

Materials Science Department

Microstructural Characterization

CENIMAT-I3N / Structural Materials



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Objectives

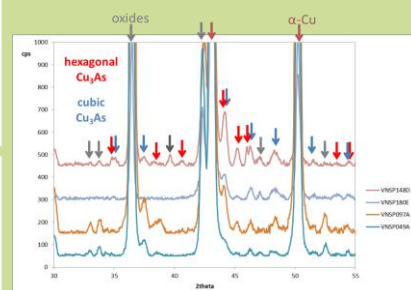
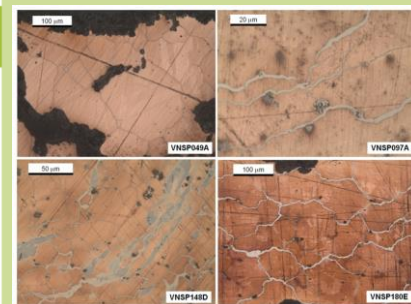
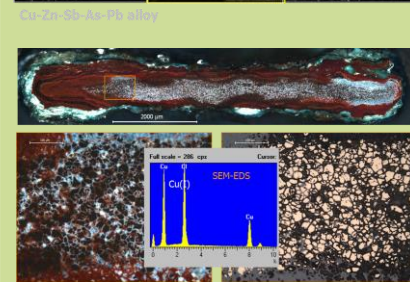
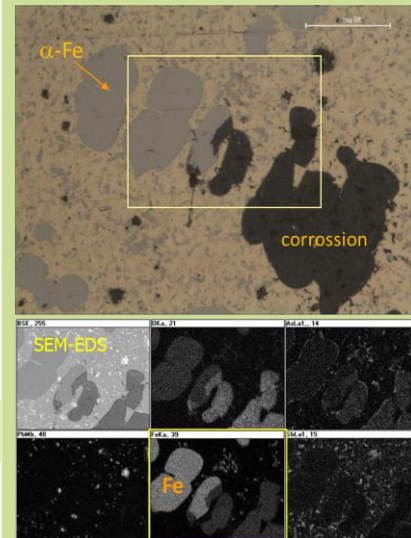
- Microstructural characterization (metallic and ceramic materials) and interpretation
- Analysis of long term phase equilibrium compositions using archaeological materials
- Understanding of ancient metallic materials processing technologies
- Understanding of corrosion mechanisms and evaluation of corrosion protection efficiency

Methodology

- Metallographic preparation
- Reflected Light Microscopy(OM), under bright-field, dark-field and polarization illumination.
- Scanning Electron Microscopy (SEM) with
- Energy Dispersive X-ray Spectroscopy (SEM-EDS)
- X-Ray Fluorescence (XRF)
- X-Ray Diffraction (XRD)

Expected Results

- Improvements on materials processing technology
- Understanding of failure mechanisms
- Understanding materials from the past.
- Improvements on material corrosion protection



Funding: