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### Michigan News

#### Battery Engineers Finally Get Respect In The Auto Industry

Dustin Dwyer

VANCOUVER, BC (2008-03-14) *The future of the auto industry, and the hopes of millions of people who want to cut their gas use, could all be in the hands of battery engineers.*

*Auto company executives say a new kind of battery - called a lithium ion battery - could allow them to build cars that get more than 100 miles per gallon.*

*But to get there, auto companies need people who understand the complicated chemistry of batteries. And that's led them to look outside the traditional auto industry, and outside Michigan.*

*At the AutoFutureTech Summit in Vancouver, British Columbia, Dustin Dwyer sat down with two of those outsiders who are now playing a key role in the industry.*

Ann Marie Sastry is an engineering professor at the University of Michigan. She got her training, and her expertise in batteries, studying at Cornell.

David Vieau is the CEO of A123 systems.

It's one of the battery companies that General Motors has picked to help it build the new Chevy Volt - a car that could go up to 40 miles on electricity power alone.

It's clear that - as battery people - both he and Ann Marie Sastry have a shared history of rejection.

I ask Vieau if he felt that auto executives took him seriously when he first started telling them about lithium ion batteries.

"Um," he says. "Not really,"

Then Sastry chimes in.

"When I started at Michigan many many years ago as an assistant professor, an administrator said to me, 'Sastry, since we're in Detroit, maybe you could pick an engine problem. I don't know what this battery stuff is.'"

But Sastry insists that batteries always made sense as an alternative power source for cars - especially lithium ion batteries.

"You can start at the periodic table and see very quickly that lithium is going to be your choice - low atomic mass, and high specific capacity," Sastry says. "So I think we've known since Edison's time which electro-chemistries were likely to be winners. But there's still an enormous amount of hard work in figuring out how to implement these in materials that are both durable and safe."

So batteries based on lithium ion technology have the potential to put out a lot of power without adding a lot of weight to the vehicle.

The challenge is getting these batteries to live up to the tough conditions in cars, and not overheat. It's a problem that engineers are still working on.

One thing that's definitely been decided though, is that lithium ion technology is crucial for the future of the auto industry.

And Sastry says battery experts are now in high demand.

I ask Sastry if that meant that the growth in automotive R&D would be outside Michigan.

"There are many of us battery researchers located in disparate parts of the country because the markets have been very disparate up to this point," Sastry tells me. "Right now the opportunity in southeast Michigan is to make southeast Michigan a center of battery research."

Sastry says in the past, battery research was scattered around the country, because the money spent on battery research was

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scattered around the country - at consumer electronics companies and companies that make medical devices.

Now that the auto industry is paying attention to these new batteries, the research and the investment dollars could come to Michigan.

David Vieau says that's already the case with his company.

"We're expanding our activities in Michigan and in Ann Arbor, and now in Livonia," Vieau says. "So being close to the customer, their engineering centers, and having our engineering people close to them and then expanding the specific solutions for the car companies with teams of people that are deployed there is what makes sense."

So now as the auto industry starts to see the potential in batteries, there's also a whole new potential for Michigan.

As I wrapped up my conversation with Ann Marie Sastry and David Vieau here in Vancouver, Sastry told me that after arriving here on an early morning flight, she had to fly back to Michigan that same day.

And as if to explain why she had to travel 16 hours all in the space of one day, she simply told me: it's an exciting time for battery people.

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