

A relay contact welding detection method for use in a circuit including a DC power supply, a load circuit, first and second main relays inserted in a pair of respective power supply lines between the DC power supply and the load circuit, and a pre-charge relay disposed in parallel with the contacts of the first main relay, comprising a step of performing a sequence ...

In order to solve the problem of accurate and efficient detection of welding defects in the process of batch welding of metal parts, an improved Probabilistic Neural Network (PNN) algorithm was proposed to build an automatic identification model of welding defects. Combined with the characteristics of the PNN model, the structure and algorithm flow of the ...

Focus on our welding defect detection task for lithium battery's pole, an improved detection algorithm based on the Yolov5 model is proposed in this paper. Specifically, the SE ...

Weld defect detection is a crucial aspect for improving the productivity and quality of the welding process. Several non-destructive methods exist for the identification of defects post weld deposition. However, they only help assess the quality of the component and offer no inputs while the welding process is being performed. Real-time or in situ weld defect ...

Welding testing is particularly important in industrial systems, but there are still some deficiencies in terms of testing performance, anti-noise capability and defect identification in current mainstream welding non-destructive testing technologies. With the development of structured-light non-destructive testing technology, deep learning technology, signal ...

Quickly replenishes power, and works continuously without interruption, greatly improving the stability of continuous spot welding.(3) All-metal aluminum shell body, fast heat dissipation, super farad energy storage capacitor, large energy, long life, ...

a relay welding detection apparatus is an apparatus that detects welding of a relay provided to a charging path extending from an external power supply to a storage battery, the apparatus including: a detection section that detects welding of the relay based on a current flowing through a region of the charging path that extends from the relay toward the external power supply, ...

An Edge Detection Method for Welding Pool Based on An Improved Canny Algorithm. Lin Zou 1, Yunlong Zheng 1 and Jie Lu 1. Published under licence by IOP Publishing Ltd Journal of Physics: Conference Series, Volume 2785, 2024 7th International Conference on Mechanical, Electrical and Material Application 23/02/2024 - 25/02/2024 Changsha, China ...

In this section, the proposed M-YOLOv2-RTCD for welding spots detection is illustrated in detail, which is composed of two aspects including M-YOLOv2 (Section 3.1) and RTCD algorithm (Section 3.2).. 3.1 The proposed light-weight M-YOLOv2 model 3.1.1 The introduction of original YOLOv2. For the purpose of effective discussion, the principle of ...

Upon successful implementation of an energy conversion device based on this new gammavoltaic principle, this inherent power source could then be utilized within SNF storage casks to drive a tamper ...

In order to fully analyze the detection effect of the detection model on the welding seam, this paper takes the average accuracy of the detection results as the evaluation object, and counts the detection accuracy AP 50 and AP 75 with the intersection and union ratio of the detection prediction frame and the actual frame of 0.5 and 0.75 ...

A novel measuring and calculation method was designed and applied to assess the electrical contact resistance itself. ... making the joining process crucial. Laser welding is considered a desirable choice for EV battery manufacturing due to its non-contact nature, high energy density, precise control over the heat input, and ease of automation ...

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Journal of Advanced Joining Processes 2020;1:100017. [6] Brand M J, Schmidt P A, Zaeh M F, Jossen A. Welding techniques for battery cells and resulting electrical contact resistances. Journal of Energy Storage 2015;1:7-14. [7] Solchenbach T, Plapper P, Cai W. Electrical performance of laser braze- welded aluminumâEUR" copper interconnects.

To address the limitations of the above methods, this study aims to develop and validate a practical inspection method for battery cap welds. A laser ultrasonic inspection technique is proposed to detect invisible weld defects at the weld joint of a cylinder lithium-ion ...

Finally, the energy coupling detection method is used to detect the discharge state of the pulse power supply with a pulse frequency of 30 ~ 300 MHz and output power within 100 W, which fills the gap in the detection of the discharge state of the high frequency and high-power pulse supply. The machining experiment results show that the VHF ...

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