Synopsys i-Virtual Stepper System for Photomask Qualification Implemented by UMC

i-Virtual Stepper System Integrates Lithography Simulation and Automation to Deliver Improved Mask Turn-Around Time and Yield

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Synopsys, Inc. (NASDAQ: SNPS), a world leader in semiconductor design software, today announced that leading global semiconductor foundry UMC (NYSE: UMC) has adopted Synopsys' i-Virtual Stepper™ system (i-VSS) for photomask inspection qualification. The i-VSS enhances mask inspection turnaround time and yield and is part of Synopsys' Design for Manufacturing (DFM) tool suite.

"The i-Virtual Stepper system is a welcome addition to our fab automation equipment as it helps simplify and automate our incoming mask inspection process through a Web-based architecture for wafer-level simulation and automated-defect dispositioning," said Simon Tarng, MES Division director of UMC. "For 90 nanometer manufacturing and below, simulation-based mask qualification has become increasingly important to ensure accurate qualification and reduced processing time for high-end photomasks."

i-VSS has a unique Web-based architecture designed to help leading semiconductor foundries such as UMC connect multiple fab sites to centralize the mask qualification process. With the i-VSS software, all sites can collaborate to create a "virtual mask qualification portal." The Web-based system can also allow foundries to be closely linked with supplier mask shops for even greater streamlining.

"The foundry industry is shifting to simulation-based photomask qualification and automation," said Edmund Cheng, vice president of marketing for the Silicon Engineering Group at Synopsys. "Synopsys is committed to delivering best-in-class DFM solutions such as the i-VSS to companies like UMC to help ensure the manufacturability and quality of the most advanced semiconductor designs while achieving faster time to results."

An emerging standard in advanced photomask verification and qualification, the i-VSS is the only commercially available software package that utilizes lithography-based simulation for defect classification and dispositioning in an automated and integrated work flow. The i-VSS provides a 'hands off' mask qualification methodology, replacing traditional manual operator reviews with automation and increased accuracy. An advanced scoring algorithm simplifies the defect review process by creating a simple pass, review and fail defect grouping. Reduced repairs, improved yields, and shortened turn-around-time are the key benefits of implementing i-VSS. Users include foundries, IDMs and mask shops.

About Synopsys DFM

Synopsys offers the industry's most comprehensive RTL-to-Mask DFM solution. Its DFM product family addresses critical yield and manufacturability issues with its Synopsys PSM, Proteus mask synthesis, CATS® mask data preparation, SiVL® lithography verification, i-Virtual Stepper mask defect dispositioning, and physics-based TCAD suite of simulation products. Synopsys leverages this expertise throughout its industry-leading Galaxy(RM) Design Platform implementation solution to help ensure that designs at 90 nanometers (nm) and smaller geometries will meet key manufacturing requirements. Synopsys' DFM product family is the solution-of-choice for yield sensitive, high-value chips, worldwide. Eighty percent of all sub-180-nm microprocessors, 60 percent of all sub-180-nm DRAMs, 80 percent of all sub-180-nm FPGA and graphics chips, 70 percent of all sub-180-nm cellular baseband chips produced use Proteus, and more than 80 percent of all photomasks produced use CATS.

About Synopsys

Synopsys, Inc. is a world leader in electronic design automation (EDA) software for semiconductor design. The company delivers technology-leading semiconductor design and verification platforms and IC manufacturing software products to the global electronics market, enabling the development and production of complex systems-on-chips (SoCs). Synopsys also provides intellectual property and design services to simplify the design process and accelerate time-to-market for its customers. Synopsys is headquartered in Mountain View, California and has offices in more than 60 locations throughout North America, Europe, Japan and Asia. Visit Synopsys online at http://www.synopsys.com/ .

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