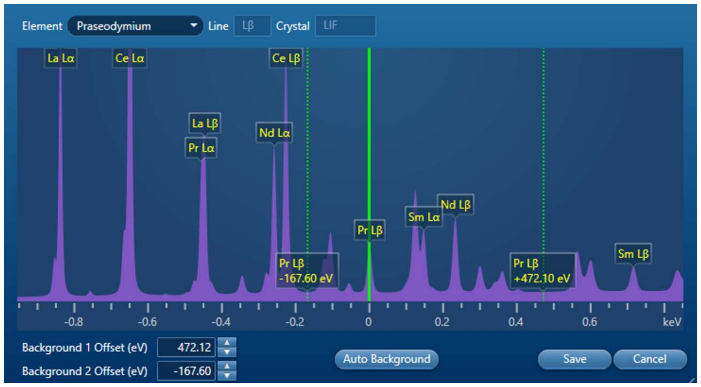
AZtecWave

WDS detection and **EDS** speed with **AZtec** accuracy and accessibility

AZtecWave

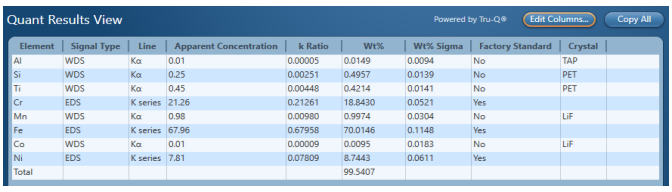
AZtecWave combines the unique power of WDS to **resolve X-ray peaks** and **quantify minor and trace elements** with the speed and flexibility of EDS. EDS and WDS operation are fully integrated into the AZtec software, guaranteeing maximum accessibility to users with all levels of expertise and Tru-Q® processing technology for the most accurate results. When microanalysis is at its most challenging, AZtec Wave provides accurate answers, fast.



Simulated WDS spectrum for visualisation of parameters and manual adjustment

New levels of accuracy and sensitivity

- Enhance clarity of element identification and composition, where element peaks are not clearly resolved in the EDS spectrum
- Detect and measure levels of trace elements down to tens of ppm
- Determine accurate composition of all elements at all concentration levels
- Measure major elements using EDS and heavily overlapped or trace elements by WDS
- Solve characterisation challenges in metallurgy, electronics, mineralogy/geology, ceramics, forensics and nuclear power generation



Element	Signal Type	Line	Apparent Concentration	k Ratio	Wt%	Wt% Sigma	Factory Standard	Crystal
Al	WDS	Kα	0.01	0.00005	0.0149	0.0094	No	TAP
Si	WDS	Kα	0.25	0.00251	0.4957	0.0139	No	PET
Ti	WDS	Kα	0.45	0.00448	0.4214	0.0141	No	PET
Cr	EDS	K series	21.26	0.21261	18.8430	0.0521	Yes	
Mn	WDS	Kα	0.98	0.00980	0.9974	0.0304	No	LiF
Fe	EDS	K series	67.96	0.67958	70.0146	0.1148	Yes	
Co	WDS	Kα	0.01	0.00009	0.0095	0.0183	No	LiF
Ni	EDS	K series	7.81	0.07809	8.7443	0.0611	Yes	
Total					99.5407			

Composition of stainless steel determined by a combination of EDS and WDS

Accessible to all users

- Fully integrated workflows designed to optimise combined EDS and WDS acquisition in the AZtec platform
- New technology uses real-time input from EDS and SEM to optimise WDS set-up guaranteeing excellent results in the shortest collection time for all levels of user expertise
- EDS and SEM inform automatic selection of:
  - Count time
  - Line series and X-ray line
  - Diffracting crystal
  - Background positions
  - EDS acquisition parameters
  - EDS detector position
- Unique 3-way control to optimise beam current, count time and precision before acquisition
- Manual control for experienced users

AZtecWave - acquire elements interface for automated set-up of collection parameters

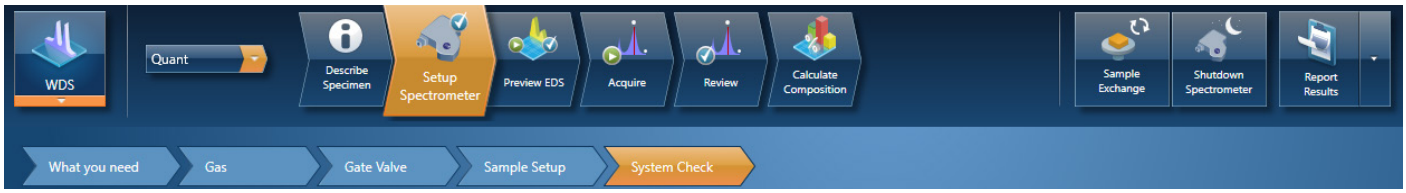
Accurate for all elements

The Wave WDS spectrometer allows AZtecWave to deliver true electron microprobe performance on a SEM

- Optimised for all energies, meaning the optimum X-ray lines are always available for analysis
- All common overlapping element lines separated including transition metal K lines
- Lowest detection limits, in shorter collection times, with lower beam currents

Integrates seamlessly with the AZtecLive EDS software and technology

- Tru-Q technology provides electron microprobe-level quantitative accuracy at EDS count rates up to 400,000cps

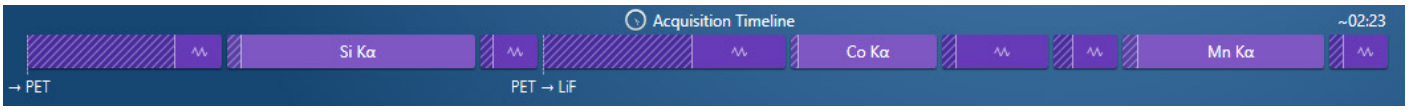


AZtecWave Software	
Setup spectrometer	✓
Quantitative analysis	✓
Image registration and navigation	✓
Standardisation	✓
Guided sample exchange and spectrometer shutdown	✓
WDS spectrum simulation	✓
WDS acquisition timeline	✓
EDS informed automatic acquisition set-up	✓
3 way control of beam current/ acquisition time/precision	✓
Qualitative spectrum scanning	INCA Wave
WDS X-ray Mapping	INCA Energy+ (optional)

Quantitative Analysis

Dedicated workflow for combined EDS and WDS acquisition and quantitative analysis

- Uses EDS for sample analysis location and to automatically optimise all EDS and WDS collection parameters
- 'Acquisition timeline' estimates WDS acquisition time during acquisition set-up and shows status of the Wave spectrometer during acquisition
- Advanced options include adding additional WDS acquisition or an existing EDS spectrum to an analysis
- Dedicated 'Calculation Composition' step for viewing and checking quantitative results from single or multiple acquisitions
- Synthesised WDS spectra transform EDS spectral data into high resolution, high peak to background space for checking overlaps, and acquisition energy for X-ray lines and backgrounds



WDS acquisition timeline

Setup Spectrometer

Step by step workflow to guide you through Wave spectrometer setup and performance check

- Designed for inexperienced users
- Ensures safe operation
- Provides rapid system set-up
- Guarantees optimum performance

Generate performance test report where required (e.g. for accredited facilities)

Standardisation

Guided workflow to ensure system is optimally calibrated using standard materials for accurate composition determination

- Optimised acquisition conditions calculated automatically
- Oxford Instruments 42 and 56 element standard block* composition and map are pre-loaded for easy navigation and speedy set-up
- Association of beam current measurement with EDS count rate for calculation of un-normalised combined EDS-WDS results

* option

Visit **nano.oxinst.com/AZtecWave**

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