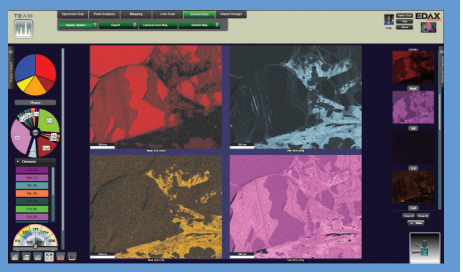
EDAX Smart Insight

AMETEK MATERIALS ANALYSIS DIVISION

Product Bulletin - EDS

TEAM™ EDS Software Suite



- Intuitive and easy to use TEAM™ software
- Smart Features ensure consistent data collection, analysis, and reporting regardless of the experience level of the operator
- Boosts user productivity and reduces analysis time
- Dynamic reporting with user-defined templates
- Available in two levels - Basic and Enhanced - to support varying analysis needs and budget levels

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TEAM™ EDS Software Suite blends powerful elemental analysis routines with an intuitive, easy to use interface that ensures ideal data collection, faster analysis, and flexible reporting for users of all levels. TEAM™ EDS Basic Software Suite contains the fundamental features needed to fully characterize samples of any nature and to efficiently output the data into Quick Reports. TEAM™ EDS Enhanced Software Suite is a fully loaded software package that includes all the available features and options for collection, analysis, and reporting to provide the user with advanced methods to examine their materials and leads to the ultimate in materials insight.

TEAM™ EDS Analysis

Provides an intuitive and easy to use analytical tool available for the SEM. The workflow functions are automated with Smart Features that guide Startup, Analysis, and Reporting.

- Spectra comparison including normalize, add, subtract, and multiply functions.
- Visual Halographic Peak Deconvolution (HPD) allows an analyst to easily determine if all the elements in a spectrum have been identified at the push of a button.
- Full capability for analysis using pure element standards, compound standards, partial standards or standardless.
- Dynamic Review allows maps to be simultaneously reviewed in the display area.

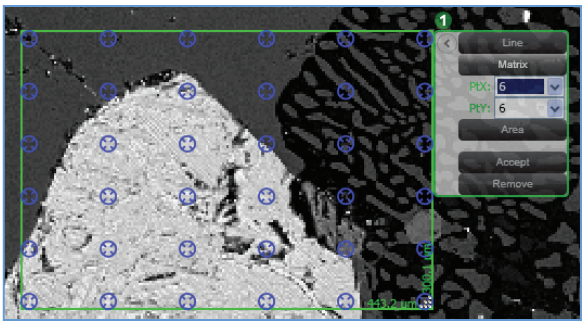

Figure 1. Multipoint Analysis allows customer definition of regions of interest.

TEAM™ EDS Multipoint Analysis

Utilizes industry-best element identification and quantification models and algorithms for examining EDS spectra.

- Areas of interest can be defined by using multiple points, lines, areas, and matrices.
- Matrices can be customized by specifying number of points in rows and columns.
- Spectra can be quantified to determine weight percentages for each element.

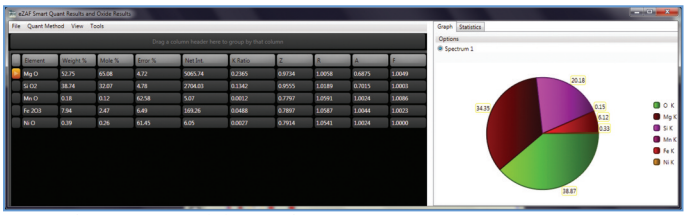

Figure 2. TEAM™ EDS Smart Quant

TEAM™ EDS Smart Quant

Uses the EXpert ID routine to improve peak ID results as statistics improve. In parallel, the Smart Quant routine determines weight percentages for each element identified.

- Determines background profile automatically.
- EXpert ID identifies elements with improved peak search and multiple-line rule set.
- Improves quantification accuracy for low kV conditions.

