EDAX Smart Insight

AMETEK® MATERIALS ANALYSIS DIVISION

Product Bulletin - EDS

TEAM™ EDS System for the TEM

- Super Ultra Thin Window (SUTW) and windowless versions provide superior light element performance
- Electronics built into the detector facilitate remote access, installation, service and calibration
- Intuitive and easy to use TEAM™ software
- Smart Features ensure consistent data collection, analysis and reporting regardless of the experience level of the operator
- Automatic detector retraction ensures completely safe operation

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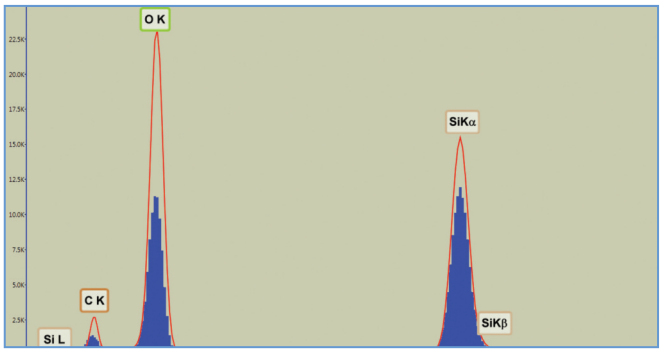
TEAM™ EDS Analysis System with the Apollo XLT Silicon Drift Detector (SDD) Series provides the ultimate analytical solution for Transmission Electron Microscope (TEM) applications. The series includes the Apollo XLT with a Super Ultra Thin Window (SUTW) and a windowless version, the Apollo XLTW.

The Apollo XLT SDD Series blends the latest SDD technology with EDAX's next generation high efficiency electronics to provide superior performance. The system electronics are built into the detector, eliminating the need for a separate electronics box, and minimizing the system footprint, while maximizing versatility and convenience. All communication is done via ethernet, providing speed, convenience and enhanced troubleshooting capabilities.



Spectra of SiO_2 collected with the Apollo XLTW detector (red) compared to a SiLi Detector (blue) have been normalized to the highest energy part of the spectrum. The Apollo XLTW detector significantly improves the low energy sensitivity. The Si K intensity is improved by 30% and the O K by 150%

EDAX was the first microanalysis company to introduce a windowless version of an SDD detector. The Apollo XLTW provides optimum light element performance with complete transmission of low energy X-rays. When compared to an SUTW detector, the light element sensitivity is improved up to 500% and the count rate is increased by 30% for heavy elements. As a result, the mapping speed and light element detection in low concentrations are greatly enhanced.

TEAM™ EDS Analysis System has a modern interface that allows for a unique layout and maximizes the display for analysis results. TEAM™ Smart Features revolutionize EDS analysis to make the system more intuitive and easier to use. Regardless of the skill of the operator, consistent and accurate results are achieved effectively and efficiently every time. TEAM™ EDS automatically determines the elements in your sample, and monitors the count rate and magnification, as well as numerous other parameters used for optimum system performance.

TEM quantification algorithms for thin material are now available in TEAM™ EDS. The quantification model is based on the Cliff-Lorimer method for fast and accurate analysis. Users have the flexibility to work in conjuction with standards to determine their own Cliff-Lorimer factors and theoretical methods.

Specifications

- 30 mm^2 SDD chip technology optimized for solid angle
- SUTW and windowless detectors for superior light element performance with resolution typically better than 59 eV for Carbon
- Resolution of 129 eV or better, measured at MnK, according to ISO 15632:2012
- Resolution stability of <1 eV up to 100 kcps
- Peak shift of <1 eV up to 250 kcps
- Available amp times from 120 ns to 7.68 µs for optimal collection

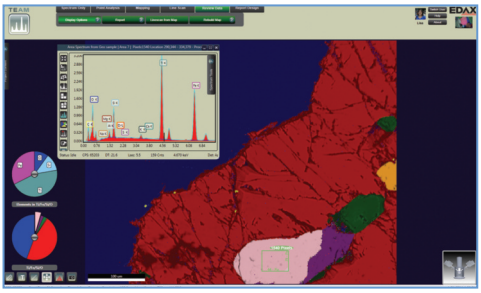
Smart Features

- Smart Track
- Smart Phase Mapping
- EXpert ID
- Smart Drift
- Smart Data Management

Smart Features

Smart Track

Smart Track is built into the Environment Panel to quickly and easily ensure the optimal working conditions upon setup.



TEAM™ EDS is built with a modern interface that maximizes the display area for the results and allows quick access to all features.

Smart Phase Mapping

Smart Phase Map collection requires no setup and starts immediately upon request. Neither mapping setup parameters nor prior peak identification need to be defined before collection. Simply find the area of interest and begin the collection. TEAM™ EDS will determine the best mapping resolution, the time required, and automatically identify all the elements present. Smart Mapping uses analytical intelligence to automatically decide how to collect the map based on any analysis conditions.

Smart EXpert ID

EXpert ID is a revolutionary peak identification program which combines traditional peak ID routines with real world analysis techniques to provide the most accurate method for a user to solve qualitative analysis problems. Complex overlaps are deconvoluted and trace peaks are identified, resulting in the best automatic peak identification available.

Smart Drift

Smart Drift takes away all drift concerns from the user. It automatically monitors and dynamically adjusts the parameters to account for the changes in drift.

Smart Data Management

The TEAM™ EDS software increases the ease of use and provides organization through simplified file management. Data is saved as a project and presented as a project tree for interactive review and archiving of images, maps, spectra, and reports.

Conclusion

Ease of use is at the core of the TEAM™ EDS Analysis System. Built-in analytical intelligence assists the user as needed, offering maximum flexibility. Results are easy to obtain, analyze, and present. Regardless of the experience level of the user, TEAM™ EDS Analysis System provides exceptional results every time.