MinDet Emago Delivers Rapid, High-Resolution Mineralogy

Delivering detailed, particle-level mineralogy for metallurgical programs

Core Resources offers high-resolution mineralogy testing from its Brisbane laboratory using the new MinDet Emago, a precision instrument that delivers fast, detailed analysis to support metallurgical investigations, process development and geometallurgical studies.

Using advanced microscopy and machine learning, the MinDet Emago provides quantitative data on mineral composition, liberation, elemental grade, and particle-size distribution (PSD) from samples as small as 10 grams, with a very short turnaround time and at low cost.

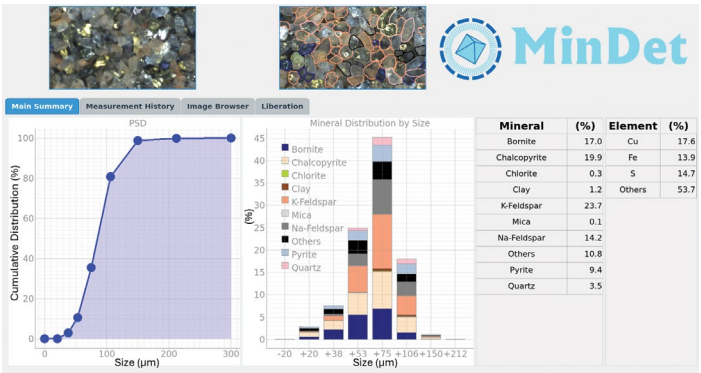
Comprehensive results, minimal sample preparation

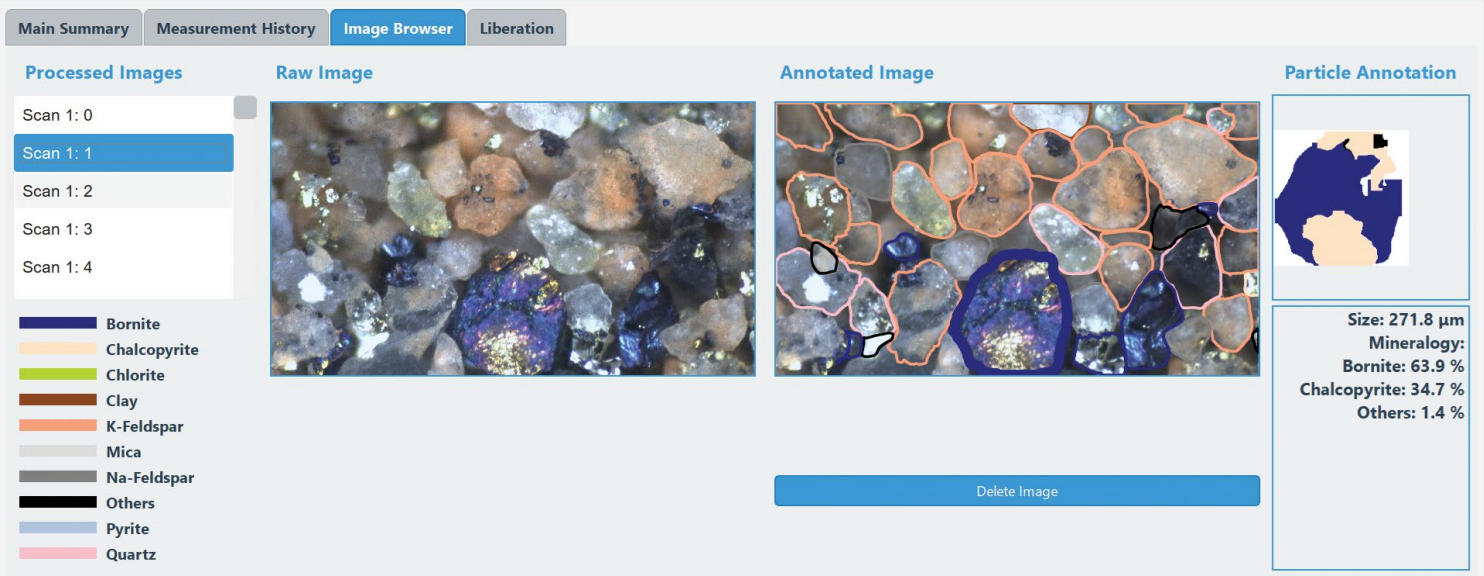
Samples can be analysed wet or dry and are prepared to a target P_{80} representative of separation size (e.g. flotation feed).

The analysis captures:

- Mineral grade by size
- Metal grade by size
- Degree of liberation
- Particle Size Distribution (PSD)

Each result is resolved across all size fractions, enabling deeper insight into mineral behaviour and processing characteristics.





How it works

The MinDet Emago combines optical microscopy with AI-driven classification. An extensive mineral database – trained on SEM/EDS-derived data – is used to identify minerals based on texture, shape and colour.

A tri-axial robotic microscope scans thousands of particles in minutes, generating particle-level mineralogical data that includes liberation and calculated elemental grades based on known mineral chemistry.

More than just target minerals

Beyond metal-bearing species, the system also identifies clays, micas and iron-rich gangue phases that may impact recovery or downstream performance.

As every particle is imaged and measured, full PSD data is generated as part of the analysis, with all results available by size fraction.

Applications

This analysis supports:

- Diagnostic mineralogy for process troubleshooting
- Feed and tailings characterisation
- Liberation and grind optimisation
- Variability testing and blends
- High-resolution mineralogy for block models

Sample preparation is simple – grind to target P_{80}, split by size fraction and submit for analysis. Our team delivers clear, structured results suitable for metallurgical modelling or process decision-making.

Efficient, insightful and lab-proven

This mineralogy testing service enhances Core's broader metallurgical capability – offering fast, accessible data that supports smarter decisions across exploration, development and processing.

Interested to find out more?

Contact: info@coreresources.com.au

About Core Resources Core Resources is an award-winning process engineering and metallurgical testing business based in Brisbane, Australia. Core Resources services a global customer base, enabling the world's mining projects with innovative metallurgical flowsheet solutions.

BRISBANE HEAD OFFICE
+61 7 3637 8100
36 Corunna Street
Albion, Qld 4010 Australia
PO Box 127, Albion DC,
Qld 4010 Australia
coreresources.com.au