# SPECTRAL EVOLUTION

## Identifying rutile and ilmenite with a field spectrometer

Rutile and ilmentite are the primary sources for titanium, especially titanium oxide (TiO2). Rutile and ilmenite are sourced from placer deposits—magmatic and heavy mineral sand. Other components in heavy mineral sands include zircon and monazite. Australia is the chief source for titanium followed by China, South Africa, and Vietnam. There is also increasing exploration for hard rock deposits (eclogites) as a source for rutile.


*The oreXpress with the Miniprobe's 3mm spot size for field or core shack use.*

Titanium is used to make metals for the aerospace and medical (implants) industries. Titanium oxide is processed into white titanium oxide pigment used in the manufacture of paint, plastic, paper, ink, rubber, textiles, cosmetics, leather and ceramics. It has excellent brightness and high opacity for good hiding power in paints.

The oreXpress high resolution/high sensitivity field spectrometer can identify minerals. Used with EZ-ID mineral identification software it matches your target minerals against known library samples for fast identification. Samples for rutile and ilmenite minerals are included in the libraries. EZ-ID allows you to create match regions to focus on specific absorption features for unmixing multiple minerals in a sample.


*EZ-ID has three libraries of over 2600 known mineral spectra to match against. It includes spectra for rutile and ilmenite.*

The oreXpress delivers full range UV/VIS/NIR/SWIR capabilities from 350-2500nm, is lightweight (under 7 lbs/3.5kg), rugged and includes integral auto-exposure, auto-shutter, and auto-dark correction for on-touch operation. An optional ALGIZ 8X tablet includes a digital camera, GPS and voice notes—all data that can be tagged to your spectra. Use the oreXpress with our 10mm spot size contact probe or our 3mm Miniprobe or in the lab with our benchtop probe with sample compactor.

In addition, our DARWin SP Data Acquisition software saves all scans as ASCII files for use (without pre-processing) with third party software such as the Spectral Geologist (TSG) Version 8 and 3D mapping and mining programs.

For ultra-high resolution scanning capabilities, the oreXpert spectroradiometer is also available. Resolution is:

- 1.5nm @ 700nm
- 3.0nm @ 1500nm
- 3.8nm @ 2100nm



26 Parkridge Road ◊ Suite 104
Haverhill, MA 01835 USA
Tel: 978 687-1833 ◊ Fax: 978 945-0372
Email: sales@spectralevolution.com
www.spectralevolution.com