NOVELLUS SYSTEMS AND THE UNIVERSITY OF SOUTH FLORIDA RECEIVE NATIONAL SCIENCE FOUNDATION GRANT TO IMPROVE SOLAR CELL EFFICIENCY

SAN JOSE, Calif., - November 28, 2011-Novellus Systems (NASDAQ: NVLS) today announced that it is a co-recipient of a National Science Foundation (NSF) grant, along with the University of South Florida (USF), to study the precise engineering of solar cell interfaces. The company's work with USF will focus on using Novellus' conformal film deposition (CFD™) technology, an atomic layer deposition process, to fabricate solar photovoltaic (PV) materials.

The Novellus and USF research effort will focus on using CFD to grow conformal metal oxide and metal nitride dipole layers in the PV cells that exhibit highly controlled atomic layer film thickness and uniformity. By so doing, the team hopes to be able to adjust the band alignment in the cell for optimized charge transfer or blocking, a process that has the potential to controllably enhance both the photocurrent and voltage in the cell. The goal of the research is to develop scalable manufacturing technology for these large-area dipole layer coatings that will allow PV solar manufacturers to precisely tailor the electronic properties of solar cell structures, leading to increased solar energy conversion.

The strength of the Novellus and USF research team investigating improved PV efficiencies lies in the complementary expertise of the partners. The University of South Florida brings an academic expertise in electronic structure and surface science of semiconductor PV interfaces, whereas industrial partner Novellus is a recognized world leader in deposition techniques suitable to high-volume manufacturing applications.

Novellus' CFD films are deposited using an innovative version of the company's VECTOR® PECVD (plasma enhanced chemical vapor deposition) system, used extensively in semiconductor manufacturing plants across the world. In the semiconductor manufacturing process, these CFD films provide solutions for very advanced logic and memory chip applications, including front-end-of-line (FEOL) liners and spacers used in tri-gate transistors and FinFETs, bitline spacers, etch stop layers, resistor protect layers, double patterning spacers using amorphous carbon or photoresist cores, and through silicon via (TSV) dielectric liners.

"The global focus and investment in emerging green technologies has necessitated the need for new fabrication techniques to make these alternative energy sources commercially viable," said Sesha Varadarajan, senior vice president of Novellus' PECVD business unit. "We believe, as do our partners at the University of South Florida, that conformal film deposition will be critical in building more efficient photovoltaic solar cells. As a company, this grant typifies our commitment to work with leading universities to come up with commercial solutions with a strong basis in science."

About Novellus:
Novellus Systems, Inc. (NASDAQ: NVLS) is a leading provider of advanced process equipment for the global semiconductor industry. The company's products deliver value to customers by providing innovative technology backed by trusted productivity. An S&P 500 company, Novellus is headquartered in San Jose, Calif. with subsidiary offices across the globe. For more information, please visit www.novellus.com.

About the University of South Florida:
The University of South Florida is a high-impact, global research university dedicated to student success. USF is classified by the Carnegie Foundation for the Advancement of Teaching in the top tier of research universities, a distinction attained by only 2.2 percent of all universities. The Carnegie Foundation also classifies USF as a community engaged university. It is ranked 44th in total research expenditures and 34th in federal research expenditures for public universities by the National Science Foundation. The USF System has an annual budget of $1.5 billion, an annual economic impact of $3.7 billion, and serves 47,000 students in Tampa, St. Petersburg, Sarasota-Manatee and Lakeland.

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