Preliminary Programme

SEM Course

20–22 March 2017

Problem Solving with Scanning Electron Microscopy and X-ray Microanalysis

1st Day: Scanning Electron Microscopy

Morning:

Basic (E)SEM (lecture): electron guns - lenses electron - specimen interaction, signals
SEM-imaging (lecture): secondary and backscattered electrons - detectors contrast formation (topographic and material)

Afternoon:

Image recording (lab): working distance, focus, astigmatism contamination, damage

2nd Day: X-ray Spectrometry

Morning:

Specimen preparation (lecture):

Basic X-ray spectrometry (lecture): information depth, inelastic scattering, applications
X-ray Analysis (lecture): detectors (wavelength - energy dispersive), artefacts qualitative - quantitative analysis - mapping

Afternoon:

X-ray acquisition (lab): beam energy, count rate, acquisition time spectra - mapping acquisition

3rd Day: Applications

Morning:

Analysis of specimens from the participants (lab)

Afternoon:

Additional methods by scanning electron microscopy (lecture): EBSD, Variable pressure SEM, Dual beam (SEM-FIB)
Alternative Analytical methods (lecture): Transmission electron microscopy Vibrational spectroscopy

Organizer: Stefan Mitsche
Lectors: Stefan Mitsche, Peter Pölt
Operator: Hartmuth Schröttner
Special arrangements: Separate Courses for groups (at least 4 persons) on request

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