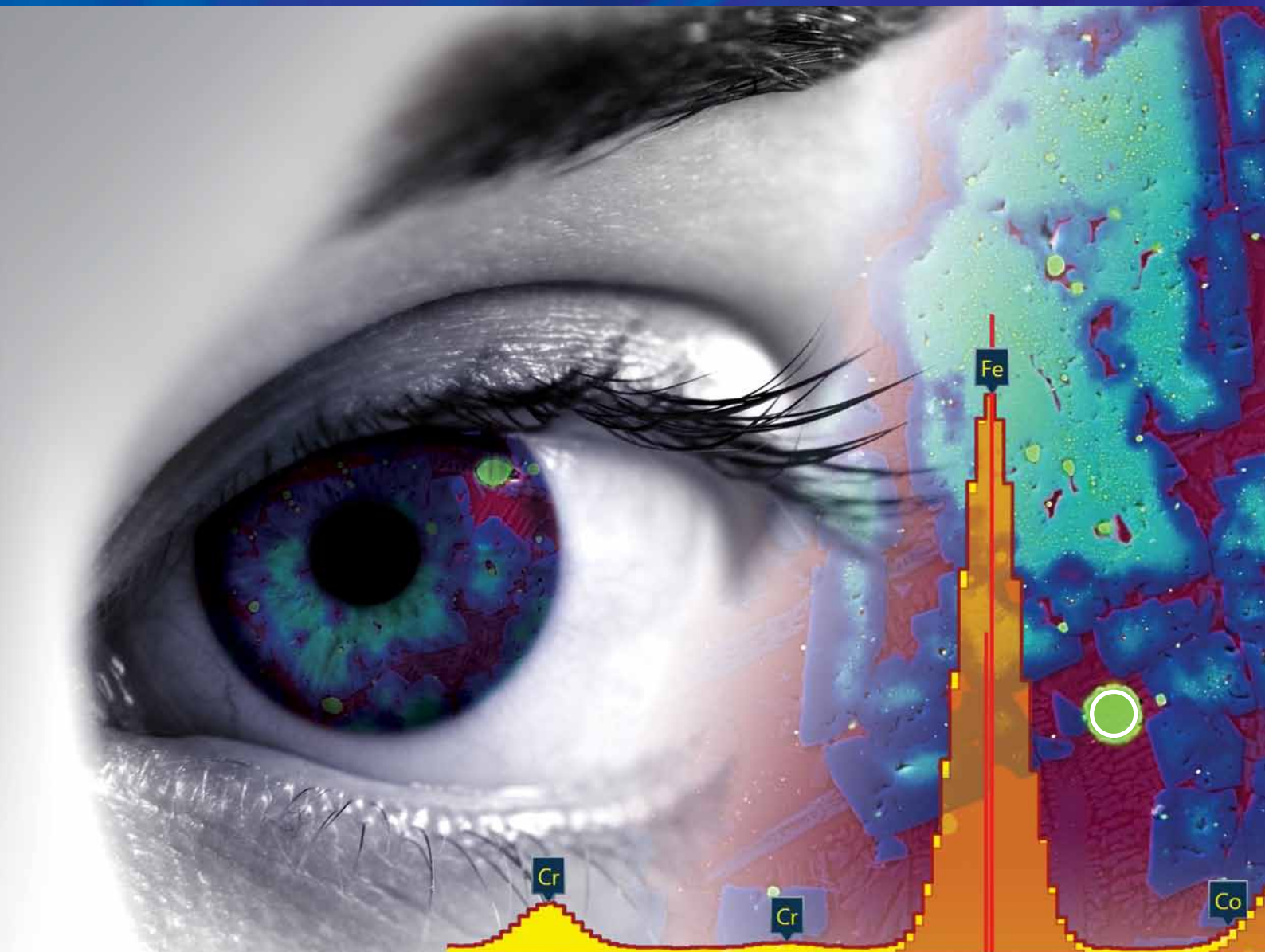


EDS

AZtecEnergy

The Ultimate EDS System



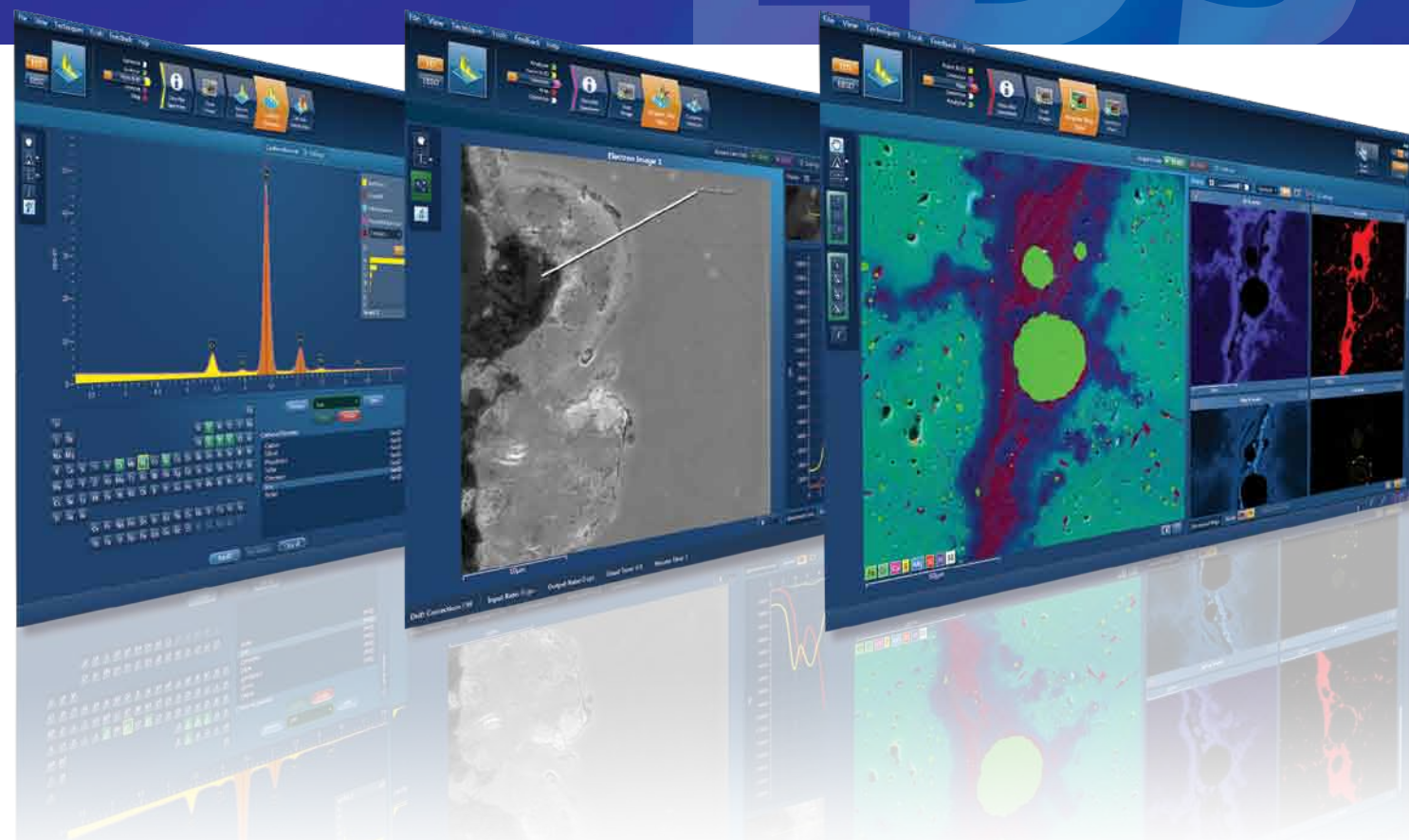
The most powerful, most flexible materials
characterisation system you'll ever see



