

ACS – Angelantoni Test Technologies

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Safe battery evaluation

For conducting potentially hazardous tests of lithium-ion batteries, these test chambers are equipped with a raft of safety features



The storage of electrical energy for use in automotive applications continues to pose a technical challenge. Even though there have been significant developments in this area over the past decade, challenges remain as the goal evolves. In the automotive industry there has been an increased need for compact, lightweight batteries for electronic devices and large quantities of energy for electric traction, which is stored in limited spaces.

A number of emerging requirements in terms of batteries relate to electric and hybrid vehicles and recovery of braking energy. Among the various solutions used to



TOP ACS has developed its Discovery battery test chambers, which can be supplied in both standard and customized configurations

power these vehicles, lithium batteries have proved the most suitable, although further optimization is necessary in order to improve the technology even further.

Tests of charge and discharge cycles are a central focus in laboratories (in the R&D departments of battery manufacturers, in universities, other research institutions, and certification and validation authorities).

The instruments used for such tests often subject batteries to demanding and lengthy test protocols, and can normally be interfaced with various devices. Here climatic chambers play a primary role, enabling tests to be conducted in controlled temperature and humidity conditions, which replicate the real-world conditions a battery will encounter in its lifetime. Equipment can also be used to simulate stress conditions.

With its experience in the testing sector and a vast production program, Angelantoni Test Technologies (ATT) is able to offer both standard and customized ACS-branded test chambers for verifying the quality and reliability of batteries, mainly based on vibration, thermal shock and stress screening tests. ACS chambers can be interfaced with any kind of charge/discharge system.

Battery analysis can be extremely dangerous as these tests simulate the limit conditions that may occur

when there is a transfer of energy from the battery to the electric motor or during the battery's fast recharge phase. These scenarios can generate serious overheating or cause the formation of dangerous atmospheres – and can even create a risk of explosion.

ACS battery test chambers are equipped with all the instruments necessary for monitoring potentially dangerous parameters, plus the following devices, which are activated to reduce any risk conditions: visual/audible tower light alarm and supplementary PT100 sensors, a GN2 or compressed air purge system, an overpressure valve, a fire extinguishing system, as well as a gas monitoring system.

ACS is the leading brand of ATT, world-famous since 1952 for its design and manufacture of a complete range of environmental test chambers for all types of tests on materials, components and finished products. The ACS brand has always been associated with experience, flexibility in customized solutions and innovation.

ACS offers a wide range of test solutions for vehicle applications, including emissions test chambers, calorimeters, airbag test chambers and battery test chambers, as well as standard and customized equipment to simulate vibration, combined stress, corrosion, solar light, sand and dust, and rain. ◀

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