St. Mary’s College of Maryland Professor Wins MIPS Award for Research Innovation

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St. Mary’s City, MD - Troy Townsend, assistant professor of chemistry at St. Mary’s College of Maryland (SMCM), was awarded a $100,000 technology product development grant through the Maryland Industrial Partnerships Program. Townsend will be working closely with Solar Tech Inc., a Maryland-based startup company, to develop a proof-of-concept process to print low-cost and lightweight solar modules from the bottom up.

Townsend explained that with this process in place, Solar Tech Inc. aims to produce solar panels faster and at a fraction of the cost of traditional silicon-based photovoltaics.

“We are very excited to partner with the College to develop new solar technology that can be applied both for commercial and residential applications,” said Jeff Croisetiere, ’04 SMCM alumnus and project manager for Solar Tech Inc.

Solar Tech Inc. specializes in solar electric and solar thermal systems for residential, business and municipal applications. The company has served the Southern Maryland area since 2005.

Townsend said the project involves using inorganic nanocrystal inks in air under ambient conditions to produce printable solar modules. This comes in contrast to current solar modules, which are created using high-purity silicon under vacuum and high temperatures.

“It’s mostly about getting solar power to people in a more cost effective way. Solar cells right now are a little bit too expensive for the average person,” he said. “By reducing the cost of fabrication and installation, solar companies will be able to sell more affordable systems.”

“The collaboration between our research group at St. Mary’s College and Solar Tech Inc. strengthens the college’s ties with the community and offers our students first-hand experiences bringing new technology out into the entrepreneurial market,” Townsend said. “We predict that this partnership will create jobs in Maryland in the next few years as we develop our process.”

Along with this project comes more opportunities for state-of-the-art undergraduate research, while students also benefit from the broad liberal arts college experience. Elena Donahue, a rising senior chemistry major and math minor, is the lead research student on this project. She has been working on synthesizing nanocrystal inks and fabricating devices since her freshman year. “I was very fortunate to begin research early in my undergrad career, and under the guidance of Dr. Townsend I have learned many useful skills in the lab,” Donahue said. Solar Tech Inc. and Dr. Townsend expect that this project will lead to more undergraduate research opportunities and future collaboration.

The Maryland Industrial Partnerships (MIPS) program promotes the development and commercialization of products and processes through industry/university research partnerships. MIPS provides matching funds to help Maryland companies pay for the university research.

St. Mary's College of Maryland, designated the Maryland state honors college in 1992, is ranked one of the best public liberal arts schools in the nation by U.S. News & World Report. Approximately 1,700 students attend the college, nestled on the St. Mary’s River in Southern Maryland.

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