



Three steps to solve the problem of lithium battery recycling and reprocessing, all rely on lithium

With the development of electric vehicles that popularize lithium-ion batteries as energy storage devices, the demand for lithium-ion batteries in the whole industry is getting bigger and bigger, which inevitably leads to a large number of lithium-ion batteries being scrapped. How to recycle end-of-life lithium batteries has become a big problem, if not handled properly, will certainly have a negative impact on the environment and resources. Currently commercially available lithium-ion batteries mainly contain lithium peroxide, cobalt or phosphate, aluminum, copper, graphite, organic electrolytes containing harmful lithium salts, and other chemicals. Therefore, the recycling of used lithium-ion batteries has received increasing attention from many researchers. However, the recycling of used lithium-ion batteries is difficult due to the great difference and diversity of lithium-ion batteries in terms of high energy density, high safety and low price.

In this research paper, a brief overview of the newer advances in recycling and treatment technologies for used lithium-ion batteries, including the development of enterprise recycling processes and products, Lithium battery recycling is presented. In addition, it describes the challenging issues and the future economic and application development prospects in China. Waste lithium battery recycling equipment process introduction.

1. The process of waste lithium battery recycling equipment is generally very simple, the core is two parts, crushing and sorting. Firstly, the discharged batteries are sent to the battery crusher through the belt conveyor for primary crushing, and 70% of the black powder in the material is separated by linear vibrating screen. Realize the first recovery

2. The remaining material passes through the magnetic separator, battery production line which can well separate the steel shell material in the steel warehouse. Then the rest of the material is transported to the second crusher to be crushed again, then 25% of the black powder in the material is classified by the disc vibrating screen, the rest of the tail material is crushed by the high speed vortex crusher, the copper foil and the aluminum foil in the material is separated by a specific gravity separator.

3. The whole process is equipped with a dust collector, which operates under negative pressure to collect the crushed black powder well. The dust generated in the process is purified by pulse dust collector and spray tower, so that the exhaust gas can be discharged according to the standard.

As a whole enterprise, China's lithium battery recycling is still in a start-up stage, the current level of research and economic and industrial continuous development capacity level can not

really do information security, labeling machine low-cost, low energy consumption, low pollution and very good recycling. Therefore, further research and investment is inevitable. In order to be able to better develop the recycling of lithium batteries and effectively utilize the network technology, we offer suggestions to start from the following aspects of the problem:

- (1) Lithium batteries are categorized by electrode type;.
- (2) Good battery design to meet the conditions of easy regeneration;
- (3) National cooperation and relevant legislation for the recycling of used lithium batteries.

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