Universal Display Corporation Wins a $4 Million Department of Energy Program for Solid-State Lighting

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Universal Display to Develop Novel Process Technology for the Cost-Effective Manufacture of White OLEDs

"Novel Low Cost Organic Vapor Jet Printing of Striped High Efficiency Phosphorescent OLEDs for White Lighting"

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Universal Display Corporation (NASDAQ:PANL), a leading developer of organic light emitting diode (OLED) technologies for flat panel displays, lighting and other opto-electronic applications, has been awarded a three-year, $4,000,000 cooperative agreement from the U.S. Department of Energy (DOE) under its new Solid-State Lighting (SSL) program to develop and demonstrate novel manufacturing technology for white OLED (WOLED(TM)) production. The DOE is funding $2,400,000, or 60% of the cost of the program, with the remaining $1,600,000 being funded as "cost share" by the Company and its subcontractor. Funds for the first year of the program have been committed.

During the three-year program entitled, "Novel Low Cost Organic Vapor Jet Printing of Striped High Efficiency Phosphorescent OLEDs for White Lighting," Universal Display and its longstanding research partner, Princeton University, will focus on developing a cost-effective, maskless deposition process called organic vapor jet printing (OVJP). This novel process will be used to fabricate energy-efficient white OLED lighting sources using the Company's proprietary high-efficiency phosphorescent OLED (PHOLED(TM)) technology and a novel approach based on printing a series of red, green and blue OLED stripes to achieve white light emission.

The OVJP process was originally invented by Dr. Stephen R. Forrest and his team at Princeton University as an innovative direct printing approach for molecular organic materials for the cost-effective production of organic electronic technologies including OLED flat panel displays and lighting. Using the same types of organic materials used in OLED products sold today, OVJP enables the rapid printing of high-resolution patterns of small-molecule organic materials onto a variety of substrates. This is achieved by expanding an organic vapor through a microscopic nozzle to form a highly collimated gas beam. This gas beam is then directed to print fine-featured patterns of these organic materials at very rapid rates. During this program, OVJP will be developed to print a series of red, green and blue stripes to generate white light.

Potential advantages of the OVJP process include higher materials utilization, higher resolution printing capabilities and higher manufacturing throughput when compared with other techniques in use and under development. This is significant because developing a low-cost means of producing OLED light sources is crucial to the widespread adoption of OLED technology by the lighting industry. OLED technology has the potential to revolutionize the lighting market through the development of highly energy efficient, solid-state white lighting sources. According to a report prepared for the U.S. Department of Energy, solid state lighting, including OLEDs, can reduce energy consumption for lighting by up to 33% by 2025, if successfully adopted.
"We are looking forward to expanding our relationship with the Department of Energy through their new Solid-State Lighting Initiative," stated Steven V. Abramson, President and Chief Operating Officer of Universal Display Corporation. "In conjunction with several recently-announced DOE Small Business Innovation Research (SBIR) programs that focus on OLED power efficiency improvements, this program will drive advances in OLED process technology and white OLED development. These gains have the potential to translate into lower OLED manufacturing costs and higher OLED energy efficiency, which are key DOE performance targets for the development of this energy-saving, solid-state lighting solution of the future."

The goal of the U.S. Department of Energy’s Solid-State Lighting program is to fundamentally change the future of lighting through the research and development of next-generation white light sources. Through collaborative, cost-shared projects, its mission is to maintain the U.S.’s position as a leader in SSL technology, as well as provide cost-effective lighting solutions for industry and consumers alike. This initiative is aimed at producing significant energy savings and new lighting sources, and may also lead to the rise of new industry and markets.

About Universal Display Corporation:

Universal Display Corporation is a world leader in developing and commercializing innovative Organic Light Emitting Diode (OLED) technologies and materials for use in the electronic flat panel display and other markets. Universal Display is working with a network of world-class organizations including Princeton University, the University of Southern California; Tohoku Pioneer Corporation, DuPont Displays, Inc., Sony Corporation, Samsung SDI Co., Toyota Industries Corporation, AU Optronics Corporation, PPG Industries, Inc. and AIXTRON AG. Universal Display currently has rights in approximately 600 issued and pending patents worldwide.

Universal Display is located in the Princeton Crossroads Corporate Center in Ewing, New Jersey, minutes away from its research partner at Princeton University. Universal Display's 21,000 sq. ft. state-of-the-art facility is designed to further technology development, technology transfer to manufacturing partners and work with customers to develop products to meet their needs for flat panel displays. Visit Universal Display Corporation on the Web at http://www.universaldisplay.com.

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