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**Lithium battery quality control with SMASH inspection system tolerates material movement, staying precise and reliable**

## **Dezhou Donghong Ltd. achieves 100% battery film inspection: exact results despite shaking substrate**

Herten (DE) / Biguaçu (BR) – As China has become one of the largest markets for electrically powered cars, Dezhou Donghong Film Making Technology Co. Ltd. decided to integrate lithium battery films into their vast product portfolio. The material is essential for the correct performance of batteries, and therefore quality standards are high without exception. Since the attentiveness of shift working employees declines when visually evaluating film material for longer hours, Dezhou Donghong decided to install ISRA's SMASH system to secure best results and high speed with this fully reliable 100% inspection system. With its anti-shaking setup, the system offers consistent performance where other inspection products fail.

In addition to already demanding quality requirements in the battery film production, Dezhou Donghong had to cope with another challenge: The film product suffered from pinholes in the micrometer range that couldn't be detected and from white spots that are almost impossible to classify. Furthermore, the material kept shaking along the process line, which made identifying defects very difficult. Through an anti-shaking setup, the ISRA solution proved most suitable during a product testing and finally became the system of choice. "First, we marked certain types of defects on a piece of film and then tested ISRA's system to judge the classification abilities. Usually, the most difficult part is to distinguish holes from thin parts because they can both appear bright under LED lighting. The ISRA SMASH system has the best ability to detect and identify pinholes due to its anti-shake setup. After installing the ISRA system, our engineers simply observe the computers without any other optical quality monitoring. Our line speed has also significantly

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increased to more than 60 meters per minute” says Chi Kaifeng, Vice General Manager at Dezhou’s subsidiary in Shandong. The company uses the systems in their three main lines and several coating and slitting lines for battery film.

### **Inspection data offers sustainable process improvements**

Internal reports confirm the first positive impression: The faster production speeds result in measurably higher product quantity and yield. The significantly reduced need for human intervention keeps the production going and supports an efficient and cost-effective process. Additionally, the inspection results serve as a data basis for process quality and open up the opportunity for continuous production improvements. “About eight weeks after the system has been in operation, the insights from the data have led us to change our production procedure. We had clear evidence, where we had to refine our process”, says Kaifeng. The engineers used different versions of reports provided by the system such as distribution diagrams, data diagrams, and trends to find out any problems and solve them by modifying the processes. Additionally, the staff can be 100% sure of every finished roll’s quality, grade and store them according to the quality clusters ranging from level A to level D.

### **Automated inspection becomes a trend – ISRA remains the top choice**

As of recently, moving from manual to automated inspection has become a trend in the Chinese battery film production, and it is about to continue. According to Mr. Chi, a lot of Dezhou Donghong’s competitors are upgrading their inspection capabilities, and the company considers further investments as well. With those very satisfying results, Dezhou naturally considers continuing the partnership with ISRA when more production lines are to be upgraded: “Yes, we think the next one is probably also going to be SMASH”, Mr. Kaifeng reveals when asked about his plans for the quality assurance sector.

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ISRA VISION looks back to 30 years of experience in the market for machine vision. The ISRA SMASH system combines many insights and experiences, gathered over the past, to a versatile and reliable inspection solution. Fast ramp-up times and well-structured training modules for operators ensure a quick and safe operation. Additionally, many features like the anti-shaking setup and “Beyond Inspection” features – which allow for maximizing line yield even after the production process through intelligent roll cutting or repairing – maximize the system’s benefit in everyday production.

#### Images



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**With fully reliable 100% inspection ISRA’s Inspection system secures best results.**

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The line speed can be significantly increased due to the best ability to detect and identify pinholes based on anti-shake setting ups.

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