

An aerial photograph of a two-lane asphalt road cutting through a dense, lush green forest. A red car is driving on the road, positioned in the lower-middle section of the frame. The trees are tall and closely packed, creating a textured green canopy. The lighting is soft, suggesting an overcast day or late afternoon. The overall mood is serene and natural.

# Reimagine Transportation

Keysight Technologies  
June 2022

**“For over half a century, Keysight Laboratories has consistently delivered breakthrough technology to deliver best-in-class design, test, and emulation solutions for complex electronic systems.**

**Our scientists and engineers around the world are dedicated to solving our customers’ challenges in diverse areas, such as next-generation communication systems, quantum computing, and autonomous vehicles with electric drivetrains to meet their end-market and regulatory needs.”**

**Daniel Thomasson, PhD  
VP, Keysight Labs  
Keysight Technologies**



# EV CHARGING

Time Remaining

15 min



Battery

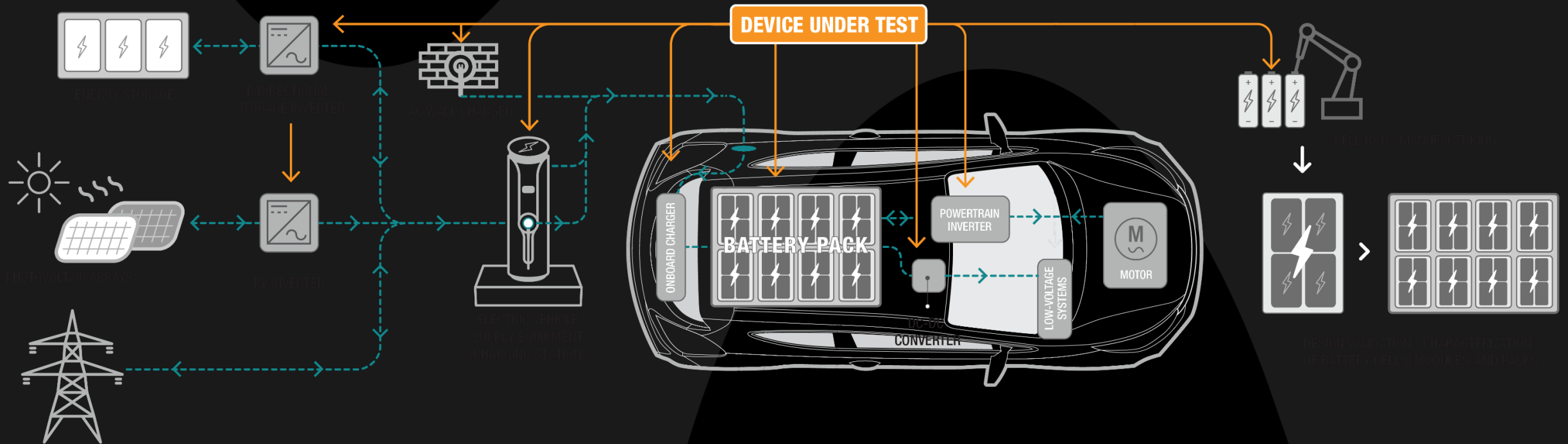


Preview



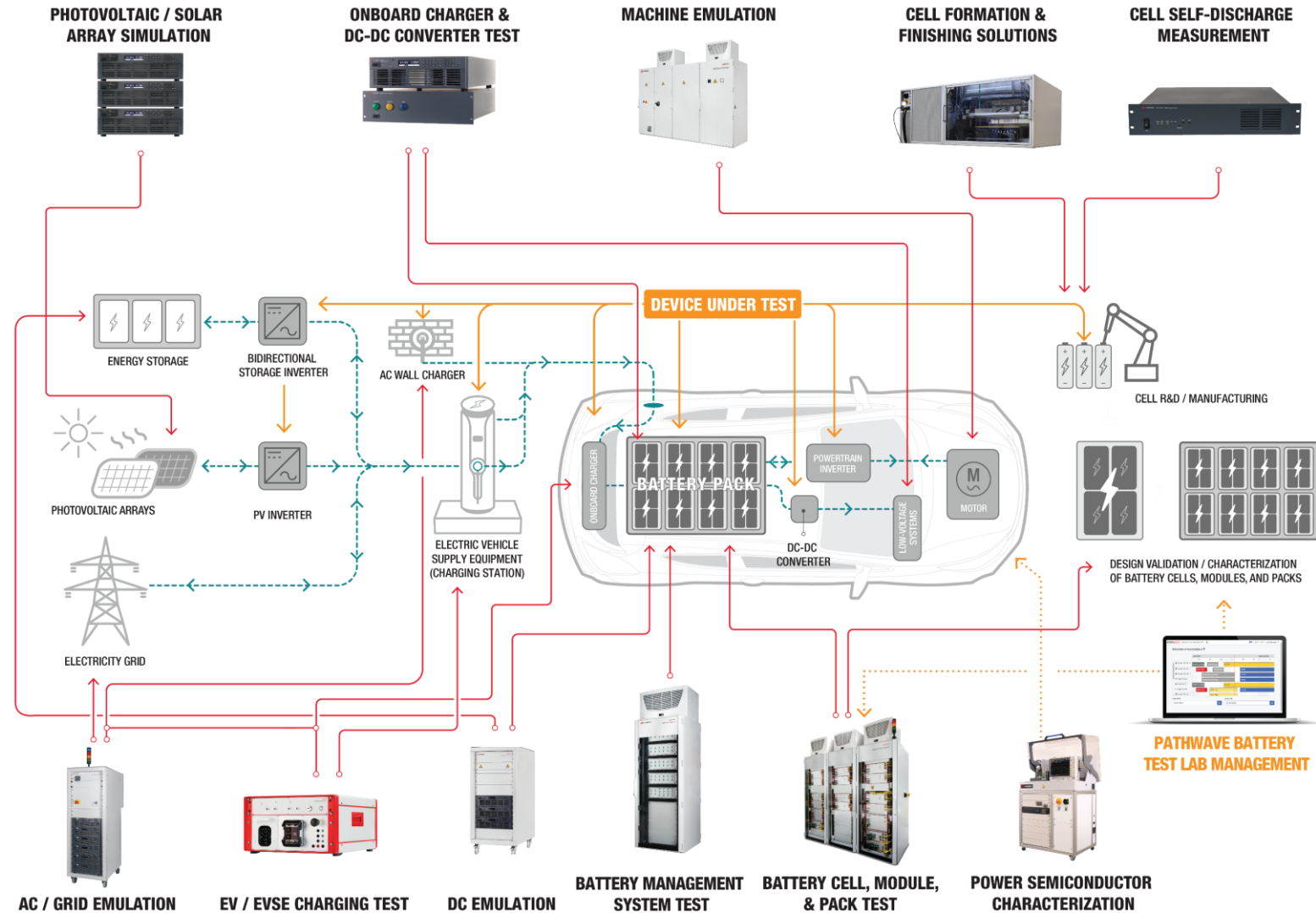
# Enabling The E-Mobility Ecosystem

- Meet industry standards amidst a complex, evolving landscape of new technologies



