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Note to editors: Illustration available from Paul McClure.

ARRI Installs Xidex Nanofabrication System in the Texas Microfactory

Fort Worth, Texas – July 27, 2011) – The Automation & Robotics Research Institute at The University of Texas at Arlington has installed a next-generation, nanofabrication system manufactured by Austin-based Xidex Corp. as the latest addition to the Texas Microfactory.

The system includes a dual-handed NanoBot® nanomanipulator for mechanical and electrical probing at the nanoscale and a Parallel Gas Injection System that will enable ARRI researchers to also fabricate and “edit” nanometer size devices. It has been installed in ARRI’s state-of-the-art electron microscope, an FEI Nova NanoSEM that can “see” objects as small as a few nanometers in size, or 10,000 times smaller than a human hair.

The electron microscope allows researchers to make observations at the nanoscale and save the images in a high-tech photo album, said Rakesh Murthy, an ARRI research scientist who is working on the project. But the addition of the NanoBot system with its Parallel Gas Injection System gives researchers new ability to directly interact with nanoscale structures and devices, he said.

“We can now put these nanodevices where we want them, create assemblies, make mechanical and electrical measurements, build entirely new nanodevices out of metals and other materials, and even cut, trim and clean the things we build,” Murthy said. “Our electron microscope has essentially been transformed into a nano-factory.”

ARRI evaluated several competing nanomanipulators before deciding on the NanoBot system, said Harry E. Stephanou, ARRI director and UT Arlington professor of electrical engineering. The decision was based on Xidex’s ability to integrate their state-of-the-art Parallel Gas Injection System with the NanoBot nanomanipulator, which has gained a reputation for high-performance combined with exceptional ease of use and user programmability.

“We are excited about the advances in defense and homeland security, health care, and renewable energy that this new system will make it possible for us to achieve in the future,” Stephanou said. “Our mission here at ARRI is to generate and apply innovative knowledge and advanced industrial technology for purposes of economic growth, national security and quality of life enhancement. This partnership will help us stake our

position as a global leader in the emerging discipline of microengineering.”

Paul F. McClure, Xidex’s chief executive officer, said the installation of the NanoBot system at ARRI is the as the first step in a broader collaboration.

“ARRI’s focus on smart micromachines with integrated sets of sensors, actuators, processors, fluidics and optics and makes this an ideal proving ground for new applications of NanoBot systems as tools for microassembly and micromanufacturing,” McClure said.

Vladimir Mancevski, Xidex’s president and chief technology officer, said his firm is monitoring developments at UT Arlington’s Texas Microfactory with an eye toward possible commercialization of research in the form of NanoBot end effectors and other components.”

ARRI is an interdisciplinary unit of [UT Arlington](http://www.ut-arlington.edu) focused on research and development with applications that can be commercialized. ARRI has become a beacon of economic growth and a world leader in the commercialization of smart micromachines by amalgamating globally competitive research, world-class micromanufacturing technology, sophisticated market awareness, state-of-the-art facilities and intimate ties to industry. (<http://arri.uta.edu/>)

Xidex Corp. manufactures and sells the NanoBot® system, an easy-to-use, highly versatile, user programmable nanomanipulator featuring specialized end-effectors, including the Parallel Gas Injection System, for nanodevice fabrication and testing inside scanning electron microscopes (SEMs) and focused ion beam (FIB) tools. Xidex’s mission is to enhance the R&D productivity of nanoscientists and nanotechnologists in both industry and academia. (www.xidex.com)

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