SURFACEVISION

Separator Inspection
DATASHEET

Surface Inspection of Coated Separators

DELIVERED THROUGH

SMART VIEW® Online detection, classification and visualization of surface defects

SMART ADVISOR® Synchronized real-time process monitoring and inspection

AMETEK Surface Vision's machine vision system has been created to detect and classify separator defects, ensuring battery producers can distinguish non-quality-related optical effects from genuine defects. SmartView's detection technology reduces the need for manual intervention and can adapt to the huge variety of separator membrane types.

Improve your quality, reliability, and speeds:
ameteksurfacevision.com or contact us at:
surfacevision.info@ametek.com

AMETEK®
SURFACE VISION

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BATTERY SEPARATOR

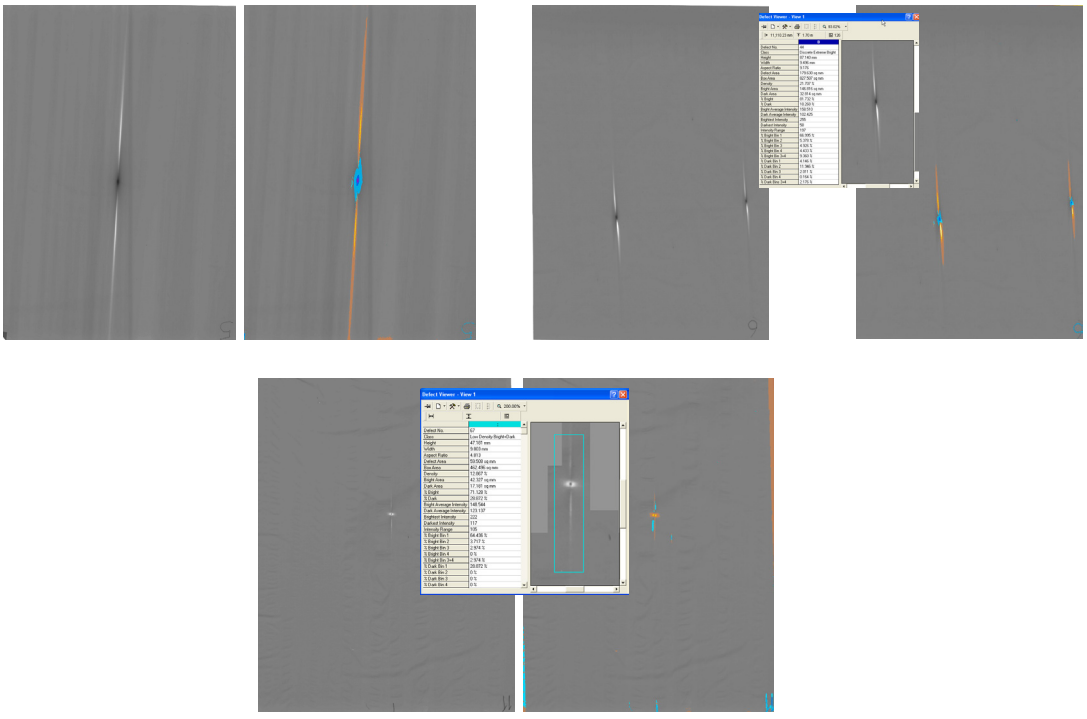
- P100% defect detection and classification
- Modular Camera Option optimized for wet and dry processes
- Transmission & Reflection Inspection with defect correlation
- Adaptive illumination concepts. Optimized for single and multi layer demand
- Typical Web Speed 30 – 250 m/min
- Typical web width 1000 – < 6000 mm
- Typical System Resolution = 50µm - 100µm
- Repeating defect detection
- Self Learning Classifier
- Low contrast detection algorithm
- Real time output for marker / labeler etc.
- Data communication to customer
- Long term trends
- Advanced Winder Advisor of post processing yield optimization

DEFECT TYPES

- Gel particle
- Thin spots
- Pinholes
- Coating skip
- Foreign material
- Oil stain
- Streak defects
- Inclusions
- Fisheye
- Bubbles
- Scratches
- Wrinkles
- and more