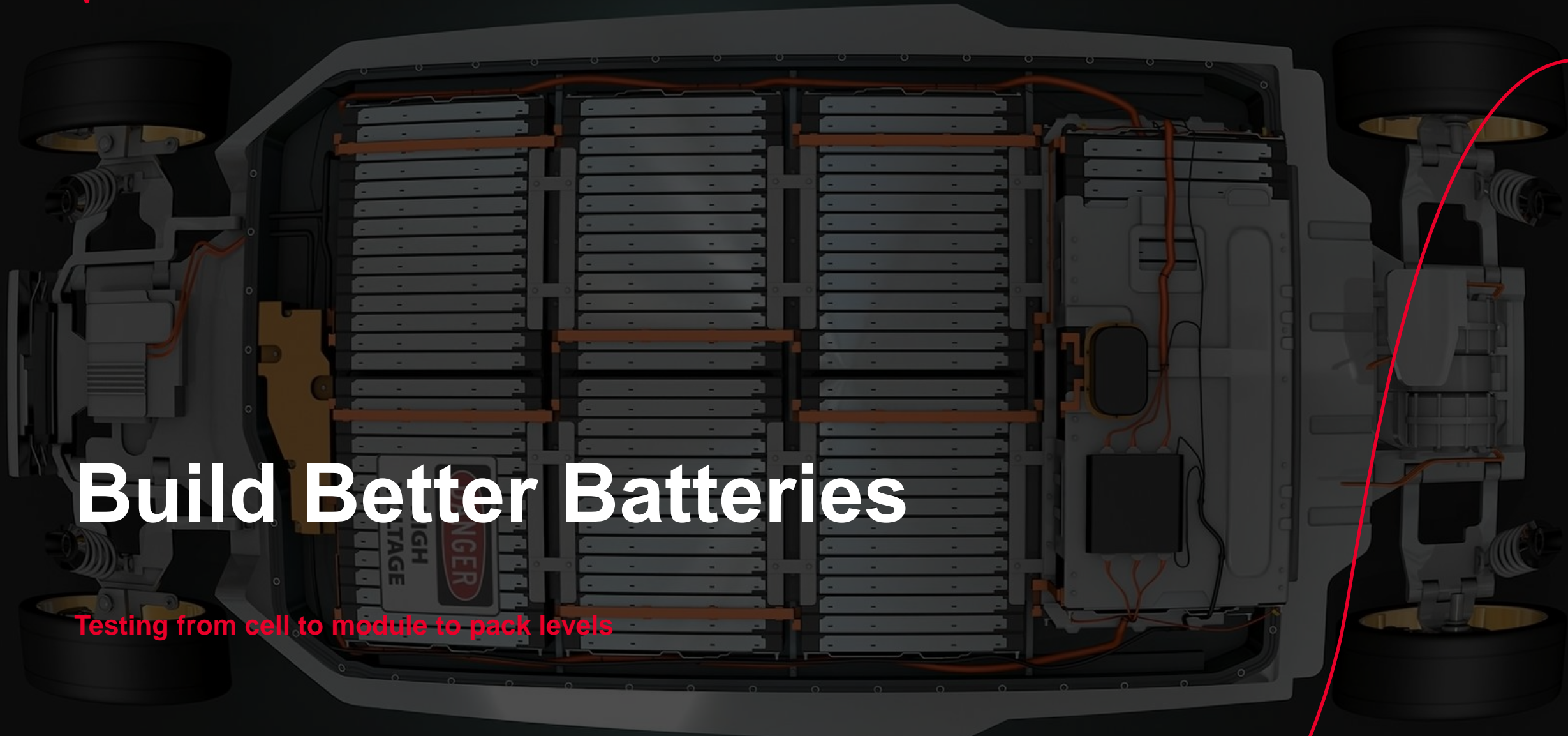
# The E-Mobility Ecosystem

Harness maximum performance with better design and test



# Build Better Batteries

Testing from cell to module to pack levels



# EV Battery Design & Test

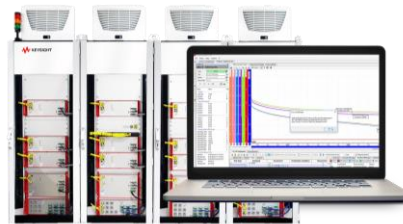
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Thoroughly test at the cell, module, and pack levels, to build high-density and longer-lasting batteries



## **SL1007A Sciencelab Battery Cell Tester**

Test your cells in an efficient and cost-effective manner, even when running multiple channels.



## **SL1001A Sciencelab Battery Module Tester**

Developing and analyze your EV battery modules in a realistic environment to ensure performance.



## **SL1740A Sciencelab Battery Pack Tester**

Emulate the EV's operating environment to test high-power battery packs comprehensively.

# Improve Your Battery Lab Operations

Manage your test orders and resources while gaining valuable test insights across thousands of test channels with [PathWave Lab Operations for Battery Test](#).





# Characterize Li-Ion Cells in Minutes

Measure Li-ion cell self-discharge currents in minutes or hours, vs days and months; and reduce your test costs while ensuring quality and performance of your battery cells.



[Keysight's BT2152B Self-Discharge Analyzer](#)

A close-up photograph of an electric vehicle's charging port. A white charging cable with a black handle is plugged into the port. The port is labeled 'EV' and 'EV STATION'. The background is dark and blurred, showing the car's body panels. A red curved line is visible on the right side of the image.

# Ensure Charging Interoperability

Test charging interfaces between  
electric vehicles & charging infrastructure

