

This research presented a sustainable recycling method for the separation and renovation of spent lithium-ion batteries (LIBs) based on the ultrasonic effects. Lithium cobalt oxide (LiCoO_2) and ...

Renovation of LiCoO_2 with outstanding cycling stability by thermal treatment with Li_2CO_3 from spent Li-ion batteries Author links open overlay panel Shi Chen a b c 1, Tao He a 1, Yun Lu a, Yuefeng Su a b c, Jun Tian a, Ning Li a, ...

Recycling spent lithium-ion batteries (LIBs) have attracted increasing attention for their great significance in environmental protection and cyclic resources utilization. ...

With the growing applications of lithium-ion batteries (LIBs) in many areas, their recycling becomes a necessary task. Although great effort has been made in LIB recycling, there remains an urgent need for green and energy-efficient approaches. Here we report a non-destructive approach to regenerate cathode materials by hydrothermal treatment of cycled ...

1 ??· The province of Ontario has added solar panels and battery storage to its Home Renovation Savings rebate program. These rebates are available without a home energy assessment but they are more restrictive than we'd hoped in that off-grid properties are not eligible. You must be connected to the Ontario electrical grid to qualify. The rebate amounts ...

Used LiCoO_2 cathode material in spent lithium ion batteries was renovate in 0.1 M LiOH solution using aqueous pulsed discharge plasma for 30 min, in which aqueous pulsed discharge plasma was used for the first time as an alternative process to renovate its electrochemical characteristics. After treatment, the microstructure of spent and renovated ...

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Used LiCoO_2 material was renovated by means of ultrasound radiation under hydrothermal conditions. The optimal reaction condition for renovation process was obtained: temperature $120 \pm 1^\circ\text{C}$, ultrasonic power 999 W, and ultrasonic method "work 5 s-stop 2 s" and ultrasonic radiation time 10 h. The XRD, SEM, ICP-AES analysis, and charge-discharge test showed that the ...

Considering the Li^+ concentration and renovation effect, the pH of the lithium leaching solution was adjusted to the optimal range from 10.10 to 10.64. During this sustainable process, the ultrasonic renovation of spent LiCoO_2 was achieved and the Li^+ from lithium leaching solution was reused. Additionally, the renovated solution was reused ...

Battery manufacturing can impact recycling processes through battery chemistry and design choices, labelling, ease of processing and disassembly, and ...

Download Citation | Ultrasound-assisted Hydrothermal Renovation of LiCoO₂ from the Cathode of Spent Lithium-ion Batteries | AbstractLiCoO₂ powders are separated from aluminum sheet of spent LiCoO₂ ...

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