Battery life aaron

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A battery with a 2600 mAh rating might be expected to provide: 2.6 amps (2600 milliamps) for an hour; or. 0.26 amps for 10 hours; or. 26 amps for a tenth of an hour. In real world performance, a higher current demand will decrease the available current by a bit, so the 6 minutes at 26 amps may be optimistic.

Prefer an on-line spinner calculator? This "lite" version of the full spreadsheet runs in your browser window and calculates weapon mass, moment of inertia, stored kinetic energy, and spin-up time. Like the full Excel spreadsheet, this calculator has been updated to include an estimate of battery resistance in its calculations.

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Hoping to address the major drawback to owning an electric car -- the battery life-- GE (IW 500/5) researchers, in partnership with Ford Motor Co. (IW 500/6) and the University of Michigan, will develop a smart, miniaturized sensing system .

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"Improvements in the range, cost and life of the battery will all be needed for EVs to be competitive," he added. "With better sensors and new battery analytics, we think we can make substantial progress at increasing battery life. This, in turn, could help bring down its overall cost and the cost entitlement of buying an electric car."

The goal of this 3-year, $3.1 million program is to demonstrate a working sensing system in an actual electric vehicle.

The objective of the ARPA-E project will be to develop small, cost effective sensors with new measurement capabilities. Due to their small size, these sensors will be placed in areas of the battery where existing sensor technologies cannot be currently located. The combination of small size and ability to measure new quantities will enable a much better understanding of battery performance and life.

GE"s role will be to combine a novel ultrathin battery sensor system with sophisticated modeling of cell behavior to control and optimize battery management systems. Today"s sensors on EVs and plug-in hybrid vehicles (PHEVs) measure the health of the battery by looking at factors such as its temperature, voltage, and current. However, these measurements provide a limited understanding of a battery"s operation and health.

A group of scientists from the University of Michigan, led by Anna Stefanopoulou, a professor of mechanical engineering, will use the data generated by GE sensors to verify advanced battery models. They will ultimately create schemes that use instantaneous sensor data to predict future battery-cell and battery-pack behavior.

"Ensuring a battery"s health over many cycles requires taking frequent snapshots of its condition as it ages," said Charles Monroe, a chemical engineering professor on the University of Michigan team. "Control systems on cars have to be able to use this vast amount of data quickly and efficiently. Information provided by advanced sensors will allow us to create and verify finely resolved physical models to underpin battery management schemes."