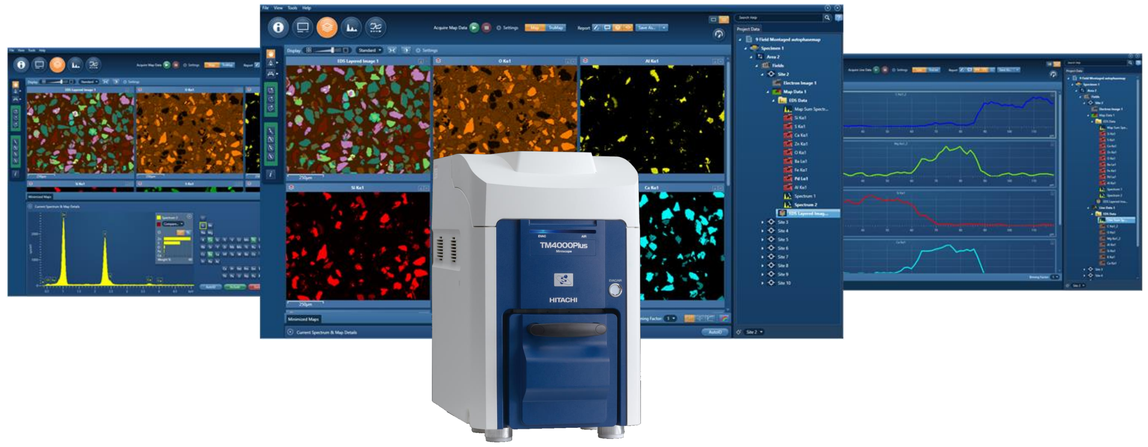
AZtecOne System for Hitachi Table Top Microscopes

Adding chemical analysis to your sample investigation



AZtecOne is a system solution that adds a materials characterisation capability to your Table Top Microscope. **AZtec**One combines the simple-to-use yet powerful **AZtec**One EDS analysis software and the proven stability and accuracy of the compact **x-act** Silicon Drift Detector.

System Summary

- The ideal solution for carrying out a complex task like EDS as quickly and as easily as possible.
- No need for advanced knowledge of the EDS technique
  - Oxford Instruments technology ensures that you can depend on the elements being automatically detected and the correct results being reported
- Streamlined interface to minimise the number of steps to achieve the right results
  - Users can be trained in a matter of minutes
  - No need for the infrequent user to be retrained every time they need to perform an analysis
  - From image to report in seconds

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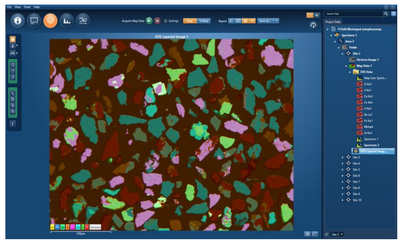
AZtecOne System for Hitachi TTM - Overview

X-Ray Mapping



Quickly see what the chemistry of your sample is and where its distributed

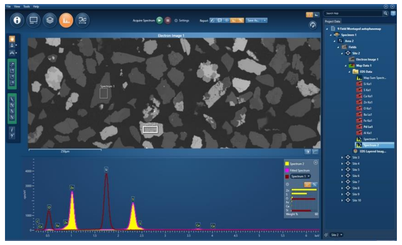
- Layered Image with colour key, helping to visualise both phase and element distribution in a single image
- TruMap - Advanced functionality eliminates common artefacts and ensures that users have confidence that they see the true element distribution (Included in AZtecOne Package only)

Spectrum Acquisition

When a more detailed analysis is required

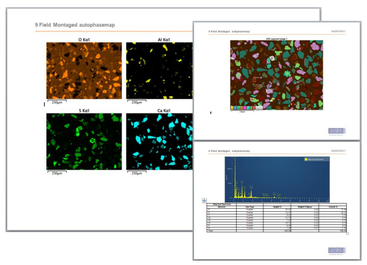
- Elements automatically detected and identified using advanced Tru-Q® technology
- Composition is displayed instantly in the MiniQuant viewer
- Acquire from point, rectangular, elliptical and freehand regions

X-ray LineScanning



Visualise compositional variation along a line

- Normalise display to compare major and trace element variations easily
- Queue up multiple linescans for unattended analysis



Reporting

Quick and Easy

- Intuitive content selection allows you to generate a report in seconds
- Choose to Print, Save or Email
- Personalise reports by adding a company logo

