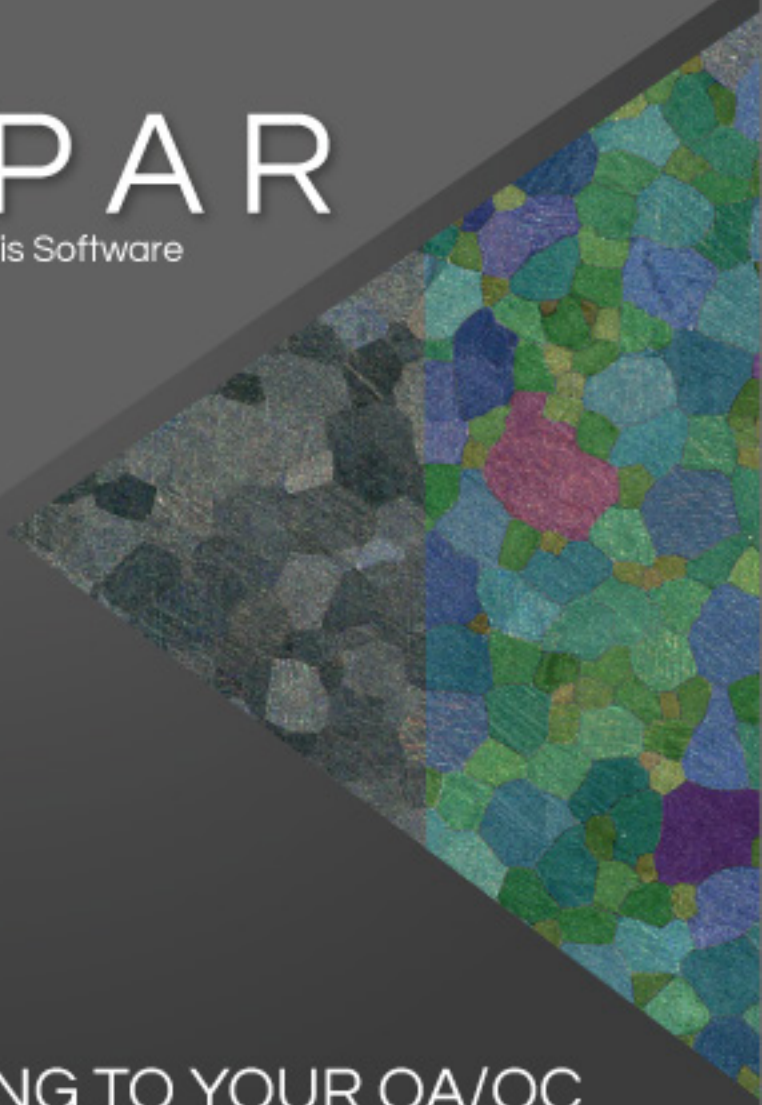
MIPAR

Image Analysis Software



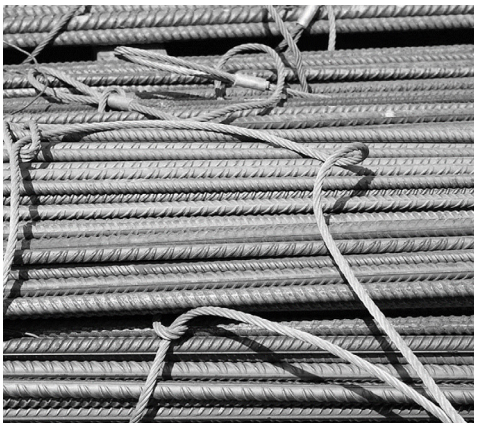
INTRODUCE DEEP LEARNING TO YOUR QA/QC

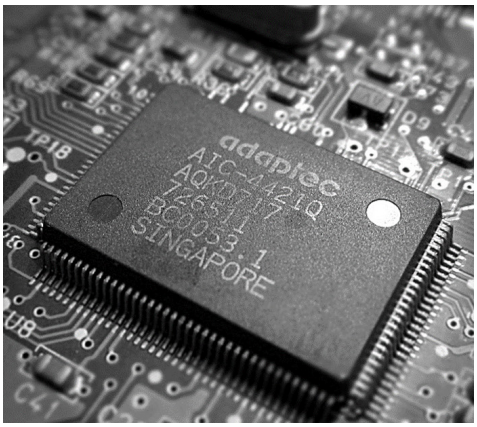
MIPAR

MICROGRAPH ANALYSIS CHALLENGES IN QA/QC

In today's fast-moving environment, reducing the projects turnaround time, meeting productivity targets, while reducing operating cost can be challenging without a smart automated approach. To avoid product recalls, meet increased customer demands and get products right the first time, a thorough investigation of the materials microstructure is key. Defect analysis, inclusion analysis, grain sized analysis are only a few approaches that can give meaningful insights into the quality of products. QA/QC has a unique challenge of working with real world, imperfect micrographs that require a flexible tool suite.

