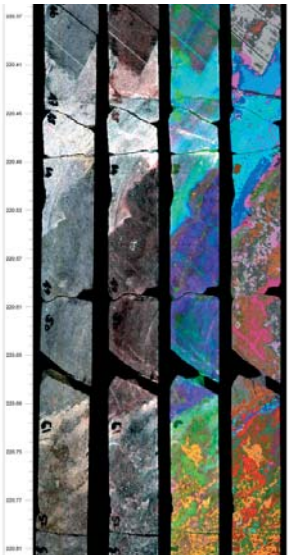
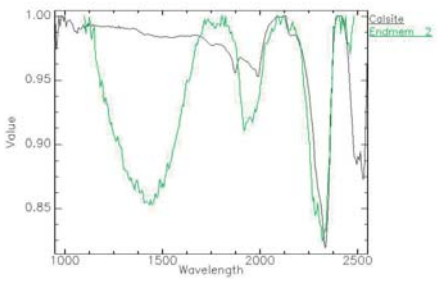
HIGH-SPEED DRILL CORE ANALYSIS

Hyperspectral imaging permits high-speed and accurate measurement of drill cores and other geological samples. In the present application example a renowned mining-specilized organization analyzes drill cores with SPECIM VNIR and SWIR Spectral Cameras (imaging spectrometers).



Drill core image processed by a recognized mining-specialized organization. Full explicative images on the reverse page



Full spectral information is associated to each image pixel.

By using hyperspectral, high-resolution drillcore scan data, the exploration geologist will be able to use accurate mineralogical and structural information for his work, not visible in normal viewing.

In this application, a normal RGB image in the leftmost column as seen by the naked eye will display little or no detailed mineralogical information without additional time-consuming and expensive investigations. The rightmost column shows the same drillcore, this time scanned by SPECIM's SisuROCK system and classified to a spectral facies image using off-the-shelf analysis tools. The image clearly shows the abundance of information - both mineralogical and structural - available to the geologist to guide his decisions in the project and to ensure better results.

The whole process of scanning and analysing the image takes only a fraction of time compared to e.g. thin section preparation and analysis at a low cost and produces quantitative data to base operational decisions on.

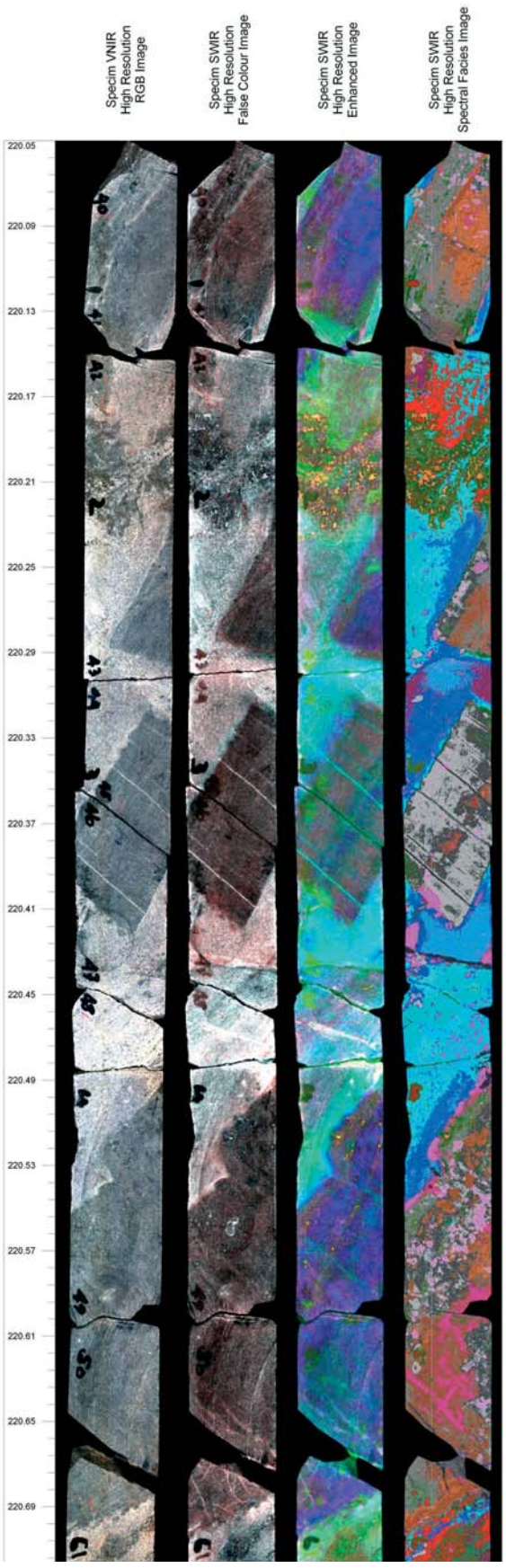
SPECIM is now developing SisuROCK, a complete scanner system for easy and ultrafast analysis of drill cores and other geological samples.

SisuROCK is built on our push-broom type hyperspectral imagers operating in SWIR (970 to 2500 nm) and VNIR (400 to 970 nm) ranges. It can work on both single core and full width core box.

Please contact SPECIM for more information.

Spectral Imaging Ltd.
POB 110
Teknologiantie 18 A
FIN–90571 Oulu, Finland

Tel. +358 (0)10 4244 400
Fax +358 (0)8 388 580
Email info@specim.fi
www.specim.fi



SPECTRAL FACIES LEGEND

- **Sulphide:** Spectral response is flat. Typical of sulphides but also includes dark responses. Markings on core are often included in this spectral facles
- **Garnet:** Spectral response is dominated by Fe features related to garnet
- **Garnet-Pyroxene-Carbonate:** Spectral response is dominated by Fe feature. The signatures indicate that garnet is often present but is mixed with other minerals. These include pyroxene and carbonate but
- **Quartz:** Spectral response characterised by a flat response with a water absorption feature. Water is typically seen in vein quartz where water is trapped as
- **Scapolite:** Spectral response is characterised by scapolite with variable amounts of carbonate and mice. The spectral signatures of scapolite are similar to prehnite but have been interpreted as scapolite
- **Sulphate (?):** Spectral response is dominated by a sharp water feature. This has been tentatively interpreted as a sulphate response
- **Deep water and Fe feature:** Spectral response has deep Fe and water features
- **Fe-Poor carbonate:** Spectral response is typical of carbonate. In general the carbonate does not display a Fe feature at lower wavelength ranges
- **Mica-Chlorite:** Spectral response is dominated by white mica. Variable amounts of phlogopite and locally amphibole are also observed in this spectral facies
- **Fe-Rich carbonate:** Spectral response is typical of carbonate. In general the carbonate has a Fe feature at lower wavelength ranges
- **Amphibole:** Spectral response is typical of amphibole, mixtures of carbonate, chlorite-phlogopite are possible. Locally mica is also observed in this spectral facies
- **Phlogopite-Chlorite-Amphibole:** Spectral response of phlogopite inferred for this spectral facies. Chlorite and amphibole with variable mica may occur throughout

A single core image scanned by SisuROCK in the SWIR range (970 to 2500 nm), at 0.2 mm pixel resolution. Scanning speed 20 mm/second.