

Customer Application #18

# Test of High-Voltage Batteries for Electrical Racing Cars

The university project Fast Forest is a student project of the Deggendorf Institute of Technology. Since 2008, the students have been building a racing car every year, developing their own vehicle concepts and manufacturing the cars themselves.

In summer, the team will compete in the international design competition „Formula Student“. Together with teams from universities and colleges from all over the world, each team demonstrates its engineering skills on the Formula 1 tracks. In addition, the cost report and a fictitiously founded company are evaluated.

All teams, consisting of students from different disciplines, work year after year to achieve the best possible results in both the static and dynamic disciplines. The static disciplines serve to present technical decisions and economic aspects to jurors from industry. In the dynamic disciplines, acceleration, driving behaviour, reliability and energy efficiency must be demonstrated.



Fast Forest Team 2019

Fast Forest started in 2009 with the construction of electrically powered racing cars and has been building only electrically powered vehicles since the 2011/12 season. Since 2016, Fast Forest has also been developing an autonomous driving vehicle for the new „Formula Student Driverless“ competition, with which the team participated in the 2016/17 season at Hockenheim.

An old car with new hardware was used for this competition. For the new season a new vehicle concept is planned. This includes a hybrid car that can compete both autonomously and with a driver.

The high voltage batteries of the cars are developed and manufactured by Fast Forest every year. The cells used are carefully selected and monitored by a battery management system developed in-house.

Höcherl & Hackl supports Fast Forest in developing the batteries and the powertrain with the load PLI 8460-SSC624. Thanks to the load, precise cell characteristics can be determined in order to operate the cells even further and more safely at their limits. Among other things, load tests, temperature tests and cycle tests are performed. Due to the wide current range of the load, HV cable simulation results can also be reconstructed using the load to save weight without increasing the risk to the driver or the car.