

Battery Degradation Testing

Ensuring performance, safety and reliability across the battery lifecycle.

Why Battery Degradation Testing Matters

Electric vehicle (EV) battery systems degrade over time due to cycling, age, and environmental conditions. Understanding and managing this degradation is critical to:

- Prolonging battery lifespan
- Ensuring vehicle safety and reliability
- Regulatory compliance - Euro 7
- Meeting industry standards and customer expectations
- Supporting warranty and product development

HORIBA MIRA's Capabilities

We offer comprehensive degradation testing for cells, modules, and packs using cutting-edge facilities and expert engineering support.

Electrical Performance Testing

- Capacity and energy retention
- State of Charge (SoC) / State of Health (SoH) monitoring
- Cycle life evaluation under real-world load profiles

Environmental & Mechanical Testing

- Thermal cycling and humidity exposure
- Vibration, shock, and mechanical durability
- Performance under temperature extremes

Abuse & Safety Testing

- Overcharge/discharge scenarios
- Short circuit and thermal runaway analysis
- Crush, penetration, and fire propagation resistance

Innovation Through Research

Our engineers work alongside leading academic partners and participate in government-funded innovation programmes focused on:

- Advanced battery health modelling
- AI-enhanced anomaly detection
- Safe integration of next-generation chemistries

Our Test Infrastructure

- Battery cyclers with advanced charge/discharge profiles
- Environmental chambers for climatic conditioning
- Thermal imaging and impedance spectroscopy
- AI-driven Battery Management System controls and calibration development
- Automation via HORIBA STARS and AI-driven test optimisation



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