

Innovation in manufacturing for new process of sustainable resource recycle

Complete recycle system of lithium ion battery

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Objective:

To gain the minor metals like Lithium, Cobalt, Nickel, Manganese from waste ternary Lithium ion batteries (LIBs), development of a complete recycle system of the waste LIBs with a green solvent process which consists of high-efficient leaching and metal isolation technique is proposed.

Summary :

Ternary LIB is compact, light-weight, high-energy capacity and so its demand at wide application such as electric device and electric vehicle will drastically increase. To catch up the demand, the consisted metals of the ternary LIB, which are mined at the limited countries, must be secured and the waste ternary LIBs should be the secondary resources. The conventional processes for the recycle of ternary LIB are required a large amount of strong acid, deleterious substance, organic solvents with several steps and suffered from low efficiency. To overcome these drawbacks of the conventional processes, a high-efficiency recycle process, which contributes for SDGs, will be developed with green solvents and biomass-derived molecules.