The Business of Science®



The most powerful, the most flexible EDS system you'll ever see



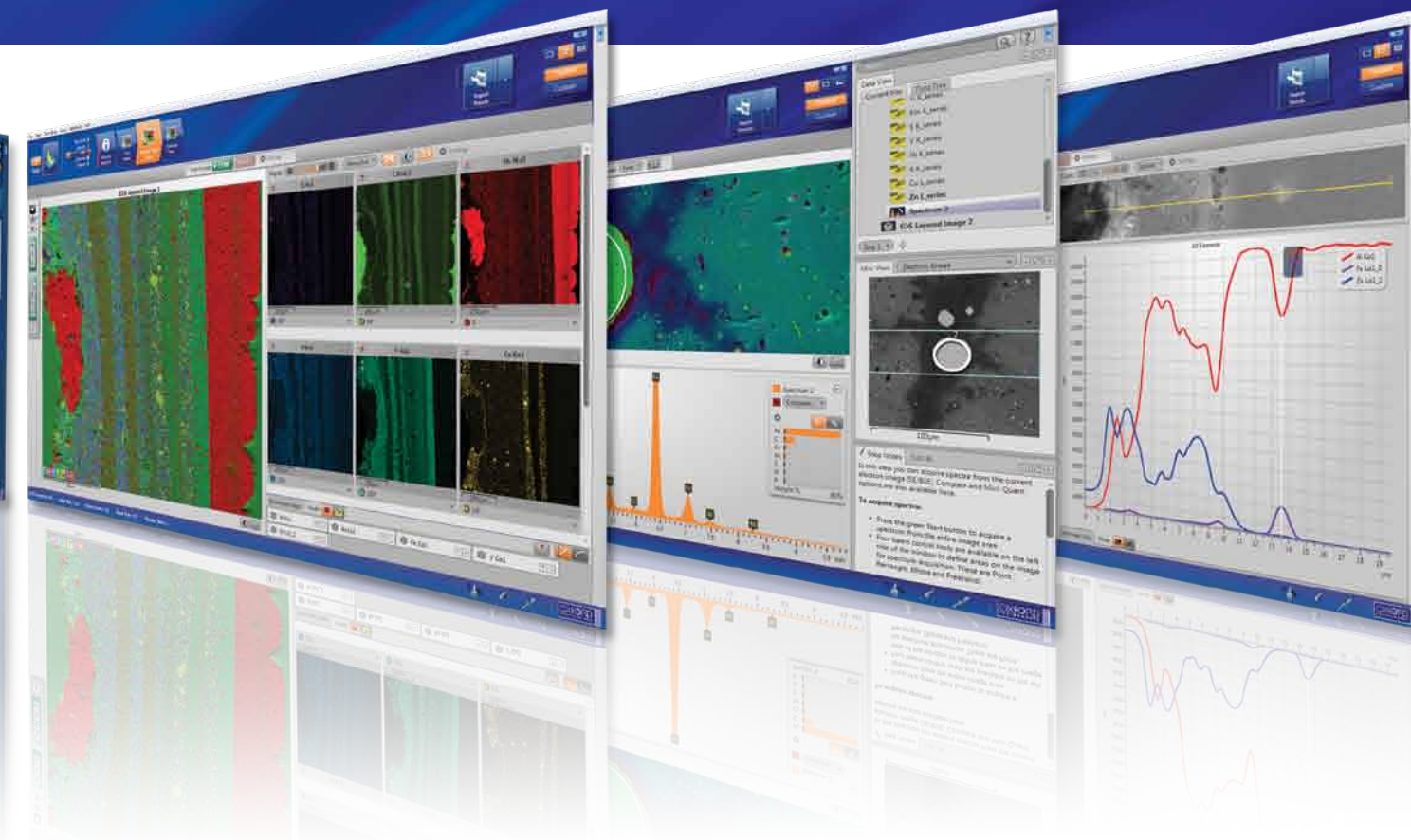
The most powerful, most flexible EDS system you'll ever see, **AZtecEnergy** will change the way you view your data... You'll gather more accurate results, gain more insights, see everything in stunning high resolution, and finish the job faster than ever.

Whether novice or expert, **AZtec** ensures you get the correct results time and time again and faster than any other system on the market. Building on nearly 40 years experience and the feedback from the world's largest microanalysis user community, **AZtec** is everything you'd expect of an Oxford Instruments system.

Only better.

A-Z technology for nanoanalysis

At a glance...



Powerful

- **AZtec** has a host of new tools and technologies that will transform the way you get results and enable everyone to see 'The Real Picture'

Flexible

- Whatever your level of expertise, **AZtec** will be there to guide you from start to finish or give you the tools to explore in your own way

Fast

- Every feature of **AZtec** has been optimised with speed and productivity in mind, for consistently accurate real-time results

Accurate

- New Tru-Q™ technology takes standardless analysis to the next level and ensures that **AZtec** gives you the best 'out of the box' results

Innovative

- A host of brand new features and novel visualisations deliver useful information to help you make decisions

Structured

- Whatever your level of expertise, **AZtec** will assist you from start to finish with Step Notes and editable Standard Operating Procedures (SOP)

Point&ID

Real-time analysis for high count rate (SDD) detectors

Point&ID has been designed to take advantage of the high count rates generated by the latest SDD detectors to deliver accurate sample information in real-time.

See the elements in a specimen and its composition instantly

- Simply select the area to analyse, then, in the few seconds required to collect a spectrum:
 - Elements are identified using an improved version of our field-proven automatic PeakID routine
 - Composition is displayed in the unique MiniQuant using the accuracy of new Tru-Q technology
 - Annotate and e-mail results directly from the software

Acquisition starts, elements are automatically identified in real-time...

