Special Issue

Application of Ionic Liquids in Hydrometallurgy

Message from the Guest Editors

Ionic liquids (ILs) are novel and outstanding solvents in many applications like extractive distillation, biomass dissolution, reaction media, and catalysis, due to their excellent properties, such as negligible vapor pressure, non-flammability, high solvating power, a wide electrochemical window, and tunable properties. However, hydrometallurgy could end up being one of the most explored processes because ILs could provide high performance, sustainability, and safety to a mining industry that has various and serious environmental impacts. This may become of even greater importance due to an increasing interest in using hydrometallurgy for the selective recovery of valuable metal ions from electronic wastes or refractory minerals. Examples include the use ILs in preferential leaching; the selective solvent extraction of metal ions from pregnant leach liquors; and studies on how the viscosity of these solvents affects the performance of electrowinning despite the large electrochemical window. Thus, these solvents could be used in the entire hydrometallurgical metal recovery process in order to promote a more sustainable mining industry.

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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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