

عنوان مقاله:

Investigating the methods of extracting valuable elements from used lithium-ion batteries

محل انتشار:

هفدهمین سمینار سالانه الکتروشیمی ایران و دوازدهمین کنفرانس پیل سوختی ایران (سال: 1401)

تعداد صفحات اصل مقاله: 2

نویسندگان:

Saeed Seraj, - *Separation Processes, Chemical Engineering Faculty, Iran University of Science and Technology*

Mohammad Borna Bahramsari, - *Separation Processes, Chemical Engineering Faculty, Iran University of Science and Technology*

Toraj Mohammadi - *Separation Processes, Chemical Engineering Faculty, Iran University of Science and Technology*

خلاصه مقاله:

The use of lithium-ion batteries in consumer electronics and electric vehicles is growing rapidly, and naturally, the increase in demand for lithium-ion batteries will be accompanied by an increase in the supply of mineral reserves of valuable metals, including cobalt and lithium. On the other hand, the supply scenario of lithium metal from mineral reserves will not be able to meet the market demand in the next few years. Therefore, battery recycling as a secondary production source not only reduces energy consumption but is also a necessity to eliminate the pollution of toxic and organic compounds in these batteries. In this research, an attempt has been made to investigate the methods of recycling and recovery of valuable metals of cathode active materials such as cobalt, lithium, aluminum, and manganese in used lithium-ion batteries. These methods are divided into pre-purification and purification methods, where physical methods are mostly used as pre-purification and chemical methods are usually used as purification and post-purification. Most of these methods are presented in a combined form for higher and better recovery of valuable metals, and the technologies and their combinations are mentioned in this research.

کلمات کلیدی:

lithium battery, lithium, recycling, battery, membrane

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1642655>