Two selectable quantification methods are available:

- eZAF quantification offers extended range to 70 degrees tilt to support quantification for EBSD conditions. Recommended for flat and polished samples.
- PeBaZAF quantification is recommended for samples with rough surfaces and particles.

TEAM™ EDS Smart Phase Mapping

- Provides on-screen phase information while maps are being collected. Smart Phase Maps are automatically generated without user input.
- Automatically collects spectra, element maps, phase maps, and associated spectra.
- Displays dynamic phase and elemental information in a pie chart during mapping.
- Interactive phase mapping allows the user to work with the dataset during collection.
- Phase library list can be locked to limit discovery of new phases or new phases can be added for subsequent maps.

TEAM™ EDS Smart Element Mapping

- Smart Element maps are automatically generated without need for user input.
- Elements can be added or changed at any time.
- Dynamic elemental information is displayed in a pie chart during the mapping process.

TEAM™ EDS CPS Mapping

- Displays count rate quality at every pixel to provide a CPS distribution and allow a unique view of map data to understand irregularities caused by surface features.

TEAM™ EDS Quant Maps and Rebuild

- Collected element maps can be processed at high speed with Quant Maps for further analysis and comparison with original data. Element lists can be modified and rebuilt with TEAM™ EDS Rebuild software.
- Each pixel of data in a multi-element X-ray map is processed with background correction and peak deconvolution.

TEAM™ EDS Maximum Intensity Spectrum

- Uses the maximum intensity found in a map data cube for each individual channel in the spectrum to facilitate locating and determining small phases and minor elements.

TEAM™ EDS Ternary Diagram

- Provides a user-selectable map of three elements or combinations of elements to display the compositional relationship, including blended colors for elemental overlaps.

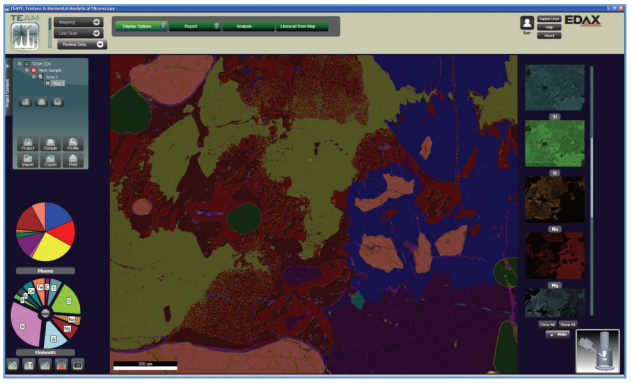

Figure 3. Smart Phase Mapping

TEAM™ EDS Linescan Acquisition

- Provides collection of spectra along a user defined line with selectable collection parameters.
- Linescan chart overlay is updated live on the image and scaled to the selected line.
- Linescan can be used with drift correction.

TEAM™ EDS Advanced Linescan

- Provides the ability to create and extract a linescan profile from an element or phase map after collection, without the need to reacquire further data.

TEAM™ EDS Smart Drift Correction

- Automatically sets drift parameters and corrects for any drift that occurs during the analysis.
- Dynamically adjusts the drift correction frequency based on the magnitude of drift.
- Automatically selects target area for drift correction.

TEAM™ Software Spectrum Utilities

- Provides software utility for converting, reviewing and printing spectrum, imaging and map data.
- Gives users ability to quickly review many spectra simultaneously.
- Converts spectra to/from .MSA format.
- Offers batch processing of spectra to images (BMP, JPEG, PNG or TIF).
- Offers batch processing of particle analysis data.
- Enables users to print multiple spectra – 1, 5, 10, 18 or 24 per page.
- Gives ability to view measured peak resolution.