MIPAR Image Analysis combines customized algorithms and powerful deep learning systems to produce technology able to perform sophisticated structure analysis processes. Whether is titanium, copper, steel, aluminium, or ceramics, MIPAR software allows for automated micrograph analysis that streamlines the data analytics, improves data quality and offers new layers of information. Automation reduces operator error and improves professional productivity.





ADVANTAGES OF DEEP LEARNING IN QA/QC

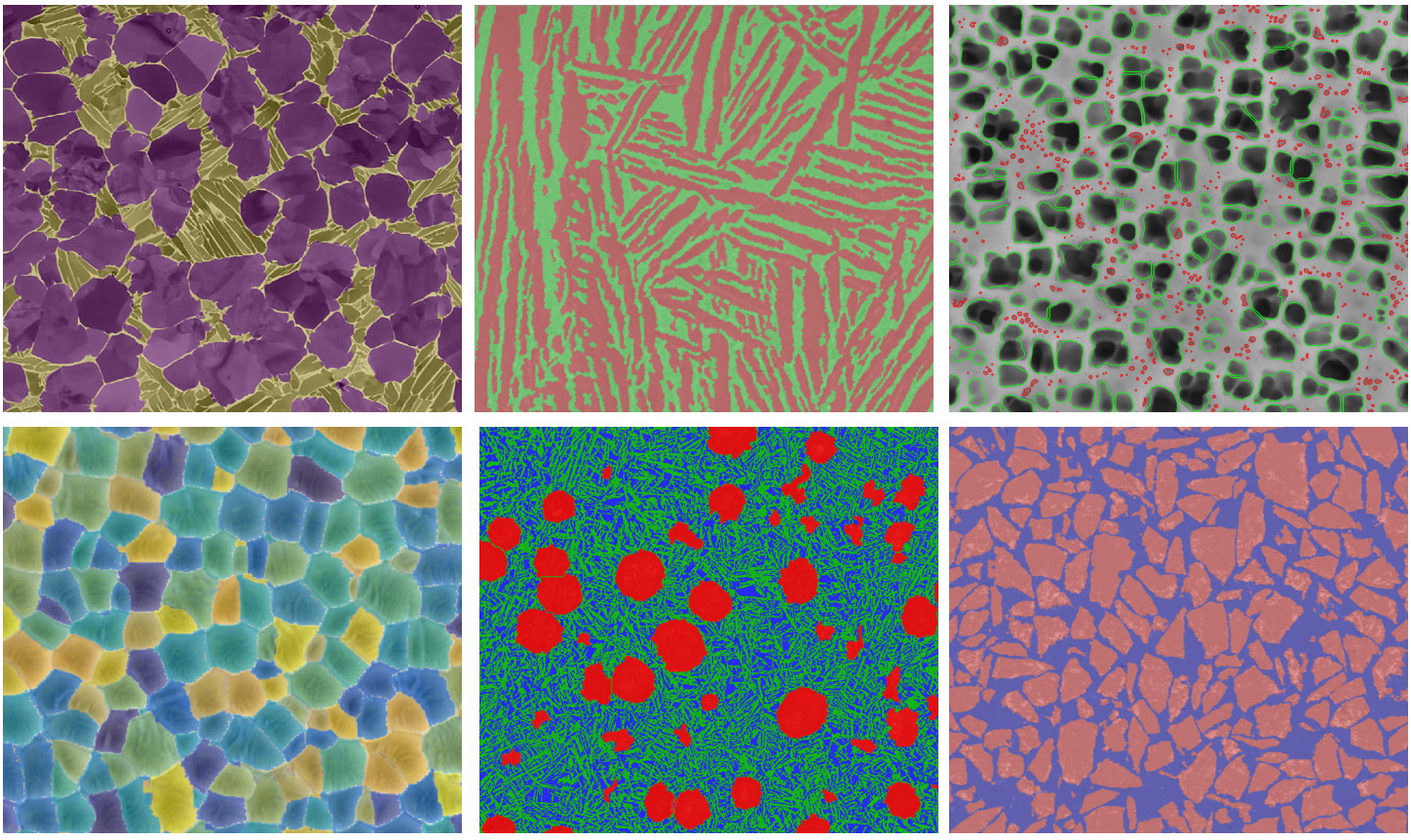
The challenge in modern QA/QC is that the manufacturing environment is increasingly driven by stringent efficiency requirements in the name of productivity. Guaranteeing product quality often runs contrary to pushing the bottom line, meaning defect and contaminant analysis must be carried out quickly as well as effectively.

