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Trace Elements in Bauxite Deposits: Critical Georesource and Significant Indicators of Paleoenvironmental Conditions

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Deadline for manuscript submissions:
30 December 2024

Message from the Guest Editors

Dear Colleagues,

In recent decades, the focus of bauxite studies has changed from their potential for aluminum to, more recently, their potential to include several trace elements. These trace elements, which are often enriched in bauxites, are considered a critical Georesource; they include Li , Ni, Co, V, Cr, Ga, Hf, Ta, Sc, Nb, Sr, Zr, and REEs. In recent years, new research has been focusing on the recovery of critical elements from bauxite waste, the so-called “red muds”.

Furthermore, the trace elements within bauxites are not only a Georesource but they can provide useful and interesting information about the genetic processes and paleoenvironmental conditions that led to the formation of these deposits. Among the trace elements, the distribution of Rare Earth Elements (REEs) and their fractionation indices (such as LREE/HREE, La/Yb, Gd/Yb) are used to help define the genetic model of these residual sedimentary rocks.

This Special Issue welcomes all original studies of the geochemical characteristics of bauxites, especially trace elements. In addition, new approaches to data analysis such as artificial intelligence and novel machine learning are welcomed.

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Special Issue

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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.

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