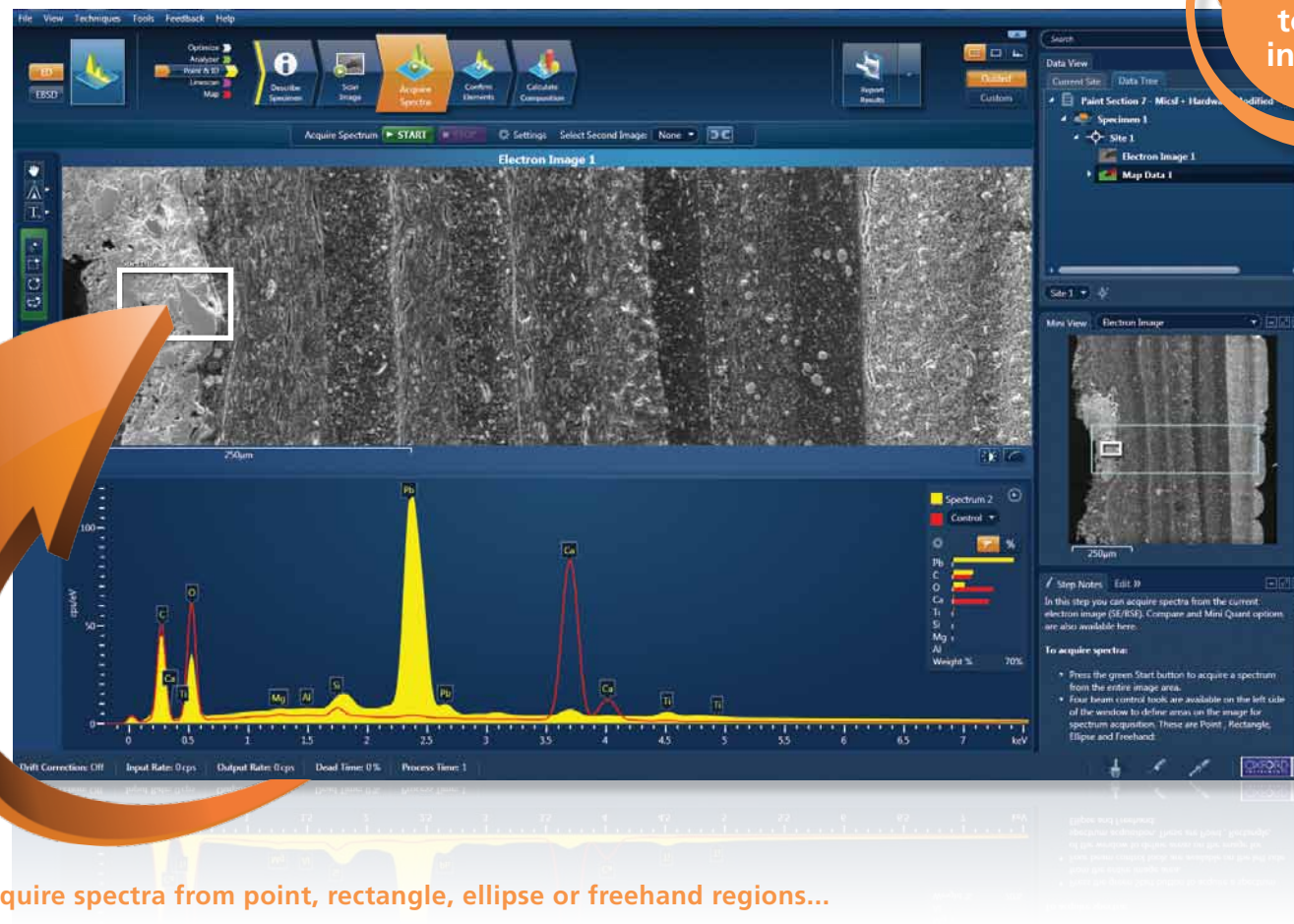
From 'Beam on' to report in seconds

Review with MiniQuant...

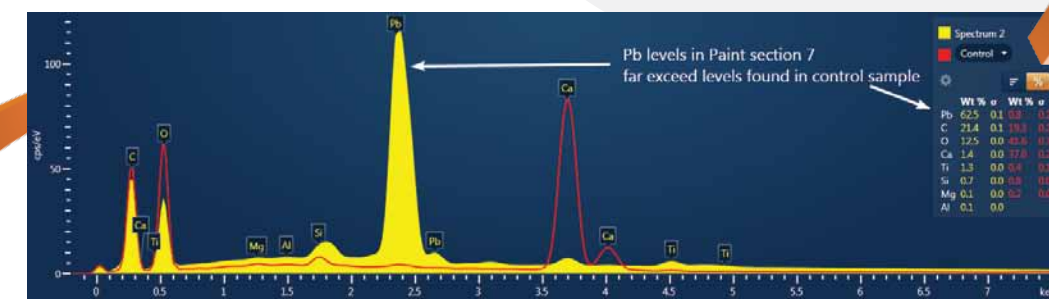
Everything in real-time

Annotate on screen...

...one click reporting to print or email direct from the interface.



Acquire spectra from point, rectangle, ellipse or freehand regions...



Tru-Q™

Providing the accuracy required for automatic real-time ElementID and Concentration Measurement

Tru-Q provides high accuracy AutoID and quantitative analysis using a unique combination of technologies.

Only AZtec offers high quality results without the need to standardise using:

QCAL

- Complete detector and hardware characterisation for true standardless analysis

FLS

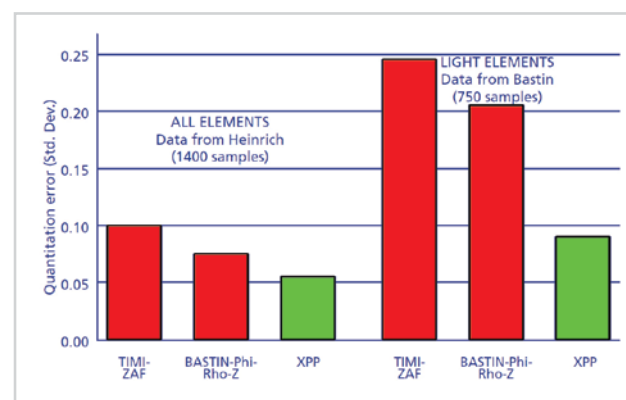
- Robust spectrum processing that works in all situations with no need for any background fitting adjustment

XPP

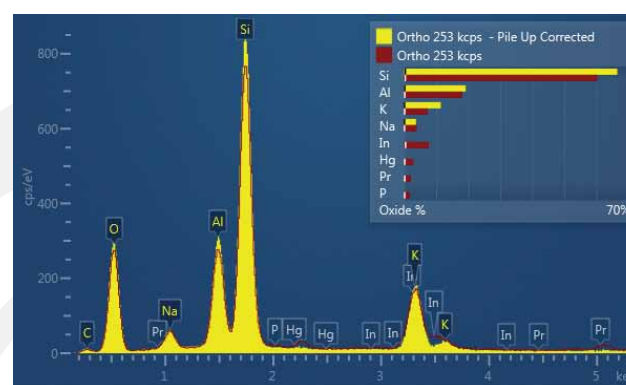
- Matrix correction with proven accuracy beyond that possible with ZAF or Phi-Rho-Z

Pulse Pile-up Correction (PPC)

- Automatic correction for pulse pile-up at high count making accurate quant at 200,000cps a reality

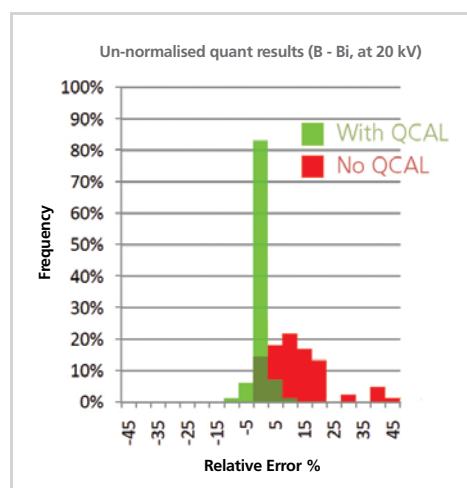


Tests on published data show that XPP results are more accurate than older methods, particularly for light elements.



Pulse pile-up corrected spectrum collected at 250,000cps (in yellow) gives correct AutoID and composition. In comparison, the uncorrected spectrum (in red) shows misidentified peaks and quant errors.

Tests of un-normalised quant shows that, with QCAL, errors are reduced to less than 5% relative. A level of accuracy only previously possible using standards-based analysis.



ElementID and Quantitative Analysis

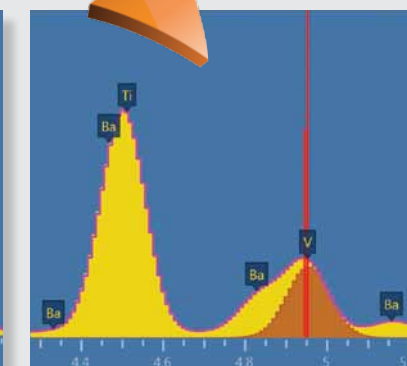
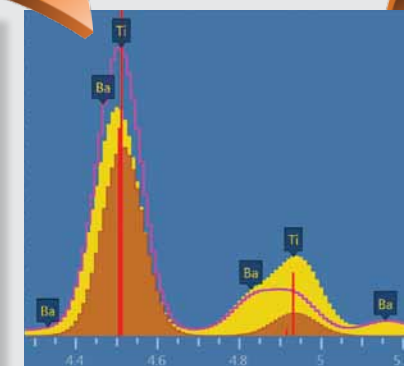
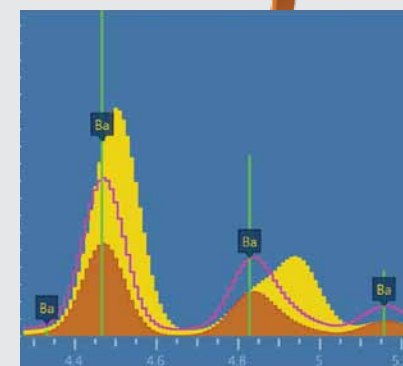
Providing clarity and flexibility for more detailed analysis

Now everyone can achieve reliable results

AZtec provides new tools to make the task of checking PeakID faster and more reliable.

