Special Issue

Electroremediation Techniques Applied to the Treatment of Industry Waste

Message from the Guest Editors

Much of the world economy is supported by the mining industry, but mining activities can cause water and soil pollution. Tailings—residual materials from mineral extraction—can contaminate underground aquifers, while chemicals used in mining operations can leach soil and natural waters. All environmental impacts caused by mining activities pose a risk to biodiversity, the environment, and the health of living beings. Electrochemical processes involve redox reactions that take place spontaneously or under an external power source. Electrochemical techniques can be used to remove, break down, or immobilize pollutants of organic or inorganic nature from an aqueous and solid matrix, and the area involving these applications is often called electrochemical remediation. Electrocoagulation, advanced oxidation, electrodialysis, and electro-Fenton, among other techniques, have been applied for wastewater remediation; however, their energy consumption is higher than conventional technologies, so they are not yet considered economically viable, similarly to electrochemical techniques applied to soil and tailings remediation.

Guest Editors

Dr. Pamela Lazo

Instituto de Química y Bioquímica, Facultad de Ciencias, Universidad de Valparaíso, Avenida Gran Bretaña 1111, Playa Ancha, Valparaíso 2360102, Chile

Prof. Dr. María Gabriela Lobos

Instituto de Química y Bioquímica, Facultad de Ciencias, Universidad de Valparaíso, Avenida Gran Bretaña 1111, Playa Ancha, Valparaíso 2360102, Chile

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

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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.

Editor-in-Chief

Prof. Dr. Leonid Dubrovinsky
Bayerisches Geoinstitut, University Bayreuth, D-95440 Bayreuth, Germany

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