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Environmentally Sound In-Situ Recovery Mining of Uranium

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Deadline for manuscript submissions:
closed (7 January 2022)

Message from the Guest Editors

Dear Colleagues,

More than half of all uranium currently mined in the world is extracted through in situ recovery (ISR) methods, wherein a “lixiviant” solution, typically containing oxygen and either CO2/bicarbonate or sulfuric acid, is injected into an ore body to oxidize and dissolve the uranium. The resulting solution is then pumped to the surface, and the uranium is recovered in a chemical processing facility. Uranium ISR is economically competitive and offers environmental, safety, and health advantages over conventional mining. However, uranium ISR leaves behind an altered geochemical environment in the ore zone, in which the concentrations of contaminants, including uranium, are significantly elevated over pre-mining concentrations, and may pose long-term threats to down-gradient aquifer water quality. In this Special Issue, we invite papers on innovative uranium ISR mining techniques. We also invite papers on innovative post-ISR-mining restoration techniques. Papers that address an optimal combination of mining and restoration practices to achieve an environmentally-sound life cycle are also invited.

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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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