

# Nikon and Synopsys Collaborate to Deliver Advanced DFM Lithography Solutions for 45nm and Below

Solutions Target Improved Lithography Modeling Accuracy, Reduced Time-to-Silicon, and Improved Manufacturing Yield

PRNewswire-FirstCall

PHOTOMASK TECHNOLOGY CONFERENCE, MONTEREY, Calif.

Synopsys, Inc. (NASDAQ: SNPS), a world leader in semiconductor design software, and Nikon Corporation, a leading supplier of lithography equipment for microelectronics manufacturing today announced that they are collaborating on the development and delivery of advanced lithography software models and DFM enabled lithography manufacturing solutions for 45 nm and below.

The Synopsys-Nikon collaboration brings together EDA design and optical lithography imaging system expertise to focus on building next generation "manufacturing-aware" OPC and RET lithography simulation models. At 45 nm and below, critical dimension (CD) control will be at the single nanometer levels pushing current OPC/RET models and optical lithography system performance to the extreme limits.

Early work will focus on the development and optimization of new advanced lithography simulation models, which can intelligently capture the Nikon lithography system's proprietary signatures. Leveraging the new manufacturing-aware models and the collaborative expertise gained, future work will focus on the development and deployment of advanced DFM manufacturing in-fab solutions for Nikon lithography systems.

"At 45 nanometers and below, the characterization and integration of both design and manufacturing information is essential," said Anantha Sethuraman, vice president of DFM Solutions at Synopsys. "In this new DFM centric landscape, design companies must work together to accelerate time to entitled yield and reduced time to market."

New lithography simulation and OPC/RET models must be developed to improve CD performance for 45 nm and below. To achieve nanometer level CD control with fast turnaround time, models must be characterized beyond traditional input parameters such as lithography dose, defocus, light source type and lens parameters. New simulation and modeling inputs must include immersion effects, polarization impacts, global and local flare, wave front aberrations, and other factors that may impact CD performance.

"We believe the accuracy of OPC models can be significantly improved and mask qualification time reduced, by incorporating our unique lithography tool characteristics into the EDA software," stated Toshikazu Umatate, executive officer, Precision Equipment Company, Nikon Corporation. "By partnering with leading-edge EDA companies like Synopsys we can provide enhanced imaging performance for our customers."

## About Nikon

Since 1980, Nikon Corporation has been revolutionizing lithography with innovative products and technologies. The company is a worldwide leader in lithography equipment for the microelectronics manufacturing industry with more than 7,800 exposure systems installed worldwide. Nikon offers the most extensive selection of production-class steppers and scanners in the industry. These products serve the semiconductor, flat panel display (LCD) and thin-film magnetic head (TFH) industries. Nikon Precision Inc. provides service, training, applications and technical support, as well as sales and marketing for Nikon lithography equipment in North America. For more information about Nikon, access the company's web site at [www.nikonprecision.com](http://www.nikonprecision.com).

## 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 [www.synopsys.com](http://www.synopsys.com).

## About Synopsys DFM

With its DFM tools, Synopsys is expanding on what is already the industry's most comprehensive design for manufacturing (DFM) solution that spans from RTL to silicon. Synopsys' DFM product family addresses critical manufacturability and yield issues with the following products: IC Compiler physical design solution, PrimeYield

LCC, PrimeYield CMP and PrimeYield CAA technologies, Hercules™ physical verification tool, Proteus OPC, CATS® mask data preparation product, SiVL® lithography verification tool, patented PSM technology, and physics-based TCAD suite of simulation products. Synopsys' Manufacturing Yield Management (MYM) solutions extend directly into the fab, providing customers real time access to yield data and the analysis capability needed to reduce random, systematic and parametric defects.

#### 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 of the collaboration between Synopsys and Nikon to develop and deliver advanced lithography software models and DFM enabled lithography manufacturing solutions for 45 nm and below. These statements are based on Synopsys' and Nikon's current expectations and beliefs. The actual results of the collaboration could differ materially from those implied by these statements as a result of unforeseen difficulties encountered during the collaboration in developing solutions for very small geometry processes, uncertainties attendant to any new technology offering and certain statements contained in the section of Synopsys' Quarterly Report on Form 10-Q for the fiscal quarter ended July 31, 2006 entitled "Factors That May Affect Future Results."

#### Editorial Contacts:

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

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

SOURCE: Synopsys, Inc.

CONTACT: Sheryl Gulizia of Synopsys, Inc., +1-650-584-8635, or  
sgulizia@synopsys.com; or Lisa Gillette-Martin of MCA, Inc., +1-650-968-8900,  
ext. 115, or lgmartin@mcapr.com, for Synopsys, Inc.

Web site: <http://www.nikonprecision.com/>  
<http://www.synopsys.com/>

---