MinFocus

Magnifying Solutions

MINTEK
A global leader in mineral and metallurgical innovation

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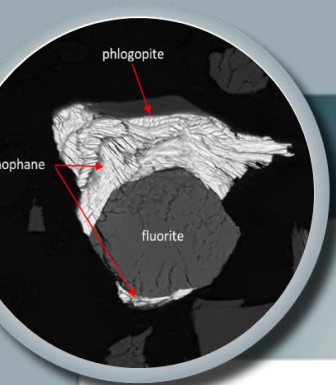

TECH FOCUS 1

Quantitative ore characterization for uranium recovery by leaching

With increasing attention focused on uranium for nuclear energy at present, the production from different ores seeks improvements in extraction efficiency and consequent flowsheet optimization. A recent case study highlights the role that quantitative mineralogy plays in identifying uranium minerals of different inherent leachability, as well as their modes of occurrence and association with gangue acid consumers.

Read more here.

TECH FOCUS 2

Mineralogy of titanomagnetite ores for vanadium upgrading

Vanadium is a valuable component for steel and alloy production. Although an abundant element, its occurrence as a minor element in ore minerals makes its upgrading and extraction complex. With the third highest vanadium production in the world coming from the Bushveld Complex, the mineralogy of titanomagnetite ore is important to determine compositional variation and modes of occurrence of the vanadiferous minerals for upgrading by magnetic separation.
Read more here.

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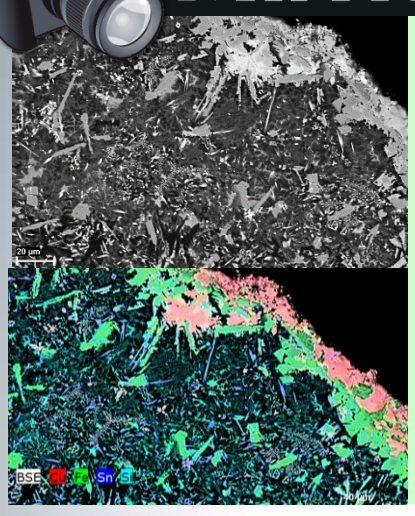

Silica-rich slag particle edge mapped by SEM (top: backscattered electron image; bottom: element map). The slag was formed from the smelting of printed circuit boards. Small enrichments of copper, iron and tin occur along the boundary of the slag particle, whereas tin occurs as needles within the slag. The SEM investigation was conducted to determine the mode of occurrence of metal lost to the slag, as part of smelting optimisation test work.

ROCK

Mineralogy hosts a successful webinar

The Mineralogy Division hosted its annual webinar on 11 March, in which our staff members showcased outcomes of various current projects and research endeavors. More than 100 participants attended from all over the world. Positive feedback was obtained, along with interest in potential collaborative projects. We thank attendees for making the time to participate, and we look forward to further opportunities to work together.

MINERALOGY IN THE FIELD

VISIT TO SAMANCOR
24 January 2022

Thelma Chirwa visited a Samancor smelting plant for an orientation and understanding of the processes involved in ferrochrome production operations. The experience will assist in the interpretation of the mineralogical assessment of the products derived from those processes.

VISIT TO BUSHVELD VANCHEM
2 March 2022

Dr Yash Thakurdin of Mineralogy recently joined colleagues of the Pyrometallurgy Division in a visit to the Bushveld Vanchem operation in Emalahleni, Mpumalanga. Titanomagnetite processing extracts vanadium to produce various refined oxides and chemicals, primarily for the steel industry. Mineralogy assists in the upgrading and extraction of the commodity (see Tech focus 2, above).

PRECIOUS METALS MEETING
7 March 2022

Mintek hosted a hybrid PGM and Gold Association workshop on 7 March 2022. The workshop focused on the application of Mintek's technologies in promoting responsible minerals processing in the precious minerals industry. High-level presentations of Mintek's modern process flowsheets and analytical tools for efficient processing were discussed in detail. Dr Kirsten Youlton, from the Mineralogy Division, presented on the effects of mineralogy on gold recovery using non-cyanide lixiviants. Stakeholders from industry attended, which allowed for many fruitful discussions.

the Nugget Effect

What we know is a drop; what we don't know is an ocean – Isaac Newton

MINERALOGY FACILITIES & CONTACT DETAILS

Sample preparation | X-ray diffraction | Scanning electron microscopy | Electron probe microanalysis | Optical microscopy | Sampling
Automated mineralogy facility – QEMSCAN, MLA | Laser ablation ICP-MS | Fourier transform infra-red spectroscopy
Micro-XRF imaging | GIS facility | X-ray computed tomography

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