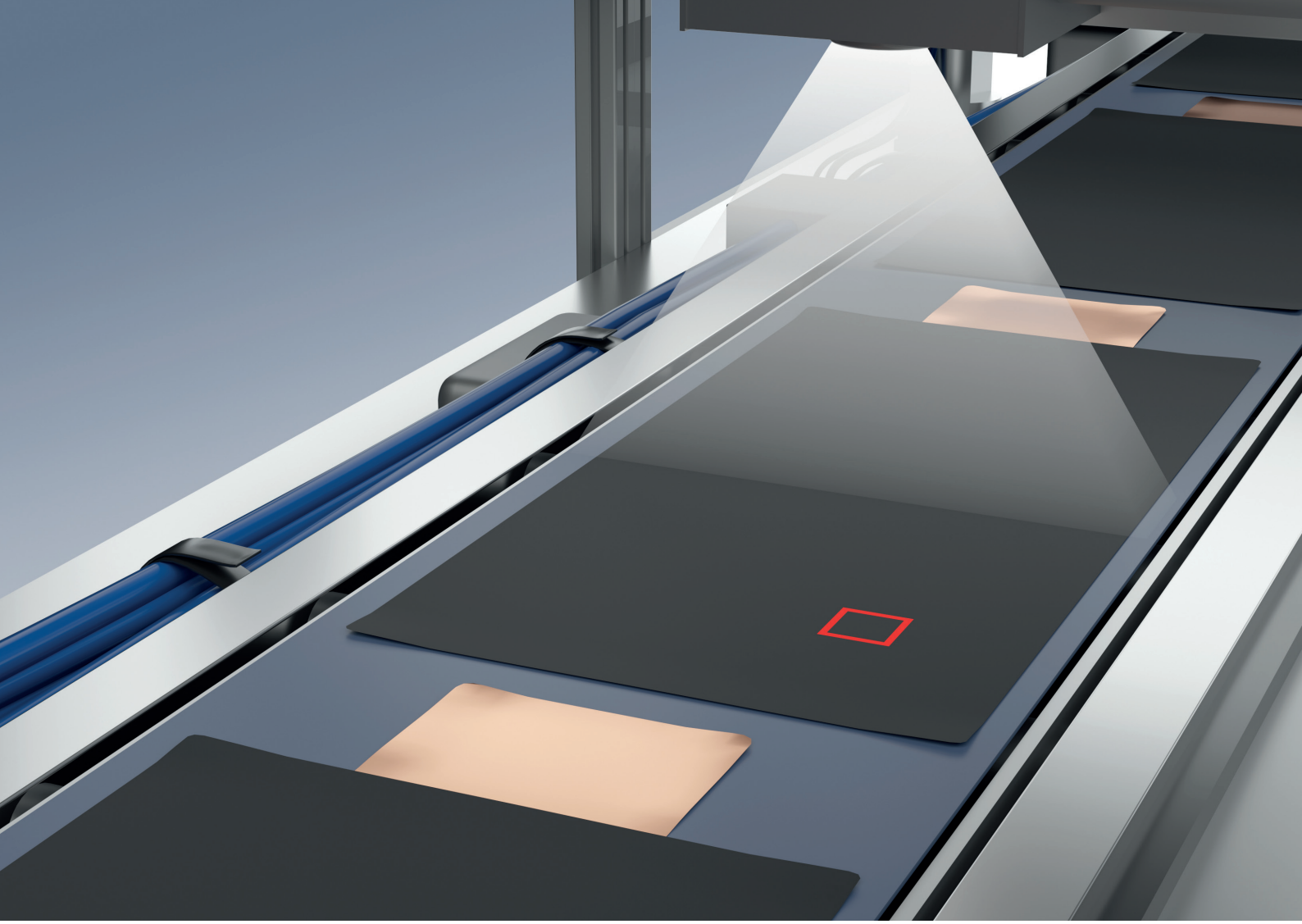


VINSPEC Monitors Cell Production

Particles Detected through Optical Surface Inspection

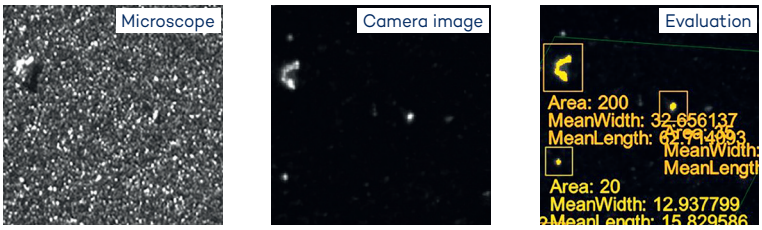
When producing electrodes, the strictest requirements exist with regard to the cleanliness of the individual electrode sheets. Even microscopic particles can create pressure points and, especially considering how thin the foils are, cause long-term damage to the battery cell – from a reduction in performance to complete failure and short circuiting.

With VINSPEC, VITRONIC offers automated surface inspection solutions that can be integrated into almost any production line and used for any cell format.

VITRONIC

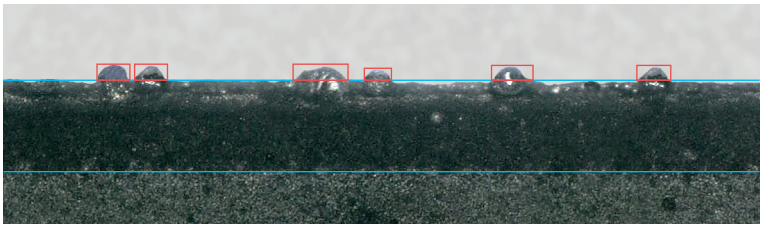
Play it Safe with VINSPEC

VINSPEC inspection solutions use a fast and high-resolution sensor system to detect foreign particles, protruding particles and defects on battery electrodes from 10 micrometer at production speed. In addition to the surface, it is also possible to optionally classify the particle height, topology and type. In this regard, the system combines conventional defect classification methods with AI-based procedures.



Particle detection on battery electrodes

In addition, defects on the cut edges and the coating as well as geometry deviations can be detected.



Camera inspection after laser cutting

Documentation Included

The production of a completely safe and reliable battery is only half the battle. It is equally important to document the quality inspections performed on every single battery cell. The database integrated into the system archives all inspection results with a time stamp as well as the component code where available. An audit trail documents all actions on the system that can result in a change to the inspection properties. Clusters of defects can be localized, visualized and thus interpreted by a software function (heat map).

In Short: Efficient Surface Inspection in Battery Production

- 100% inline inspection
- Detection of particles on battery electrodes from 10 micrometer
- Deviation of surface and cut edges from 15 micrometer
- Classic measurements can be combined with AI-based methods
- User-friendly software
- Continuous process improvement
- Time and cost savings

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