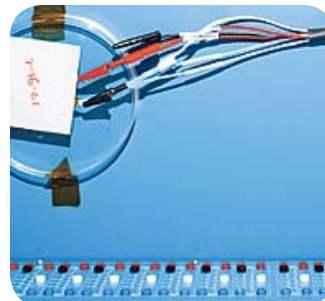


2010

newsmaker



“Sakti3’s next-generation batteries have the potential to leap frog today’s technology and make the dream of an electrified vehicle future a reality.” - Jeff Bocan, Managing Director, Beringea



CRAIN'S DETROIT BUSINESS

Detroit and Southeast Michigan's premier business news and information website

State can lead way in vehicle electrification, Sakti3 CEO tells ESD conference

By Brett Callwood

March 3, 2010

Ann Marie Sastry, CEO and co-founder of Ann Arbor-based Sakti3, said Michigan can lead the way in vehicle electrification and, in doing so, reduce the state's carbon footprint and oil dependence and create green jobs.

Sastry, whose company is working to develop advanced solid-state rechargeable lithium-ion battery technology, made her comments today at the Engineering Society of Detroit's Alternative Energy Conference held at the Doubletree Dearborn Hotel in Detroit.

Sastry also addressed the huge challenges in scaling up battery technology to meet the needs of vehicular electrification.

However, she said, "Sixty percent of the nation now believes climate change to be real. Thirty-eight percent believe that it will affect them in their lifetime."

"That second number needs to be bigger, because it will. But the fact is that the majority of the country now believes the clear science that proves climate change. And when that happens, the big businesses pay attention," Sastry said.

In her presentation, Sastry also addressed Michigan's lack of an educated workforce in a couple of key technological areas, a problem she said that needs to be addressed before moving forward in alternative energies.

The ESD event also included a welcome presentation by David Meynell, president and CEO of Dürr Systems Inc., and a keynote presentation by Christopher Webb, co-director of the ESD Institute.

Webb said Michigan has the potential to be the "next Hong Kong for the United States and the world" due to the state's wealth of talent in the field of alternative energies, applied technology and manufacturing.

Wayne County Executive Robert Ficano also addressed the conference and told the group there are more engineers per capita in Southeast Michigan than anywhere else in the United States.

He said the legacy of his generation should be that people don't have to get on a plane to see their children and grandchildren. Ficano said Michigan residents should want to stay in Michigan due to the state's economic growth.

The conference, a day-long event, also featured panels on public policy for renewable growth, and recent success stories in renewable energies.



Expert: How to make West Michigan's new battery plants a success

By Shandra Martinez

March 27, 2010

HOLLAND -- Now that Holland has landed two of the biggest lithium-ion battery plant projects in North America, the next step is to develop the eco-system that will support their success.

That will mean an extensive supply chain.

"You have to think what your region is going to do for the rest of the world," said Ann Marie Sastry, CEO and co-founder of the battery technology firm Sakti3 and professor of engineering at the University of Michigan.

The lithium-ion battery expert gave an overview of the industry that is expected to create 10,000 West Michigan jobs over the next decade. More than 90 people representing local companies and governments attended Friday's lunch-hour session hosted by Lakeshore Advantage, the economic development group that led the effort to bring the battery plants to the area.

Initially, the battery cells produced at the local JCI-Saft and LG Chem plants will go in Ford and General Motors electric cars produced in the Detroit area. But the market for these batteries goes beyond Michigan -- and even the U.S. borders.

"Where we are living is not where the biggest markets will be," said Sastry, noting the vehicle markets in India, China and Brazil will dwarf the market here.

The U.S. market currently accounts for just over one-quarter of the 790 million electric cars produced worldwide.

The federal government's \$1.5 billion investment in advanced battery technology doesn't guarantee the nation will be the leader in the second generation of vehicle batteries which are being developed.

Asia locked up the competitive advantage of the first generation of the lithium-batteries by licensing technology, much of which was developed at U.S. research universities. At the time, American companies were not interested in electric cars.

The key to Holland's battery industry transitioning into "gen 2" battery production will be staying connected to researchers like Sastry, who are at the technology's forefront, said Jeff Disher, owner of Disher Design & Development.

His Zeeland firm is working with Sastry and others to understand what his firm can offer on the manufacturing side and battery component design. The firm also is assisting with recruiting engineers to the area and coordinating educational sessions, such as the one held Friday.

While Jane Clark, president of the Holland Area Chamber of Commerce, admitted some of the technical terms went over her head, she understand what the technology will mean for the region over the next decade.

"Someone used the analogy, 'This is the first day of school' in learning how we can all contribute more to the emerging technology," Clark said.

The session was held in the lobby of Trans-Matic, a components supplier, which sits halfway between the sites of the two battery plants.

Trans-Matic President Patrick J. Thompson said he appreciated how Sastry was able to explain how technology, education and commercialization must work together to grow the advanced battery industry in Michigan.

“This industry offers a lot of opportunity for components suppliers that have the capability that exist in this Western Michigan and particularly this Holland area,” said Thompson. “It will be important for companies that want to participate in this to have both the technical capability and the commercial patience to work on really a long, extended development process.”

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Battery expert energizes business community

Researcher says automotive power will evolve quickly

By Ben Beversluis

March 27, 2010

Holland, MI — Ann Marie Sastry on Friday took 90 area business people on a whirlwind tour of the future of rechargeable automotive batteries.

A University of Michigan professor and researcher as well as CEO of battery technology company Sakti3 in Ann Arbor, Sastry said research and business competition will solve the dual challenges of reducing manufacturing costs and improving power efficiencies.

She spoke at Trans-Matic headquarters, 300 E. 48th St. in Holland — about halfway between the future battery manufacturing sites of Johnson Controls-Saft and LG Chem.

Those plants are where the federal government has invested \$450 million in stimulus money, pointed out Randy Thelen, president of Lakeshore Advantage, a private, nonprofit economic development agency.

Representatives of some 60 area firms were invited to learn more about the technology, a step toward a goal of making West Michigan the “leading North American center of excellence for advanced energy storage and power management solutions,” including an objective of 10,000 new jobs and \$2 billion of investment by 2020.

“Think about how we want this community to look in five to 10 years,” Thelen said. “An incredible opportunity is staring us right in the face and we need to go after it.”

Sastry rapidly described the background of battery technology, educational efforts, the research, the commercialization and the markets, policies and next step.

Key, she said, is a new emphasis on partnerships between businesses and between industry and education. Her own research is funded by companies like DTE, GM and Ford. Her courses are offered as distance learning for working people around the country, and an intensive UM internship program has more openings than interns.

Her ABCD program — Advanced Battery Coalition for Drivetrains — has partners around the globe, as does UM’s Energy Systems Engineering program.

“Vehicle electrification solves a lot of societal problems at once,” said Sastry, who was featured on the cover of Inc. magazine last fall. “It’s a great problem to work on.”

She warned potential suppliers to prepare for rapid change as the industry evolves.

Asia locked up a competitive advantage with the current generation of lithium-ion technology — technology developed in the U.S. she noted, but ignored by U.S. carmakers until recently — she said, but “the future home of the second generation (of battery technology) is wide open.”

Concluding, Sastry pointed out the world market for rechargeable automotive power will dwarf by a factor of thousands the current global market for consumer electronics rechargeable power. And a supply chain will need to serve it, she said.

“That’s what everyone here is looking for – how can I support this, how can I be a supplier,” said a lunch participant Jim Warners, a Holland-based lean manufacturing consultant.

“This is big,” said Jane Clark, president of the Holland Area Chamber of Commerce. “It’s about growth, it’s about jobs, it’s about the future of our community.”

Trans-Matic President Patrick Thompson said the event was about how education, technology and commercialization can pull together.

Potential suppliers, he said, will need to have commercial abilities and patience – and probably a lot of up-front capital, making collaboration valuable.

He figures his company, which specializes in deep-drawn metal stampings, could eventually be a supplier, with large production still some three to four years off.

