Center for Advanced Materials Characterization in Oregon (CAMCOR) Presents

Problem Solving Using Microanalysis Tools Workshop

Focus on both instrumental methods and software algorithms for solving real world analytical problems for science and industry in EPMA in a variety of samples, conditions and geometries. Hands on workshops and labs to explore new ideas for extending EPMA for all users.

September 16, 17, 18 (Tuesday, Wednesday, Thursday), 2008

University of Oregon, Eugene, Oregon

Preliminary Outline of Program

A three day hands on workshop exploring problems and solutions for difficult and/or complex analytical situations using the latest analytical methods, instrumental techniques and software algorithms. Workshop will be held in the new Integrated Science Complex, Lorry I. Lokey Laboratory (temperature controlled, low vibration/low EMI underground Microanalytical Facility).

Instruments:
Cameca SX50 with Bruker SDD
Cameca SX100 with Thermo SDD
FEI Quanta with Thermo SDD and HKL EBSD

Software:
Quantitative microanalysis (bulk, particles, thin films)
Quantitative x-ray mapping (WDS and spectrum imaging)
Software modeling: Casino, WinXray, Penelope, and DTSA II

Presentations:
Jeff Davis - Large (very large) area mapping with millipore XRF

Mike Jercinovic- "Practical Considerations in trace element analysis by EPMA"

John Fournelle- "Light element quantification, problems and pitfalls"

Dale Newbury- Desktop Spectrum Analyzer-2 (DTSA-2: Son of DTSA): Nicholas Ritchie's Answer to the Microanalyst's Need for Spectrum Simulation"

Lab Instrument/Computer Demonstrations and Exercises:
Dale Newbury- Data mining demonstration using SDD and spectrum imaging with Lispix

Newbury- "Auto ID, caveat emptor"

Ed Vicenzi- "Methods for Analyzing X-ray Spectrum Images"

Ed Vicenzi, Jeff Davis, and Dale Newbury "Analyzing Multiphase Regions: Should I Use a Defocused Beam or Phase Imaging?"

Paul Carpenter- Quality Control and Your Electron Microprobe: Ensuring the Data You Produce is Valid

Paul Carpenter- Quantitative EPMA Using Probe for Windows: Setting Up a Quantitative Analysis Run on the Microprobe

Paul Carpenter/John Donovan- Advanced EPMA: Peak Overlaps, Trace Element Analysis, Beam-sensitive Materials, Layered Specimens, and Particles

Paul Carpenter, Matrix Corrections and Mass Absorption Coefficients

John Donovan- Quantitative Thin Film Analysis using EPMA, Part I

John Donovan- Quantitative Thin Film Analysis using EPMA, Part II

John Donovan- Pathological Interferences and How to Deal With Them

John Fournelle- EBSD Tutorial

John Fournelle- Modeling secondary Fluorescence with Penelope Monte-Carlo

John Fournelle- Off-peak selection, background modeling and artifacts

Mike Jercinovic- "Spatial Resolution and trace element sensitivity"

Mike Jercinovic- Selection of experimental parameters for high accuracy microanalysis

Special Presentation by Ellery Frahm
"Scandinavian Reindeer Herding, Tunisian Timekeeping, and Electron Probe Microanalysis: Considering Technological Choices"

Tours:
FEI Helios dual beam
Zeiss Ultra 55 (Nabity Lithography)
FEI Titan Analytical TEM
IonTof TOF-SIMS
Thermo VG XPS
Waters Qtof
Philips Auger
Bruker, Rigaku and Scintag XRDs

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