Lithium battery welding patented technology

Which welding techniques can be used for connecting battery cells?
Brass (CuZn37) test samples are used for the quantitative comparison of the welding techniques,as this metal can be processed by all three welding techniques. At the end of the presented work,the suitability of resistance spot,ultrasonic and laser beam weldingfor connecting battery cells is evaluated.

How is a 26650 lithium-ion battery welded?
As external conductor a CuZn37 sheet of 0.2 mm thickness was welded at the negative pole of the cell. The negative tab of the battery cells is made of nickel-plated steel. Welding results for the 26650 lithium-ion cells and the chosen geometries of the weld areas are shown in Fig. 16.

Can a battery cell casing be welded?
The findings are applicable to all kinds of battery cell casings. Additionally, the three welding techniques are compared quantitatively in terms of ultimate tensile strength, heat input into a battery cell caused by the welding process, and electrical contact resistance.

What is laser beam welding?
For battery assemblies, joining of two different metals can be required, e.g., an aluminum cell terminal with a copper external conductor . When laser beam welding is used, the two molten materials are mixed and a metallurgical system is generated, which influences the mechanical properties.

Can ultrasonic weld damage a battery cell?
The counterpart has to be fixed but may have any thickness. It was reported that ultrasonic weld vibrations can damage the inside of a pouch cell,especially when the conductors inside the battery cell are also ultrasonically welded. In order to prevent the propagation of the vibrations into the cell,the terminal tabs need to be clamped .

Can keyhole welding be used on battery tabs & connector bars?
Furthermore,battery tabs or connector bars with a thickness of several millimeters can be joined by keyhole welding,. Especially for metal surfaces,the reflection of the laser beam is problematic,because it can damage objects in close vicinity.

The lithium-ion power battery laser welding method is simple in device operation procedure, rapid and high in practicality, the laser welding process...

The invention belongs to lithium battery manufacturing technology fields, more particularly to a kind of lithium battery back welding device, lithium battery back welding device of the invention pass through setting transmission assembly, transhipment component and collection assembly, it is collected in this way, just the

lithium battery on transmission assembly can be transported at ...

The invention provides a method for detecting the welding firmness of a lithium ion battery tab. The method comprises the following steps of step1, sampling partial battery tab welding products in the mass production to be tested, obtaining a firm welding point resistance value and a desoldering welding point resistance value, carrying out the F-test and t-test for the firm ...

The invention discloses lithium battery welding equipment. The lithium battery welding equipment comprises a battery clamping device, a conveying device, a laser welding device, wherein a support is formed by a dovetail groove arranged along the conveying direction of the conveying device, one end, far away from a support plate, of the dovetail groove is provided with a ...

Lithium iron phosphate (LFP) batteries have emerged as one of the most promising energy storage solutions due to their high safety, long cycle life, and environmental friendliness. In recent years, significant progress has been made in enhancing the performance and expanding the applications of LFP batteries through innovative materials design, electrode ...

The objectives of the "Advanced Battery Technology Center" (ABTC) are the development of new materials and innovative technologies for high-performance and sustainable battery ...

With the development of computer vision technology, image recognition technology has been applied to the detection of welding quality of lithium batteries, for example, patent document...

??? Xinde (Shenzhen) Laser Equipment Co., LTD is a well-known domestic lithium battery welding equipment manufacturers ??? Main: new energy lithium battery welding machine series, including: ??? Longmen laser welding ...

The invention discloses lithium battery welding equipment which comprises a lithium battery clamping device, a conveying device and a laser welding device. The lithium battery clamping device comprises a supporting plate, fixing holes are formed in the upper plate face of the supporting plate, pressing plates are arranged above the fixing holes, through holes are ...

The main products include: lithium battery module automatic production line,power battery module PACK production line,square aluminum cover production line,fiber laser welding machine series,YAG laser welding machine series,etc. 40% of the company''s personnel are laser optics R& D personnel and automation R& D team,focusing on the field of laser welding,and have ...

These welding processes were recorded by the thermographic camera A325sc by Flir. The battery cells, the conductors and the background were prepared with black chalk spray in order to reach an emission coefficient ? = 0.95. The hot spot of the welding process lies beneath the external conductor and, therefore, is not visible

for the ...

Fengli brings together top senior technical experts and industry elites who have been plowing the domestic lithium battery industry for decades, and owns the industry"s 1st Non-Welding Technology ...

Specialized in the welding of copper or aluminum foils, which are a base material as anode and cathode in lithium battery designs. CLC Advantages for Battery Welding TECH-SONIC"s ...

18650 Lithium Battery Patented Product Battery Pack Gantry Spot Welding Machine, Find Details and Price about Battery Welding Machine 18650 Battery Spot Welding Machine from 18650 Lithium Battery Patented Product Battery ...

With the development of computer vision technology, image recognition technology has been applied to the detection of welding quality of lithium batteries, for example, patent document CN113723499A provides a method and a system for detecting abnormal welding of a tab of a lithium battery, which construct a welding detection library, acquire a welding image of the tab, ...

At present, in the lithium battery automatic Pack packaging process of mobile phones and other digital products, the machine vision method is generally used to detect the ...

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