

Program CCMX course 2024: Introduction to SEM and FIB microanalysis

Day one, Tuesdays 26th of November: SEM and FIB: Instrumentation and Principles

- 9.00 **SEM+FIB: mode of operation**
Dr. Lorenz Herrmann, Empa
- 11.00 **SEM+FIB: Image formation and interpretation**
Dr. Lorenz Herrmann, Empa
- 13.00 **Lunch break**
- 14.00 **FIB: Milling and Fabrication**
Dr. Johann Michler, Empa
- 15:30 **Elemental analyses with FIB-TOFSIMS**
Dr. Johann Michler, Empa
- 17.00 **End of Day1**

Day two, Wednesday 27th of November: SEM Analytics I: Elemental analyses

- 9.00 **Elemental analyses with EDS**
Dr. Xavier Maeder, Empa
- 10:30 **Elemental analyses with WDS and μ -XRF**
Dr. Xavier Maeder, Empa
- 12.00 **Lunch break**
- 13:00 **Introduction to Auger Electron Spectroscopy (AES)**
Dr. Xavier Maeder, Empa
- 15.00 **Introduction to Atom Probe Tomography (APT)**
Dr. Johann Michler, Empa
- 17:00 **Demonstration and teaching in front of the SEM**
Dr. Xavier Maeder, Dr. Johann Michler, Empa
- 18.00 **End of Day2**

Day three, Thursday 28th of November: SEM Analytics II: Electron diffraction

- 9:00 **Introduction to ECCI**
Dr. Xavier Maeder, Empa
- 10:30 **Introduction to EBSD**
Dr. Xavier Maeder, Empa
- 12.00 **Lunch break**
- 13.00 **EBSD techniques: Texture, advanced EBSD indexing, 3D-EBSD, TKD**
Dr. Xavier Maeder, Empa
- 15.00 **Advanced EBSD techniques: HR-EBSD**
Dr. Xavier Maeder, Empa
- 17.00 **End of Day3**

Day four, Friday 29th of November: Advanced analytics and complementary techniques.

9:00 **Advanced diffraction technique in SEM: LEND**

Dr. Xavier Maeder, Empa

10:30 **Introduction to TEM: TEM vs SEM for imaging and diffraction**

Dr. Xavier Maeder, Empa

12:00 **Lunch break**

13:00 **Advanced SEM in-situ techniques**

Dr. Xavier Maeder, Empa

16:00 **Written Exam**

17:00 **End of Day4**