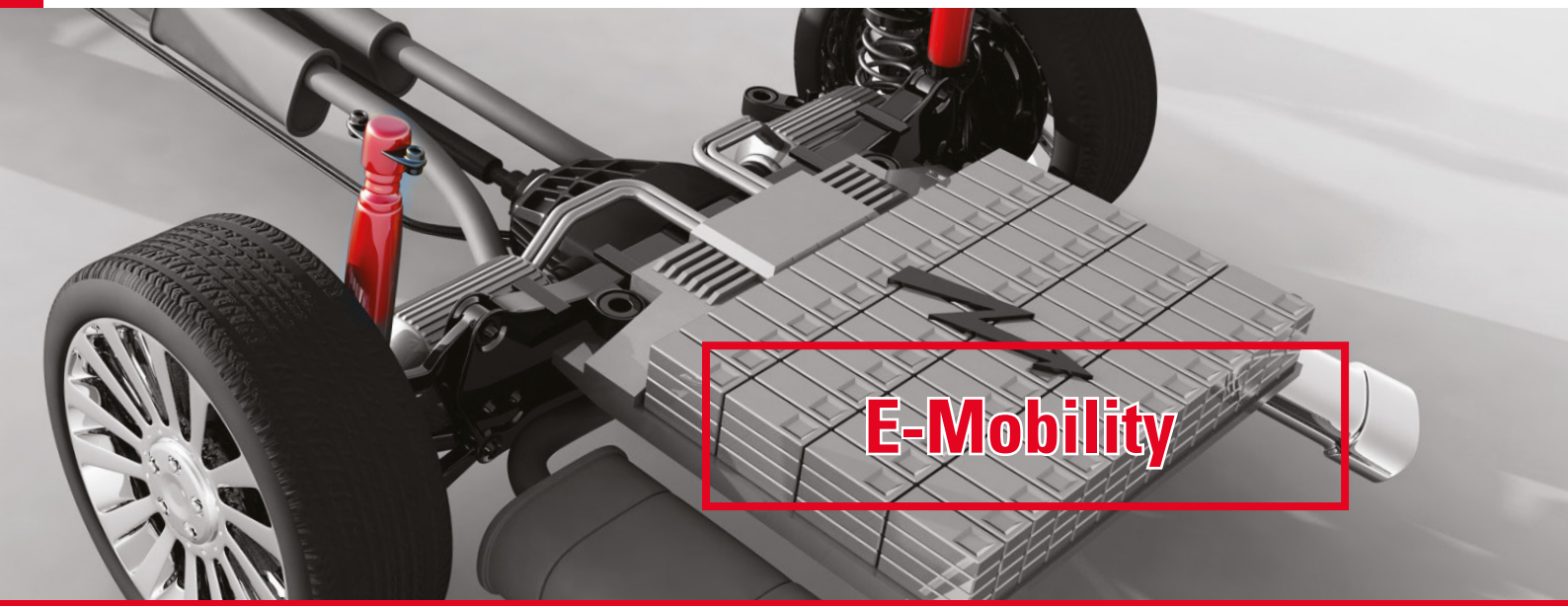
From Eye to Insight

Leica MICROSYSTEMS

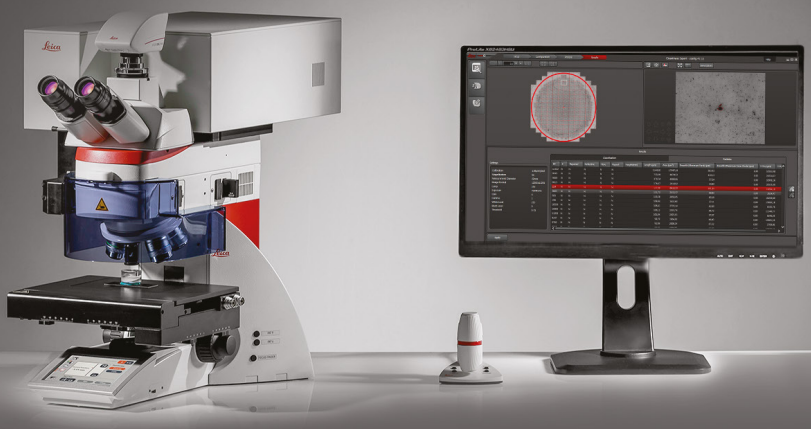


E-Mobility Quality Control: Root Cause Identification for Breakdown of Electric Drive Systems

PREVENT THE BREAKDOWN OF INNOVATIVE ELECTRONIC SYSTEMS CAUSED BY CONDUCTIVE PARTICLES

E-Mobility is a rising topics all around the world. From the perspective of a long history of steam and combustion engines, the up-and-coming electric drive systems can have a dramatic impact on vehicles, cars and trucks. The green and energy efficiency economy is driving the creation of new fields of research such as quality control in insulation, friction and batteries.

Particles which may not be a risk for moving parts like pistons, can cause a significant breakdown of the electric networking devices if they are conductive. For this reason, the particle material needs to be identified. The Cleanliness Expert solution allows you to track the relevant production process and helps to find the source of contamination to reduce the danger of short circuits and premature wear.



Important change of technology for cleanliness

- Petrol engine: Hard and abrasive metallic particles
- Electronic engine: Low and high conductive particles

VISUAL AND CHEMICAL IDENTIFICATION FOR E-MOBILITY WORKFLOWS BY CLEANLINESS EXPERT

PALL
Pall Corporation

Particle extraction
Prepare sample for investigation using Pall filtration cooperation.

Detect and count
Save time during automatic particle counting by using multiple samples.

Classify particle
Classify length, width and height according to international standards.

LIBS analysis
Carry out the chemical analysis within a few seconds.

Compare element peaks
Chemical analysis identifies material if its conductivity is a risk.

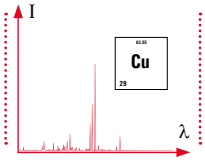
DM6 M LIBS Cleanliness solution at E-Mobility

The Cleanliness Expert software from Leica Microsystems supports the next steps required to achieve a safe electronic society. Besides a particle´s hardness, also its conductivity is of essential importance to estimate its potential to cause damage.

The 2-in-1 visual and chemical analysis make particle identification and clarification possible with just one click.

Material Science

LIBS Spectra



Conductivity Data

Material	σ in S/m	Risk
Cu	58 · 10⁶	High
Al	37 · 10⁶	Middle
Mn	0,69 · 10⁶	Low

Count → **Identify** → **React**

CONNECT WITH US!

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