Be confident, even where peaks overlap

- Element profiles give a much clearer picture than traditional markers
- Interactive overlays show when the element list is correct



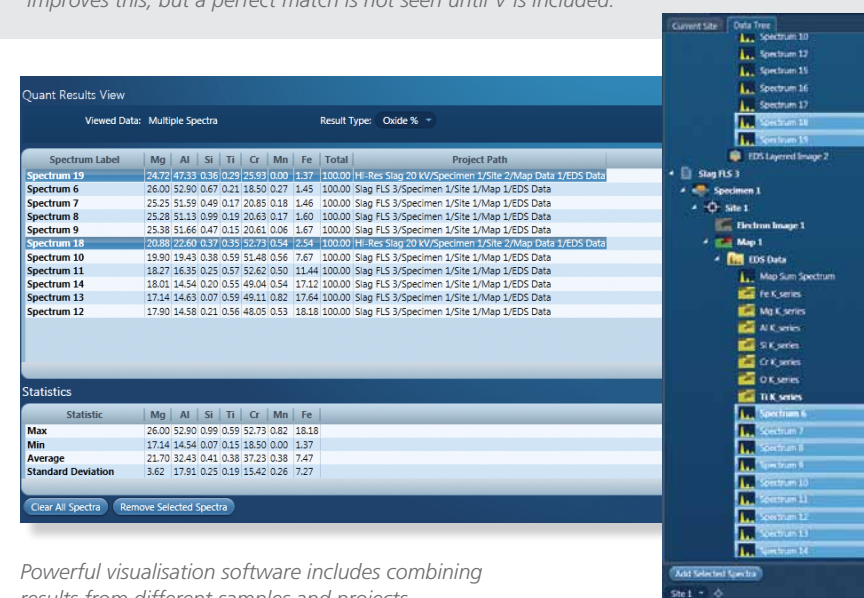
■ Spectrum
 ■ Fitted Spectrum Overlay
 ■ Element Peak Profile

Element profiles and interactive overlays make investigating peak overlaps simple, e.g. Ba/Ti/V. When all the elements are correctly assigned the fitted spectrum overlay should match the spectrum. Assigning Ba alone produces a poor match, adding Ti improves this, but a perfect match is not seen until V is included.

Calculate quantitative results the way you want to

- Flexible processing options
- Batch output from multiple samples
- Standardisation manager for easy optimisation for special samples or conditions

The best results... guaranteed.



Powerful visualisation software includes combining results from different samples and projects.

SmartMap and LineScan

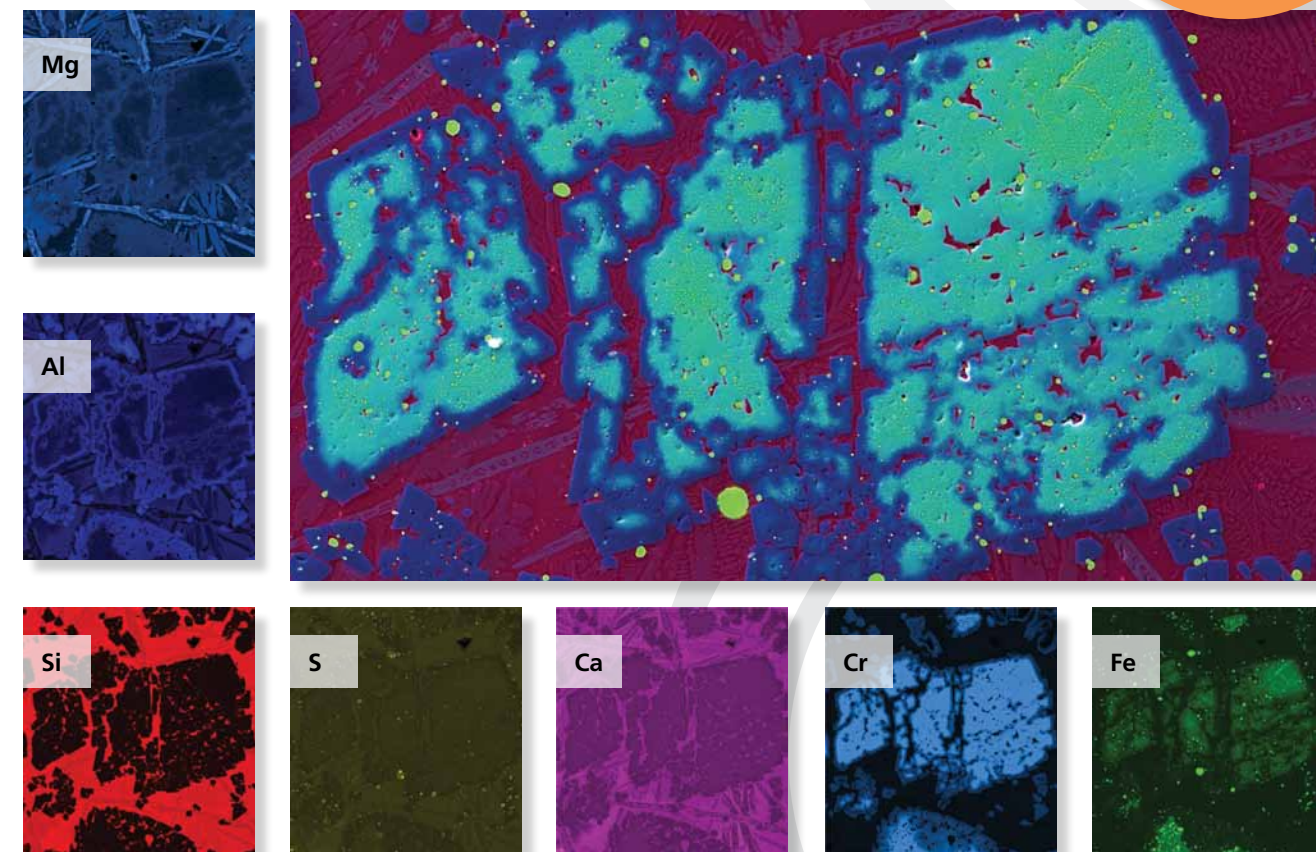
Brings new levels of certainty and detail to sample investigation

SmartMap spectral mapping brings the benefits of automatic qualitative analysis into two dimensions to identify elements and show their distributions.

Now see how all elements are distributed in a sample

- No sample pre-knowledge required
- Maps for all elements identified and generated automatically
- Single Layered Image highlights chemistry and phase distribution in seconds
- Up to 4K SmartMap resolution to combine wide area and high resolution studies

Layered Image of a slag sample, a 4K electron image is overlaid by 4K X-ray maps



Layered Image gives complete picture of composition and phase distribution. Or view individual X-ray maps for more detailed information.

Spectral Mapping should be a central tool of every EDS system, it is with AZtec

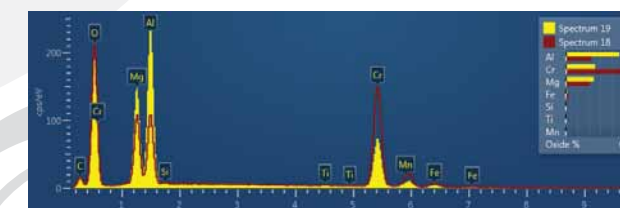
Display the information you want in the way you need it

Analyse the information in greater depth at any time

- Reconstruct any data from the SmartMap to the same accuracy provided by live spectrum acquisition



Reconstruct spectra from any area during or after acquisition.



Accurate ElementID and MiniQuant give instant result.

The figure is a screenshot of the AZtec software interface, displaying a table of quantitative analysis results. The table has columns for Element, Concentration, and various other parameters. The data is organized into rows for different elements, with their respective concentrations and other analytical data.

Element	Concentration	Other Parameters
Al	1.00	...
Mg	1.00	...
Si	1.00	...
Fe	1.00	...

Data is of same high quality as live spectra collection for accurate quant analysis.

LineScan:

Visualise composition along a line.

LineScan brings the concepts of AZtec real-time acquisition and reporting to the study of linear variations

- Visualise LineScans clearly, quickly and easily
- Flexible views make interpretation easy
- View LineScans in stacked or titled format
- Normalise display to compare major and trace element variations easily



Rotatable monitors show linescan information at its best – in profile rather than landscape format.