Automation and digital integration are central to the push for greater productivity in manufacturing environments. The concept of automating production typically brings to mind the robotic arms of assembly lines, but manufacturers are just as interested in software solutions that accelerate critical processes throughout the manufacturing pipeline. Deep learning is one such solution.

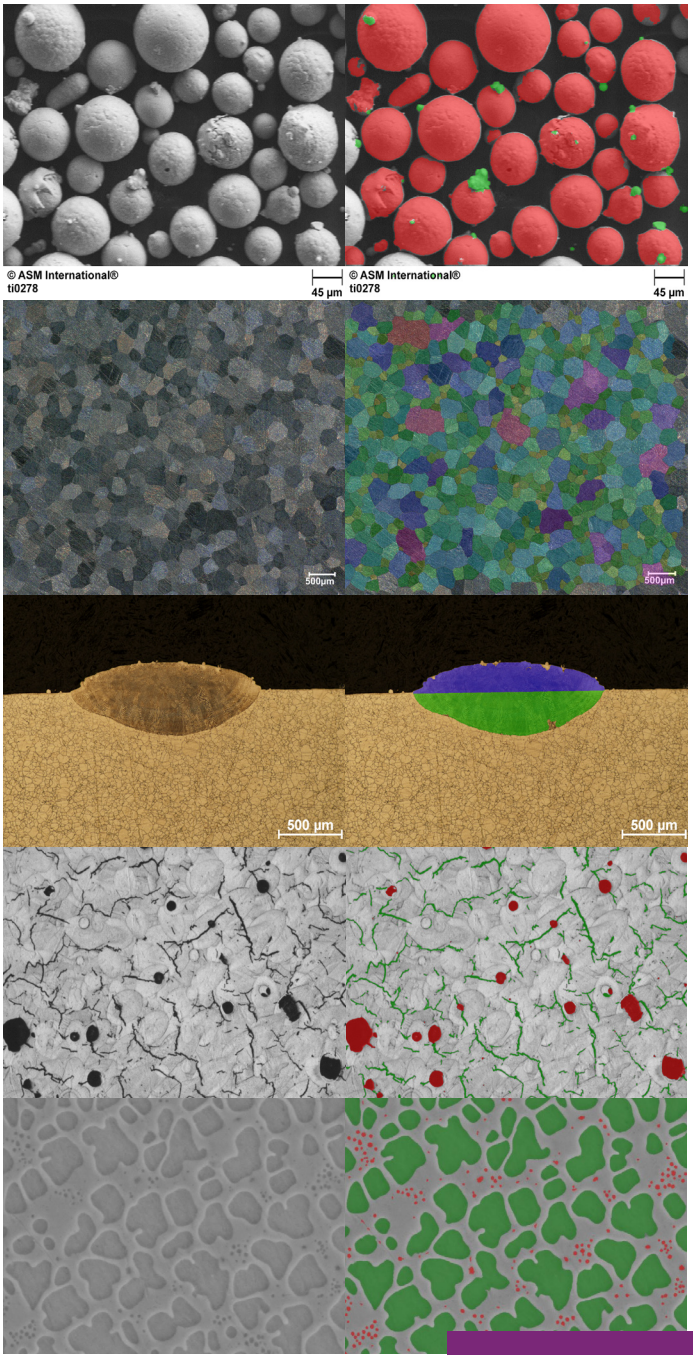
Did you know that more and more companies are using deep learning to double check the material quality provided by suppliers? Be ahead of your customers by introducing these capabilities in house. Improve your customer satisfaction, avoid rework, while reducing the operational cost.