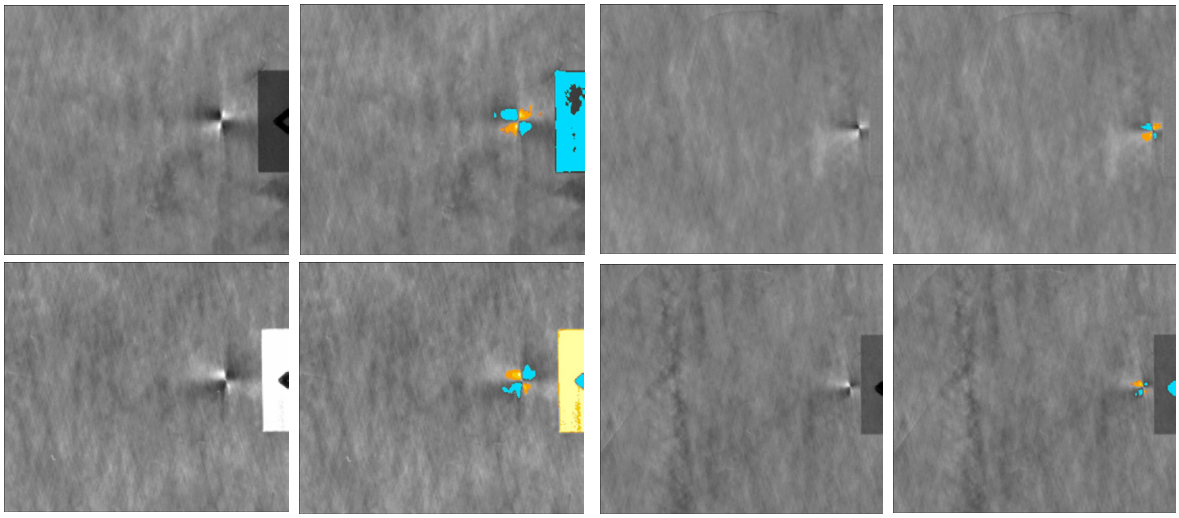
EXAMPLES OF DEFECT TYPES

Defect Gel



EXAMPLES OF DEFECT TYPES

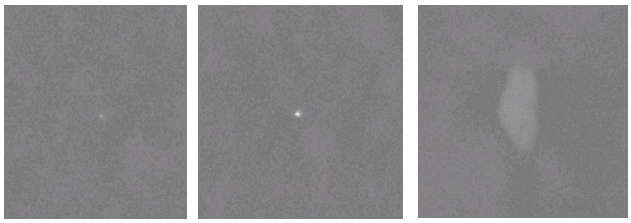
Multi Layer Gel



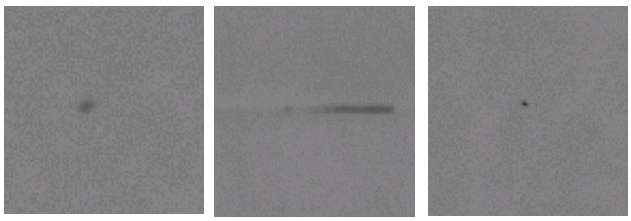
Wet-process Separator Film

Transmission

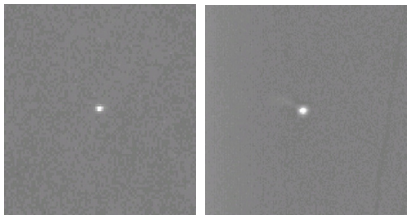
Bright Spot



Dark Spot

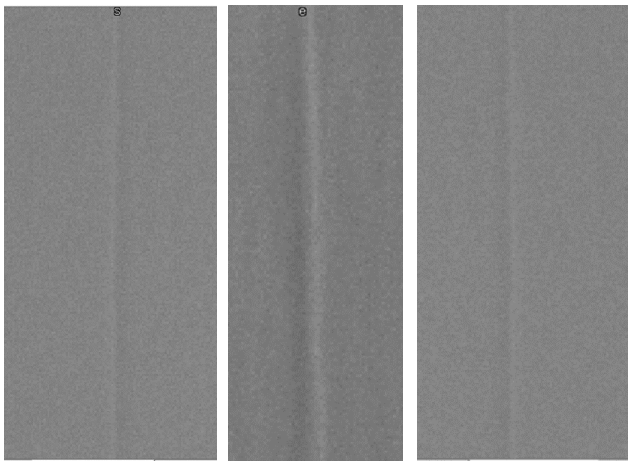


Hole

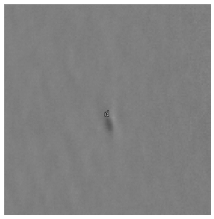


Reflection

Bright Line (Streak)