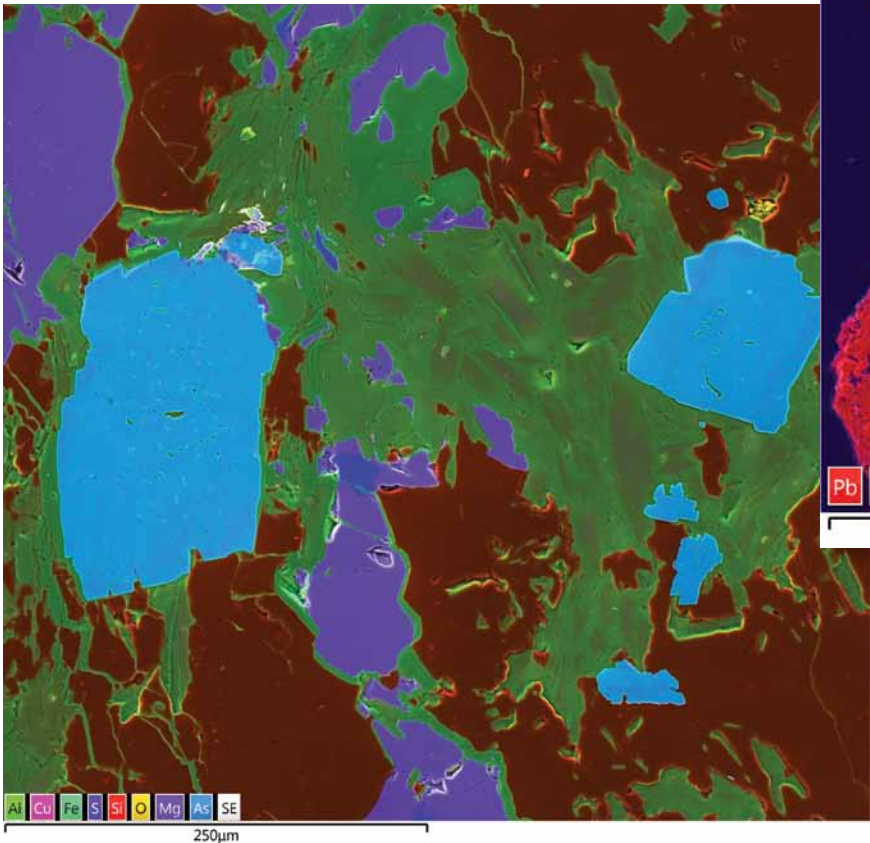
AutoLayer

Makes a complex story simple

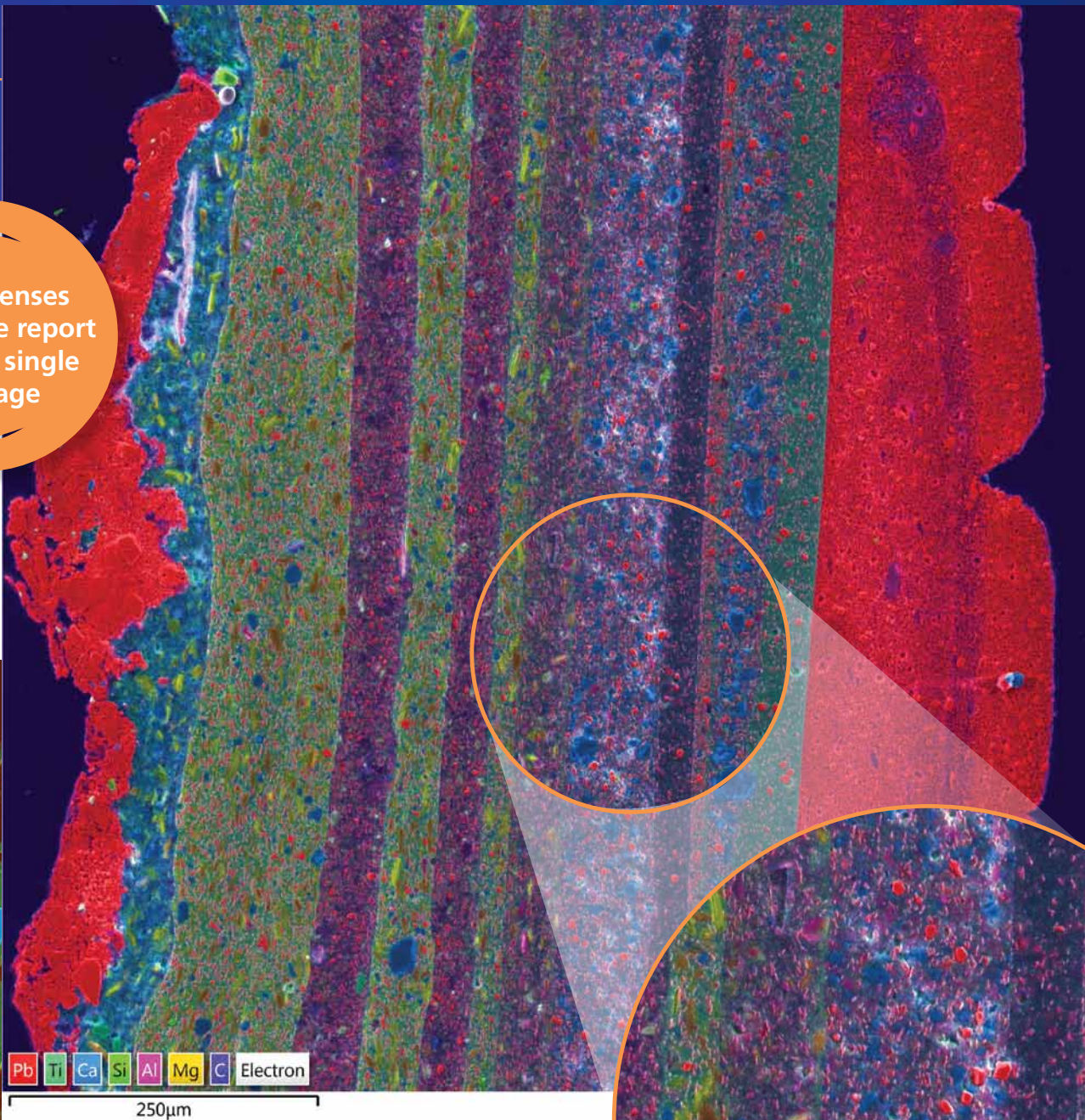
AutoLayer is a new way of turning the information contained in a set of X-ray maps into a single image that highlights the key points.

- Instantly and automatically interprets your specimen
- Highlights what's important in a single image
- Unravels the complexity of real specimens
- Colours on the Layered Image correlate to the X-ray map colours

