

Seacoast Science, Inc. Awarded Grant for Development of a Sensor System to Sniff Out Drug Labs.

Carlsbad, CA, December 1, 2003 – Seacoast Science, Inc. (SSI) has been awarded a \$70,000 Phase I SBIR grant (#A03-053), with the option of an additional \$50,000, from the Department of Defense's Army Research Office to develop a microelectromechanical systems (MEMS) based chemical sensor capable of detecting solvents used in the manufacture of illicit drugs. The field deployable microsensors will be small enough to be used for clandestine operations and light enough to be worn by personnel as badges.

The SSI system uses a 10-element array of microfabricated capacitors as detectors, with each detector in the array coated with a different chemically selective absorbent material. When these materials absorb a chemical from the air, the smart sensor's electronics measures the capacitances, and identifies the chemical by the collective pattern created by the array. The 0.75-micrometer by 360-micrometer capacitors are micromachined on the surface of a single chip 10 mm². This system is based on a single chip array and state of the art polymer coatings created in house by SSI's scientists and through collaborations with the Naval Research Laboratory (Washington, DC) and Oak Ridge National Laboratory (Oak Ridge, TN). The microcapacitors are unique in that they are arrayed on a single silicon chip, and have no moving parts, which makes the final system small and robust. The proposed system will contain a microcapacitor array, microprocessor for pattern recognition and a wireless subsystem to transmit detection results to a central command center. The system should be able to run off of two standard AAA batteries for 6 months.

The Phase I program will demonstrate the use of the microarray for detecting particular solvents in the air, and to develop a working prototype that can detect and identify the chemicals, display and transmit the information to a central command and alert necessary parties. This system's development program will complement SSI's continuing work on chemical sensors for chemical warfare agents and explosives. SSI's goal is to develop the microcapacitor array for a wide range of applications, such as homeland security, law enforcement, and public safety. Because of their small size, low power requirements and low cost these sensors can be deployed to detect harmful chemicals anywhere including in government facilities, industrial complexes, commercial buildings, and even unmanned air vehicles.

About Seacoast Science, Inc.

Seacoast Science, Inc. (www.seacoastscience.com) is a privately held R&D company located in Carlsbad, California. SSI develops chemical microsensors, and fabrication and testing systems for chemical sensors. SSI's technologies focus on chemical and biological sensing systems for homeland security, military and civilian first responders, environmental compliance, and many other markets.

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