

Application Note

— Example Applications —

Detecting Contamination

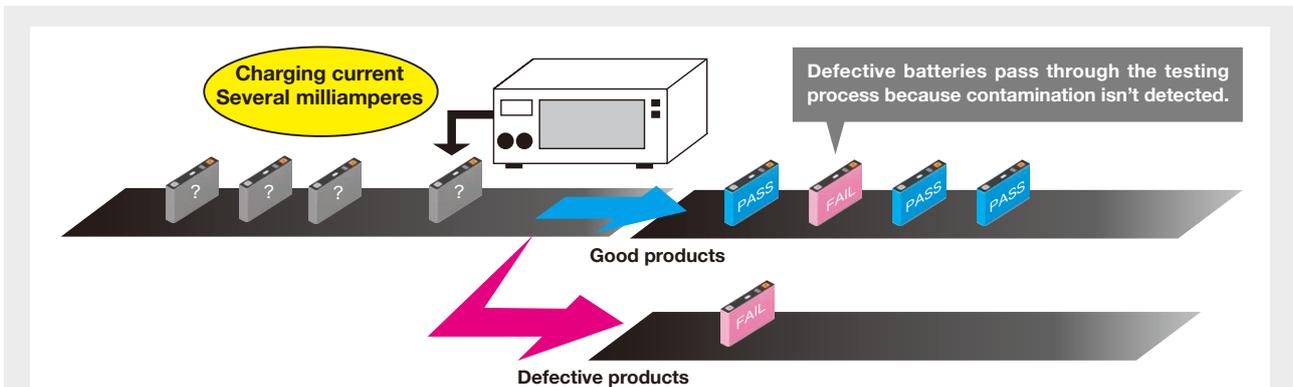
Capturing even minuscule voltage variations during charging

Batteries used in electric vehicles (EVs) and similar applications must operate under harsh conditions for extended periods of time. It's extremely important to measure the safety and quality of batteries since degradation can lead to serious accidents (such as fire). Manufacturers are facing the need to reliably detect even minuscule degradation and failures that went undetected in the past.



Issue

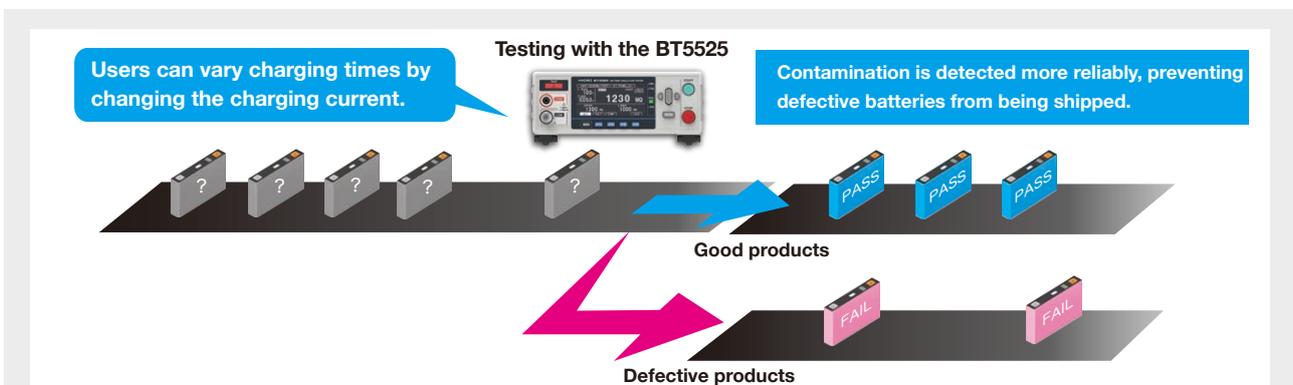
It's not possible to detect contamination because instruments fail to capture minuscule voltage variations during charging.



Contaminated (defective) batteries are considered to be more susceptible to voltage variations during charging. There's demand for reducing the charging current and smoothing out voltage variations during charging so that minuscule voltage variations can be detected more easily as batteries are charged. Most insulation resistance testers used in this testing process apply a large current (on the order of several milliamperes), and few instruments provide functionality for limiting current.

Solution

The BT5525's charging time can be adjusted to facilitate detection of minuscule voltage variations.



The BT5525 lets users adjust the time used to charge batteries by changing the charging current. Voltage changes can be captured reliably—and contamination detected—by lengthening charging times. This approach makes it possible not only to capture minuscule voltage variations, but also to adjust times to suit the production cycle.

Instrument used

BATTERY INSULATION TESTER BT5525

Hioki product

HIOKI

© 2022 HIOKI E.E. CORPORATION
application_BT5525_CurrentLimit_E1_220425

All information correct as of June 3, 2021. All specifications are subject to change without notice.