Condenses a whole report into a single image

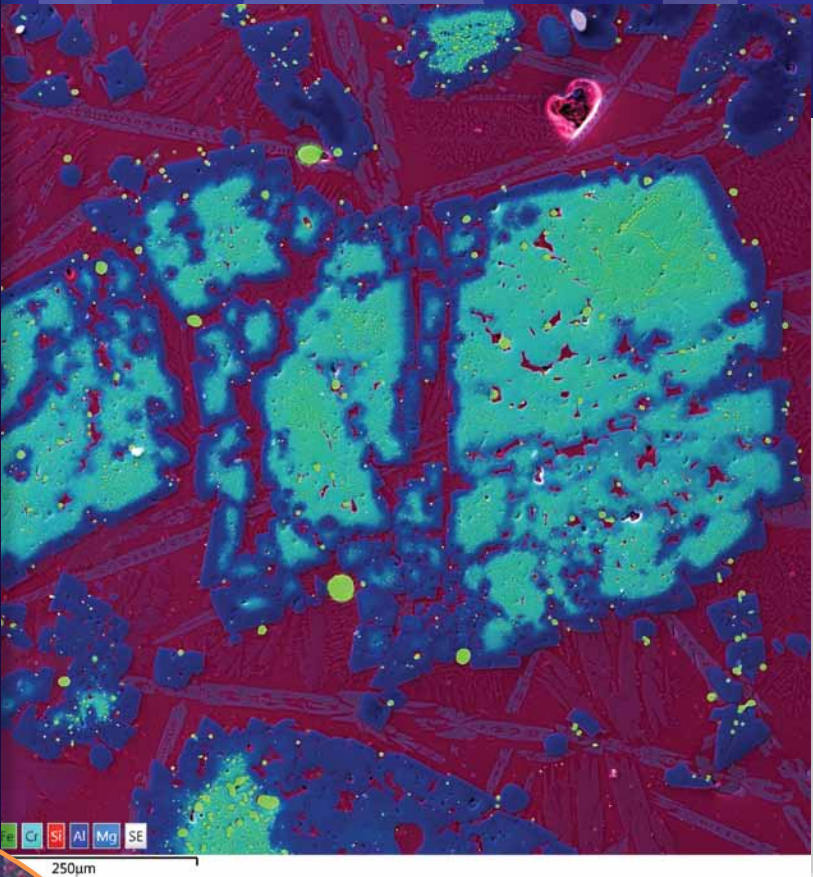
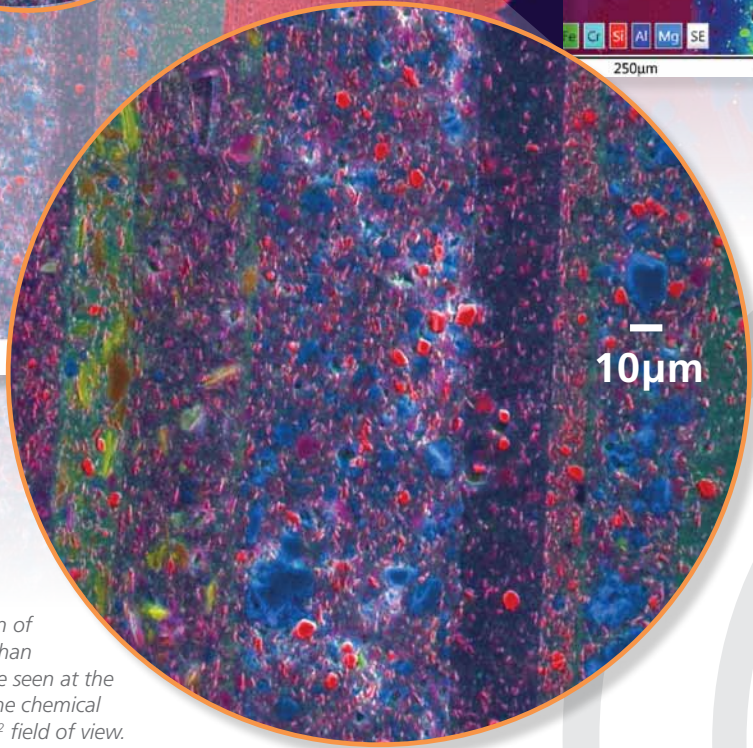


Composition and microstructure study of a Cu-Zn-As ore provides key information on mineral formation.



Paint cross-section taken from a demolition site, highlights Pb-rich layers and particles in red.

Due to the 4k resolution of the data, features less than 10 microns can easily be seen at the same time as viewing the chemical variation over the 1mm² field of view.



AutoLayer image of an experimental Slag sample pinpoints both location and compositional changes of spinels.

By identifying and combining the elements that vary in a sample, AutoLayer helps you visualise both phases and element distribution using a single image.

TruMap™

Unique Real-time Mapping

TruMap: Unique Real-time Mapping solution takes advantage of the increased counts acquired by the latest SDD detectors.

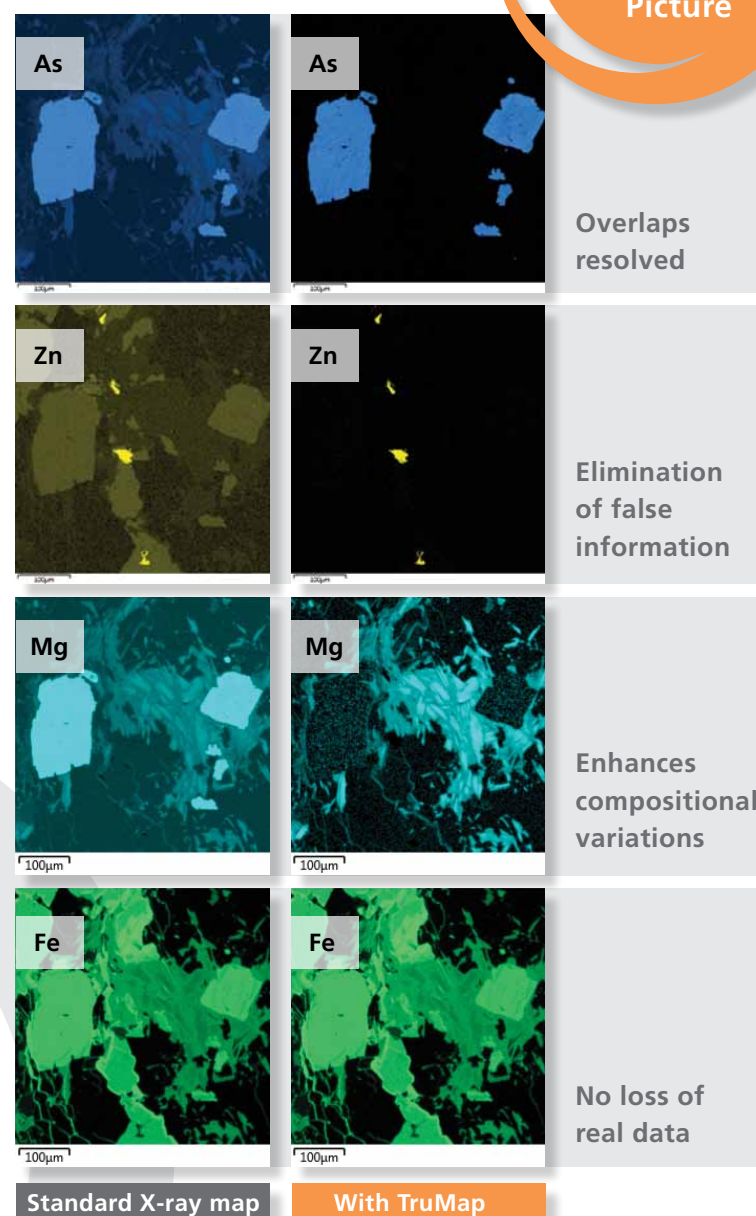
TruMap has been designed to really take advantage of high counts generated by latest SDD detectors offering a new level of data integrity

Now see the real element variation

- Eliminates artifacts
- Corrects element overlaps
- Removes false variations due to X-ray background
- Everything is in real-time

Why map any other way?

TruMap reveals real element variations in this ore sample. Overlaps such as AsL/MgK are resolved, and variations in X-ray background seen in the Zn map are removed.



