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News Release

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E M Optomechanical, Inc. obtains license to produce products based on Labs-developed technology

ALBUQUERQUE, N.M. – E M Optomechanical, Inc. (EMOM) of Albuquerque, N.M., recently obtained a license from Sandia National Laboratories to produce products based on a Labs-developed technology — a new configuration for interference microscopy.

The technology was developed by Sandia researchers Mike Sinclair, Maarten de Boer and Alex Corwin.

The need for these types of tools capable of characterizing the fabrication and performance of very small devices came about as a result of the recent growth in micro-electro-mechanical systems (MEMS).

Sandia is a National Nuclear Security Administration laboratory.

Sinclair says Sandia licensed this technology to Tom Swann, president of EMOM, to commercialize the product for several reasons.

"His technical specialty is the design and fabrication of optomechanical instruments, and he is local, which would facilitate the tech transfer," Sinclair says.

In addition, Swann, as president of Optomec, Inc., successfully transferred another Sandia technology known as laser engineered net shaping. EMOM now holds a license from Sandia and is producing products based on the technology.

EMOM developed its first long-working-distance interference microscope, based on the licensed Sandia technology, in collaboration with Auburn University. Known as OPTOPro™ model 622A 3D MEMS Profiler, this first-generation product is intended primarily for use by microsystems researchers for making real-time dynamic measurements of the micro- and nano-scale motions of microsystems devices. Its key feature is that it allows for long-distance functions without any sacrifice in measurement resolution.

This permits capabilities not possible with other techniques such as space for probes that are needed to attach to microsystem devices and viewing through portholes into vacuum chambers.

W. Robert Ashurst, assistant professor of chemical engineering at Auburn University's Samuel Ginn College of Engineering — whose research interests include MEMS systems design, fabrication and reliability — says that having OPTOPro™ will "allow me to cut a year off my research project schedule by providing the measurement data that I need."

The interference microscope developed by EMOM is controlled by MEMScript™ software, also developed by Sandia researchers and licensed to EMOM. The software acquires and analyzes collected data.

"This software has several unique features — such as the ability to control microsystem devices — which by nature have moving parts, and making real time measurements of performance," Corwin says.

The software was used with the EMOM-built 3-D MEMS profiler to run a test on a microsystems device on loan from Sandia. This device had previously been characterized and documented by the Labs.

"This benchmarking was very significant in that it demonstrated that the technical aspects of the technology had been successfully transferred," says de Boer.

"Successful technology transfer efforts like this are a real win-win," says Paul Smith, Sandia's licensing executive responsible for the agreement with EMOM. "In this situation Sandia will realize a reduction in the resources needed to maintain this technology internally while also helping to create jobs and make important laboratory equipment available to the research community."

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin company, for the U.S. Department of Energy's National Nuclear Security Administration. With main facilities in Albuquerque, N.M., and Livermore, Calif., Sandia has major R&D responsibilities in national security, energy and environmental technologies, and economic competitiveness.

Story available at:
http://www.sandia.gov/news-center/news-releases/2006/EMOM

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