Meanwhile, he said, this area is well-positioned, particularly with its capable, stable workforce, to build the kind of supply chain that is needed.

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Electric vehicle battery startup Sakti3 lands \$7M from major alternative energy investors

Nathan Bomey

April 1, 2010

Ann Arbor-based startup Sakti3 this week secured \$7 million in venture capital, funding the company considers critical to accelerating the development of its lithium-ion battery technology for electric vehicles.

The financing marks the second time that Silicon Valley-based Khosla Ventures, one the premier alternative energy venture firms in the world, has invested in Sakti3. Global investment firm Beringea invested in the University of Michigan startup for the first time.

Sakti3, which has close to 20 employees at its Ann Arbor headquarters, is developing lithium-ion battery material and manufacturing technologies for use in second-generation electric vehicles.

“This is a critical phase in the growth of any high-tech company -- the recruitment of new partners and the development of the capability to build prototypes at a larger scale,” Sakti3 CEO Ann Marie Sastry told AnnArbor.com. “Our plan now is to keep our heads down and to keep developing our technology and to spend these funds wisely so we can get the prototypes to customers.”

The investment comes as a variety of major players are diving quickly into the development of lithium-ion battery technology for electric vehicles and smart grid applications. Firms like Dow Chemical, Johnson Controls, A123Systems, General Motors and Ford have all announced plans to invest in battery operations in Michigan.

Jeff Bocan, managing director of Beringea in Michigan, said there’s room for a startup in the battery field despite all the big companies emerging as competitors.

“Ann Marie and her team are some of the best people in the world at doing what they do in the battery space,” he told AnnArbor.com. “Over the years they have developed a level of expertise that’s unmatched really just about anywhere.”

Sakti3, part of Michigan’s emerging battery technology supply chain, is enhancing intellectual property first developed at the U-M College of Engineering. Sastry, also director of U-M’s energy systems engineering program, has been purposely silent about the details of Sakti3’s technology and strategy.

But the company’s ability to attract Khosla and Beringea as investors lends an aura of credibility to the firm’s ambitions.

“They know a lot about batteries and they’ve got a lot of great ideas about what makes the best battery and how to make the best battery,” Bocan said. “There are a variety of different ways to make them, and the Sakti3 approach is very different than the current approach. As a result, we believe they will have much more powerful and radically cheaper batteries that will make the electrification of cars more of a reality than it is today.”



Beringea invested in Sakti3 out of a \$100 million pool of financing dedicated to boosting Michigan-based technology companies through the InvestMichigan! Growth Capital Fund.

Sakti3 already had \$2 million in funding from Khosla and \$3 million from the Michigan Economic Development Corp.'s Centers of Energy Excellence program. The company also received a \$2.3 million MEDC tax credit in 2008 to support a plan to hire 112 workers in Michigan over the next several years.

"We want everybody to know that we're still serious about the way in which we used state funds," Sastry said. "We consider this a very profound responsibility."

Khosla's investment, for one, is likely to draw additional attention to Sakti3 because of the venture capital firm's global reputation. The investment firm is led by legendary clean tech investor and former Sun Microsystems CEO Vinod Khosla, who also recently invested in Canton Township-based wind technology firm Danotek Motion Technologies.

"We're pleased to see Sakti3's progress and growth," Khosla said in a statement. "It's the kind of play we like -- one that uses advanced computational science and manufacturing to produce a potentially disruptive technology."

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Battery startup Sakti3 Inc. lands \$7 million in VC funding

By Ryan Beene

April 2, 2010

Ann Arbor-based advanced battery startup Sakti3 Inc. has secured \$7 million in Series B venture capital financing.

The financing was provided by Khosla Ventures, the California-based clean energy venture capital firm and Sakti3's original financial backer, and Farmington Hills-based Beringea L.L.C., Michigan's largest venture capital firm.

"These funds will enable us to continue to develop our technology and manufacturing capabilities," Ann Marie Sastry, CEO of Sakti3, said in a statement. "We are scaling and continuing to build our team from our base in Michigan."

Sastry, director of the energy systems engineering program at the University of Michigan, founded Sakti3 in 2007.

The company is developing solid-state lithium ion battery systems to be used in electrified vehicles, and the advanced manufacturing processes needed to bring the batteries to market at a reasonable cost.

Sakti3 received a \$2.3 million state tax credit in March 2008 in return for about \$1.1 million in company investment in its Ann Arbor operations.

The company also was granted \$3 million under the state's Centers of Energy Excellence program to establish a center focused on next-generation lithium battery technologies and processes.

"Sakti3 presents a fantastic Michigan story: some of the most innovative technology and talent from the University of Michigan has built a business to speed electrification of vehicles," Jeff Bocan, Beringea managing director, said in a statement.

"Sakti3 helps position Michigan as a leader of the next phase of growth in the automotive market — an industry still critical to Michigan's future."



Why Start-Ups Are Charging Into Lithium

By Steven Gray / Detroit

April 5, 2010

In February, President Barack Obama told the crowd at a Henderson, Nev., high school that not so long ago, the U.S. made barely 2% of the advanced batteries used in the world's electric vehicles. Now, thanks to a multibillion-dollar federal investment, American companies are positioned to increase production tenfold — and potentially control 40% of the global lithium-ion-battery market by 2015. “We’ve created an entire new industry,” Obama said.

Not quite, but certainly the beginnings of one. Demand for lithium-ion batteries is increasing dramatically as electric-car technology improves and prices drop. Nissan has introduced the all-electric Leaf, and this year Chevy will debut the long-anticipated gas-electric Volt. Those and future electric cars need battery packs, and at least a dozen American lithium-battery start-ups are competing with Asian companies such as Sanyo and Hitachi to provide them. “There’s a tremendous amount of competition,” says David Vieau, chief executive of A123 Systems, a Watertown, Mass., start-up powered by federal money that is vying for the business.

And it’s a ton of business. The consulting firm Pike Research estimates that the global market for lithium-ion batteries could grow from \$877 million this year to \$8 billion by 2015. In North America, the market is expected to expand from about \$287 million this year to \$2.2 billion in 2015.

A123 Systems is a window on how the government’s multibillion-dollar electric-vehicle gambit is working. The company was founded at MIT in 2001 with a \$100,000 Department of Energy grant. One of its early products was lithium-ion batteries for power-tool maker Black & Decker. Last year, A123 Systems got a \$249 million federal grant to open at least three lithium-ion-battery plants in Michigan that will employ hundreds of workers. Michigan is home to or close to many of the plants where electric vehicles are being made, of course, and the state has a surplus of skilled workers. It’s not, ahem, a bad choice politically either.

Vieau attributes his company’s recent success in part to its deep finances and manufacturing capacity. Customers regularly ask, he says, “Do you have the financial wherewithal to keep up and execute at a large scale?” Companies like A123 are busy wrestling with two key issues facing electric-car batteries: providing enough power to the car’s engine and storing enough power to guarantee a defined range — say, 200 miles (about 320 km) — between charges. The goal for electric-car manufacturers is an affordable battery that can handle countless partial charge-discharge cycles over an eight-to-10-year life cycle. The battery has to absorb energy from braking and provide short bursts of power for acceleration. Lithium-ion batteries, with their high density-to-weight ratio, provide the greatest acceleration and range with the fewest batteries compared with lead-acid or nickel-metal-hydride batteries. One big problem: they can overheat and even blow up — bad enough in a single-battery laptop but potentially disastrous in a multibattery electric car. So engineers have been busy resolving the heat problem and refining the batteries’ ability to handle partial charge-discharge cycles.

As for affordability, lithium-ion battery packs currently cost about \$1,000 per kilowatt-hour of capacity. Which means the GM Volt’s 16-kW-h battery pack alone would cost \$16,000, according to some industry analysts. The price per kilowatt-hour has to fall below \$500 to make production viable — and it will.