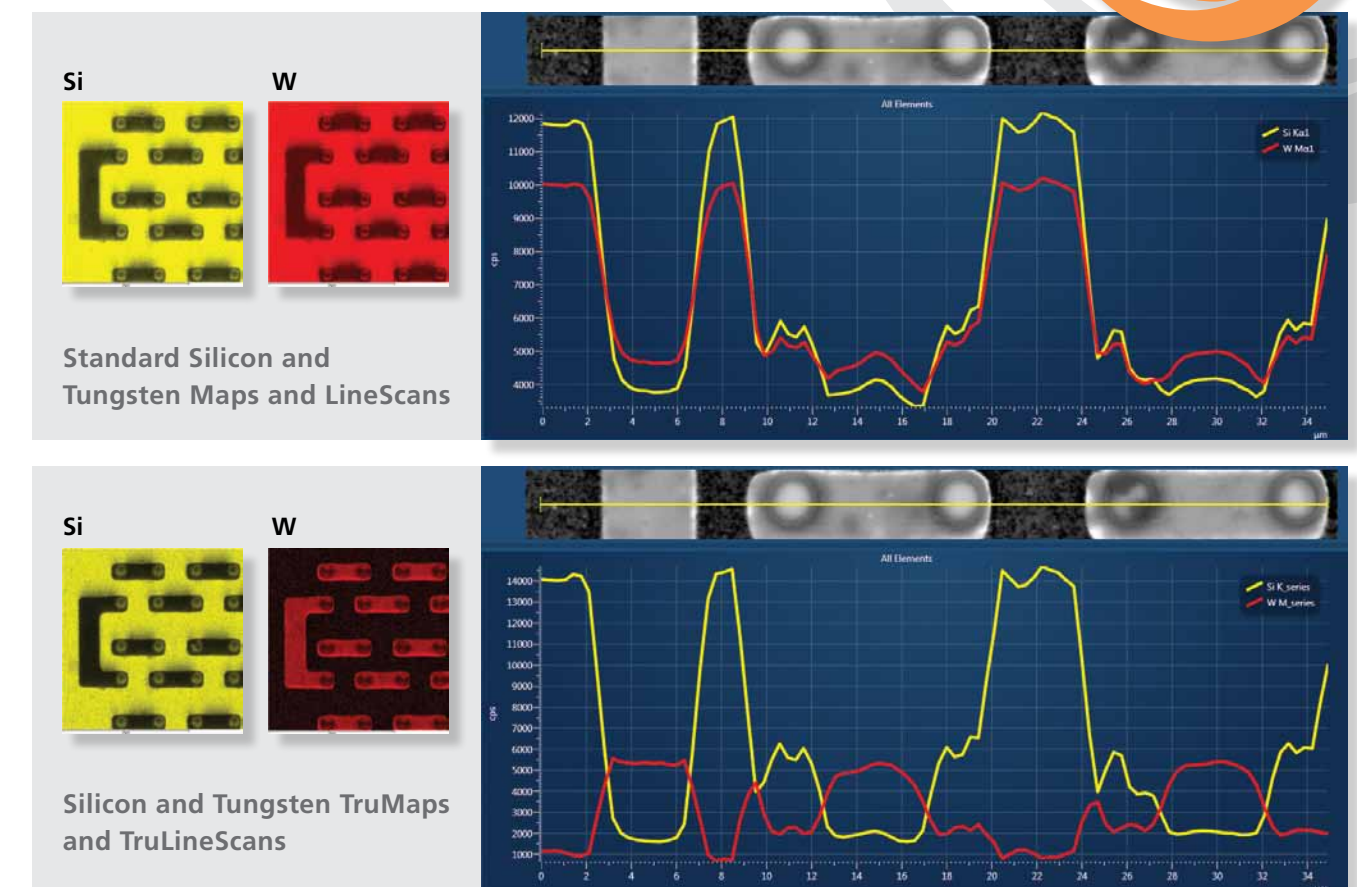
Choose the
Right Picture
NOT the Bright
Picture

TruLine™

See the right line every time

- Incorporates TruMap technology ensuring that you will see real element distribution
- Corrects for peak overlaps automatically
- Enhances real elemental differences by removing X-ray background variation
- Aligns image and LineScan for clear visual comparison
- Normalised intensity scales make comparison of major and minor elements simple

So quick,
you will want
to use it all
the time



Standard X-ray Maps and LineScans indicate that Tungsten and Silicon are concentrated in similar regions of the structure, however, with TruMap technology the real positions of these elements are revealed.

AutoLock provides a seamlessly integrated and powerful solution for collecting useful data when specimens drift.

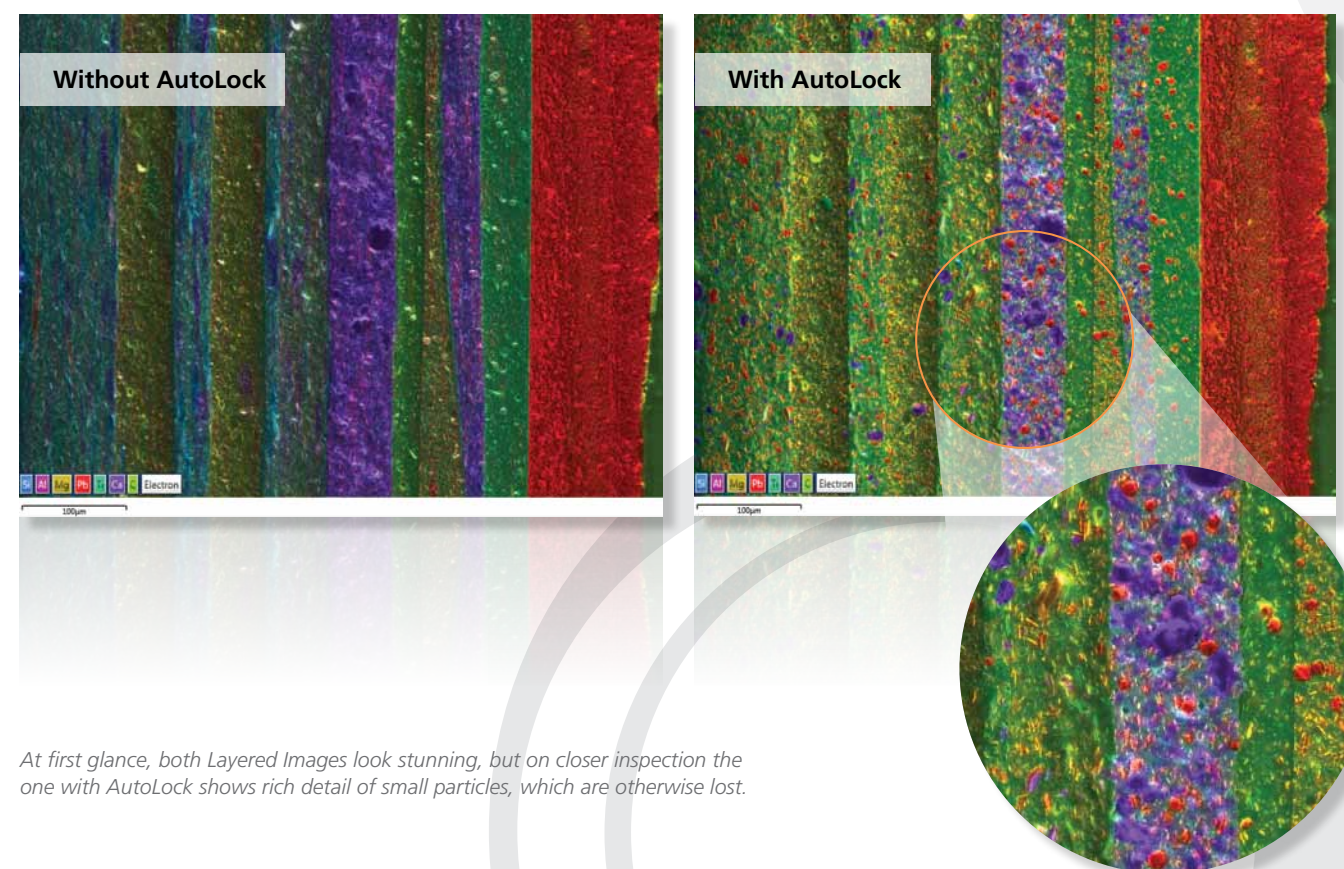
- Works in extreme situations, even on the nanoscale
- Keeps you informed about specimen drift
- Provides live updates of corrective action taken

Innovative

- Unique blend of predictive and reactive drift correction routines cope with different types of specimen drift



Pb maps illustrating the power of AutoLock.



At first glance, both Layered Images look stunning, but on closer inspection the one with AutoLock shows rich detail of small particles, which are otherwise lost.

Multi-tasking: Change the way you work forever.

