

## TECH FOCUS 1

### LCT pegmatite mineralogy for Li, Cs and Ta recovery

LCT pegmatites, named for hosting Li, Cs and Ta, respectively, form from late stages of magmatic crystallization, concentrating these incompatible elements in various minerals. Mineralogical characterisation of crushed samples of such pegmatites is crucial to understanding the mineral hosts, their content of these elements, and their modes of occurrence, to inform such processes as gravity and magnetic separation for successful upgrading and recovery of these minerals.

[Read more here](#)



## TECH FOCUS 2

### Tracking floatability of Ni-bearing minerals in Platreef ore

Successive instances of Ni losses to flotation tails during the recovery of platinum group minerals and base metal sulfides, have led to a project to identify the reasons for these losses, and how they may be mitigated. Although pentlandite is the chief Ni host in ores from the Platreef, other, non-targeted minerals may also host the element. Using a combination of techniques, this project seeks to identify these minerals, determine what typical Ni losses should be expected, and what might be done to improve Ni recovery.

[Read more here](#)



## MINTEREST




Phosphate ore of sedimentary origin shows fossils of different types, creating varied patterns in section. Such features are incorporated in the determination of phosphate grain size distribution for liberation purposes in phosphate recovery.



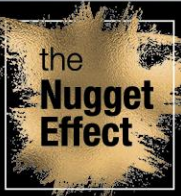
## ROCK

### Mineralogy Welcomes Given Lebyane



In November, the Division welcomed Given Lebyane as its new technician in sample preparation. Given comes to us from Anglo American, where he worked at its smelter laboratories. He will oversee the daily running of the sample preparation laboratory, focusing on QA/QC and instrumentation.

 <b>MINERALOGY IN THE FIELD</b>	<b>MINERALOGY OPEN DAY</b> 6 September 2024	<b>MINTEK@90 CONFERENCE</b> 10-11 November 2024	<b>OTHER CONFERENCES</b> September-November 2024
	The Division held its annual Open Day, this time in person at Mintek. Six presentations were given, covering current research in the Division. Our keynote speaker was Prof Johan de Villiers of the University of Pretoria, a previous manager of Mineralogy and general manager at Mintek, who gave a personal perspective on mineralogy. The day allowed networking with our clients and potential collaborators, ending with a tour of the Division's facilities.	The conference featured three divisional contributions. Dr Yash Thakurdin presented modern applications of electron probe microanalysis, whereas Dr Derek Rose presented observed linkages between mineralogy, texture and comminution properties of chromitite and associated waste rocks in UG2 ore. Beberto Baloyi presented mineralogical observations on manganese ores from pre-reduction experiments done by Pyrometallurgy, to minimise energy consumption in the move towards green smelting. The successful conference afforded meetings with clients, Mintek alumni and other dignitaries.	The MEI Process Mineralogy '24 conference was held in Cape Town from 12-14 November, at which Mapadi Olifant presented on coarse Fe ore particle work, while Candice Carelse and Jabu Ngwane presented a poster on Ni losses in flotation. At the MINSAs-GSSA Analytical Symposium held at Mintek from 14-15 October, Dr Desh Chetty presented micro-XRF theory and applications, while Marian Manuel was a panelist on accreditation in Mineralogy. Jonathan Desebrook presented a poster on battery recycling waste treatment at the ISWA2024 conference in Cape Town, held from 15-18 September.



A Happy and Prosperous New Year 2025 to all our clients and collaborators

## MINERALOGY FACILITIES & CONTACT DETAILS

Sample preparation | X-ray diffraction | Scanning electron microscopy | Electron probe microanalysis | Optical microscopy  
Sampling | Automated mineralogy facility – QEMSCAN, MLA, TIMA | Micro-XRF imaging | GIS facility | X-ray computed tomography

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