Sakti3 is another company trying to create a breakthrough. The company was launched a few years ago at the University of Michigan by an ambitious young engineering professor, Ann Marie Sastry. Sakti3 is developing solid-state (as opposed to liquid) lithium-ion batteries that Sastry believes will enable cars to travel twice as far as batteries do now, allowing the

cars to be used the way internal-combustion-engine-driven vehicles are. Her firm is developing prototypes to deliver to automakers later this year. Sastry's 20-employee firm, based in Ann Arbor, has generated millions of dollars in government grants and considerable buzz — but so far no juice.

Automakers, meanwhile, are developing their own battery capability. Ford, for one, believes that designing its own lithium-ion battery packs will help streamline the development of its electric vehicles and reduce the cost. Design experts will be brought in-house, says Nancy Gioia, Ford's director of global electrification. By developing battery packs, Gioia says, "we get the volume and scale of more than 1 million units on our battery-management systems. Our suppliers aren't in a position to do that yet."

While they wait for the U.S. electric-auto market to develop, some new suppliers are looking toward consumer electronic goods and markets outside the U.S. to keep their plants busy and improve quality until the big orders come in. "We're in the early stages of what will be a significant run-up," says A123's Vieau. "There's a lot of business out there." Sastry echoes that view, saying many automakers rely on engine suppliers. "If the dream I and others have is realized, we'll see batteries being treated like engines," she says. Job engines, no less.

Auto Battery Developer Sakti3 Gets \$7M in Series B Funds; Company Stays Low Key

By Howard Lovy

April 21, 2010



When I last met Ann Marie Sastry, she was shivering in the cold, leaky basement of Detroit's Cobo Hall at January's auto show, talking about how her company, Ann Arbor, MI-based automotive lithium-ion battery developer Sakti3, was eventually going to power the cars upstairs on the main show's "Electric Avenue." Now her company is closer to ascending that escalator with a new \$7 million Series B round of financing.

The money comes from new investor Beringea, based in Farmington Hills, MI, and previous investor Khosla Ventures. The Beringea investment was made through the \$175 million InvestMichigan Growth Capital fund, which provides expansion capital to promising Michigan businesses.

Previously, the company received \$3 million from the Michigan Economic Development Corporation in 2009 following an initial \$2 million in financing from Khosla Ventures in 2008.

Sastry, the company's CEO and a University of Michigan engineering professor, told me recently that although she likes to stay low-key about her company, this investment is exciting because it allows **Sakti3** to work toward its goal of hiring 112 more people in the next few years and getting prototypes to customers by the end of this year.

Sakti3 has been a kind of poster child for state incentives. In 2008, the company received tax credits from the Michigan Economic Growth Authority worth \$2.3 million over 10 years, helping to convince the company to stay in Michigan rather than move to a competing site in California.

"They've been amazing to us," Sastry says, referring to the state government's efforts to support Michigan's nascent battery industry. "The state's made a really substantial commitment to us. We take that really seriously. We want to scale in Michigan and the state has really stepped up."

But, Sastry says, mostly she and her colleagues at Sakti3 keep their heads down, work on their technology and learn more about the nuts and bolts of the business, like automotive supply chain issues. Lithium-ion battery cells for the automotive space is a hot, highly competitive field now and Sastry prefers to keep the press releases at a minimum, as you can see by the company's very minimalist Web site.

Of investors Beringea and Khosla, she says that she is thrilled that they share her philosophy about the future of vehicle electrification.

"We really believe that the way to solve a lot of these sticky societal problems is with **good technology**," Sastry says.

Why Obama is putting so much stock in battery technology

By Mark Clayton

July 16, 2010

What's with all the presidential visits to battery-manufacturing plants?

President Obama's trip Thursday to just such a plant in Holland, Mich., was his fourth automotive-battery-focused stop since being elected. To riff off of President Clinton's mantra "it's the economy, stupid," it's almost as if Mr. Obama's catch phrase about what's important could be, "It's the battery, bozo."

The reason is that batteries are central to the president's election-year message that green-tech will lead America into well-paid jobs and a revived economy. But politics aside, the \$2.4 billion the Obama administration has funneled to the advanced battery industry points to a tooth-and-nail struggle as the United States endeavors to catch up to Asia in making cutting-edge lithium-ion batteries for use in vehicles.

"The workers at this plant, already slated to produce batteries for the new Chevy Volt, learned the other day that they're also going to be supplying batteries for the new electric Ford Focus as soon as this operation gears up," Obama said Thursday at the Compact Power plant in Michigan. "By 2012, the batteries will be manufactured here in Holland, Michigan. So when you buy one of these vehicles, the battery could be stamped 'Made in America' - just like the car." Last week, he visited an electric-truck plant in Kansas City, Mo.

Developing US manufacturing prowess in new batteries is vital, analysts agree. Those batteries will power next-generation electrified plug-in vehicles, which are expected to dominate auto sales within a decade, they say. The nation that dominates batteries is also likely take the lead in overall auto manufacturing.

"The Obama administration is making a concerted effort to prevent the failure of the US auto industry, and that will bolster development of the US battery industry through 2012," says John Gartner, a senior analyst at Pike Research, a Boulder, Colo., clean-tech research company. "But political shifts and market realities could remove that safety net."

Nine battery plants in the works

The huge federal investment has single-handedly vaulted the US toward becoming the globe's major supplier of advanced batteries for plug-in vehicles. Government funds have helped to finance 26 of 30 electric-vehicle battery and component plants now under construction - including nine lithium-ion battery manufacturing plants. Four of the nine are expected to be producing batteries by year's end.

By 2012, those 30 factories will have enough capacity to supply 20 percent of the world's advanced vehicle batteries, according to a new report by the US Department of Energy. That share could rise to 40 percent by 2015.

"There's no question this federal investment has given US battery manufacturers a huge push in the right direction," says Vishal Sapru, industry manager for energy and power systems for Frost & Sullivan, a market research firm. "The funding has contributed significantly to giving the US at least a chance to play in this arena."

But he and others note that the US industry will need additional research and development funding to develop technologies that are more advanced than lithium ion, if the US is to become solidly planted as a global leader in electrified vehicles.

China, Korea, Japan, and India are today's dominant producers of lithium-ion batteries for cell phones and personal appliances. They have a running start. China is currently leading the world in the market for electric-only vehicles, according to Pike Research.

"Are we playing catch-up with Asian nations in this battery race? Yes, we are," says Ann Marie Sastry, professor of mechanical engineering at the University of Michigan and CEO of Sakti3, a battery startup company. "Sure, someone can always say it's stupid to pour billions into batteries when all these other countries are ahead of us. But it's also the price we have to pay to even get into the game."

Next two years crucial

The next two years will be crucial for the US industry, analysts say. By 2012, all the battery plants are slated to be cranking out systems for cars. But will there be enough battery demand from automakers?

The danger, says Dave Hurst, another Pike Research senior analyst, is that federal funding might dry up before the domestic battery industry is on firm footing.

"We're seeing a big backlash, politically, from bailouts," he says. "So if we start seeing future funding dry up, that's going to be a problem for the industry in the longer run - after 2012, when you start to see a shakeout from battery plants bought or sold or, worst case, closing."

Pike Research estimates that global sales of plug-in vehicles will reach 1,081,000 by 2015 - with one-quarter of that total, or about 285,000 vehicles, in the US. That's about the right amount to support all the battery factories in the US - except for one thing. Many of those vehicles - such as the plug-in Prius - will get their batteries from overseas manufacturers.

That means there may not be quite enough demand to support all the US battery suppliers by 2015 - and definitely not enough demand by 2012, when most are slated to be in full production, Pike Research says.

Frost and Sullivan's Mr. Sapru offers a different assessment. He sees global demand for plug-in vehicles growing 127 percent annually through 2015, to about 756,000 vehicles a year. The US portion could be as much as half of that - although the market could be much larger depending on the strength of economic rebound and gasoline prices, he says.

