



## **SEMATECH AND SOITEC PARTNER TO ADVANCE NEXT-GENERATION TRANSISTORS AND METROLOGY TECHNIQUES**

*Partnership will focus on advanced materials technology to extend the technology roadmap*

**ALBANY, N.Y. – January 25, 2012** – In an effort that will accelerate the development of next-generation transistors, SEMATECH announced today that Soitec, a world leader in manufacturing revolutionary semiconductor substrates for the electronics and energy industries, has joined SEMATECH’s Front End Processes (FEP) and Advanced Metrology Programs. This partnership aims to foster the development of advanced processes, devices, based on Soitec’s leading-edge silicon-on-insulator (SOI) wafers and other advanced engineered wafers for high-performance, low-power IC applications. The collaboration will also focus on applying SEMATECH’s metrology expertise towards extending current solutions to advanced transistor designs.

SOI wafers are widely used today in fabricating semiconductor devices for applications such as computing, telecommunications, and automotive electronics. Compared to bulk silicon, SOI enables significant improvements in device performance including faster switching speeds for transistors and reduced power consumption while also decreasing manufacturing costs through process simplification. In addition, fully depleted SOI presents advantages in variability control and cost reductions at the 28 nm technology node and beyond.

As a member of SEMATECH’s Metrology and FEP divisions, located at the College of Nanoscale Science and Engineering (CNSE) of the University at Albany, Soitec will collaborate with SEMATECH’s material and metrology experts and leverage SEMATECH’s activities in advanced metrology, materials, process technology, and device characterization to extend CMOS and high-mobility FinFET technologies. Specifically, SEMATECH and Soitec plan to develop dimensional and films metrology on Soitec’s SOI wafers.

“Due to their expertise in advanced CMOS and FinFET transistor modules, SEMATECH was a natural choice to partner with in developing advanced metrology techniques and device characterization for mobility performance,” said Christophe Maleville, senior vice president of Soitec’s Microelectronics Business Unit. “Such collaborative efforts will further help demonstrating our cost-effective performance/power contribution to device and highlight yield solutions that will support our customers in their technology roadmaps.”

SEMATECH’s FEP program is exploring innovative materials, new transistor structures, and alternative non-volatile memories to address key aspects of system-level performance,

power, variability, and cost and to help accelerate innovation in the continued scaling of logic and memory applications.

“SEMATECH is pleased to welcome Soitec as a partner,” said Raj Jammy, SEMATECH’s vice president of emerging technologies. “Soitec’s expertise in substrate fabrication methodology will complement our own device and process expertise as well as enable us to offer our experience in developing leading-edge metrology capabilities to characterize these advanced devices and evaluate critical defects. We will work together to develop practical and promising high-mobility non-planar and metrology approaches to speed the transition of these new innovations to mainstream semiconductor production.”

SEMATECH’s Advanced Metrology program has developed world-class knowledge of the technologies and methodologies necessary to provide solutions for the measurement needs of high-volume manufacturing. Driven by joint development projects with tool suppliers and leading universities, its goal is to identify key gaps in measurement technology for advanced devices and to develop solutions to meet the needs of the sub-20 nm technology node and beyond.

#### **About Soitec**

Soitec is an international manufacturing company, a world leader in generating and manufacturing revolutionary semiconductor materials at the frontier of the most exciting energy and electronic challenges. Soitec’s products include substrates for microelectronics (most notably SOI: Silicon-on-Insulator) and concentrator photovoltaic systems (CPV). The company’s core technologies are Smart Cut™, Smart Stacking™ and Concentrix™, as well as expertise in epitaxy. Applications include consumer and mobile electronics, microelectronics-driven IT, telecommunications, automotive electronics, lighting products and large scale solar power plants. Soitec has manufacturing plants and R&D centers in France, Singapore, Germany, and the United States. For more information, visit: [www.soitec.com](http://www.soitec.com).

#### **About SEMATECH:**

SEMATECH®, the international consortium of leading semiconductor device, equipment, and materials manufacturers, this year celebrates 25 years of excellence in accelerating the commercialization of technology innovations into manufacturing solutions. Through our unwavering commitment to foster collaboration across the nanoelectronics industry, we help our members and partners address critical industry transitions, drive technical consensus, pull research into the industry mainstream, improve manufacturing productivity, and reduce risk and time to market. Information about SEMATECH can be found at [www.sematech.org](http://www.sematech.org).

Twitter: [www.twitter.com/sematechnews](https://www.twitter.com/sematechnews)

#### **About CNSE**

The UAlbany CNSE is the first college in the world dedicated to education, research, development and deployment in the emerging disciplines of nanoscience, nanoengineering, nanobioscience and nanoeconomics. With more than \$12 billion in high-

tech investments, CNSE represents the world's most advanced university-driven research enterprise, offering students a one-of-kind academic experience and providing over 300 corporate partners with access to an unmatched ecosystem for leading-edge R&D and commercialization of nanoelectronics and nanotechnology innovations. CNSE's footprint spans upstate New York, including its Albany NanoTech Complex, an 800,000-square-foot megaplex with the only fully-integrated, 300mm wafer, computer chip pilot prototyping and demonstration line within 85,000 square feet of Class 1 capable cleanrooms. More than 2,600 scientists, researchers, engineers, students and faculty work here, from companies including IBM, Intel, GlobalFoundries, SEMATECH, Samsung, TSMC, Toshiba, Applied Materials, Tokyo Electron, ASML and Novellus Systems. An expansion now underway, part of which will house the world's first Global 450mm Consortium, will add nearly 500,000 square feet of next-generation infrastructure, an additional 50,000 square feet of Class 1 capable cleanrooms, and more than 1,000 scientists, researchers and engineers from CNSE and global corporations. In addition, CNSE's Solar Energy Development Center in Halfmoon provides a prototyping and demonstration line for next-generation CIGS thin-film solar cells. CNSE's Smart Systems Technology and Commercialization Center of Excellence (STC) in Rochester offers state-of-the-art capabilities for MEMS fabrication and packaging. CNSE also co-founded and manages operations at the Computer Chip Commercialization Center at SUNYIT in Utica and is a co-founder of the Nanotechnology Innovation and Commercialization Excelerator in Syracuse. For information, visit [www.cnse.albany.edu](http://www.cnse.albany.edu).

###

**Media Contacts:**

**Erica McGill**

SEMATECH

Phone: 518-649-1041

[erica.mcgill@sematech.org](mailto:erica.mcgill@sematech.org)

**Camille Darnaud-Dufour**

Soitec

Phone: +33679495143

[camille.darnaud-dufour@soitec.com](mailto:camille.darnaud-dufour@soitec.com)