

TRANSPORTATION: New entrant in the race for cheaper electric car batteries *(Monday, May 3, 2010)*

Saqib Rahim, E&E reporter

The Department of Energy is hunting for ways to dramatically cut the cost of electric-car batteries, and one of its freshest candidates takes a page from the computer industry.

The heads of Planar Energy, a company that spun off from the National Renewable Energy Laboratory, have their roots in semiconductors -- the tiny, simple devices without which microchips and computers could not exist.

Last week, Planar won a \$4 million grant from DOE's Advanced Projects Research Agency-Energy (ARPA-E) program, which devoted about a third of a recent funding burst to batteries that might take a faster track to commercial readiness than current technologies ([E&ENews PM](#), April 29).

Planar's CEO, Scott Faris, claimed the company is essentially making the guts of the battery in the same way as semiconductors. He said the method makes the battery far more cheaply than its lithium-ion cousins: "I'm using one-third of the materials, but the cost of those materials are one-third of the cost of a traditional battery."

He claimed the battery will carry three times as much energy as comparable lithium-ion batteries.

For his comparison, Faris assumed a lithium-ion battery that costs about \$1,000 per kilowatt-hour. The cost of such a battery for automotive purposes is in dispute, ranging from several hundred to well over a thousand dollars.

Battery built like a semiconductor

Faris described the process as "airbrushing" ceramic particles onto a surface; the particles multiply and spread out until they form a film. Each film contains the parts of a battery that are usually distinct.

The claim: that this process takes less equipment and makes mass production simpler.

In the current wave of electricity-powered cars, lithium-ion batteries are the technology of choice. The batteries essentially function as larger versions of what is in a laptop or cell phone. Compared to other types of widely available batteries, lithium-ion is thought to carry the most energy for the least

weight.

But experts disagree widely on both current costs and the prospects for future costs. Others have claimed that the biggest lithium supplies sit in foreign lands, so a massive electric-car scale-up could pose a security risk.

ARPA-E funding targeted various alternatives to lithium-ion, including batteries based on zinc and magnesium, a lithium-sulfur technology, and capacitors.

Faris started as a venture capitalist with roots in the semiconductor industry. He and Planar's other principals had worked on semiconductors that can make windows turn dimmer, can replace a massive machine with a hand-held device that measures air quality in hospitals, and can "print" tiny crystals onto a surface.

Reproduced with permission. Copyright 2010, E&E Publishing, LLC.

www.ClimateWire.com