"Obama coming to Michigan is about him bearing witness to the bud of an industry that could one day be a really good engine in our economy, if it is cultivated, fertilized, and nurtured," says Robert Kruse, former director of global vehicle engineering for hybrids, electric vehicles, and batteries for General Motors, and now principal of EV Consulting in Detroit.

Though the US battery industry will have to battle for primacy in first-generation new-battery technology, the long term is bright, he says. It's crucial that third- and fourth-generation battery technology be nurtured in the US - just as China, Japan, and Korea have done with borrowed US lithium-ion technology.

"What Obama has done was absolutely necessary for the US automotive industry to survive and grow," he says. "Now it's poised, with electrification, to grow into something very substantial - but only if the government looks long term. That's where we have to put our money."

The New York Times

Expect the World®

G.M. Ventures Invests \$3.2 Million in Battery Company

By Jim Motavalli

September 9, 2010



Sakti3 Inc. has brought in General Motors' new venture capital arm as an investor in the hope that the automaker will help commercialize the start-up's battery technology.

The company said it received \$3.2 million from General Motors Ventures and \$1 million from Itochu Technology Ventures, which bought minority stakes in the company. The funding was the second close of the company's Series B round.

"Absolutely everyone here hopes that there will be a customer-supplier relationship" between GM and Sakti3, said Ann Marie Sastry, chief executive

of the Ann Arbor, Mich.-based start-up.

For starters, GM expects to test Sakti3's battery cells once they are available, said Jon Lauckner, president of GM Ventures, which was created earlier this year with \$100 million to invest in new technologies that could be incorporated into GM's vehicles. Sakti3 is working on prototype battery cells, some of which would be more geared for cellphones and other consumer electronics.

Lauckner said it's too early to tell whether GM would be involved in any manufacturing of Sakti3's batteries, which are still in the early stages of development.

"Electrically driven vehicles are more expensive than gasoline-fueled ones, and in order to grow the market to its full potential we're going to have to improve the electric vehicle, batteries or power electronics significantly in order to allow those to mature," Lauckner said.

Lauckner said his team looked at several early-stage battery technologies and found that Sakti3's has "the potential to be quite a game-changer."

The venture group, now totaling about a dozen people, has made one other investment so far--in hybrid electric vehicle maker Bright Automotive Inc.--and is likely to make several others this year, Lauckner said. Its main areas of focus are automotive clean tech, infotainment, advanced materials and sensor technologies.

Sakti3 won't be the only battery technology in which GM Ventures invests, said Lauckner, adding that it makes sense for GM to invest in some later-stage battery technologies as well, as batteries take a while to develop.

Sakti3's Sastry said she has long cooperated with GM in her capacity as professor of engineering at the University of Michigan. Sastry is co-director with GM's Mickey Bly of the GM/UM advanced battery coalition for drivetrains, a partnership

that tests, models and develops battery technology. Bly is executive director of global electrical systems, hybrids, and electric vehicles and batteries at GM.

Sakti3 is developing a solid-state lithium-ion battery, which the company hopes will extend range, lifetime and power of batteries both in electric vehicles and in consumer electronics. Japan-based Itochu will help the company explore the Asian consumer electronics markets, said Sastry.

“We see that North America is often the test market for devices and products that penetrate global markets,” Sastry said.

The first close of the round took place earlier this year with \$7 million from lead investor Beringea and returning backer Khosla Ventures. Sastry declined to comment on valuation.

Bloomberg

General Motors Ventures Invests \$3.2 Million in Battery Developer Sakti3

By Craig Trudell

September 10, 2010

General Motors Co., the largest U.S. automaker, and a unit of Itochu Corp. are investing \$4.2 million in battery developer Sakti3 for technology that may increase the range of electric vehicles.

Sakti3 received \$3.2 million from Detroit-based GM's venture capital unit and \$1 million from Itochu Ventures of Tokyo, said Ann Marie Sastry, chief executive officer of Sakti3. GM will get an undisclosed stake in Ann Arbor, Michigan-based Sakti3 in return for the funds, she said in a telephone interview.

GM, 61 percent owned by the U.S. government, is developing battery technologies such as those used in the electric-drive Chevrolet Volt in part to comply with fuel-efficiency standards. Automakers are required to reach an average of 35.5 miles per gallon across their vehicle lineups by 2016.

"You must take risks and work with innovators," Sastry said. "That is the only way to maintain leadership in any sector, particularly in automotive."

The New York Times reported GM's investment in Sakti3 yesterday on its Wheels blog.

The investment is the second by General Motors Ventures LLC, the unit formed in June with \$100 million in capital for technology startups. GM Ventures provided \$5 million to Anderson, Indiana-based Bright Automotive in August to help develop its Idea plug-in commercial van.

GM plans to sell the Volt in November for a starting price of \$41,000. The Volt can travel 340 miles on a tank of fuel, with the first 40 in electric drive before a gasoline engine starts to recharge the battery.

Sakti3 was founded in 2007 and was spun out of the University of Michigan, also in Ann Arbor, the company said today in a statement.

Itochu Ventures is the corporate venture arm of Itochu Corp., Japan's fourth-largest trading company by market value.

To contact the reporter on this story: Craig Trudell in New York at ctrudell1@bloomberg.net.

Bloomberg Businessweek

GM invests \$3.2 million in battery company

September 10, 2010

General Motors Co.'s venture capital operation has invested \$3.2 million in Sakti3, Inc., a startup battery technology company spun off from the University of Michigan in Ann Arbor.

The company got another \$1 million from Japanese investment firm Itochu Technology Ventures. The companies plan to work together to speed up commercialization of new lithium-ion battery cells developed by Sakti3, which was spun off from the university in 2007.

"Our product planning in the automotive and portables sectors will be accelerated by working with these two pre-eminent firms," Sakti3 CEO Ann Marie Sastry said in a statement issued Friday.

GM set up General Motors Ventures LLC in June with \$100 million to invest in companies that are developing transportation technology.

VentureBeat

GM, Itochu charge up battery-maker Sakti3 with \$4.2 million

By Iris Kuo

September 10, 2010



GM Ventures, the venture-capital arm of General Motors, announced today it has teamed up with Itochu Technology Ventures to invest \$4.2 million into Sakti3, a lithium-ion battery developer.

Sakti3, a spin-off from the University of Michigan, is working on battery cells that could be smaller, cheaper and more effective than what's currently on the market – potentially resulting in batteries that could extend its range of electric cars. The company's technology uses solids instead of the standard liquid electrolyte and electrodes.

"The technology will eventually make it into GM batteries/vehicles, but it's years away from commercial applications," said GM spokeswoman Allison

Ackels. "When the technology becomes commercially viable, it could be in future GM cars and trucks."

GM, which it set to release the Chevrolet Volt electric hybrid later this year, reportedly invested \$3.2 million.

The reborn General Motors opened its venture-capital branch in June to fund advanced transportation projects. With its backing and that of Japanese conglomerate Itochu (which recently invested in video platform Ooyala and game startup Tonchidot), Sakti3 should be able to speed the commercialization of its batteries.

This is the second announcement from GM Ventures, which said last month it would invest \$5 million in Bright Automotive, which makes a hybrid van.

Range and the reliability of batteries are big question marks in the electric car market. While consumers have tax incentives to purchase an electric car – the Nissan Leaf, Coda sedan and Chevrolet Volt all debut at the end of this year – questions remain about the range of these cars and the reliability of the batteries, which are expensive to replace. The Leaf, for example, goes about 100 miles on a single charge, but could perform worse in extremely cold or hot weather.

It's also not clear how long the batteries last, though Nissan and Chevrolet both extended an 8-year, 100,000-mile warranty to the Leaf and Volt, respectively.

Sakti3 is led by Ann Marie Sastry (pictured above, with a Volt), a University of Michigan professor recently profiled in the New York Times. Sakti3's investors include Khosla and Beringea.

