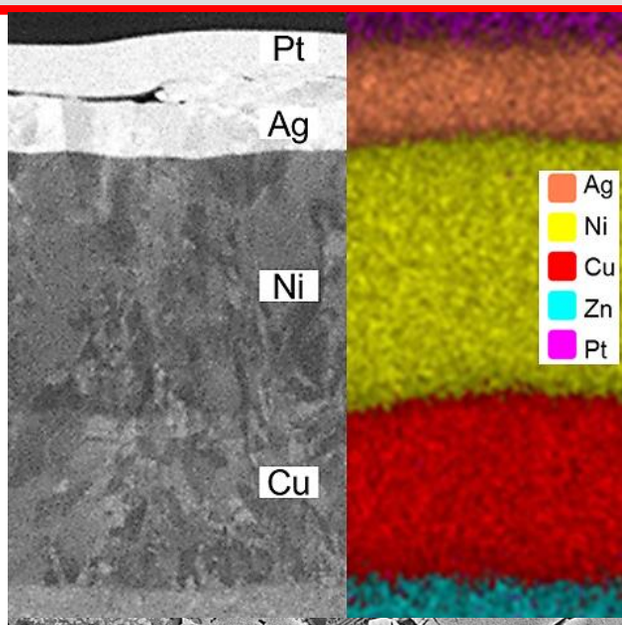
Scanning Electron Microscopy

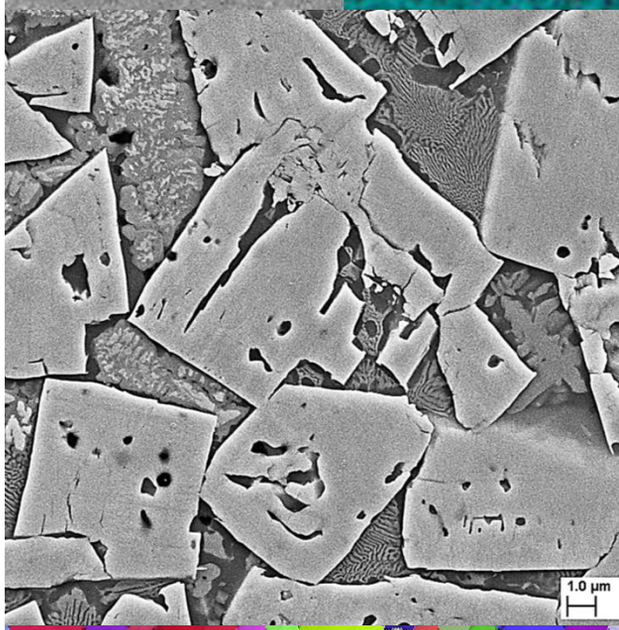
Focused Ion Beam Preparation

- **Target preparation with minimal artefacts with laser- and electron beam via FIB**
- **Examination of interfaces of coated materials or laminated structures, e.g. Li-Ion cells**
- **Microanalysis of surface damage**



Electron Backscatter Diffraction (EBSD)

- **Investigation of crystal orientation / texture of polycrystalline materials**
- **Grade of orientation of hard and soft magnets**
- **Quantitative particle size distribution and analysis of shape factors via EBSD**
- **Correlation of EBSD data and other methods e.g. x-ray diffraction**

