

NON-DESTRUCTIVE INSPECTION OF CELL CONNECTORS IN EV BATTERIES

The quality of welded connections between battery cells is critical to the safety, electrical performance and service life of EV batteries. Laser thermography enables fast, non-contact and automatable inspection directly within the production process.

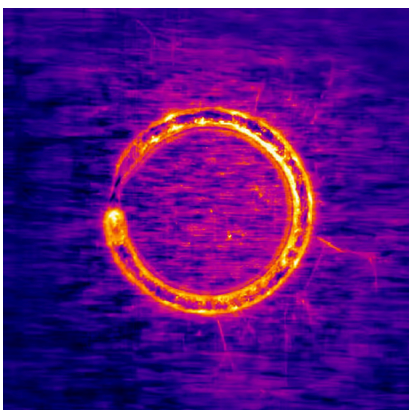
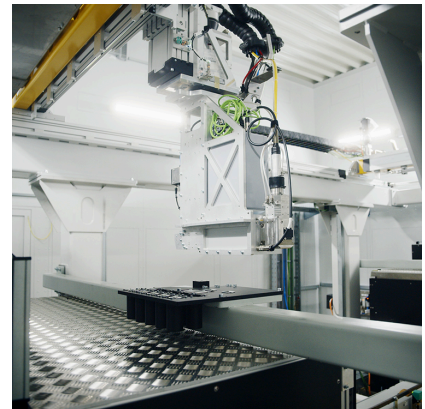


THE CHALLENGE

Welds on cell connectors must provide reliable mechanical strength while ensuring good electrical conductivity. However, monitoring process parameters such as laser power or welding speed alone does not provide a complete assessment of the actual joint quality. Visual inspection also cannot reliably detect hidden defects or evaluate the connection below the surface.

THE SOLUTION

LThead combines targeted laser excitation with high-speed infrared thermography. The laser heats the inspection area while an IR camera captures the resulting heat flow. Defective or incomplete joints alter the thermal response and become visible in the thermographic evaluation. Phase images reduce interfering surface effects and enable quantitative assessment of the welded connection. The results can be evaluated automatically as OK/NOK.



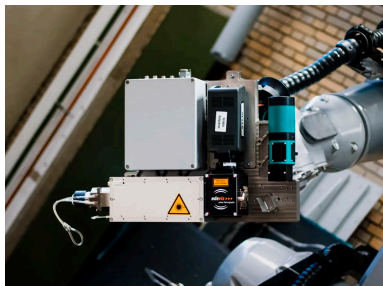
THE RESULT

With inspection times of less than one second, LThead is suitable for automated inline inspection in short production cycles. The system can be integrated into robotic and production systems and supports joints made of materials including aluminum, copper and stainless steel. This enables reproducible, non-destructive quality control of safety-critical welded connections.

THE PRODUCTS

LTHEAD

Laser thermography for inline inspection of welded joints



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