What is Deep Learning?

The aim with deep learning is to teach software to adapt to your own micrographs. Deep learning works in a presence of varying contrasts and feature texture, as well as sample preparation artefacts. As little as four images can be used to train an application specific solution. This can be done with minimum training and no programming expertise.



SOLVE CHALLENGES YOU COULD NOT BEFORE



Powders analysis

Automated size and shape measurements is essential to determine the quality of powders. MIPAR can analyze particle agglomerates, satellites and overlapping powders.

Polarized Grains

Measuring grain size through image analysis is critical to most metals and ceramics research. MIPAR can detect grain boundaries, simple and complex, from any material you encounter.

Weld analysis

Weld analysis is important in product design, especially in automotive, aviation and construction industry. MIPAR can be trained to identify and measure different weld characteristics.

Pores and crack analysis

Defects analysis (especially in additively manufactured components) is very important to assess the quality of products. MIPAR can correctly identify cracks and pores, measure their dimensions and quantify the area fraction and number density of each.

Phase analysis

Phase analysis helps researchers to connect the material microstructure with its properties. MIPAR identifies complex phases and performs phase fraction quantification, ignoring defects, pores or scratches that might be present on the surface.

Limitless Applications...

MIPAR's flexibility offers engineers the tools to solve real world problems in any field. Today, MIPAR is used by companies and universities around world in application from materials, life science and much more..

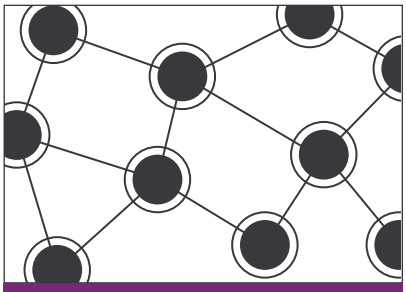
MIPAR

OUR VISION

The Vision for MIPAR is to empower users to solve a wide variety of image analysis problems, without sacrificing user-friendliness. MIPAR's powerful image analysis engine, combined with straightforward algorithm development, enables users to obtain accurate, reliable results for their unique images.

Simple. Uniquely Powerful.

MIPAR is a revolutionary image analysis software, capable of identifying and measuring features from nearly any image one can capture.

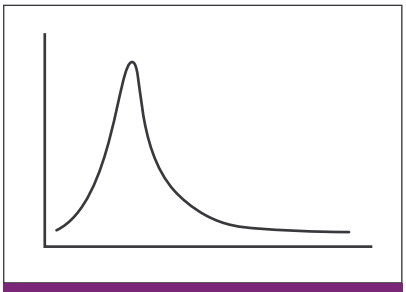


Detect

Develop a Recipe to detect any features you desire.

Batch Process

Process multiple images with the same Recipe using our efficient Batch Processor.



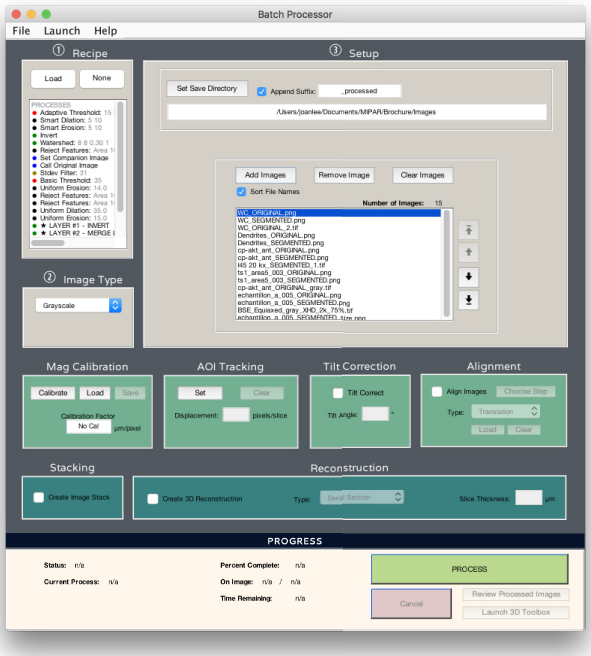
Analyze

Analyze your results by making global, feature, and local measurements.

