



## ***High-Performance, Cost-Effective, Thin-Film Solar Cell Technology Provides an Attractive Source of Portable and Mobile Power***

**Woburn, Mass.** — March 20, 2018 — Magnolia Optical Technology, Inc. announced that it is working with the Defense Advanced Research Projects Agency (DARPA) under the Phase II SBIR Program for Development of High-Performance Thin-Film Solar Cells for Portable Power Applications (Contract No D15PC00222).

Photovoltaic devices can provide a portable source of electrical power for a wide variety of defense and commercial applications, including mobile power for dismounted soldiers, unmanned aerial vehicles, and remote sensors. “The goal of the current program is to develop high-efficiency GaAs-based solar cells that maintain their performance over changing environmental conditions, and that are thinner and thus more cost-effective to produce,” said Dr. Roger Welsler, Magnolia’s Chief Technical Officer. “By combining thin III-V absorbers with advanced light-trapping structures, single-junction GaAs-based devices provide a means to deliver high efficiency performance over a wide range of operating conditions at a fraction of the cost of the multi-junction structures typically employed for space power. In addition, the incorporation of nano-enhanced III-V absorbers provides a pathway to extend infrared absorption and increase the photovoltaic power conversion efficiency of cost-effective thin-film solar cells.”

Dr. Ashok Sood, President of Magnolia stated “changes in the solar spectrum can dramatically degrade the performance of traditional multi-junction devices – changes that occur naturally throughout the day, from season to season, and from location to location as sunlight passes through the earth’s atmosphere. Moreover, multi-junction III-V cells require thick, complex epitaxial layers and are therefore inherently expensive to manufacture. The technology under development as part of this DARPA-funded program addresses these key weaknesses in the established high-performance photovoltaic technology. The photovoltaic market is a rapidly growing segment of the energy industry with a wide range of commercial and defense applications.”

### **About Magnolia Optical Technologies, Inc.**

Magnolia specializes in developing innovative optical technologies for defense and commercial applications. Based in Woburn, MA, Magnolia develops both thin film and nanostructure-based technologies that cover the ultraviolet, visible, and infrared part of the spectrum. These technologies are developed for use in advanced military sensors and other commercial applications including solar cells.

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