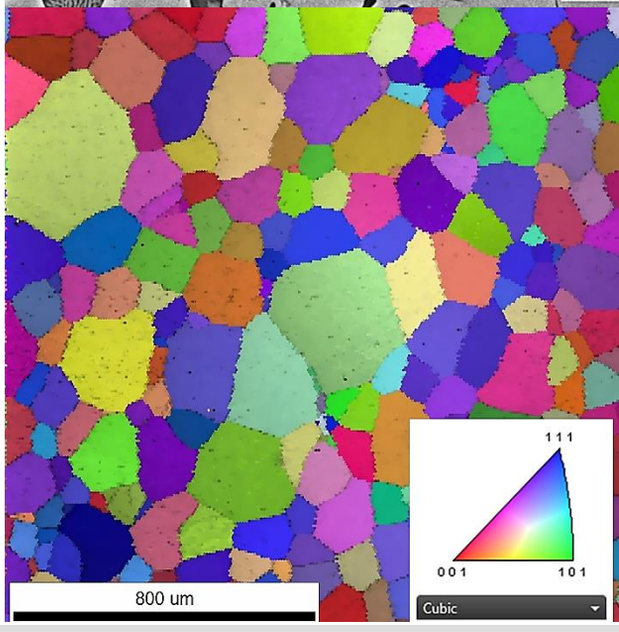


Chemical analysis via x-ray-spectroscopy

- **Accurate determination of the local chemical composition via energy dispersive analysis (EDX)**
- **Quantitative determination of light elements (C, N, O, B) and analysis of sophisticated elements via wave-length-dispersive analysis (WDX)**

Taking big images via Atlas 5

- **High resolution, large-scale tile images with scanning electron microscopy for e.g. quantitative microstructure analysis**



Matworks GmbH

Certified according DIN EN ISO 9001
A Steinbeis Enterprise

matworks
Materials Engineering Solutions

Technical Equipment

Carl Zeiss LEO 1455VP and LEO Gemini 1525

SEM-detector

- Secondary- and backscatter-electron detector

Image acquisition and analysis

- EDAX EDX-analysis system
- Matworks-holding fixture (MSH-1) for correlative microscopy

Carl Zeiss Crossbeam 540 Laser

Detector

- Combined secondary-electron and ion-detector
- EBSD-detector for material contrast for accelerating voltages <2kV
- 4-Quadrant backscatter-electron-detector
- STEM-Detector for transmission-electron-mapping

FIB-System

- UV quick-pulse-laser for rough machining
- Capella Focused Ion Beam column for sample preparation on nanoscale
- Kleindiek micromanipulator

Image acquisition and analysis

- Atlas 3D for high resolution FIB-tomography
- EDAX EDX- and 3D-EBSD analysis

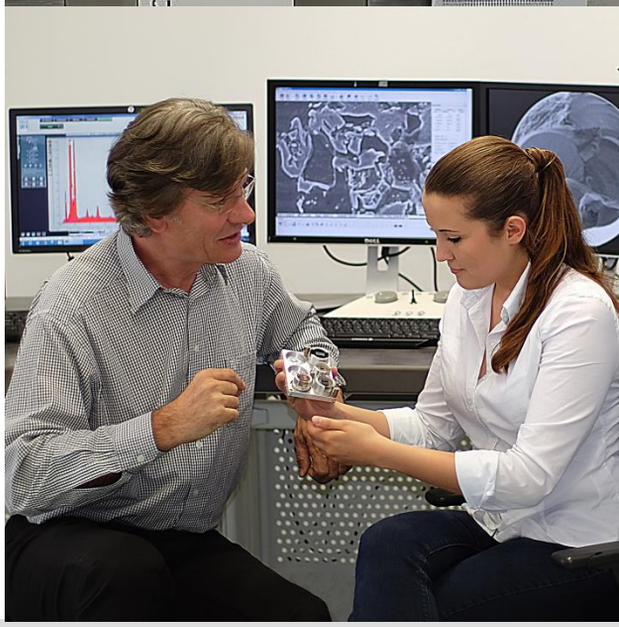
Carl Zeiss Sigma 300 Variable Pressure

Detector

- Secondary-electron detector
- 4-Quadrant AsB-backscatter-electron detector
- VP-secondary-electron detector with simple possibility of CL-imaging

Image acquisition and analysis

- Variable-Pressure-System for charge-free imaging of non conductible samples
- Atlas-System for large scale, high resolution images
- EDAX EDX-, EBSD- and WDX-analysis
- Fast EBSD camera with up to 1400 FPS for crystallographic analysis



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