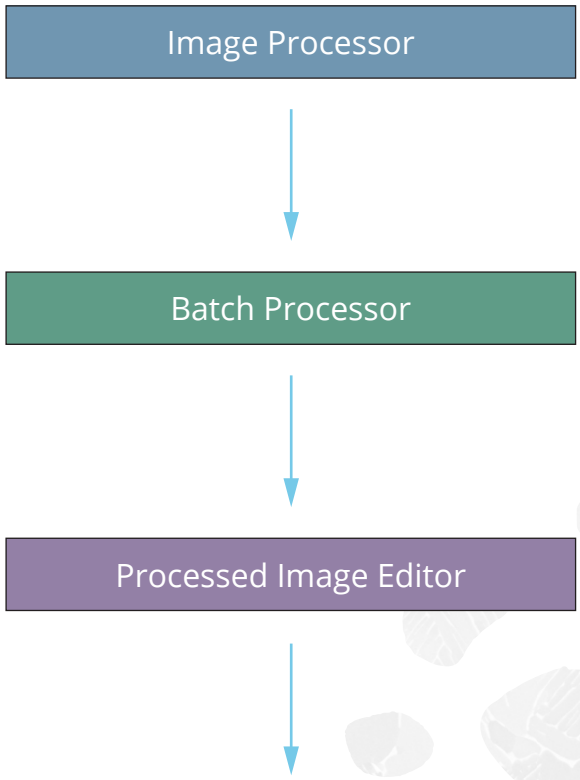
BATCH PROCESS

Process Multiple Images and Save Time

Once a Recipe has been developed in the Image Processor, it can be applied to other similar images in the Batch Processor.



