

# SENSORS®

DECEMBER 2003 VOL. 20 NO. 12 \$10.00

## BUSINESS SENSE

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NASA has granted **Integrated Sensing Systems, Inc.** (ISSYS, Ypsilanti, MI, [www.mems-issys.com](http://www.mems-issys.com)) three Phase I Small Business Innovation Research (SBIR) contracts to develop wireless, batteryless, implantable pressure and flow sensors, and create a platform to incorporate various other sensors for space studies. ISSYS says that this kind of support is essential for the commercial development of

its advanced core pressure sensor technology because such a small company cannot adequately fund high-risk, early-stage research.

The technology spillover of these projects will include the monitoring and treatment of two major diseases: congestive heart failure, with more than 400,000 new cases diagnosed per year in the U.S.; and hydrocephalus, now the most common birth defect.

ISSYS has also been awarded \$1.97 million from the National Institute of Standards and Technology's Advanced Technology Program (NIST-ATP). The award ("Multi-Drug, Portable Infusion System for the Treatment of Cancer & AIDS") is dedicated to developing a portable and highly accurate multidrug infusion system that integrates the technology of MEMS with a passively pressurized drug reservoir. ISSYS says that the system will simultaneously or sequentially deliver up to 12 drugs in units of nano- to microliters, and allow improved medication therapies to be implemented by reprogramming the delivery controls.

**ENSCO, Inc.** ([www.ensco.com](http://www.ensco.com), Cocoa Beach, FL), a diversified research, development, and information technology company, has won a \$500,000 contract from the USRA's NASA Institute for Advanced Concepts (NIAC) to continue work on the design of a proposed observing

system, Global Environmental MEMS Sensors (GEMS).

According to ENSCO, the GEMS system will likely consist of a wireless network of environmentally friendly airborne probes that will take in situ measurements and report their findings. It is envisioned to function as a protective veil that will stay aloft through buoyancy control and by mimicking dandelion seeds. For specific applications, probes might also be able to camouflage. While existing sensor systems measure centimeters to millimeters in size, future versions of the GEMS probes could be roughly the width of a strand of hair.

Phase I of a potential \$7.2 million joint development project supported by the Defense Advanced Research Projects Agency (DARPA) involves **Nanosys, Inc.** (Palo Alto, CA, [www.nanosys.com](http://www.nanosys.com)), and other entities. Their goal is to develop high-performance, lightweight, and flexible electronically steerable radio frequency antennas. This technology, says Nanosys, could form a platform for applications such as wireless communications that can eliminate interference while increasing range and battery life.

**XenICs** (Leuven, Belgium, [www.xenics.com](http://www.xenics.com)), developer and producer of a range of new IR image sensors, has received 1.5 million Euro in a second round of funding. The company will use this money to deploy its international sales network and to establish international partnerships. The company is a spinoff of IMEC, a supplier of IR image sensors based on III-V InGaAs technology and reportedly Europe's largest independent microelectronics and nanotechnology research center. XenICs targets applications where visible light offers no solution.