Auger Electron Spectroscopy (AES)

Technology:
Nano Area Analysis
Surface and Interface Analysis

Equipment:
Auger Nanoprobe PHI 680, Physical Electronics

Category:
C. Particle Characterisation ex-situ

Institute:
KIT

Location:
Karlsruhe Institute of Technology
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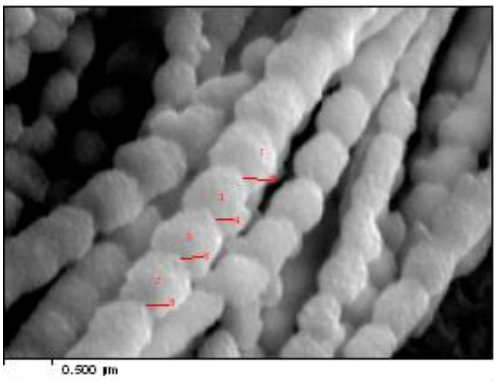
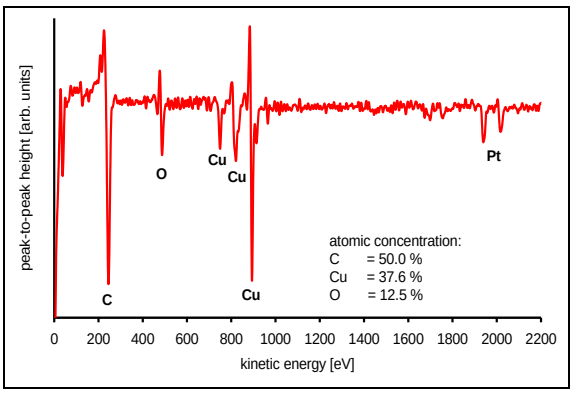
Short technology description / Overview and Main Features (Equipment Capabilities):

Auger Electron Spectrometry (AES) provides information about composition and to some extent chemical state within nanometer size of solid and vacuum-stable, non-insulating materials of rough, multilayer and fracture surfaces. In combination with Ar-ion-sputtering depth profiles to 1000 nm are available.

- Semi-quantitative analysis of Li to U; quantitative analysis with standards
- practical detection limit 0,1 to 1 at-%
- Multi point and area analysis, linescans, element maps
- Resolutions: practical Auger electron analysis < 20 nm, depth analysis 0,5 – 5 nm depending on Auger electron energy
- Two types of ion guns available: scanning (1x1 mm) ion spot (0,1 mm) and low energy ion gun
- Zalar Rotation™ for better interface resolution
- In-situ fracture of samples with liquid N_2 cooling for grain boundary analysis

Typical Samples & Images:





SEM image of Cu nanowire and AES point analysis

Any further Information: