

Special Issue

Automated and Quantitative Analysis of Minerals

Message from the Guest Editors

Information about chemical assays is often insufficient for mineralogical studies for ore processing. Minerals define not only the value of the deposit but also the extraction and concentration methods. Quantitative analysis of minerals (modal mineralogy) has proved to be useful for the sound assessment of deposits and for finding bottlenecks in mineral processing operations. Quantitative mineralogical methods range from the simple balancing of chemical assays and conversion into modal mineralogy, quantitative powder X-ray diffraction, 2D section analysis and even 3D analysis of volume. To obtain modal mineralogy as well as information on particles and texture, automated mineralogical methods have been extensively employed in exploration, process analysis, mineral processing, critical element analysis, quality control, environment, and metallurgy. These techniques allow the analysis of specimens in a systematic way that is normally tedious and even impossible manually. Currently, the application of automated mineralogy extends beyond SEM-based systems, and it is even used for 2D and 3D X-ray imaging, visible, and other light sources.

Guest Editors

Dr. Mehdi Parian
Dr. Andrew Menzies
Prof. Dr. Alan R. Butcher

Deadline for manuscript submissions

closed (28 March 2023)



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Minerals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
minerals@mdpi.com

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About the Journal

Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

Editor-in-Chief

Prof. Dr. Leonid Dubrovinsky

Bayerisches Geoinstitut, University Bayreuth, D-95440 Bayreuth,
Germany

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.2 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).