




## U-M professor's start-up attracts funding as it works on advanced lithium-ion batteries to save auto industry

BY KATHERINE YUNG • FREE PRESS BUSINESS WRITER • DECEMBER 9, 2008

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In a modest office near Briarwood Mall in Ann Arbor, Ann Marie Sastry oversees a small group of engineers racing to create what could become the ultimate savior of the U.S. automobile industry: a next-generation lithium-ion battery.

ADVERTISEMENT Since its founding last year, Sastry's company, called Sakti3 Inc., has emerged as one of Michigan's most important start-up firms.

It's seeking nothing less than making electric vehicles an affordable and reliable reality worldwide. It also hopes to turn Michigan into a major producer of lithium-ion batteries for electric vehicles.

"This is a moment," said Sastry, a University of Michigan professor of mechanical, biomedical and materials science and engineering. "We're teetering on the edge of electrification."

Sakti3 is working on a more advanced lithium-ion battery than the one that is to be used in the upcoming Chevrolet Volt. It's also a Michigan-based company, unlike A123 Systems Inc. and Compact Power Inc., the two firms competing to supply batteries for the Volt. Though they operate offices in the state, A123 is based in Watertown, Mass., and Compact Power is a subsidiary of the South Korean chemical giant LG Chem Ltd.

Sakti3 is the 41-year-old Sastry's first start-up. The technology for the next-generation electric vehicle battery comes from research that she and her graduate students did at U-M.

One day, as Sastry tells it, she and her students were sitting around their laboratory after generating some exciting research results. At that point, they faced a crucial decision: go forward with creating the battery or write a paper about their research.

They chose the harder but potentially more satisfying route and licensed the technology from U-M.

"The main thing for us was to really rethink what the role of American technology would be in this space," said Sastry, who willingly admits to being an engineering geek.

But Sakti3, which means "power" in Sanskrit, is no ordinary start-up. It obtained \$2 million from one of Silicon Valley's most prominent venture capital firms, Khosla Ventures.

Through an acquaintance, Sastry had met Vinod Khosla, the founder of Sun Microsystems and a former general partner at another famous Silicon Valley venture firm, Kleiner Perkins Caufield & Byers. She and her team convinced him that they had some promising technology.

Michigan is also betting on Sakti3. Earlier this year, officials at the Michigan Economic Development Corp. awarded the company \$3 million, designating it as one of the state's Centers of Energy Excellence. Sakti3 had applied for the grant program, which is part of Michigan's 21st Century Jobs Fund.

"The technology is very good," said Martin Dober, the MEDC's vice president of new markets.



(RICK NEASE)



SUSAN TUSA/Detroit Free Press

Ann Marie Sastry, CEO of Sakti3, in her offices in Ann Arbor last week.

### ANN MARIE SASTRY






**Occupation:** CEO of Sakti3 Inc. and a professor of mechanical, biomedical and materials science and engineering at the University of Michigan. Also serves as the director of the energy systems engineering program at U-M.

**Career:** Joined U-M in 1995 after serving as a senior member of the technical staff at Sandia National Laboratories.

**Education:** Bachelor of science in mechanical engineering from the University of Delaware and MS and doctorate degrees in mechanical engineering from Cornell University.

**Personal:** Married with two children. Lives in Ann Arbor.

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In March, state economic development officials also gave Sakti3 tax credits worth \$2.4 million over 10 years.

Helping homegrown alternative energy companies like Sakti3 grow is a top priority for Michigan. The state wants to become the advanced battery capital of the world, Gov. Jennifer Granholm declared in August.

"Advanced battery development and production is critical for the U.S., and our intention is that Michigan be the leader in meeting this need," Granholm said at the annual Center for Automotive Research management briefing seminar in Traverse City.

Even though General Motors Corp. and Chrysler LLC are running out of cash, Sastry believes in Michigan's automotive future. She has resisted pressure to move her company to another state, insisting that metro Detroit's dominance in automotive research and development is critical to her firm.

"We placed a bet on Michigan when we located the company here," said the new entrepreneur.

Sastry is on sabbatical from U-M until May. The battery expert has spent the last 13 years teaching at U-M and doing research work sponsored by Detroit's automakers, the U.S. Department of Energy and others. Last year, she started the university's first master's degree program in energy systems engineering.

Despite all the backing Sastry has received, she knows all too well the enormous obstacles facing her company. Not only must she and her team overcome technological hurdles, they must also create a battery that doesn't cost a lot of money.

"We decided to work on a very hard problem," she said. "We may fail."

But for the moment, despite the Detroit automakers' struggle for survival, the future looks promising for the U-M spin-off. Only in times of economic turmoil are big companies willing to take daring leaps with new technology, Sastry noted.

"This is the moment to make radical change," she said. "The auto industry needs to change radically."

Though Sakti3 has fewer than 10 employees, it hopes to grow its workforce to more than 100 in the next few years.

Sastry wouldn't reveal when her company's batteries will debut. But if things continue to go well, it could be sooner than five to 10 years from now.

"We're moving very quickly," she said. "The pace is extremely fast."

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