Synopsys and Ovonyx Collaborate on TCAD Models for Phase Change Memory

New Models Will Enhance Sentaurus TCAD Capabilities for Emerging PCM Applications

PRNewswire-FirstCall
MOUNTAIN VIEW, Calif. and ROCHESTER HILLS, Mich.
(NASDAQ:SNPS)

MOUNTAIN VIEW, Calif. and ROCHESTER HILLS, Mich., Sept. 10 /PRNewswire-FirstCall/ -- Synopsys, Inc. (NASDAQ: SNPS), a world leader in software and IP for semiconductor design and manufacturing, and Ovonyx Inc., a developer of proprietary phase change semiconductor memory technology, today announced an agreement to work on the development of device simulation models for phase change memory (PCM) based on Ovonyx's PCM technology.

DRAM and Flash memories are the two largest segments of the semiconductor memory market and are fundamental components in consumer and industrial electronic devices such as computers, cellular phones, MP3 players and digital cameras. PCM is widely considered to be a practical alternative to Flash and DRAM devices, both of which will encounter increasing scaling challenges in the face of shrinking device geometries. With this collaboration, Ovonyx provides Synopsys with material and device characterization data for Synopsys to develop and calibrate TCAD models for PCM device simulation.

"Ovonyx's PCM technology offers the benefit of increased performance and relative ease of scaling to future smaller memory device nodes," said Howard Ko, senior vice president and general manager of the Silicon Engineering Group at Synopsys. "This collaboration can increase the effectiveness of Synopsys' Sentaurus TCAD tools for modeling emerging technologies such as PCM, so that chipmakers can have a cost-effective alternative for continued scaling of semiconductor devices."

"Synopsys has world-class expertise in developing sophisticated Technology Computer-Aided Design (TCAD) simulation tools for the semiconductor industry," said Tyler Lowrey, president and chief executive officer of Ovonyx. "We believe this collaboration with Synopsys to develop and enhance simulation capabilities for PCM will assist the commercialization efforts of PCM products by worldwide chipmakers."

About Phase Change Memory Technology

Ovonyx and its largest shareholder, Energy Conversion Devices, invented and pioneered the development of "PCM" technology, thereby gaining a fundamental understanding of PCM operation, including PCM devices, materials, processing, design, modeling, and performance. Ovonyx PCM technology uses a reversible phase-change process that provides for high performance, dense, array-addressed semiconductor memory technology that can be used as cost effective Flash and DRAM device replacements, as well as in embedded applications such as microcontrollers and reconfigurable MOS logic.

About Synopsys TCAD

Technology CAD (TCAD) refers to the use of computer simulation to model semiconductor processing and device operation. TCAD provides insight into the fundamental physical phenomena that ultimately impact performance and yield.

About Synopsys

Synopsys, Inc. (NASDAQ: SNPS) is a world leader in electronic design automation (EDA), supplying the global electronics market with the software, intellectual property (IP) and services used in semiconductor design and manufacturing. Synopsys' comprehensive, integrated portfolio of implementation, verification, IP, manufacturing and field-programmable gate array (FPGA) solutions helps address the key challenges designers and manufacturers face today, such as power and yield management, system-to- silicon verification and time-to-results. These technology-leading solutions help give Synopsys customers a competitive edge in bringing the best products to market quickly while reducing costs and schedule risk. Synopsys is headquartered in Mountain View, California, and has more than 60 offices located throughout North America, Europe, Japan, Asia and India. Visit Synopsys online at http://www.synopsys.com/.

About Ovonyx

Ovonyx was formed with the charter to commercialize its proprietary phase- change semiconductor memory technology originally invented at Energy Conversion Devices, Inc. Ovonyx nonvolatile PCM technology offers significantly faster write and erase speeds through its capability for byte- write in either direction (avoiding the need to erase a block to write a bit), higher cycling endurance, and better scaling performance with new generations of photolithography than conventional Flash memory. Relative to DRAM, PCM eliminates the refresh power by retaining its memory without power. PCM also has the advantage of a

simple fabrication process that allows the design of semiconductor chips with embedded nonvolatile memory using only a few additional mask steps. Ovonyx is pursuing commercialization of its array- addressed memory systems through licenses and joint development programs with semiconductor manufacturers including BAE Systems, Intel Corporation, ST Microelectronics, Elpida Memory, Samsung Electronics, Qimonda AG, and Hynix Semiconductor Inc. For more information, please visit http://www.ovonyx.com/.

Synopsys is a registered trademark of Synopsys, Inc. Any other trademarks or registered trademarks mentioned in this release are the intellectual property of their respective owners.

Editorial Contacts:
Sheryl Gulizia
Synopsys, Inc.
650-584-8635
sgulizia@synopsys.com

Lisa Gillette-Martin
MCA, Inc.
650-968-8900 x115
lgmartin@mcapr.com

Karen Connolly
Director, Communications
Ovonyx, Inc.
248-842-6096
kconnolly@ovonyx.com

SOURCE: Synopsys, Inc.

CONTACT: Sheryl Gulizia of Synopsys, Inc., +1-650-584-8635, sgulizia@synopsys.com; or Lisa Gillette-Martin of MCA, Inc., +1-650-968-8900, ext. 115, lgmartin@mcapr.com; or Karen Connolly, Director, Communications of Ovonyx, Inc., +1-248-842-6096, kconnolly@ovonyx.com

Web site: http://www.synopsys.com/
http://www.ovonyx.com/