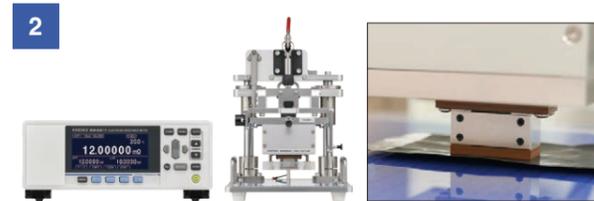


1 Managing Electrode Slurry quality

Electrode slurries consist of active materials, conductive auxiliary agents, polymer binders, and organic solvents. By ensuring these materials are uniformly dispersed, it is possible to produce batteries with favorable characteristics.

Slurry Analytical System

This process measures electrode slurries' impedance. Calculations are then performed using a proprietary algorithm to quantify the slurry's mixture conditions based on measured values.



2 Managing electrode sheet manufacturing quality

To produce electrode sheets with favorable characteristics, manufacturers study materials, composition, and manufacturing conditions based on two indicators: the composite layer resistance and the interface resistance between the composite layer and collector.

RM2610

The system allows users to visualize those two quantities by measuring the surface of the electrode sheet with a test fixture that consists of an array of test probes and then using proprietary analytical



3 Li-ion Battery Weld Quality Testing

If welds connecting tabs, collectors, and other battery components are insufficient, resistance between components will increase significantly, resulting in electrical energy loss and battery overheating. Such heating can reduce the battery's service life or cause fire.

RM3546, RM3545A-2, Z3003

This type of testing measures the resistance between welded components.



4 Li-ion Battery Insulation Resistance Testing

Structurally, it's necessary to keep the anode and cathode electrodes, as well as the electrodes and enclosure (case), insulated from each other. Failure to keep those components properly insulated—in other words, insufficient insulation resistance - could lead to a risk of ignition or fire accidents.

BT5525, ST5520, SM7110, SM7120

This type of testing measures the insulation resistance between battery cells' anode and cathode electrodes, and between the electrodes and the enclosure.



5 Li-ion Battery Open-circuit Voltage (OCV) Testing

A battery's voltage when it is not connected to any load is known as the open-circuit voltage (OCV). OCV values gradually decline due to self-discharge, a characteristic of batteries. When a battery has an internal defect, self-discharge increases, causing the OCV to decrease beyond the defined value.

DM7276, BT4560, BT3561A, BT3562A, BT6075, BT6065

This type of testing measures battery cells' open-circuit voltage.

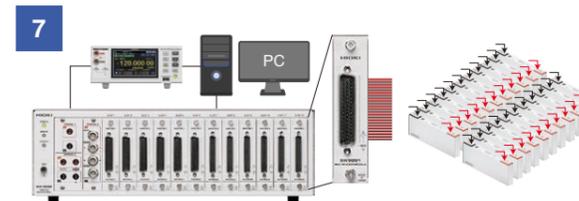


6 Li-ion Battery Internal Resistance Testing

Although batteries' internal resistance would ideally be zero, internal resistance exists due to a variety of factors. Internal resistance increases as a battery degrades.

BT3561A, BT3562A, BT6075, BT6065

This type of testing measures battery cells' internal resistance.



7 Reducing testing times with multichannel measurement

Testing times can be reduced by increasing the number of measurement channels, helping shorten lead times.

SW1002

The DM7276, BT6075, and BT4560 support up to 264, 132, and 72 channels, respectively. In addition, the SW1002 can connect to two different instruments, and the switching between them can be done automatically.



8 Monitoring battery cells' voltage and temperature

Voltage and temperature are recorded during the charging and discharging test process in order to monitor changes in battery state. Recorded data is then analyzed to detect defects and rank batteries.

LR8101, LR8102, LR8450

This type of testing records fluctuations in battery cells' voltage and temperature across multiple channels.