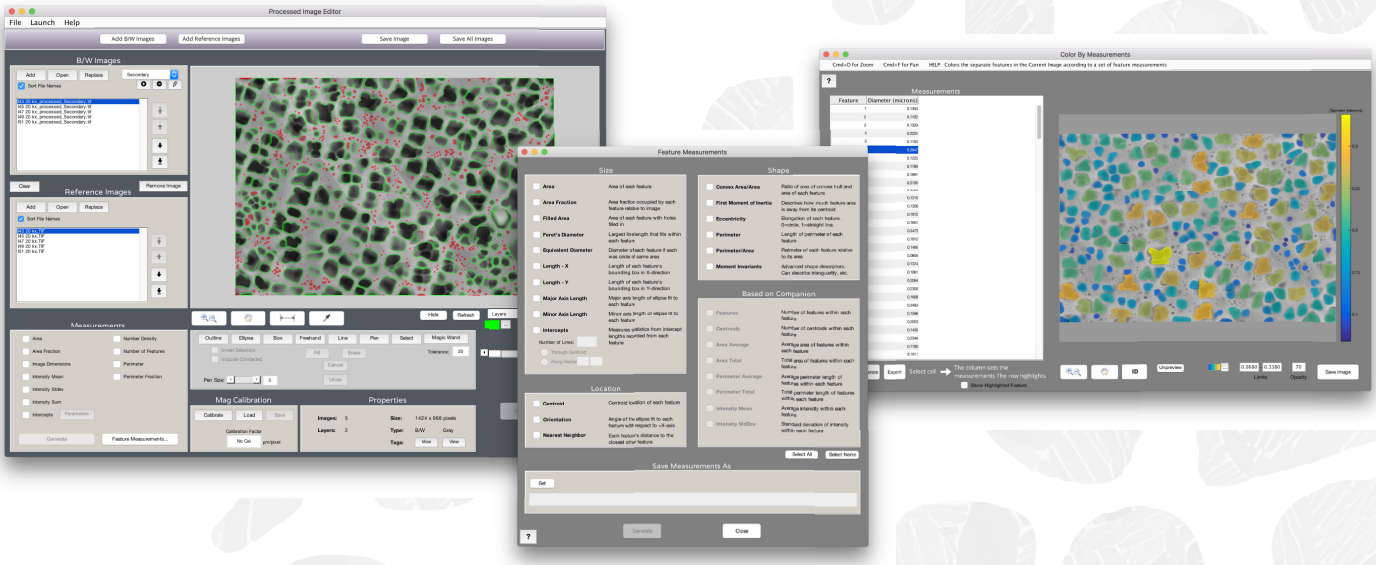
2D Image Workflow

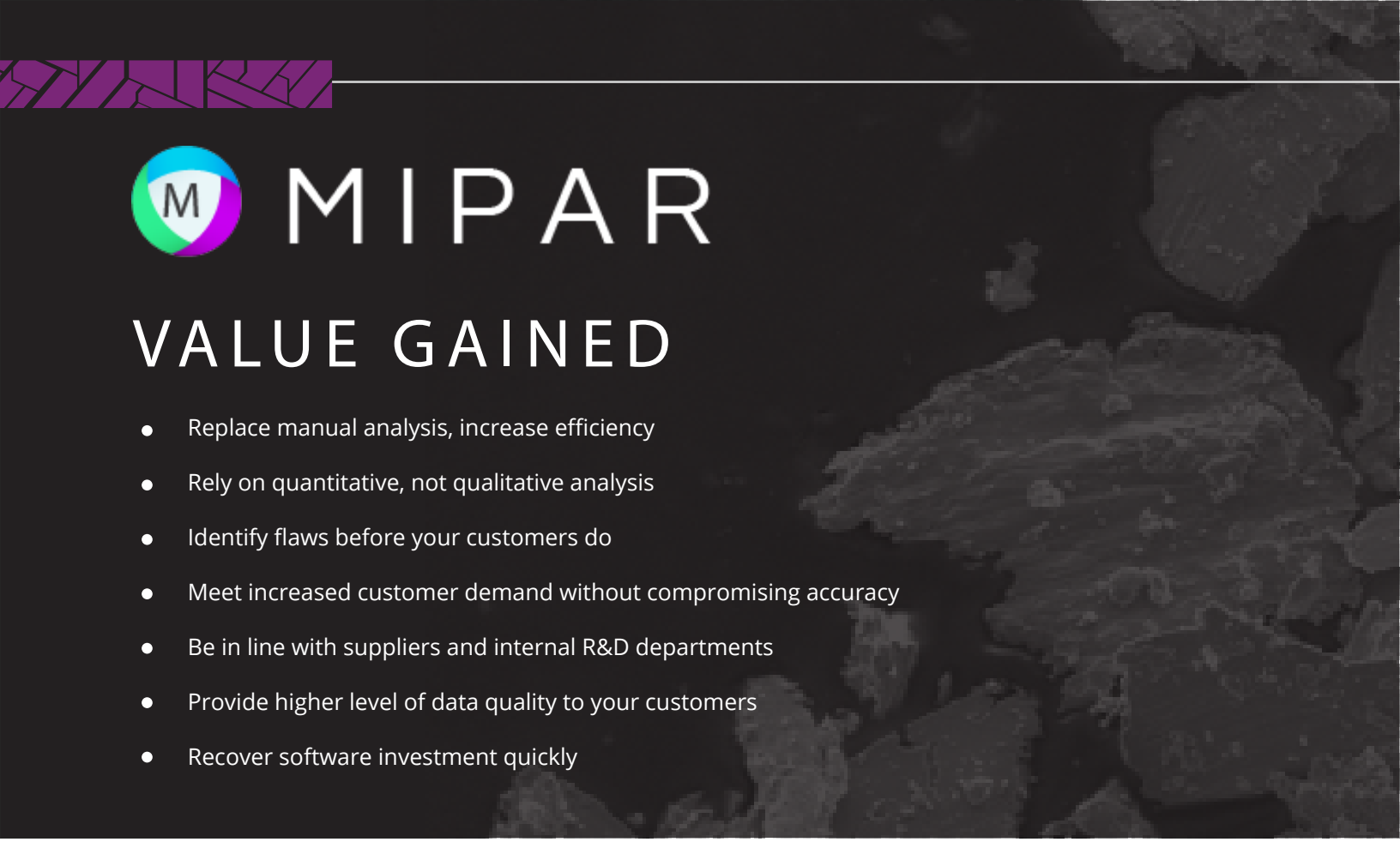


ANALYZE

Review Processed Images

The Processed Image Editor allows you to review the results from the Batch Processor, and make manual edits if need be. Once you are satisfied, you can generate various feature measurements from your images.