AZtec has true multi-tasking capability, meaning that every spare second of data collection can be used for processing and reporting

- Unleashes the potential of the latest high-speed detectors
- Data interaction in real-time
- Many tasks that used to take minutes now take seconds
- Interrogate data from one project while acquiring data for a new project
- Revolutionise productivity

Acquire, process and report all at the same time.

User Profiles: Managing a multi-user environment is now straightforward

User Profiles take the hassle out of setting up the system for different users

- Set-up your system once for a user, then save all the relevant settings into a user profile
- Next time simply load the profile and you are ready to go



EDS Element Settings page, showing selected elements along with associated X-ray map colours.

Faster set-up. Faster throughput. Faster reporting.

STRUCTURED

Guided and Custom modes

EXIBLE

Choose the way you want to work

AZtec is designed for all types of users and offers many different ways of working.

Guided Mode

- Ideal for those who prefer a 'step by step' approach to analysis
- Each step of the Navigator has a clear purpose
- You can always see what is happening and what to do next



Be guided to a result or find your own way – its up to you

Custom Mode

- Ideal for those who prefer the freedom and flexibility to do what they want, when they want.
- You decide what functionality you want to see and where you want to see it
- Choose the visualisations that suit your task and expand them over as many monitors as you need

In Custom Mode, you can expand your work over more than one display, still with widescreen resolution.

STRUCTURED

Guidance and Structure

Ensuring that everyone gets the job done correctly

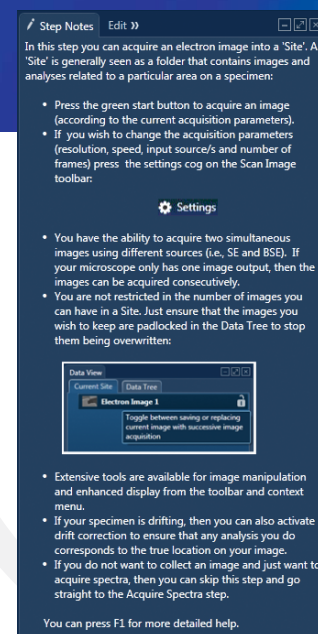
Step Notes and Standard Operating Procedures.

Step Notes are available on every Navigator step to help you get the most from AZtec in the quickest time possible

- Help precisely where you need it
- Easy to follow text and images ensure that you know exactly what to do next

Step Notes can be easily turned into Standard Operating Procedures (SOPs)

- Define on-screen SOPs using text and images
- By following an SOP, novice staff can be productive from the start, and achieve repeatable and reliable results every time



Copy from Word and paste into AZtec

Turn your system into an integrated SOP

Integrated Reporting

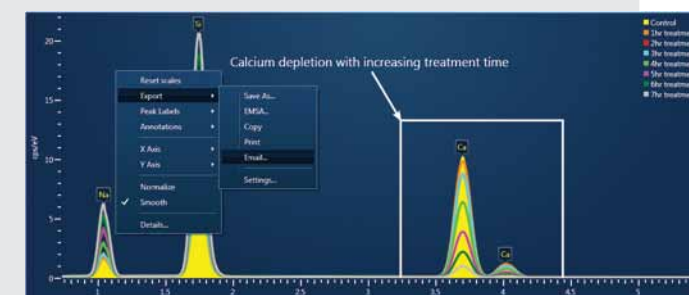
Flexible or structured, always fast

Integrated Reporting: You talked...We listened.

- Three ways to report your data...
- Three ways to save time...
- Three ways to take the hassle out of reporting

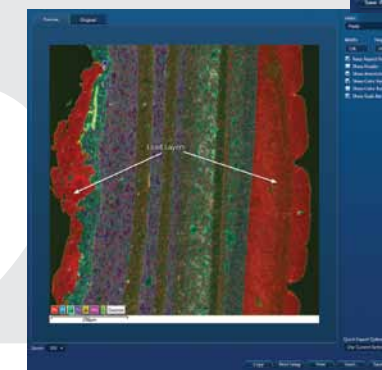
Fast

- Reporting direct from the interface
- A simple right click and data can be e-mailed direct to your customer



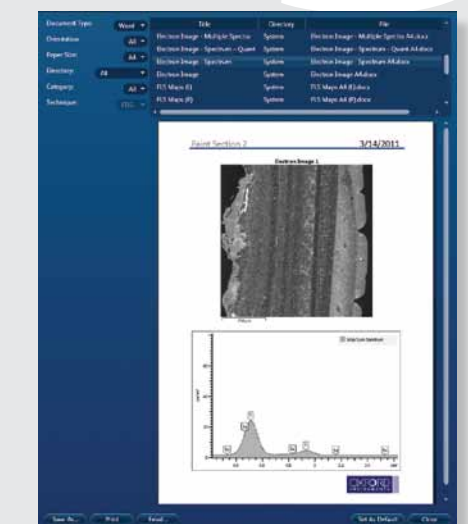
Flexible

- Dedicated export application
- Export your data in the format and resolution you want



Structured

- Comprehensive list of report templates tailored to each application
- Saves time and effort
- Print a professional report with a single button press

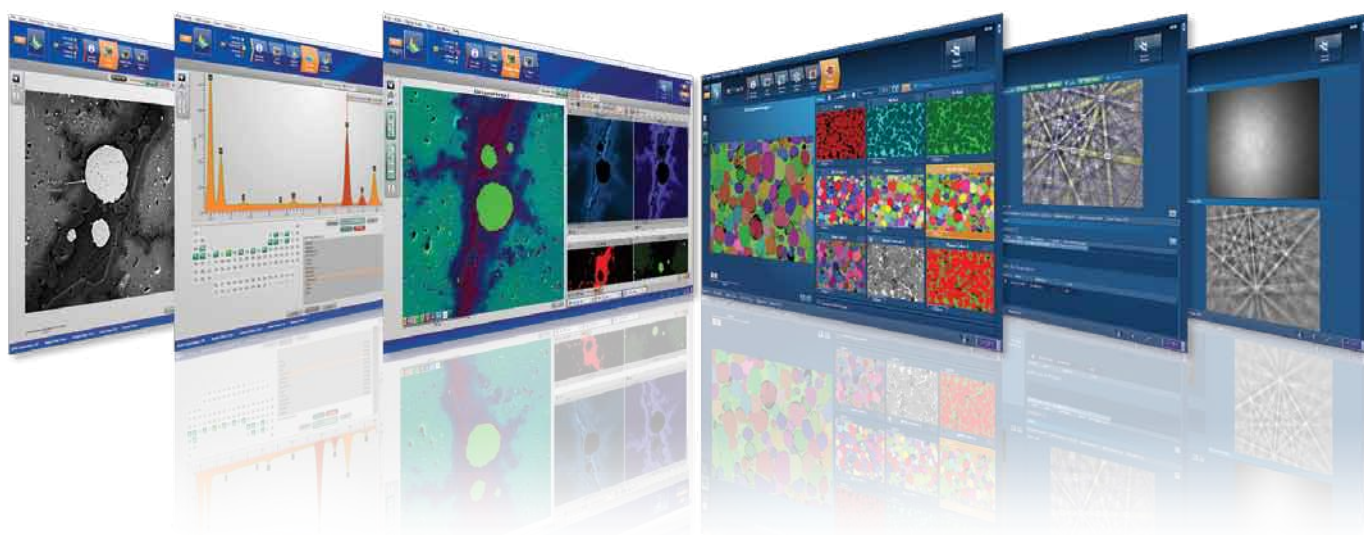


Report your data quickly and in the way you want

INTEGRATED

AZtec

The most powerful, most flexible materials characterisation system you'll ever see



AZtec combines the latest generation of detector hardware, multi-tasking software, and decades of microanalysis know-how to create the ultimate system for materials characterisation...

- One interface for all microanalysis techniques
- Collects full EDS spectral maps simultaneously with EBSD so re-analysis and re-interpretation is easy
- Integrated with industry-standard materials databases
- No compromise in speed or functionality

○iService®

Whether your requirements are hardware, software, or application oriented, our worldwide network of specialists will be there to support you.

Please visit www.oxford-instruments.com/AZtec or e-mail AZtec@oxinst.com

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