Ann Arbor battery firm Sakti3 lands \$3.2 million investment from General Motors

By Nathan Bomey
September 10, 2010

Ann Arbor-based Sakti3, a University of Michigan spinoff developing next-generation batteries for electric vehicles, has secured a \$3.2 million investment from the venture investment arm of General Motors.

Sakti3, whose CEO, Ann Marie Sastry, is considered a global expert on alternative propulsion, won the second investment approved by GM Ventures, a \$100 million investment operation the automaker launched in June.

A GM spokeswoman confirmed news of the investment, which was first reported this afternoon by the New York Times, but declined to offer further details until a news release is issued Friday morning. Sastry declined to comment until the news release is issued.

GM's decision to invest in Sakti3 is the latest show of confidence in the startup company, which has about 20 employees at its office on Victors Way.

Sakti3 earlier this year landed \$7 million in venture capital from renowned clean tech investor Khosla Ventures and investment firm Beringea, which manages part of the \$150 million Invest Michigan Growth Capital Fund.

"This is a critical phase in the growth of any high-tech company -- the recruitment of new partners and the development of the capability to build prototypes at a larger scale," Sastry told AnnArbor.com in April.

"Our plan now is to keep our heads down and to keep developing our technology and to spend these funds wisely so we can get the prototypes to customers."

The New York Times reported that Sakti3's batteries would "replace the standard liquid electrolyte and electrodes with solids," boasting "the potential of doubling energy density, enabling smaller and more powerful packs that offer electric cars greater range."

"The technology that Sakti3 is working on is very innovative," GM Ventures President Jon Lauckner told the New York Times. "It's quite different from standard electrochemical cells and it's a technology not in the marketplace today. It has the potential of being a real game changer going forward." GM already had a research partnership with Sakti3 and has enrolled dozens of its own engineers in Sastry's energy systems engineering master's program at U-M.

For GM, the partnership is practical: The automaker needs to lower the cost of advanced batteries to make electric vehicles affordable to the middle class. GM announced this summer that this November it would start selling the Chevrolet Volt, an extended-range electric vehicle, at a suggested retail price of \$41,000.

The Volt uses a 400-pound lithium-ion battery pack to store electricity, allowing the vehicle to travel up to 40 miles without using petroleum until a gasoline-powered generator kicks in and recharges the battery, allowing the car to continue



traveling.

GM and other automakers like Nissan, which is introducing the all-electric Leaf later this year, must lower the cost and size of electric vehicles.

“I think it becomes a volume issue,” U-M Transportation Research Institute analyst Bruce Belzowski said in July. “As the economies of scale kick in, the price of the components will go down, but there is a certain amount of engineering, continuous improvement that will be a part of that as well.”

Sakti3 in 2008 received a \$2.3 million tax credit from the Michigan Economic Development Corp.’s Michigan Economic Growth Authority Board to support its growth plan. The company, which later received a separate \$3 million award from the MEDC’s Centers of Energy Excellence program, said in 2008 that it would hire 112 workers over the next several years.

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Detroit and Southeast Michigan's premier business news and information website

Sakti3 adds investors, \$4.2 million in funding

By Tom Henderson

September 10, 2010

Sakti3 Inc., a spinoff from the University of Michigan that is developing lithium-ion batteries for electric vehicles, announced Friday that it has received a \$4.2 million round of funding by General Motors Ventures and Itochu Technology Ventures of Japan.

The two new investors join two previous investors, Kosla Ventures of California and Farmington Hills-based Beringea LLC, who announced in April that they had invested \$7 million in the company. Beringea's investment was from the \$185 million Growth Capital Fund it co-manages with New York-based Credit Suisse.

The Growth Capital Fund is part of the state's InvestMichigan! program, which was founded in 2008 with \$300 million in state pension fund money.

"These investments by General Motors Ventures and Itochu Technology Ventures bring us not only capital, but partnerships that will speed our commercialization efforts," said Ann Marie Sastry, the Sakti3 CEO who, as director of the energy systems engineering program at UM, founded the company in 2007.

Sakti3 has received a \$2.3 million state tax credit in return for about \$1.1 million in company investment in its Ann Arbor operations, and it has received a grant of \$3 million from the state's Centers of Energy Excellence program.



GM Ventures invests in battery start-up Sakti3

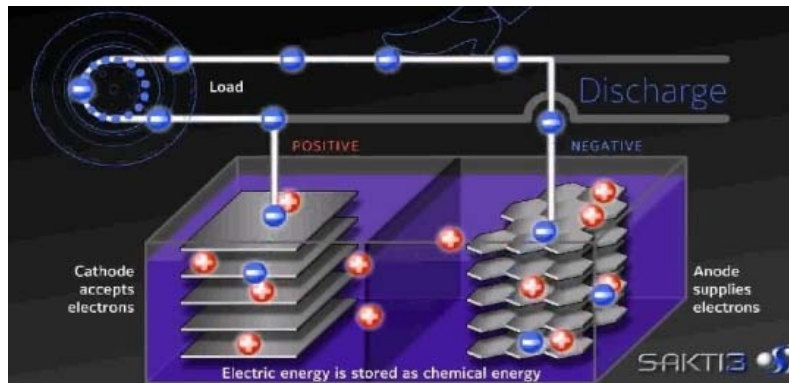
by Martin LaMonica

September 10, 2010

General Motor's venture-capital arm has invested in battery company Sakti3, taking a stake for a second time in an electric vehicle oriented start-up.

GM Ventures and the venture arm of Japanese conglomerate Itochu have invested \$4.2 million in the company, Sakti3 said Friday. GM Ventures invested \$3.2 million, according to reports.

Ann Arbor, Mich.-based Sakti3 is developing next-generation lithium-ion batteries that are designed to be cheaper and extend electric vehicle driving range. Rather than using a liquid electrolyte like most rechargeable batteries today, Sakti3's batteries are solid-state devices, which would allow car batteries to hold more energy and improve safety, according to the company.



This is the second investment for GM Ventures, which was created earlier this year to help the auto giant tap into new auto technologies that could make their way into GM vehicles. In August, it took a \$5 million stake in Bright Automotive, which designed a plug-in hybrid utility van.

"Our investment in Sakti3 gives us access to an innovative battery technology that has the potential to be a mainstream solution for electrically-driven cars and trucks of the future," Jon Lauckner, president of GM Ventures and one of the key GM executives behind the Chevy Volt program, said in a statement.

Development of the technology and manufacturing process behind Sakti3 was led by Professor Ann Marie Sastry in the University of Michigan's mechanical engineering department. Sakti3 was spun off from the university, and Sastry is its founder and CEO.

The company had raised \$7 million from Khosla Ventures and Michigan-based Beringea. It also received a \$3 million grant from the Michigan Economic Development Corporation.

In a statement, Sastry said the investment will help the company bring its batteries to market faster.



Lithium-Ion Battery Maker Sakti3 Gets \$4.2 Million from GM, Itochu to Speed Up Commercialization Efforts

By Erin Kutz

September 10, 2010

Sakti3, an Ann Arbor, MI-based lithium-ion battery maker, announced today that it has brought in \$4.2 million from General Motors Ventures and Itochu Technology Ventures to put toward the manufacturing and commercialization of its battery cells.

Sakti3 was co-founded by Ann Marie Sastry, a University of Michigan engineering professor, in 2007, and is working on high performance solid state batteries. Last year, Sakti3 entered an agreement with GM to study vehicle integration challenges from high-tech batteries.

“These investments by General Motors Ventures and Itochu Technology Ventures bring us not only capital, but partnerships that will speed our commercialization efforts,” CEO Sastry (also a Detroit Xconomist) said in the company announcement of the deal today.

The newest financing brings the company’s funding pot to more than \$16 million, which includes a \$7 million Series B round Sakti3 wrapped up this spring, from Menlo Park, CA-based Khosla Ventures and Beringea, Michigan’s largest venture capital firm. The startup has also received funding from the Michigan Economic Development Corporation, earning it the designation as a Michigan Center of Energy Excellence, and has gotten tax incentives at the state level.

