Synopsys and Mattson Collaborate on Advanced TCAD Process Simulation of CMOS Technology

Collaboration Lowers Development Time and Cost Through Accurate Process Modeling

PRNewswire-FirstCall
SAN FRANCISCO
(NASDAQ:SNPS)

SAN FRANCISCO, July 15 /PRNewswire-FirstCall/ -- SEMICON WEST -- Mattson Technology, Inc. (NASDAQ: MTSN), a leading supplier of advanced semiconductor process equipment used to manufacture integrated circuits (ICs), and Synopsys, Inc. (NASDAQ: SNPS), a world leader in software and IP for semiconductor design and manufacturing, today announced a collaboration to offer calibrated process models for flash annealing equipment used on the 45-nanometer (nm) node and beyond. Through this collaboration, Synopsys' Sentaurus Process models will be calibrated to the Mattson Millios™ flash-assist Rapid Thermal Process (fRTP™) system. As a result, engineers will be able to simulate and optimize process conditions before costly silicon processing, thus lowering development time and cost.

The continual scaling of CMOS technology demands new processing techniques to meet the strict International Technology Roadmap for Semiconductor (ITRS) targets for junction depth and sheet resistance in the source and drain extensions of CMOS transistors -- one of the critical device regions requiring precise process control. To meet this challenge, Mattson has developed the Millios fRTP system, which features a powerful flash lamp and highly accurate temperature control and monitoring that allow engineers to optimize process conditions for simultaneous achievement of shallow junction depth and low sheet resistance. The Millios system combines high throughput, precise process control and process flexibility to provide a high-volume IC manufacturing solution for milli-second annealing.

Sentaurus Process is Synopsys' multi-dimensional process simulator that is part of the TCAD Sentaurus suite. It is equipped with a set of advanced process models that include default parameters calibrated with data from equipment vendors and provides a predictive framework for simulating a broad range of technologies from nanoscale CMOS to large-scale high-voltage power devices. The combination of these technologies creates a powerful solution for optimizing the flash-annealing process using the Millios fRTP system.

"Process technologies are increasingly complex and costly to develop, and therefore TCAD tools with models calibrated to specific process conditions are very important to guide experimentation and process optimization," said Howard Ko, senior vice president and general manager of the Silicon Engineering Group at Synopsys. "Collaborations with leading equipment vendors such as Mattson Technology are a critical component of our strategy to deliver advanced and accurate TCAD tools to the market."

Jeff Gelpey, Mattson fellow, added, "Process development with advanced tools such as Millios becomes very time consuming and expensive if done only with experimentation. This collaboration between Synopsys and us enables the use of Sentaurus TCAD in conjunction with models calibrated to our equipment so that the development engineer can optimize the process more quickly and explore many more options."

About Millios

In the nanotechnology era, where chips have features 1000 times smaller than the diameter of a human hair, advanced RTP applications will require annealing that is fractions of, to a few thousandths of, a second in duration. Mattson's Millios Flash-Assist RTP (fRTP) is a next-generation millisecond annealing tool featuring advanced process control and high throughput to meet manufacturing and development needs. The technique offers effective process times of 1-3 milliseconds. The system features a patented arc lamp technology that processes the wafers through millisecond "flashes" (similar to a camera flash), providing improved thermal control for ultra-shallow junction (USJ) anneal and other advanced applications through the 22 nm regime. Millios also combines fully automated wafer handling hardware and software from Mattson's production-proven Helios™ RTP system. Millios was qualified in 2007 by semiconductor and leading nanoelectronics research centers in Europe and the United States.

About Mattson

Mattson Technology, Inc. is a leading supplier of dry strip equipment and the second largest supplier of rapid thermal processing equipment in the global semiconductor industry. The company's strip and RTP equipment utilize innovative technology to deliver advanced processing performance and productivity gains to semiconductor manufacturers worldwide for the fabrication of current- and next-generation devices. For more information, please contact Mattson Technology, Inc., 47131

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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 impacts 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/.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934, including statements regarding the expected benefits and results of the collaboration, on advanced TCAD process simulation of CMOS technology, between Synopsys and Mattson. These statements are based on Synopsys' and Mattson's current expectations and beliefs. Actual results could differ materially from these statements as a result of unforeseen difficulties in completing the collaboration and the other factors contained in Synopsys' Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2008 and Mattson's Quarterly Report on Form 10-Q for the fiscal quarter ended March 30, 2008.

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