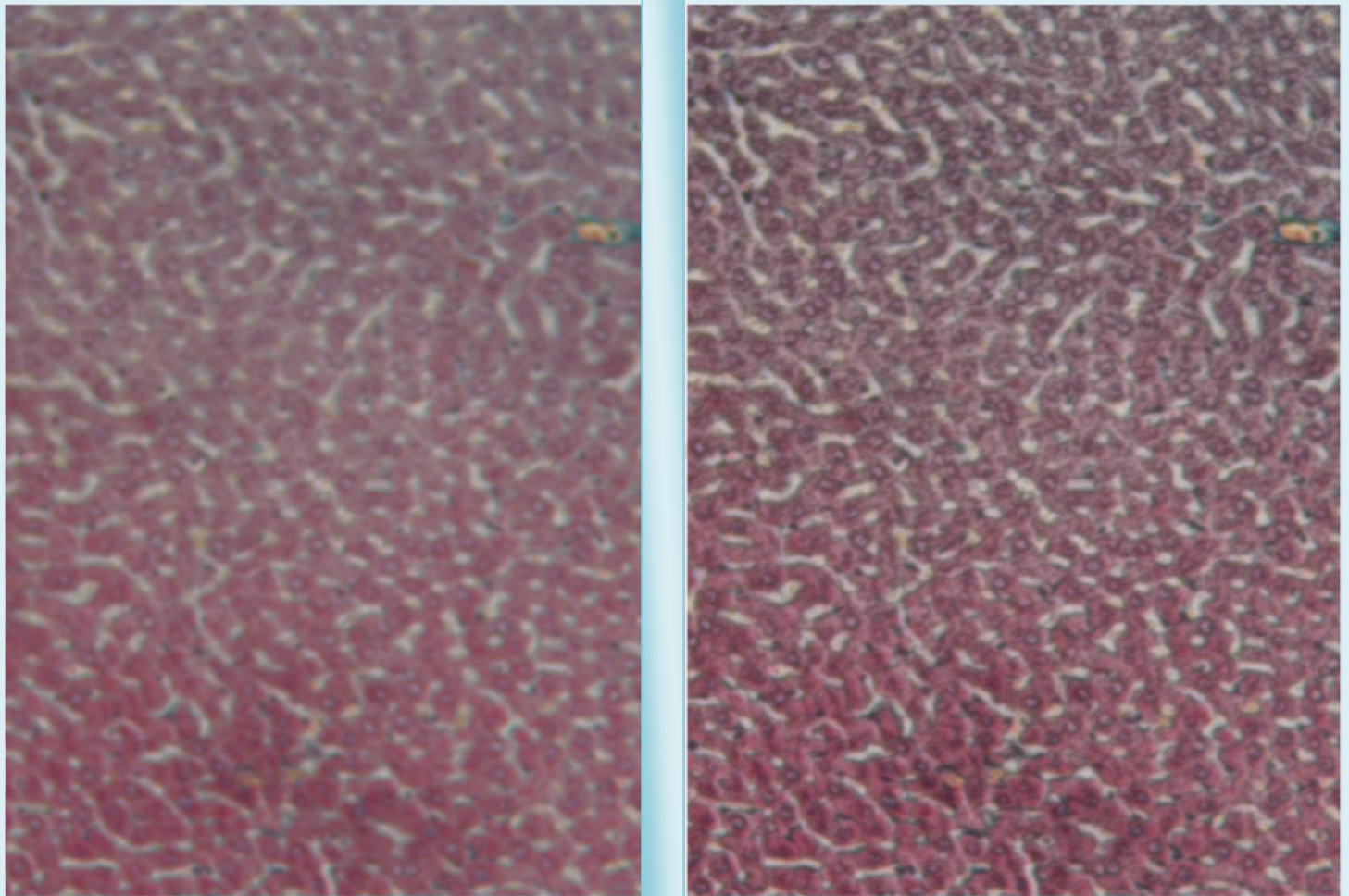


Image before (left) and after (right) Spherical Aberration Correction

Measure

Calibration

- Automatically calibrate images captured with native cameras.
- Objective tracking enables quick measurement.
- Preset mechanism facilitates multiple calibrations.
- Possibly calibrate against third-party images.
- Selectively calibrate single, multiple or sequence of images.

Planimetry

- Classic micrometry tools include rectangular and co-centric grids and touch counting.
- Light density tool profiles pixel values over a cross section of image.
- Circle tool determines radius of the circle passing three points.
- Caliper tool measures diameter or distance.
- Line tool measures total and average lengths of connected line segments.
- Polygon tool measures area and perimeter of closed shapes.
- Measurement operations generate customizable numeric results, graphical overlays and optional textual descriptions.