THE WALL STREET JOURNAL.

GM Ventures Makes Battery Start-Up Sakti3 Its Second Investment

By Yuliya Chernova

September 10, 2010

Sakti3 Inc. has brought in General Motors' new venture capital arm as an investor in the hope that the automaker will help commercialize the start-up's battery technology.

The company said it received \$3.2 million from General Motors Ventures and \$1 million from Itochu Technology Ventures, which bought minority stakes in the company. The funding was the second close of the company's Series B round.

"Absolutely everyone here hopes that there will be a customer-supplier relationship" between GM and Sakti3, said Ann Marie Sastry, chief executive of the Ann Arbor, Mich.-based start-up.

For starters, GM expects to test Sakti3's battery cells once they are available, said Jon Lauckner, president of GM Ventures, which was created earlier this year with \$100 million to invest in new technologies that could be incorporated into GM's vehicles. Sakti3 is working on prototype battery cells, some of which would be more geared for cellphones and other consumer electronics.

Lauckner said it's too early to tell whether GM would be involved in any manufacturing of Sakti3's batteries, which are still in the early stages of development.

"Electrically driven vehicles are more expensive than gasoline-fueled ones, and in order to grow the market to its full potential we're going to have to improve the electric vehicle, batteries or power electronics significantly in order to allow those to mature," Lauckner said.

Lauckner said his team looked at several early-stage battery technologies and found that Sakti3's has "the potential to be quite a game-changer."

The venture group, now totaling about a dozen people, has made one other investment so far--in hybrid electric vehicle maker Bright Automotive Inc.--and is likely to make several others this year, Lauckner said. Its main areas of focus are automotive clean tech, infotainment, advanced materials and sensor technologies.

Sakti3 won't be the only battery technology in which GM Ventures invests, said Lauckner, adding that it makes sense for GM to invest in some later-stage battery technologies as well, as batteries take a while to develop.

Sakti3's Sastry said she has long cooperated with GM in her capacity as professor of engineering at the University of Michigan. Sastry is co-director with GM's Mickey Bly of the GM/UM advanced battery coalition for drivetrains, a partnership that tests, models and develops battery technology. Bly is executive director of global electrical systems, hybrids, and electric vehicles and batteries at GM.

Sakti3 is developing a solid-state lithium-ion battery, which the company hopes will extend range, lifetime and power of batteries both in electric vehicles and in consumer electronics. Japan-based Itochu will help the company explore the Asian consumer electronics markets, said Sastry.

"We see that North America is often the test market for devices and products that penetrate global markets," Sastry said. The first close of the round took place earlier this year with \$7 million from lead investor Beringea and returning backer Khosla Ventures. Sastry declined to comment on valuation.

GM and Itochu fund lithium-ion battery development

September 10, 2010

An Ann Arbor, Michigan-based developer of lithium-ion batteries has received \$4.2m (£2.7m) in investment from General Motors Ventures and Itochu Technology Ventures.

A spin-out of the University of Michigan, Sakti3 is commercialising solid-state batteries that are produced using a novel manufacturing process developed by the company.

Sakti3 was founded in 2007 and has been supported to date by Khosla Ventures, the Michigan Economic Development Corporation and Michigan venture capital firm Beringea. The company now plans to work closely with General Motors to speed the commercialisation of its battery cells.

'Our investment in Sakti3 gives us access to an innovative battery technology that has the potential to be a mainstream solution for electrically driven cars and trucks of the future,' said Jon Lauckner, president of GM Ventures.

Sakti3 was awarded a \$3m grant from the Michigan Economic Development Corporation (MEDC) in 2009 and has been designated as a State of Michigan Center of Energy Excellence (CoEE) in partnership with the University of Michigan.

Detroit Free Press

Sakti3 gets \$4.2M

September 11, 2010

Sakti3, an Ann Arbor lithium-ion battery developer, said Friday it had received \$4.2 million in investment -- \$3.2 million from General Motors' venture-capital arm and \$1 million from Itochu Technology Ventures, a division of a Tokyo information-technology group.

The investments are in exchange for undisclosed equity stakes, said Ann Marie Sastry, CEO of Sakti3 and a professor at the University of Michigan. The university, California venture capital group Khosla Ventures and Michigan venture-capital firm Beringea also have stakes in the battery developer, a University of Michigan spin-off.

Sakti3 is working on battery cells using technology that offers energy densities that can easily double those of today's lithium-ion batteries, Sastry said.

Those batteries could eventually end up in GM's electric [vehicles](#).



GM Ventures investing in battery maker

By Joe Szczesny

September 11, 2010

General Motors Ventures and Itochu Technology Ventures, a Japanese venture capital firm, are investing \$4.2 million in Sakti3 Inc., a developer of next-generation lithium-ion batteries.

Itochu and GM join Khosla Ventures of Menlo Park, Calif., and Beringea of Farmington Hills, Michigan's largest venture capital firm, in placing capital into the Ann Arbor-based Sakti3.

"It's great news for (Sakti3)," said Andi Wilmes, spokeswoman for Beringea, which last spring led Sakti3's \$7 million Series B financing round with Khosla Ventures.

"These investments by General Motors Ventures and Itochu Technology Ventures bring us not only capital, but partnerships that will speed our commercialization efforts," said Ann Marie Sastry, Sakti3 chief executive officer.

"Our product planning in the automotive and portables sectors will be accelerated by working with these two pre-eminent firms," she said, adding GM is clearly a global leader in vehicle electrification.

Itochu Technology Ventures has a strong focus on energy technologies, and on growth markets in Asia.

Jon Lauckner, president of GM Ventures LLC, said, "Our investment in Sakti3 gives us access to an innovative battery technology that has the potential to be a mainstream solution for electrically-driven cars and trucks of the future."

Senator Carl Levin (D-MI) also hailed the announcement, saying it was the latest piece of evidence that many U.S. companies, and especially Michigan companies, are moving toward a future of technologically advanced, energy-efficient vehicles.

"Sakti3's solid-state advanced lithium ion battery technology offers tremendous potential for powering the next generation of electric drive vehicles in the U.S. and around the world," he said.

Sakti3 was awarded a \$3 million grant from the Michigan Economic Development Corporation and has been designated as a State of Michigan Center of Energy Excellence (CoEE) in partnership with the University of Michigan.



REUTERS

Advanced battery developer Sakti3 raises \$4.2 million

By Carol Tice

September 27, 2010

SAN FRANCISCO (Venture Capital Journal) - At first glance, it might seem like GM Ventures was playing hometown favorites with its involvement in the \$4.2 million Series B funding round of lithium-battery startup Sakti3 announced earlier this month.

The 2-year-old company is based near the auto giant in Ann Arbor, Michigan and Sakti3 CEO Ann Marie Sastry has personal ties to General Motors, having previously helped design a training program for its engineers.

But GM Ventures President Jon Lauckner, who has known Sastry for years, said neither familiarity nor proximity played into the firm's decision to fund the startup. Sakti3's standout technology made GM want to get involved, period.



"We would have been just as enthusiastic if Sakti3 was in Silicon Valley or anywhere else in the world," Lauckner said. "This has the potential to be a revolutionary technology."

GM Ventures was joined in the funding round by Itochu Technology Ventures. The company raised \$7 million in April from Beringea and Khosla Ventures. Sakti3 (www.sakti3.com) also raised \$3 million from The Michigan Economic Development Corporation in 2009, bringing the total funding amount raised to \$14.2 million.

What's attracted the attention of the investors about the lithium batteries Sakti3 is developing is that the current generation of metal-hydride based electric-car batteries rely on a liquid medium for electric storage. That kind of technology makes the batteries bulky, heavy, costly and inefficient.

Sakti3, however, is developing solid-state lithium-ion battery technology that aims to eliminate the need for a liquid base. That would provide more power and durability in a lighter, cheaper, more compact package. In other words, it's the difference between a 20th century-era crystal radio set and an iPod, according to Lauckner.

