Special Issue

Systems and Materials for Recycling Spent Lithium-Ion Batteries

Message from the Guest Editors

Exponential increases in the demand for lithium-ion batteries (LIBs), which follow the growth of the number of electronic devices and electric vehicles produced, pose serious environmental issues related to the consumption of critical raw materials (such as Li, Co, Ni, and Mn) and the disposal of spent LIBs. In this context, research on alternatives to well-assessed (and environmentally detrimental) pyro- and hydrometallurgy has multiplied in recent years. This Special Issue aims to collect the latest findings about new systems or materials that can valorize spent LIBs through their reuse or through the recovery of the precious elements contained in industrial black mass (BM); these elements are mainly made of Li metal oxides and graphite. The main topics include the following: - The reuse of partially spent LIBs. - The extraction of critical raw materials from spent LIBs. - The characterization of black masses (BMs). - Pyrometallurgy for the valorization of spent LIBs. - Hydro/solvometallurgy for the valorization of spent LIBs.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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