

# SPECTRAL EVOLUTION

## Copper Exploration

NIR spectroscopy can be a valuable vectoring tool for mineral exploration in copper mining. Using an oreXpress™ or an oreXpress Platinum spectrometer and SPECTRAL EVOLUTION'S EZ-ID™ software can result in fewer drill holes and better results through a range of deposit types, including:

- ◆ Porphyry copper deposits
- ◆ Volcanogenic massive sulfide ore deposits
- ◆ Iron oxide copper gold (IOCG) deposits
- ◆ Copper skarn

Exploration geologists looking for mineable copper deposits can map alteration zone mineralogy and identify the following diagnostic minerals:

- ◆ For porphyry copper: tourmaline, muscovite, alunite, kaolinite, jarosite, goethite, hematite, chalcanthite
- ◆ For oxidized BXA (leach cap): mica, jarosite, alunite, kaolinite
- ◆ For oxidized phyllitic: alunite, kaolinite, jarosite, copper sulphate overprinting muscovite
- ◆ For potassic: muscovite, tourmaline, some alunite

Using EZ-ID with the USGS spectral library or the SpecMIN™ library available from Spectral International, the software quickly provides accurate matching of an unknown target with a known mineral spectra. With an oreXpress spectrometer and EZ-ID a geologist can identify minerals indicating copper in real-time, in the field.

Benefits include:

- ◆ Quickly collect a lot of scans
- ◆ Cover more ground in less time for better mapping
- ◆ Collect more accurate data for a more complete picture of the area you are exploring
- ◆ Get results immediately instead of waiting for lab analysis
- ◆ Drill fewer holes with better results
- ◆ In the core shack, correctly identify promising samples, save on assay costs, and save your valuable logging data

The oreXpress and oreXpress Platinum deliver full range, UV/VIS/NIR capabilities from 350-2500nm, are lightweight (under 7 lbs), rugged, include integral autoexposure and auto-dark shutter, and come with a handheld GETAC microcomputer with digital camera, GPS, and voice notes that can be tagged to your spectra.

In addition, our DARWin Data Acquisition software saves your scans as ASCII files for use (without pre-processing) with third party software, including chemometric analysis software.

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**oreXpress and oreXpress Platinum spectrometers are ideal for single-user field mining exploration.**



**EZ-ID software identifies minerals in real-time by matching your target spectra against a known spectral library such as the USGS library, or the SpecMIN library.**

