



FOR IMMEDIATE RELEASE

Semprius, Inc. Awarded a Small Business Innovation Research Phase I Grant by the National Science Foundation

Funding used to demonstrate transfer printing of high-performance semiconductors on flexible materials

Durham, NC – June, 2007 – Semprius, Inc., a semiconductor technology company developing novel transfer printing technology for the manufacture of advanced semiconductor devices, announced today it has received a Small Business Innovation Research (SBIR) Phase I Grant from the National Science Foundation (NSF).

The SBIR Phase I project will demonstrate printing of fully formed thin-film transistors on plastic substrates for use as high-performance backplanes in flexible displays. No company has developed a cost-effective process for forming high-performance thin-film electronic devices on plastic substrates. This missing capability has prevented the development of flexible displays as well as a large number of other flexible electronic innovations.

With Semprius' approach, high-performance electronics are first formed on a host semiconductor wafer using conventional wafer processing techniques. Specific wet etching chemistries are used for undercutting the devices in such a way that they become removable in an ultra-thin and flexible format from the host wafer. In the last step of the process, the devices are transfer printed onto a plastic sheet using a silicone rubber transfer stamp.

The key feature of this approach is that the demanding process steps necessary to fabricate high-performance electronic systems are performed on the host substrate and not on the final plastic substrate. As a result, the inherent mechanical or chemical instabilities of the final receiving plastic substrate do not limit the choice of semiconductor manufacturing processes for fabricating the devices.

The Phase I research will focus on developing the processes and materials necessary to meet the demanding registration and yield requirements of large area array printing necessary for display manufacturing. In addition, Semprius will identify, analyze and resolve key issues yielding circuit defects.

The ability to manufacture flexible display backplanes to the demanding standards of the display industry will enable a broad opportunity in flexible electronics far beyond displays, including configurable X-ray sensors, RFID tags, and wearable electronics and sensors. In displays, backplanes using Semprius' technology could potentially be utilized by all Liquid Crystal Display (LCD) manufacturers, Organic Light Emitting Diode (OLED) display manufacturers and other specialty display manufacturers.

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About Semprius

Semprius, Inc. is a spin out of the University of Illinois commercializing a newly invented process for printing high-performance single crystal semiconductors on any substrate, including glass, plastic and other semiconductor materials. Initial applications of the technology include high frequency radio frequency semiconductors for mobile communications, TFT backplanes for flat panel displays and flexible digital X-ray detectors. The overall result is vast gains in performance for these types of devices at lower manufacturing costs. Semprius is located in Research Triangle Park, North Carolina. For more information, please visit www.semprius.com.

About the National Science Foundation

The National Science Foundation (NSF) is an independent federal agency that supports fundamental research and education across all fields of science and engineering, with an annual budget of \$5.91 billion. NSF funds reach all 50 states through grants to nearly 1,700 universities and institutions. Each year, NSF receives about 40,000 competitive requests for funding, and makes nearly 10,000 new funding awards. For more information, please visit www.nsf.gov.

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