RECENT TREND OF RECYCLING TECHNOLOGY OF END-OF-LIFE FIRST/SECONDARY BATTERY

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Abstract - In this study recent researches were investigated for recycling end-of-life batteries and how to extract valuable materials such as lithium, nickel, cobalt, zinc and manganese etc. from first and secondary batteries. There are two main processes including pyro and hydrometallurgical processes. Thermal treatment is recently attempted to remove toxic materials in advance safely and separate electrodic powder from components of spent batteries. The electrodic powder containing lithium, cobalt, nickel and manganese is going through leaching, solvent extinction and refining processes to be high purity powders. Each powder extracted was examined by EDS(energy-dispersive spectroscopy), XRD(X-ray diffraction) and ICP(Ion-coupled plasma analysis to confirm their phase, size and purity, respectively.

Index Terms - Lithium, Cobalt, Zinc, Thermal treatment