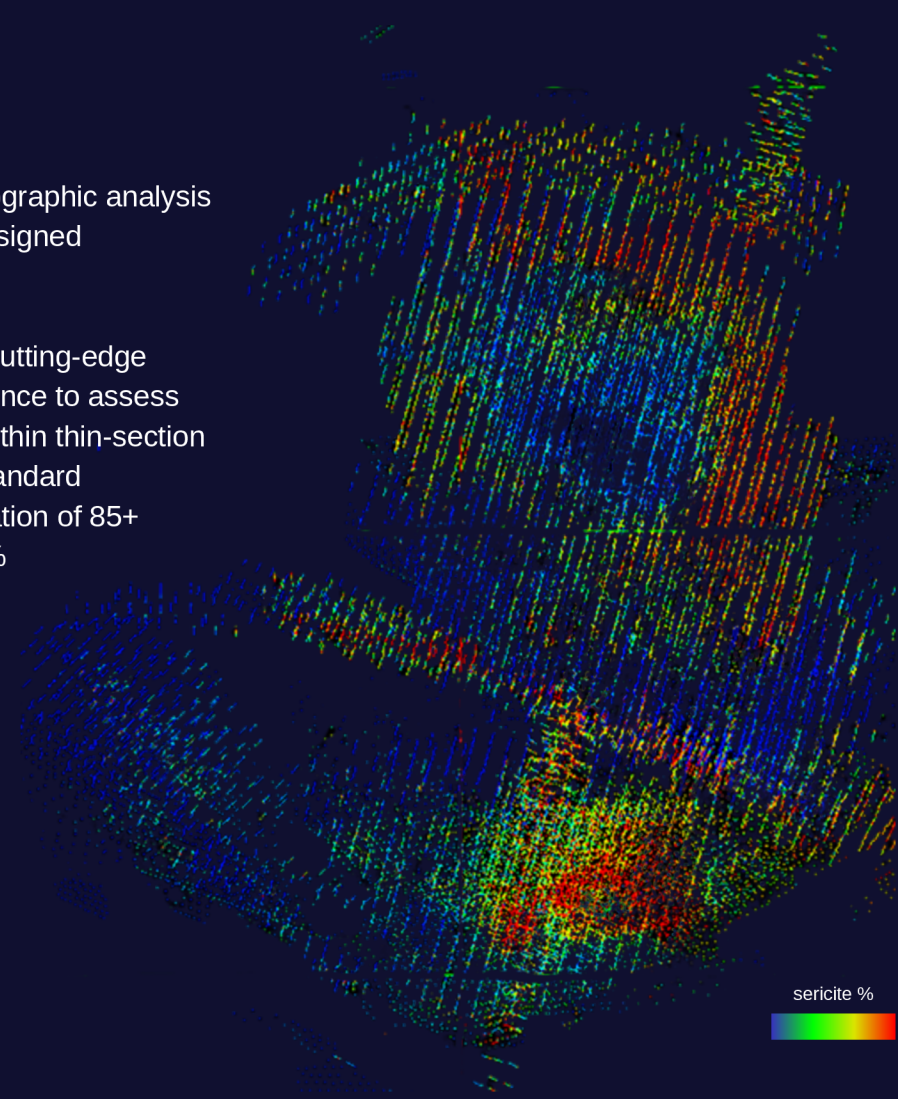


MICA Technologies is revolutionizing petrographic analysis through advanced AI-powered solutions, designed specifically for the mining sector.

Our flagship platform, **MOSAIC**, combines cutting-edge computer vision with sophisticated data science to assess subtle mineralogical and textural features within thin-section samples, otherwise not captured through standard geochemical analysis. We support classification of 85+ different mineral species, at a minimum 80% pixel-level-accuracy.

The method utilizes multiple AI models independently trained on cross-polarized, plane-polarized and reflected light. Preprocessing data layers offers a comprehensive range of input modes that are flexible to data requirements.



OUR APPROACH



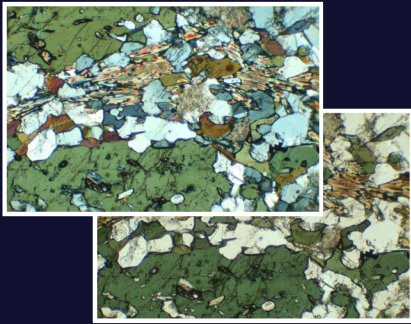
Plane-polarized and cross-polarized images are imported into the software; grain boundaries are identified and mineral phases classified through cutting-edge machine learning algorithms.

01 QUANTITATIVE MODAL ANALYSIS
Precise determination of modal abundances for all mineral phases in the field of view.

02 GRAIN SIZE DISTRIBUTIONS
The dimensions of mineral grains in the field of view are automatically calculated.

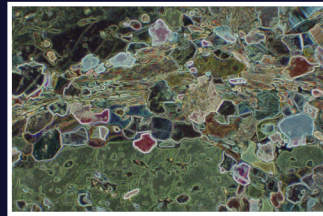
03 PLUG-AND-PLAY INTEGRATIONS
MOSAIC accepts raw image layers (png, jpeg, tiff), as well as CZI thin-section scans. Results are output in CSV format, directly compatible with leading geospatial software.

VISUALIZATION, UNLIMITED



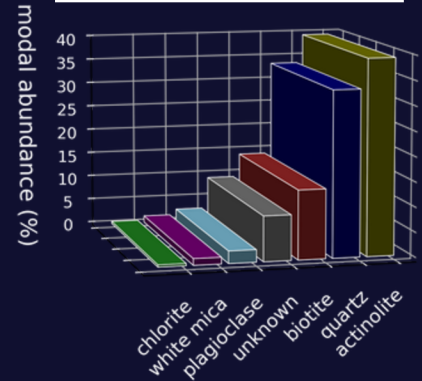
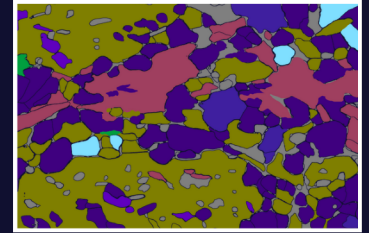
PRE-PROCESSING

plane polarized + cross polarized partial input layers are segmented and normalized



DETAIL ACQUISITION

generated texture + edge map intermediate layers are included as model inputs



MULTIMODAL ANALYSIS

MOSAIC's machine learning models are trained on a wide range of image types at multiple scales, ranging from traditional photomicrographs to large format polished thin section scans. The model is trained to recognize optical characteristics of minerals across four different image channels.

USER-FRIENDLY OUTPUT

Tabulated data is exported in .csv format to achieve "plug-and-play" functionality with leading geospatial modelling software (LeapFrog, Vulcan etc.)

PERFORMANCE & HARDWARE

Full-scale analysis and classification of multi-channel thin section scans (up to 10 GB in size) takes under **4 minutes** on modern CPUs, or **30 seconds** using GPU-acceleration and Apple Metal CPUs.

MOSAIC is installed **locally**, allowing complete access to our tools with or without usage of our cloud services.