Lauckner said while there are scores of clean-energy startups out there, few are in Sakti3's league.

"When you start talking about solid state technology in lithium-ion batteries, they're advanced compared with what else is being developed out there," he said. "This could give us a significant advantage going forward."

GM Ventures has a personal interest in Sakti3's batteries, as it looks to compete in the growing electric-car market. For instance, GM's all-electric Chevy Volt currently lasts just 40 miles on a charge. If it could reach 100 miles instead, it would appeal to a broader swath of consumers and offer GM a serious competitive edge.

Sastry said the next-generation of solid-state batteries could also help make mobile devices more affordable, although she said that the technology's use in small devices still faces a long road to commercialization.

“Our success is not assured, but our bench strength is growing with these investors and our staff,” said Sastry, who also teaches science at the University of Michigan. “GM can help reduce our risk by giving us information on their customers’ needs.”



Battery start-up Sakti3 considers building factory in Michigan

By David Shepardson

October 14, 2010

Detroit — The chief executive of an Ann Arbor-based battery start-up says the company hopes to decide within the next year or two where to build a factory.

Ann Marie Sastry, CEO of Sakti3 Inc, said the company is considering Michigan among the options.

“My business Sakti3 has to make some decisions about where we’ll site factories — and we would like those to be here to keep that innovation in America,” Sastry said, saying she and other battery companies and suppliers will be making decisions on whether to locate in the United States or abroad.

She spoke with Rep. John Dingell, D-Dearborn, who said the government needs to take further action to boost the nascent electric vehicle and battery industry. Dingell said he wants the next Volt to drive out “with good American batteries.”

“The Koreans are getting ready to plunk \$20 billion into advanced battery and electric vehicle research,” Dingell said. The U.S. must back clean vehicle efforts to keep up with other governments, he said.

Sastry also said the U.S. is in danger of falling behind.

“The United States has to get in the game,” Sastry said, noting other countries like China are also backing their electric vehicle and battery efforts. “If we’re not in the game, we’re in deep trouble in the auto industry.”

Both spoke on the sidelines of the Business of Plugging In conference in Detroit.

Congress approved \$2.4 billion in cash grants for electric and battery research that was awarded in August 2009 — more than half went to Michigan companies or projects. It’s also approved \$7,500 tax breaks for purchasers Sastry said the battery market is worth \$20 billion or \$30 billion over the next six years or so.

“This is a critical moment in time,” Sastry said, noting that while North America has a good start with battery facilities it can’t rest on its laurels. “If we don’t stay ahead, we’re going to lose our grip on the rings on this new industry.”

Dingell agreed.

“We can’t fight for last year’s technology,” he said, saying the industry and Congress must be looking 10 and 20 years out.

Last month, Sakti3, the developer of next-generation lithium-ion batteries, received an investment of \$4.2 million from General Motors Co.’s \$100 million venture capital fund and Itochu Technology Ventures to advance the firm’s manufacturing capabilities.

The companies plan to work together to speed commercialization of Sakti3 battery cells. Sakti3 was awarded a \$3 million grant from the Michigan Economic Development Corporation in 2009 and has been designated as a state of Michigan Center of Energy Excellence in partnership with the University of Michigan.

Sakti3 was founded in 2007 as a spin-off of the University of Michigan and has been supported by Khosla Ventures and the Michigan Economic Development Corporation.

Sastry said Michigan economic officials have been in close contact to make the case that Sakti3 should build a factory in the state.

THE WALL STREET JOURNAL.

Electric-Car Offshoots Pick Up Momentum

New alternative-energy deals also include solar cells and biofuels

By Yuliya Chernova

October 18, 2010

Coulomb Charges Up

Coulomb Technologies Inc., which sells software and hardware for electric-vehicle charging stations, has more than tripled in valuation in just a few months—a possible signal that investors believe the industry is about to take off.

Last month, the Campbell, Calif., start-up announced it had raised \$15 million in Series C financing. That boosted the company's valuation to \$80 million from \$24 million after a January funding round, says Richard Lowenthal, Coulomb's founder and chief executive.

Several factors have helped contribute to investor interest in the company, Mr. Lowenthal says. Auto makers such as General Motors Co., Nissan Motor Co. and Ford Motor Co. are about to roll out their electric vehicles. The initial public offering of electric-vehicle maker Tesla Motors Inc. over the summer showed investors there is a path to liquidity. And Coulomb changed its business model to emphasize software sales in preparation for increased competition on the hardware side of the business. Coulomb's software is designed to, among other things, make it easier for station owners to bill drivers for the electricity they use.

Coulomb also expects its sales to rise to \$9 million this year from \$1 million last year, according to Mr. Lowenthal, partly because of the company's participation in a Department of Energy program to deploy charging stations in nine U.S. cities.

New investors in the C round were Harbor Pacific Capital LLC, LS Cable Ltd. and LS Industrial Systems Co. Venture investors were Rho Ventures, Siemens Venture Capital, Hartford Ventures and Voyager Capital Group.

Sakti3 Attracts Interest From GM

Battery developer Sakti3 Inc. received \$3.2 million in Series B funding from General Motors' new venture-capital arm and is hoping the auto maker will help commercialize its technology.

"Absolutely everyone here hopes that there will be a customer-supplier relationship" between GM and Sakti3, says Ann Marie Sastry, chief executive of the Ann Arbor, Mich., start-up.

Sakti3, which also received \$1 million from Itochu Technology Ventures Inc., is developing a lithium-ion battery designed to extend the range, lifetime and power of batteries both in electric vehicles and consumer electronics.

General Motors plans to test Sakti3's battery cells once they are available, says Jon Lauckner, president of GM Ventures, created earlier this year to find new technologies that could be incorporated into GM vehicles. Mr. Lauckner says it is too early to tell whether GM would be involved in any manufacturing of Sakti3's batteries, which are in the early stages of development. Still, his team determined that Sakti3's technology has "the potential to be quite a game-changer," he says.

NuvoSun Raises Funds for New Plant

NuvoSun Inc., a maker of thin-film solar cells, has raised \$29 million in two rounds of financing this year from Dow Chemical Co. and NuvoSun founder David Pearce.

The company, based in Palo Alto, Calif., says it will use the capital to open its first commercial-size factory, in Milpitas, Calif.

NuvoSun's solar cells and modules are made by applying a semiconducting film of copper indium gallium diselenide, or CIGS, on a stainless-steel foil. Eventually, NuvoSun hopes to supply Dow with solar cells for its solar roof shingles, a product currently in development, says Mr. Pearce, who is also NuvoSun's president and chief executive.

Dow's venture arm, Dow Venture Capital, contributed to both rounds; Mr. Pearce wouldn't say how much the company contributed.

Mr. Pearce says NuvoSun will be able to make solar modules for less than \$1 a watt by 2012. At 70 to 75 cents a watt, CIGS companies would be able to compete with Chinese manufacturers of the more prevalent solar modules based on crystalline silicon, he says.

SG Biofuels Wins New Backers

SG Biofuels Inc., which develops and produces seeds of the jatropha plant for use in biofuel, raised \$9.4 million from new and returning investors.

The San Diego-based company's new backers are Flint Hills Resources LLC, part of closely held conglomerate Koch Industries Inc., which refines and sells crude oil, and publicly held Life Technologies Corp., a biotechnology company that together with SG sequenced the jatropha genome.

Jatropha is a perennial, inedible plant that produces seeds with a high oil content. It requires relatively little upkeep and isn't a source of food like corn, the main ingredient in today's biofuels.

SG, which was founded three years ago and began selling its seeds in March, has developed a system for cultivating jatropha that produces more seeds per given area and at a lower cost.

The company estimates that oil eventually could be produced from its seeds at a cost of \$1.40 a gallon, or about \$58 a barrel, making it competitive with petroleum-based crude oil at today's prices.