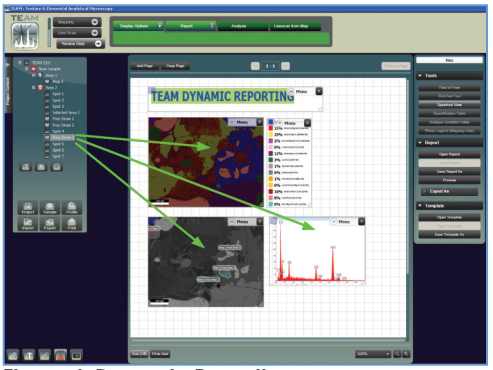

Figure 4. Dynamic Reporting

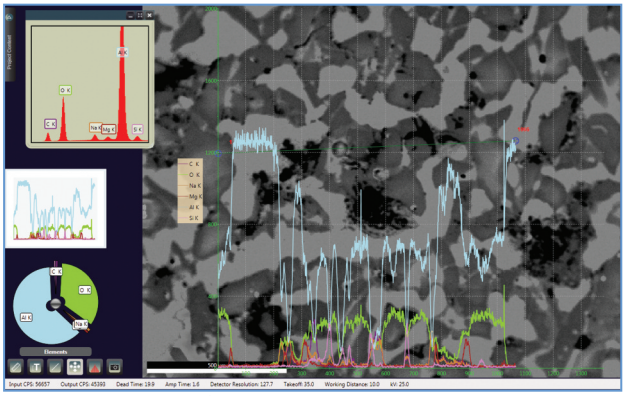

Figure 5. TEAM™ EDS Linescan Acquisition

TEAM™ Software Smart Track

Integrated into the Environment Panel to monitor system status and integrity and provide access to advanced level application controls including:

- Detector conditions.
- Column conditions, including kV, magnification, and working distance.
- Stage movement.
- Mapping time collection parameters and suggested working conditions.

TEAM™ Software Data Management and Reporting

- Data is handled and organized in the TEAM™ software project tree for interactive review and archiving of images, maps, and spectra.
- Quick Reports provide a standard summary of data at the click of the mouse.

TEAM™ Software Dynamic Reporting

- Permits report template customization. The operator creates Custom Reports with a few easy mouse clicks. The template can be saved and applied to future reports, eliminating the need to create a new version for each report.

TEAM™ EDS Offline Software License

- Includes one software license for purchased applications to be used on an offline workstation to minimize time needed on the SEM.

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Specifications

TEAM™ EDS Software Suite

- Smart Diagnostics
- Smart Acquisition
- EXpert ID
- Smart Mapping
- Smart Data Management
- Smart Pulse Pile-Up Correction

Compatible EDS Detectors

- Octane Pro, Plus, Super, Ultra*
- Resolutions down to 121 eV
- Resolution stability >90% up to 200 kcps
- Count rates up to 1.6 Mcps with throughput rates of 800 kcps
- SDD modules up to 100 mm^2

**Available with TEAM™ EDS Enhanced only*

Comparison of TEAM™ EDS Software Packages

	TEAM™ EDS Enhanced	TEAM™ EDS Basic
Analysis	✓	✓
Multipoint Analysis	✓	
Smart Quant	✓	✓
Smart Phase Mapping	✓	
Smart Element Mapping	✓	✓
CPS Mapping	✓	
Quant Maps and Rebuild	✓	
Maximum Intensity Spectrum	✓	
EDS Ternary Diagram	✓	
Linescan Acquisition	✓	✓
Advanced Linescan	✓	
Smart Drift Correction	✓	
Spectrum Utilities	✓	✓
Smart Track	✓	✓
Data Management & Reporting	✓	✓
Dynamic Reporting	✓	
Offline Software License	✓	

Conclusion

Ease of use is at the core of the TEAM™ EDS Software Suite. Built-in analytical intelligence assists the user as needed, offering maximum flexibility. Results are easy to obtain, analyze, and present. TEAM™ EDS Basic offers a complete software package for users performing routine elemental analysis, while TEAM™ EDS Enhanced includes a higher level of functionality for EDAX customers that regularly push the boundaries of materials characterization. Regardless of the experience level of the user, TEAM™ EDS Software Suite provides exceptional results every time.