



Maryland Technology Enterprise Institute

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AccuStrata Inc. Receives Third Set of Stimulus Funding *Grant Supports Company's Technology to Make Solar Panel Manufacturing More Efficient*

COLLEGE PARK, Md.—The biggest problem with solar panels is they cost too much for the power they generate. **AccuStrata Inc.** is developing a technology that could change that.

The company, based in the University of Maryland's Technology Advancement Program incubator, just won a \$150,000, phase-one Department of Energy Small Business Innovation Research grant, its third in six months. AccuStrata will use the grant to refine its field-tested, patent-protected system for monitoring the effectiveness of thin-film solar panel production in real time, enabling manufacturers to make on-the-fly adjustments and ensure panels' efficiency.

"Solar panels are priced by the electricity they produce, dollar per watt," says Oscar von Bredow, chief operating officer of AccuStrata. "The ways to make them more affordable are to improve the manufacturing yield or increase the efficiency of the panels so they generate more power."

AccuStrata's technology does both. It increases the efficiency of solar panels and saves manufacturers millions of dollars by reducing the number of lower quality panels produced.

Thin-film solar panels are made through a long manufacturing process by depositing layers of different materials, only a few microns thick total, onto a substrate such as a glass panel, metal or plastic roll. The quality of these films largely determines how well the solar panel performs.

Depositing the films is a complex process, requiring tight control over many factors, including chemical, optical, and electrical properties, all while maintaining geometrically and structurally uniform films.

The problem is, manufacturers are only able to test efficiency of the panels after they have been made, and if something is wrong, adjustments are only made on the next panel or batch. Lower quality panels are discarded or sold as inferior.

But AccuStrata's system lets manufacturers know what is going on while the panels are being made, enabling immediate corrections and the production of better panels.

"Currently, manufacturers have no way of knowing how the films are growing inside their deposition chambers, at least until the entire film is deposited," says Dr. George Atanasoff, president of AccuStrata. "We are giving the manufacturer the ability to know, in real time, what the quality of the film is as it is deposited and how this will affect the final panel quality."

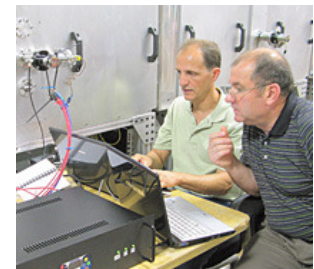
AccuStrata's prototype system consists of patented miniature fiber optic sensors installed at specific locations in existing equipment without disrupting the manufacturing process, along with external hardware and software. The system monitors the spectral reflectance and light scattering of films as they are deposited and calculates film properties and their uniformity over the area of the panel, critical for the panel's final quality.

This summer, AccuStrata installed a prototype in the live production environment of a large solar panel manufacturer. Another installation is just under way.

"As of today, a percent increase in efficiency at a constant price per watt translates into a percent increase in revenue for manufacturers," says von Bredow. "If our system is able to

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Pictured, left to right: Oscar von Bredow, COO, and George Atanasoff, president of AccuStrata Inc., installing their prototype system at the facility of a large solar panel manufacturer. Full-resolution photo.

increase the panel efficiency by only 12-15 percent, as expected, and was adopted by only 25 percent of the \$35 billion thin-film solar manufacturing market, it would save over \$1 billion by 2013. As prices per watt decrease, manufacturers can lower the price for panels and continue to be profitable. Manufacturers are also able to reduce costs and save energy. This will accelerate solar technology's ability to achieve grid parity with traditional energy sources."

The next step is automation. AccuStrata is developing the Thin Film Auto Pilot, which will automatically make corrections during the thin-film solar panel manufacturing process without any human involvement. This new DoE grant supports this research.

The company has acquired more than \$1 million in funding from founders, angel investors, and grants. In June, 2009, AccuStrata received a National Science Foundation phase-one SBIR grant for \$100,000. In August, 2009, the company won another DOE Supply Chain grant for \$150,000. The company also received funding from the Maryland Technology Development Corporation (TEDCO) through the Maryland Technology Transfer Fund.

AccuStrata plans to enter additional markets using thin-film deposition, such as nanotechnology, flat panel displays, telecom, medical and military applications.

The company has six employees. It has received two patents, has filed another patent, and is in the process of filing more.

AccuStrata was selected as the Maryland Incubator Company of the Year in 2008 and was again nominated for Maryland Incubator Company of the Year in 2009.

About AccuStrata (www.accustrata.com)

AccuStrata Inc. is a College Park, Md-based company developing an intelligent, real-time optical control system able to improve thin film photovoltaic (solar cell) manufacturing, resulting in higher conversion efficiency and reduced cost. As a result of the company's solution, solar cells produce more power, resulting in increased revenue and profit for manufacturers.

About Mtech's Technology Advancement Program (TAP) (www.tap.umd.edu)

For over 20 years, TAP has helped entrepreneurs build some of the most successful technology companies in the mid-Atlantic region. TAP's staff is comprised of seasoned veterans of startups and venture capital firms who provide business advice and support, market intelligence, introductions, access to funding and other critical assistance that can accelerate the growth of technology ventures. TAP offers furnished offices and flexible lab space as well as a multitude of other benefits and services that can only be found at a technology business incubator situated right on the campus of one of the nation's top public universities, the University of Maryland. TAP was the first technology business incubator in the state of Maryland and is the birthplace of two of Maryland's billion dollar companies: Gaithersburg-based Digene Corporation (now part of Qiagen) and Columbia-based Martek Biosciences.

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