

Special Issue

Biogeochemistry Process of Acid Mine Drainage and Effects on Materials Alteration

Message from the Guest Editors

An important problem for mining companies that exploit polymetallic sulphides is the corrosion suffered by the machinery and tools necessary to cover the inherent needs in the phases of the exploitation project. Water storage is a constant in mining operations, both to meet the needs of mining towns and mineral treatment plants, and to collect water already affected by AMD. Likewise, for industrial use, it is common to dam waters affected by AMD processes that have pH values less than 4. In addition, there are a significant number of urban and rural areas that are settled in abandoned mining areas affected by the same problem. These mechanical and structural elements interact with acidic waters ($\text{pH} < 4$) and dissolved metals in mining leachate (high concentrations of sulphates, metals and extremophile microorganisms), affecting their durability. The dissolution of the constituent phases of the concrete, oxidation of the metallic materials and the precipitation and formation of secondary minerals will be the dominant reactions to determine the alteration and durability of these materials.

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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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