



## **APEX™ Pegasus Training Course Agenda**

### **Monday – Introduction and EDS theory**

- 12:00**      **Welcome and lunch**
- 13:00**      **EDAX and AMETEK**  
Introduction of EDAX and participants - organizational matters
- 13:15**      **Introduction to the analytical system**  
SEM – electron and X-ray signals  
EDS – detector and pulse processing hardware
- 14:00**      **EDS analysis**  
System requirements - element identification – sample effects - quantification  
parameters - correction factors
- 15:00**      **Coffee break**
- 15:30**      **APEX software introduction**  
Live on SEM  
Analyzing participant samples
- 17:00**      **End of day 1**



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### **Tuesday – EDS data acquisition: point analysis and line scans**

- 9:00**            **APEX software setup**  
Image and spectrum calibration - correction factors for quantification – results output
- 9:45**            **APEX quantification methods**  
eZAF, PeBaZAF, coating correction
- 10:30**           **Coffee break**
- 10:45**           **APEX quantification results**  
Elements - oxides – standards
- 12:00**           **Lunch break**
- 13:00**           **APEX point analysis**  
Analysis location selection - SEM beam parameters - composition effects - quantification - analyzing participant samples
- 15:00**           **Coffee break**
- 15:30**           **APEX line scan collection and processing**  
Analysis location selection - line scan parameters - dwell time considerations - analyzing participant samples
- 17:00**           **End of day 2**



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### **Wednesday – EDS data acquisition: mapping and reporting**

- 9:00**            **Review of day 2**
- 9:30**            **APEX spectral mapping**  
Parameter selection - measurement duration - post processing
- 10:45**          **Coffee break**
- 11:00**          **APEX reporting**  
Quick report - live reporting - customization
- 11:30**          **Practice on live SEM and Q&A session**
- 12:00**          **Lunch break**

**End of EDAX EDS course**

### **Wednesday – Basic crystallography for EBSD and EBSD data collection**

- 13:00**          **Crystallography and Diffraction**  
History of EBSD  
Basics of crystallography - unit cell - symmetry – origin of EBSD patterns
- 14:45**          **Coffee break**
- 15:00**          **EBSD pattern processing and indexing**  
EBSD reflectors - EBSD pattern formation - external and internal influences
- 16:30**          **APEX EBSD data collection - software introduction and practice**  
Live introduction into EBSD data collection - practical work on SEM using participant samples - specimen mounting - How to setup the system - pattern optimization – scan strategies
- 17:00**          **End of day 3**



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### **Thursday – EBSD Data Collection and OIM Analysis™**

- 9:00**            **Review of collected EBSD data**  
Review of day 3 based on data collected on participant samples
- 9:30**            **Orientation definitions and representation of EBSD data**  
Euler angles - pole figures - inverse pole figures - map color coding
- 10:45**           **Coffee break**
- 11:00**           **Data processing with OIM Analysis - analytical tools - 1**  
User interface - Analytical tools - Partitions - Maps - Plots - Charts
- 12:00**           **Lunch break**
- 13:00**           **Data processing with OIM Analysis - analytical tools - 2**  
Textures - interactive analysis – highlighting
- 14:00**           **APEX EBSD data collection live on SEM**  
Data collection on participant samples
- 14:30**           **Coffee break**
- 14:45**           **Data processing with OIM Analysis - advanced features**  
Pattern reprocessing – NPAR™ - PRIAS™
- 16:00**           **APEX EBSD data collection live on SEM and reprocessing of collected datasets**  
Analyzing participant samples
- 17:00**           **End of day 4**



## **APEX™ Pegasus Training Course Agenda**

### **Friday – Combining EDS & EBSD – Phase ID and ChI-Scan™**

- 9:00**            **Combining EDS and EBSD**  
Simultaneous EDS-EBSD data collection – phase discrimination with ChI-Scan – phase identification
- 10:30**            **Coffee break**
- 10:45**            **Simultaneous EDS-EBSD data collection live on SEM – ChI-Scan and Phase ID**  
Determination of phases – structure file optimization – ChI-Scan reprocessing in OIM Analysis
- 12:00**            **Lunch break**
- 13:00**            **Open session and Practice**  
As required – data cleanup – large area montage mapping - OIM Analysis practice
- 15:30**            **End of EDAX Pegasus course**