Probe Software

Software for MicroAnalysis

Probe Software, Inc.
885 Crest Drive
Eugene, OR 97405 USA
(541) 343-3400
sales@probesoftware.com
www.probesoftware.com

Probe for EPMA

Probe Image

PictureSnapApp

Remote/On-Site (Customized) EPMA Training for JEOL and Cameca Microprobes

In addition to remote/on-site software installation and training of our Probe for EPMA and Probe Image products for JEOL and Cameca instruments, we can also offer customized basic to advanced training on specific topics in EPMA for your staff, by our microprobe experts, for those labs that already have our software installed, and would like to expand their EPMA skill sets.

We can offer both remote (via common desktop sharing applications such as TeamViewer, Skype, Zoom, RealVNC, etc.) and on-site training in your lab on your EPMA instrument. The following is a list of possible training modules that we can offer your lab. These training modules can be customized to your laboratory's specific needs as desired and other EPMA topics are available upon request. Please contact Barbara (barbara@probesoftware.com) for more information on customized remote/on-site training for your EPMA lab needs.

Some typical training modules might include:

Module: Calibration Curves (4 hours)
- Matrix matching standards
- Carbon in steel
- Background corrected vs. non background corrected calibration curves
- Zero point calibration

Module: Quantitative X-Ray Mapping (8 hours)
- Considerations for optimizing x-ray mapping throughput
- Spectrometer configuration for multi-pass mapping (more elements than spectrometers)
- Background corrections for maps (MAN vs off-peak)
- Mapping elements by different or by stoichiometry
- Quantification of x-ray maps
- TDI mapping for beam sensitive samples
- Pixel extraction from quant x-ray maps (cross sections, rectangular areas, polygon areas, etc.)
- Accuracy and "bulk" analysis of multi-phase materials
- RGB maps and image math
- Classification and modal analysis (area vs mass volume)

Module: Light element analysis (6 hours)
- Strategies for background models: when to use linear exponential, polynomial, MAN etc
- Spectral interference corrections in Probe for EPMA
- Peak shifts and peak shape changes: APF, peak scan
- Matrix correction methods in Probe for EPMA and when to use them
- Empirical mass absorption coefficients (MACs)

Module: Trace element analysis (8 hours)
- Calculating counting times and detection limits in Probe for EPMA and CalcZAF
- Strategies for background models: Acquiring and using wavescans vs. MAN
- Blank correction: Improving accuracy at low concentration levels
- Aggregated intensities with duplicate elements for improved sensitivity
- Specified concentrations and elements by difference

Module: Analyzing complex materials (6 hours)
- Spectral interference corrections
- Multi-point backgrounds
- Using virtual standards
- Calculating and correcting for secondary fluorescence boundary effects

Module: Beam-sensitive materials (6 hours)
- Using Time-dependent intensity corrections in Probe for EPMA
- Using TDI scanning: Time-dependent intensity in Probe Image
- Calculating sample temperature rise

Module: Low voltage analysis (4 hours)
- Low voltage vs. low overvoltage analysis
- Using non-traditional X-ray lines for quantification
- Defining empirical mass absorption coefficients (MACs)

Module: Integrated WDS and EDS (if available) (4 hours)
- Setting up integrated WDS and EDS analyses in Probe for EPMA (Thermo, Bruker and JEOL EDS systems)
- Calibration strategies for EDS

Module: Productivity and report writing (4 hours)
- Using MAN backgrounds to increase productivity by reducing analysis time
- Using specified or by difference concentrations
- Export options in Probe for EPMA and Probe Image
- Report options in Probe for EPMA
- Creating documentation in Probe for EPMA
- Creating customized documentation in Golden Software Grapher and Surfer
- Utilizing previous analysis setups in Probe for EPMA values for new samples

Module: Thin Film and Particle Quantitative Analysis (4 hours)
- Sample preparation for thin films
- Using Multi-Voltage Analysis (MVA) for thin specimens
- Automated MVA acquisition
- Thin film reprocessing (STRATAGem and/or BadgerFilm)
- Using geometric corrections for particle analysis

02-25-2021