



ANSYS Making Electric Vehicle Batteries More Practical And Efficient

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PITTSBURGH, June 20, 2012 /PRNewswire/ -- One year into a U.S. Department of Energy (DOE) funded project, ANSYS (NASDAQ: ANSS), General Motors LLC, the National Renewable Energy Laboratory (NREL) and ESim are leveraging engineering simulation technology to optimize electric and hybrid vehicle battery performance. The team achieved significant milestones during the past year in support of the DOE's Computer Aided Engineering for Electric Drive Vehicle Batteries (CAEBAT) project.

(Logo: <http://photos.prnewswire.com/prnh/20110127/MM38081/LOGO>)

GM awarded ANSYS a subcontract to develop battery software tools that will help accelerate development of next-generation electric vehicles (EV). The project is a result of a competitive procurement through the DOE's NREL that was presented to GM last year (<http://www.nrel.gov/news/press/2011/1472.html>).

The main goal of the CAEBAT project is to incorporate existing and new battery models into engineering simulation software to shorten design cycles and optimize batteries for increased performance, safety and life span. The project is driving EV innovation.

The GM-ANSYS-ESim team's achievements over the past year include prototyping and validating three electrochemistry modeling approaches. The partners also prototyped a co-simulation feature, which blends battery multiphysics and system simulation technologies that enable engineers to shed unnecessary details and increase simulation efficiency without compromising the accuracy of the model.

"Traditionally, the EV battery industry depends mostly on the expensive and time-consuming process of design-build-test-break for prototyping and manufacturing these batteries," said Jan Aase, director of the vehicle development research lab at GM Global R&D. "However, the virtual development of engineered products has proven to be an effective way of evaluating many design alternatives. This specific team was selected because of their individual track records of success in their respective fields for providing reliable technologies that lead to efficient products."

The team is leveraging NREL's considerable experience in multiphysics, multi-scale modeling of lithium-ion battery systems. The resulting design tools will be made commercially available through ANSYS. GM plans to validate and apply the model to its electric vehicles in development.

"ANSYS is well known for providing reliable simulation technology to enable sustainable design across a wide range of industries, including automotive," said Sandeep Sovani, manager of global automotive strategy at ANSYS. "The recent demands from customers to make vehicles more practical coupled with government regulations are creating unprecedented innovation within the auto industry. ANSYS is proud to be at the forefront of this innovation surge by developing software tools that will accelerate the production of safe, reliable, high-performance and long-lasting lithium-ion batteries for EVs and make vehicles more fuel efficient and sustainable."

NREL expects that the resulting systems will become commercial offerings in about two years. This initiative is funded by DOE's Vehicle Technologies Program in the Office of Energy Efficiency and Renewable Energy.

About ANSYS, Inc.

ANSYS brings clarity and insight to customers' most complex design challenges through fast, accurate and reliable engineering simulation. Our technology enables organizations — no matter their industry — to predict with confidence that their products will thrive in the real world. Customers trust our software to help ensure product integrity and drive business success through innovation. Founded in 1970, ANSYS employs more than 2,200 professionals, many of them expert in engineering fields such as finite element analysis, computational fluid dynamics, electronics and electromagnetics, and design optimization. Headquartered south of Pittsburgh, U.S.A., ANSYS has more than 65 strategic sales locations throughout the world with a network of channel partners in 40+ countries. Visit www.ansys.com for more information.

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