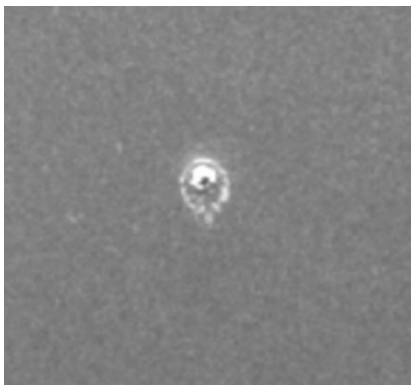


Pit

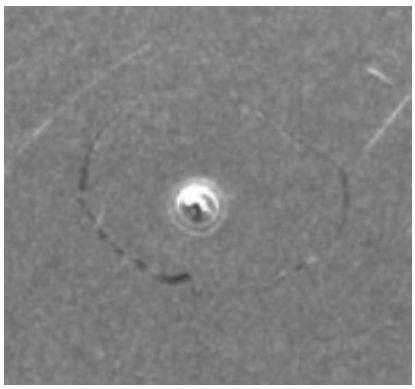


OPTICAL CONFIGURATIONS

Transmission



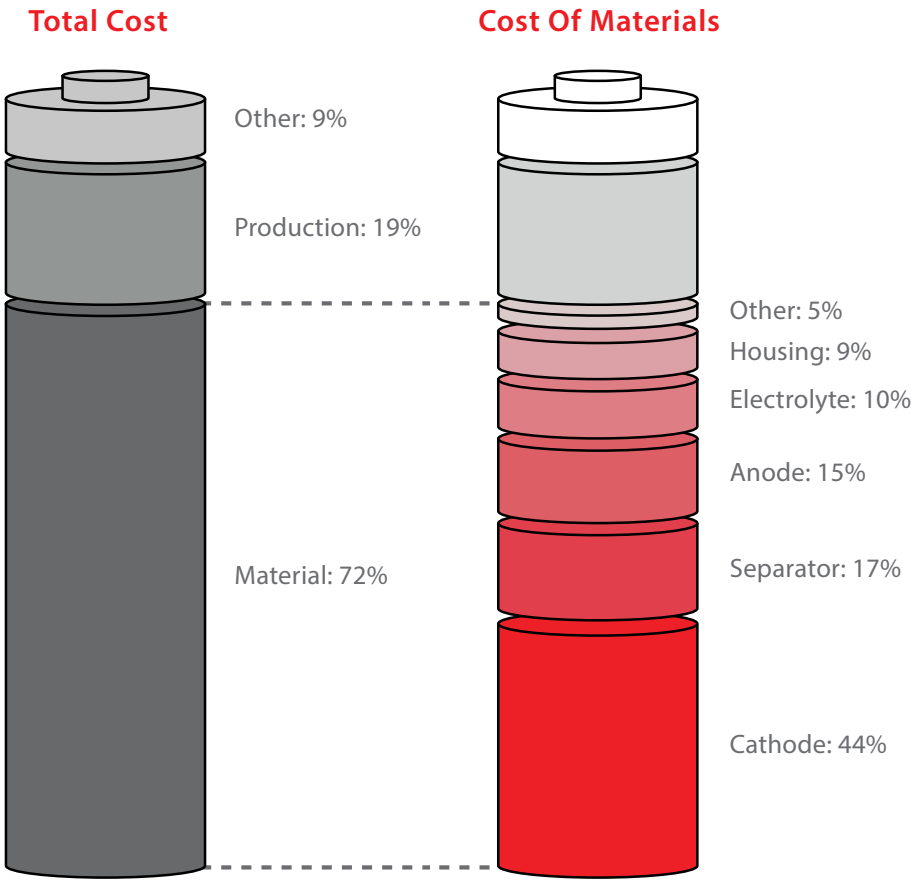
Transmission (foreign object)



Transmission (bubble)

Cost Overview of a Battery Cell

- With a material cost share of 17%, the separator has a significant impact on total costs.
- With up to 50% of the total cost, the battery is the most expensive component of an electric vehicle. Therefore, the success of electric mobility is essentially determined by the price of the battery.
- In the manufacturing of lithium-ion battery cells, material costs account for the majority of battery costs.
- One way of making the battery more powerful and energetic, and therefore more successful, is to use high-quality component materials.
- With 44% of material costs, the cathode material is the most expensive component of the battery cell.



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