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Environmental block: Sustainability by any other name might smell sweeter

By Gary Anglebrandt

November 21, 2010

The biggest problem with sustainability could very well be the word itself -- and all the other words associated with it.

Phrases like "triple bottom line," "people, planet and profit," "cradle to cradle" or "corporate social responsibility" are all easy targets for eye rolls from business executives weary of altruistic terms.

What is corporate sustainability? It's about doing business better. At its core, it's what made Henry Ford look for ways to make his manufacturing processes more efficient. These days, it might make a battery or furniture maker look for ways to reduce waste.

Sustainability refers to business practices that address environmental and social problems. Reduction of energy use is the classic example, but proponents say it goes way beyond turning off the lights.

Sustainability asks businesses to consider un-businesslike things, such as the quality of life of the surrounding community and the well-being of workers, because eventually these things affect the bottom line, too. If a business can no longer attract top talent because the company has a bad reputation and sits in a run down, crime-ridden area, that's a business problem, not just a societal one, proponents say.

But people who work in this field are well aware of their image problem. Many of them tell stories of how co-workers and family members questioned the wisdom of a career move into something apparently involving the environment.

"I see people actually cringe" at terms like social capital and social responsibility, said Kelley Losey, director of **Quest Sustainable Solutions** in Grand Rapids, during a recent presentation at **Automation Alley** in Troy.

Kate Pepin, president of the **Southeast Michigan Sustainable Business Forum** based in Ann Arbor, sometimes recommends avoiding the word "sustainability" entirely. That helps to ensure that preconceived notions do not distract businesspeople from the main message that sustainability can be about economics and profits -- not just saving the world from mankind's consumptive ways.

New Sydney, Australia-based **Planet Footprint Pty. Ltd.** opened a U.S. base office a year ago in Ann Arbor. Dean Jackson, president of Planet Footprint's U.S. business, received a sustainable business award from the Southeast Michigan Sustainable Business Forum on Nov. 11.

Financial accountability and reputation are reasons why businesses should care about sustainability, he said.

His company helps customers, mainly municipalities, keep track of their energy, fuel and waste consumption.

"It makes their behavior change, and those behavioral changes can bring about savings instantly," he said.

In October, the **University of Michigan-Dearborn** and *Crain's Detroit Business* held a panel on sustainability in manufacturing. Among the panelists was Ann Marie Sastry, co-founder and CEO of **Sakti3**. Her company is a lithium-ion battery startup in Ann Arbor spun off from the **University of Michigan**.

In Sastry's view, there's a much bigger business picture for sustainability when the developing world is taken into account. These are countries where leaps in infrastructure development can be witnessed, such as forgoing the stringing up of miles of telephone lines in favor of cell phone towers.

"To me, the important question is, what are the cars that people are going to sell in emerging markets? ... And if they select (internal combustion) engines, we're all in a lot of trouble. In fact, it's unsustainable," Sastry said.

She said she once spoke to a person in the auto industry who had taken part in the dissection of a Toyota Prius. The engineers were able to point to some aspect of the vehicle and say, "Toyota's losing money on this."

On the other hand, she said, money Toyota used to become the North American industry leader in a new growth area was well spent.

While it's no surprise that Ann Arbor is home to outfits such as the Southeast Michigan Sustainable Business Forum and Sakti3, west Michigan organizations also can offer lessons on best practices in sustainable business.

West Michigan's reputation is a religiously conservative one, the polar opposite of Ann Arbor in Michigan's cultural sphere.

Paul Murray, **Herman Miller's** director of environmental health and safety, said it makes more sense that the region would be a hot spot for sustainability than people might realize.

Herman Miller founder D.J. De Pree was very rooted in the Christian faith, and sustainability is in line with a Christian sense of stewardship, he said.

"This movement really isn't about red, blue. This movement is about being a steward," Murray said.

And for many sustainability proponents, it's an economic matter of the highest order. Countries that do not develop the advanced technologies that incorporate sustainability will fall to the wayside, they say.

Cascade Engineering Inc. Chairman and CEO Fred Keller said China's starting to edge out the U.S. in advanced technology development.

"It's not just something that's nice to think about; it's something that's essential, something as a country we absolutely must do," said Keller, whose company is based in Grand Rapids. "Sustainability can be a driver for innovation, which then drives our economy."

Sastry at Sakti3 said that, for China and India, the issue is not one of choice. Those countries cannot sustain their growth without clean energy technology.

"This isn't one of these things where we sing 'Kumbaya' and say, 'Wouldn't this be nice for the planet?'" Sastry said. "It's something that's an economic reality."

Cascade is growing its line of small, lightweight wind turbines that can be put in residential areas and farms, with new versions to come out within a year, Keller said.

That's part of Cascade's strategy to make products that address challenges, said Losey of Quest Sustainable Solutions, which is part of Cascade.

"Are we making a ton of money on it? No, we're not," she said. But when the market is ready, Cascade will have the edge, just as in the case of hybrid vehicles, she said.

Quest is itself a money-making endeavor for Cascade. Quest's task is to turn Cascade's years of work in sustainability into a consulting business. It might be spun off sometime next year, Losey said.

Plastic injection molding is Cascade's core business, but a view toward sustainability has allowed the company to expand its product line and survive recent years' economic upheaval, Losey said.

One tangible benefit was in 2009: Cascade paid \$8,000 in landfill costs, down from \$268,000 in 2002, he said. But that line

can only go down to zero.

The bigger opportunity in sustainability is in new products, Keller said.

“By focusing on sustainability, we’ve expanded our product lines and increased our sales,” Keller said.

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Incoming and outgoing governors share Michigan Economic Development Corp. picks

December 15, 2010

Gov. Jennifer Granholm's office today released the names of appointees she and Gov.-elect Rick Snyder have made to Michigan Economic Development Corp.

In a show of cooperation between incoming and outgoing administrations, Granholm, a Democrat, and Snyder, a Republican who takes office in January, appeared together earlier this week to talk about an economic development transition plan.

MEDC's current executive committee members have tendered their resignations effective Dec. 31. The new leadership team does include several re-appointments.

Snyder's appointees:

Christopher Rizik, CEO and fund manager of Renaissance Venture Capital Fund.

Lizabeth Ardisana, CEO of ASG Renaissance.

Greg Northrup, president of the West Michigan Strategic Alliance.

John Rakolta Jr., chairman and CEO of Walbridge.

Kirk Lewis, group executive for corporate and civic affairs for the city of Detroit.

Stephen R. D'Arcy, chairman of Detroit Medical Center and Partner Quantum Group LLC.

Stephen Forrest, vice president for research at the University of Michigan.

Robert Collier, president and CEO of the Council of Michigan Foundations.

David Armstrong, president and CEO of Greenstone Farm Credit Services.

Doug Rothwell, president and CEO of Business Leaders of Michigan.

Granholm appointees:

Mary Lou Benecke, vice president of public affairs and corporate communications for Dow Corning.

D. Jeffrey Noel, vice president of communications and public affairs for Whirlpool Corp.

Marilyn Schlack, president of Kalamazoo Valley Community College.

Chris MacInnes, chief operating officer of Crystal Mountain Resort and Spa.

Ann Marie Sastry, CEO of Sakti3 (reappointment).

Jeff Metts, president of Dowding Industries (reappointment).

F. Thomas Lewand, partner at Bodman LLP (reappointment).

John W. Brown, chairman emeritus, Stryker Corp. (reappointment).

Haifa Fakhouri, president and CEO of the Arab American and Chaldean Council (reappointment).

Dayne Walling, mayor of Flint (reappointment).

Snyder Monday said that the new MEDC executive committee has agreed to select Michael Finney as the new CEO of the MEDC. (Previous coverage.)

Finney is currently president and CEO of Ann Arbor SPARK, a public-private partnership focused on innovation-based economic development in greater Ann Arbor.

Snyder also announced that the new executive committee will designate Rothwell, a former CEO of the MEDC, as its chairman.