Special Issue

Geology, Exploration and Mining of Deep-Sea Mineral Resources

Message from the Guest Editors

Resources of cobalt, nickel, manganese, copper, gold, and several rare and rare earth elements in deep-sea minerals (DSM) are categorized as critical and strategic, ensuring the sustainable development particularly for high-tech industries of the global economy. Currently, exploration work is ongoing to assess the resources of three main types of deep-sea minerals—ferromanganese nodules, cobalt-rich ferromanganese crusts, and polymetallic sulfides. The data obtained during exploration work are of great scientific importance, and the issues of DSM distribution and composition, as well as modeling of ore formation processes, remain the subject of many scientific projects. At present, exploration work on certain areas of the seabed is nearing completion. The need to move on to production is driving the development of deep-sea mining technologies. The main goal of the Special Issue is to improve our understanding of ore-forming processes in the ocean as well as approaches for exploration and exploitation of DSM. This will provide a scientific and methodological basis for the future development of ocean mineral resources.

Guest Editors

Prof. Dr. Georgy Cherkashov

Prof. Dr. Xiaoming Sun

Prof. Dr. Luigi Jovane

Dr. Pedro Madureira

Dr. Francisco J. González

Deadline for manuscript submissions

31 March 2026

Minerals

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.4

mdpi.com/si/247397

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

mdpi.com/journal/minerals

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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).

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