BUHLE POWER

Cutting of cylindrical lithium batteries

Overview

Can laser cutting improve the quality of lithium-ion battery manufacturing processes?

Conclusions Laser cutting allows an improved quality of cut surface and cutting speed during lithium-ion battery manufacturing processes. The advantages of laser cutting can be maximized by understanding the underlying physics during the laser cutting of electrodes for lithium-ion batteries.

Can a laser cut a lithium ion battery?

High speed laser cuttings of electrodes for the lithium-ion battery using single mode fiber lasers have also been investigated by Patwa et al. They illustrated the achievable highest cutting speed, the effect of the focus beam and the number of cutting passes.

Can laser cutting foil rolls be used in lithium-ion battery production?

Modern laser technology using beam deflection units is again proving to be the best solution for efficient production, especially for cutting foil rolls in battery production. There are currently three cell formats used in the production of lithium-ion batteries: pouch, cylindrical and prismatic cells.

Can remote laser cutting be used for lithium-ion batteries?

Investigating underlying physical phenomena with numerical analysis provides significant advantages to fully utilize the remote laser cutting of electrodes for lithium-ion batteries. In this paper, a mathematical model of three-dimensional self-consistent remote laser cutting is presented for anode (graphite-coated copper) of lithium-ion batteries.

Cutting of cylindrical lithium batteries

Battery production

Modern laser technology using beam deflection units is again proving to be the best solution for efficient production, especially for cutting foil rolls in battery production. THE LITHIUM-ION ...

High speed remote laser cutting of electrodes for lithium-ion batteries

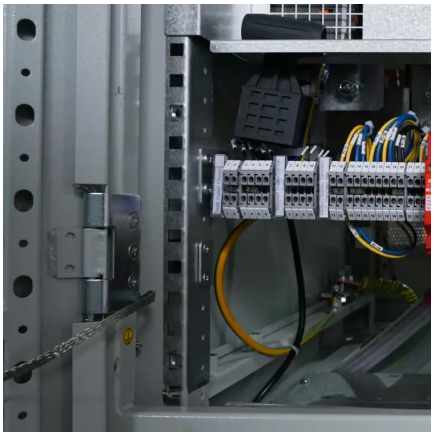
Oct 15, 2013 · Investigating underlying physical phenomena with numerical analysis provides significant advantages to fully utilize the remote laser cutting of electrodes for lithium-ion ...

Lithium-ion Battery Manufacturing Process Insights

Dec 13, 2024 · Understand the lithium-ion battery manufacturing process and discover the differences between rotary slitting and laser cutting methods.

Cutting of cylindrical lithium batteries

Nov 30, 2025 · Feb 19, 2016 · To cut prismatic and cylindrical electrodes for lithium-ion batteries, die cutting and rotary knife slitting have been used. Both techniques have disadvantages such ...



[Lithium-ion Battery Manufacturing Process ...]

Dec 13, 2024 · Understand the lithium-ion battery manufacturing process and discover the differences between rotary slitting and laser cutting methods.

[Cylindrical Lithium Battery Production Process]

15 hours ago · Slitting: Cut the wide electrode sheets into the required width according to battery specifications. Electrode Baking: Vacuum bake to completely remove moisture from the ...

[Design, Properties, and Manufacturing of ...]

Jun 3, 2023 · Battery cells are the main components of a battery system for electric vehicle batteries. Depending on the manufacturer, three different ...

[Laser Remote Cutting of Anode Battery Foil: A Comparison ...]

Overall, the remote laser cutting of coated foils plays a fundamental role in battery manufacturing, paving the way for enhanced precision, reduced manufacturing costs, and improved overall ...

[Lyric Robot's EV battery winding machine optimizes and ...]

In the laser die-cutting part, Lyric Robot uses the high-speed laser slit cutting technology to realize the electrodeless (full-pole) process of the 4680 large cylindrical battery, which solves the ...

[Laser notching machines for battery electrodes: essential ...]

Basic structure of a cylindrical battery ? 5 amazing benefits of laser notching systems Laser notching systems have a number of remarkable advantages over traditional mold cutting ...

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