Special Issue

Genesis of Mississippi Valley-Type Ore Deposits

Message from the Guest Editors

Mississippi Valley-type (MVT) ore deposits are important targets worldwide, especially in countries utilizing their mineral resources to create job opportunities and develop infrastructure. These deposit types produce large quantities of economically useful base metals such as lead and zinc, and have great potential for some of the so-called critical and/or strategic minerals needed for the energy transition. Given the increasing demand for these commodities and the export restrictions imposed by major producing countries, resources of this type necessitate in-depth investigation since they are part of our commitment to ensure societal development on a sustainable Earth. The technological and economic future of many countries is critically reliant on the continuation of prospecting, discovery, and exploitation of new resources.

The formation of MVT ore is a complex process involving the concomitant interplay between several factors within the subsurface, including basin evolution, tectonic compression, geochemical evolution of basinal brines, organic matter maturation, fluid pathways and transport, and geodynamic settings that control the distribution and deposition of the exploited ore. Supergene processes are also important in the redistribution and reconcentration of critical metals during fluid–rock interactions. However, there are still fundamental gaps in our understanding of the genesis of MVT deposits...The goal of this Special Issue is to gather relevant contributions (original research articles and review papers) that offer insights into the geological processes that lead to the formation of MVT ore deposits. We would like to cordially invite you to consider submitting your manuscript to this Special Issue.

Guest Editors

Dr. Adriana Potra

Department of Geosciences, University of Arkansas, Fayetteville, AR 72701, USA

Dr. Mohammed Bouabdellah

Department of Geosciences, Mohammed First University, Oujda 60000, Morocco

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

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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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