amco

amcosystems.com

CALL NOW +34 91 06 76542

POLITÉCNICA
"Engineering the future"

INTERNATIONAL
CAMPUS OF
EXCELLENCE

LIÈGE université

CLC
Cobre Las Cruces, S.A.

KGHM

LMAUPM

Thin Section Lab

Optimized ore processing and predictive mineralogy

AMCO technology **adds value** to companies performing **full geometallurgical characterization** of metal ores

- Ore identification
- Quantitative mineralogical composition
- Modal analysis
- Grain size analysis
- Liberation grade
- Textural analysis

☎ +34 91 06 76542

🌐 amcosystems.com

✉ amco.minasyenergia@upm.es

📍 ETSI Minas y Energía, c/ Rios Rosas 21

AUTOMATED MICROSCOPIC CHARACTERIZATION OF ORES

AMCO System

- Very **low** cost for **investment** and **maintenance** which translates into **shorter pay-back**
- Both **complementary & alternative** to expensive traditional *SEM analysis.*
- **Ultra high performance** for **specific types of ores** such as iron oxides.
- Characterization and quantification of **intergrowth textures** in mineral particles.
- **Portable**, **robust**, **on site** operating capability.
- Can **operate 24/7.**
- Save time and costs in ore processing.
- Smooth learning and user-friendly software, does not require highly specialized personnel.

Mining companies

- **Process engineers** needing geometallurgical characterization of ores to check the process.
- **Engineers/geologists** facing early investment decisions supported by preliminary assessment about geometallurgical feasibility, based on the predictive mineralogical characterization of ores from drill cores.
- Geologist with a need for rapid **in field analysis,** typically in a lab on site.
- **R&D engineers** from mining companies for **own** research and/or analysis.

Consulting companies

- To offer **value-added** services.
- To provide **in-depth** mineral **analysis** at an early stage of exploration.

Universities & Researchers

- Enhancing **mineralogical** information.
- Improving **academic education** to their students
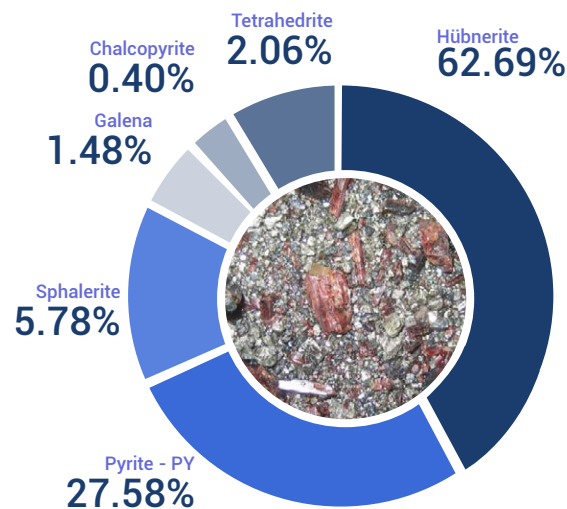- **Affordable** to a limited budget.

Summary

Ore processing requires physical separation of mineral phases; therefore a chemical characterization cannot by itself solve the problem, and must be complemented by mineralogical characterisation of the ore. This task has been traditionally achieved by an operator with a reflected light microscope coupled to a point counter device. Modern **SEM-based Systems** are far more **performant but very expensive.**

The automated **AMCO System combines** the **low price** of the optical microscope with the **high performance** of SEM-systems. Automated ore identification and characterization are achieved by AMCO through **multispectral imaging**. The acquired images allow specular reflectance measurement and digital image analysis on a pixel to pixel basis, thus providing all the information required for industrial plants or for research e.g. ore identification, modal analysis, grain size and textural analysis, liberation grade, etc...

Typical geometallurgical application:
modal analysis of feed-in to control ore processing performance

- Tetrahedrite **2.06%**
- Hübnerite **62.69%**
- Chalcopyrite **0.40%**
- Galena **1.48%**
- Sphalerite **5.78%**
- Pyrite - PY **27.58%**

Modal
Analysis of
Concentrates

Hübnerite ($MnWO_4$) **Ore**
PB Mine (Peru)