MIPAR

VALUE GAINED

- Replace manual analysis, increase efficiency
- Rely on quantitative, not qualitative analysis
- Identify flaws before your customers do
- Meet increased customer demand without compromising accuracy
- Be in line with suppliers and internal R&D departments
- Provide higher level of data quality to your customers
- Recover software investment quickly

> "I HAVE USED THEM ALL: OPEN SOURCE, COMMERCIAL... THERE'S JUST NOTHING LIKE MIPAR. IT'S AMAZING"
>
> - Adam/Metallurgy

> "MIPAR HAS TAKEN OUR CHARACTERIZATION TO THE NEXT LEVEL"
>
> - Bobby/Aviation

> "GREAT PRODUCT WORTH INVESTING IN"
>
> - Spiros/Biotechnology

> "MACHINE LEARNING FOR EVERYONE"
>
> - Federico/Computer Science

TRUSTED BY THE BEST

Honeywell

BAYER

EWI

P&G

AK Steel

Pratt & Whitney
A United Technologies Company

PennState

UCSF

Nationwide Children's

NASA

MIT

Pacific Northwest
NATIONAL LABORATORY

INDUSTRIES THAT USE MIPAR

- ✓ Aerospace
- ✓ Automotive
- ✓ Medical devices
- ✓ Electronic devices
- ✓ Energy

KEY ADVANTAGES

Efficient

Intuitive Design

Solves problems faster

Batch Processing

Automate analysis on thousands of images

Powerful

Recipe Engine

Solves problems other products cannot

Objective

Learns optimal settings for unbiased analysis

Visualization

Quality Assurance

Review batch results before you measure

Colorize Metrics

Color-code objects according to their measurements and reveal trends

Support

Experts On-Call

Live trainings

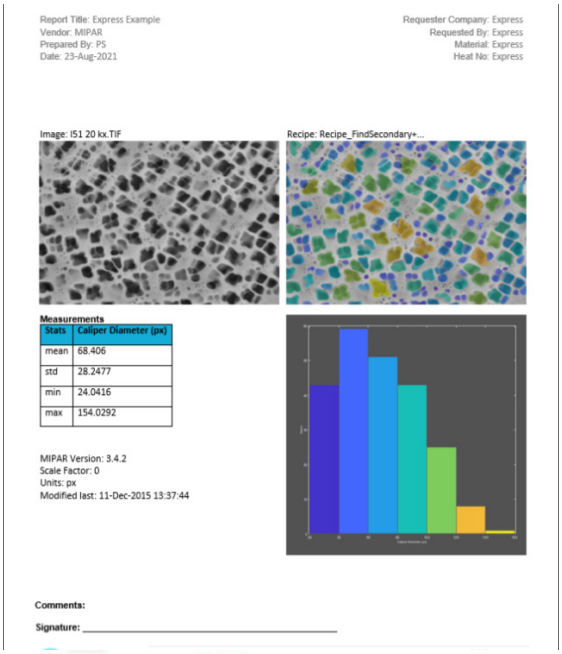
Free “Recipe Store”

Custom Recipes built in minutes to hours

Decades of image analysis experience

MIPAR BASE: PROTOTYPE, OPTIMIZE, EXECUTE

Build and run application specific solutions utilizing modern tools in a user friendly environment, without any programming.



Available Extensions:

Deep Learning Trainer:
assemble and train true deep learning detection models.

3D Toolbox:
optimized for FIB-SEM, segment, reconstruct and measure 3D volumes of data.

Report Generator:
output customizable Microsoft Office Word reports with a single mouse click.

MIPAR EXPRESS: EXECUTE AT SCALE

Run validated recipes on one image or a sample set and generate detection and measurement reports. Built for QA/QC environments and routine analysis.

Available Extensions:

Report Generator:
output customizable Microsoft Office Word reports with a single mouse click.

MIPAR API: INTEGRATE

Integrate recipes into an existing image processing pipeline, output to a data base, or use the output for hardware control. API is available as a Python library or RESTful Docker Container

Support: Leverage Experience
Application specialists bring years of micrograph analysis experience to your project. Support is always a phone call away.

Learn More

www.mipar.us

Recipe Store

Over 50 pre-built Recipes. Always free.

Submit Your Images

Get custom Recipes from Experts.

Free Trial

Download your 14-day trial today!

MIPAR

Image Analysis Software

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