CCMX Advanced Course

"Combining Structural & Analytical Investigations of Matter at the Micro-, Nano and Atomic Scale"

5-8.11.2018 ETH Zürich

Station 5 Cameca LEAP 4000X-HR (Location: HPT C9)

Atom Probe demo (60 minutes)

Atom Probe tip preparation: discussion of methods, workflows & minimizing artifacts

Data Collection: causing ionization, ToF mass spectrometry, ion detection system

Reconstruction: projections, parameters & correlative methods to best represent collected data

Data Analysis: Interpreting & quantifying 3-D atomic scale data

Dr. Stephan Gerstl

Atom probe tip preparation:

- ✓ Defining ROI, FIB annular milling vs. nano-lathing (developed at ETH)
- ✓ Low kV showering
- ✓ Electropolishing options

Data Collection:

- ✓ Review of hardware & functions
- ✓ Parameters for controlled ionization
- ✓ Cryo sample transfer options (developed at ETH)

Reconstruction:

- ✓ Raw data & projection corrections applied
- ✓ Variables involved & identifying ions
- ✓ Correlation options to apply

Data Analysis:

- ✓ Data types for manipulation & ranging
- ✓ Point, surface, volume representations
- ✓ Quantifying spatial & chemical distributions