# EV & EVSE Charging Test

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Use a single platform for your conformance tests to meet CCS, CHAdeMO, and GB/T standards with the Keysight Scienlab SL1047A (High-Power) or SL1040A Charging Discovery System (CDS).



## Test Your EV vs Various EVSE Models

With a high-power DC emulator (left), you can emulate DC charging infrastructure of up to 600 A to test your EV.



## Test Your EVSE vs Various EV Models

The high-power CDS (center) can emulate any EV. This allows functional, safety, interoperability, conformance, and durability testing for your EVSE.



## “Person-in-the-Middle” Testing

The CDS connects a real EV to an EVSE, capturing electrical signals and digital communications between them to identify and trace potential interoperability issues.

# Better EV & EVSE Test Insights

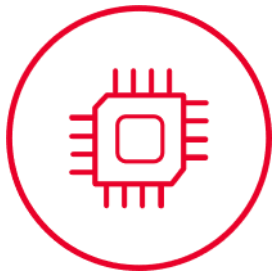
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Accelerate your charging interface testing operations with the Keysight Scienlab Charging Discover Test software.



# Test Solutions for the Broader E-Mobility Ecosystem

Harness performance, from chip-to-grid



Validate wide bandgap power devices

Double pulse tester characterizes SiC and GaN chips in high-power applications.



Lower test costs with regenerative power

Source / sink emulators recycles over 90% of the power to the grid, saving cooling and utility costs.



Ensure electrical integrity of all ECUs

Automated in-circuit tester ensures electrical integrity of PCBAs in mission-critical ECUs.



Harness the power of big data

Enterprise-level Pathwave Lab Ops software provides test insights to improve quality and productivity.



Let's collaborate. [www.keysight.com/find/automotive](https://www.keysight.com/find/automotive)