Hardware

Compact x-act SDD

- Proven technology and reliability of the compact x-act silicon drift detector and electronics deliver accurate quantitative results at all count rates
- Detector sensor size options:
  - 10mm² <129eV@MnKα
  - 30mm² <137eV@MnKα
- Peak position is guaranteed to change by no more than 1 eV between 1,000 cps and 100,000 cps

AZtecOne System for Hitachi TTM - Technical Data

AZtecOne includes all the tools required to perform qualitative and quantitative analysis, image capture, image centric analysis, standard line scanning and X-ray spectral mapping. With Tru-Q® (a unique combination of quantitative algorithms optimised for our detection electronics), AutoID and standardless analyses can be achieved automatically to new levels of accuracy. Additional TruMap functionality available for acquiring overlap corrected X-ray maps and linescans in real-time (Included in AZtecOne package only)

Software

Navigation Buttons

AZtecOne is equipped with 5 navigation buttons, which are designed to help you perform tasks quickly and easily:

- Specimen Details
- Image Acquisition
- Mapping
- LineScan
- Spectrum Acquisition

Image

- Resolutions available:
  - **AZtec**OneGO – 512 and 1024
  - **AZtec**One – 512, 1024 and 2048
- Sequential Dual image capture (for microscopes that have multiple image outputs)

Spectrum Acquisition

- Acquire from point, rectangle, ellipse or freehand area
- Pulse Pile-up Correction

MiniQuant

- Shows bar chart or numeric values of quantitative analysis results for detected elements
- Results can be shown in Weight%, Atomic% or Oxide%
- Overlay a spectrum from any project in the Data Tree over the current spectrum

SmartMap – X-Ray Mapping

- Collects spectral map datacube
- Resolutions available:
  - **AZtec**OneGO – 128 and 256
  - **AZtec**One – 128, 256, 512, & 1024
- Layered Image view consisting of coloured X-ray maps overlaid on the electron image with associated colour key
- Reconstruct spectra from a point, rectangle, ellipse or freehand region for qualitative and quantitative analysis

SmartLineScan – X-Ray LineScanning

- Up to 8192 points allowed per line
- Reconstruct spectra from each point or binned region of the linescan

Reporting

- Quick and easy reporting functionality
  - Content selectable via radial buttons
  - Exports in Microsoft® Word format (reports can be viewed in free Microsoft viewer)
-

Exporting

- Images, Spectra, X-ray maps, Layered Images and Linescans can be saved, copied, printed and e-mailed directly from the AZtec interface via 'right mouse click' menu
- Spectra export in EMSA format
- X-ray map and Linescan data export as .TSV, CSV and RAW (for Lispix, MSA etc...)

TruMap (Not available with AZtecOneGO)

- Overlap and background corrected mapping and LineScanning
- Calculated from SmartMaps/SmartLineScans during or after acquisition

AZtecOne System for Hitachi TTM - Technical Data

Hardware

Silicon Drift Detector resolution guaranteed on customer's microscope:

Sensor Size	@ Mn Kα (50,000cps)
10mm^2	<129eV
30mm^2	<137eV

Resolution is guaranteed and tested on installation using an x-stream2 pulse processor, between 10°C and 30 °C.

Detector Stability

- Peak position is guaranteed to change by no more than 1 eV between 1,000 cps and 100,000 cps

Low Energy Performance

Guaranteed detection of elements from Z=5 (boron).

Silicon Drift Detector

- Low noise external FET, ensuring accurate results at higher count rates.
- Pulsed restore for performance at high throughput and a stable response with changing count rate
- SATW ultra-thin polymer window
- Manufactured under ISO9001 standard
- EMC Approved
- Liquid nitrogen–free cooling using Peltier cooling:
- Requires only electrical supply
- Vibration free – no moving parts
- Cool on Demand Capability detector only needs to be cooled as required:
    - Detector cools automatically when TTM chamber is pumped
    - Detector cools down in seconds ready for stable analysis

x-stream2 pulse processor

is the latest generation of pulse processors capable of handling very high count rates. High speed communications with the built in embedded PC and Microscope Image Capture (MIC) electronics enable digital control and digital pulse processing. Single USB connection to Microscope PC and pre calibration of system enables simple connectivity and ease of installation.

- Effective pile-up discrimination when working at very high count rates
- Simple automatic system calibration
- Using a single pure element standard (e.g. Si, Co, Cu) at a single process time
- High precision energy scale under any conditions
- Two process times to provide control of count rate and resolution

Environmental specification

- These requirements are necessary for the installation and operation of the system and are the responsibility of the purchaser.
- Operating temperature: 10°C to 30°C
- Operating humidity: <80% relative humidity, non-condensing
- Operating altitude range: Sea level to 1,500m

Visit www.oxinst.com/AZtecOne

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