

NovaScan 3090Next: Process Control Solutions Overview

The NovaScan 3090Next family offers industry-leading, total solutions for both IM and SA metrology applications, including:

Dielectric CMP

Designed to address all dielectric CMP high-end application requirements, including measurement on solid test structures, test patterns and in-die array measurements, NovaScan 3090Next tools enable Advanced Process Control (APC) by measuring both pre- and post-CMP.

Copper CMP

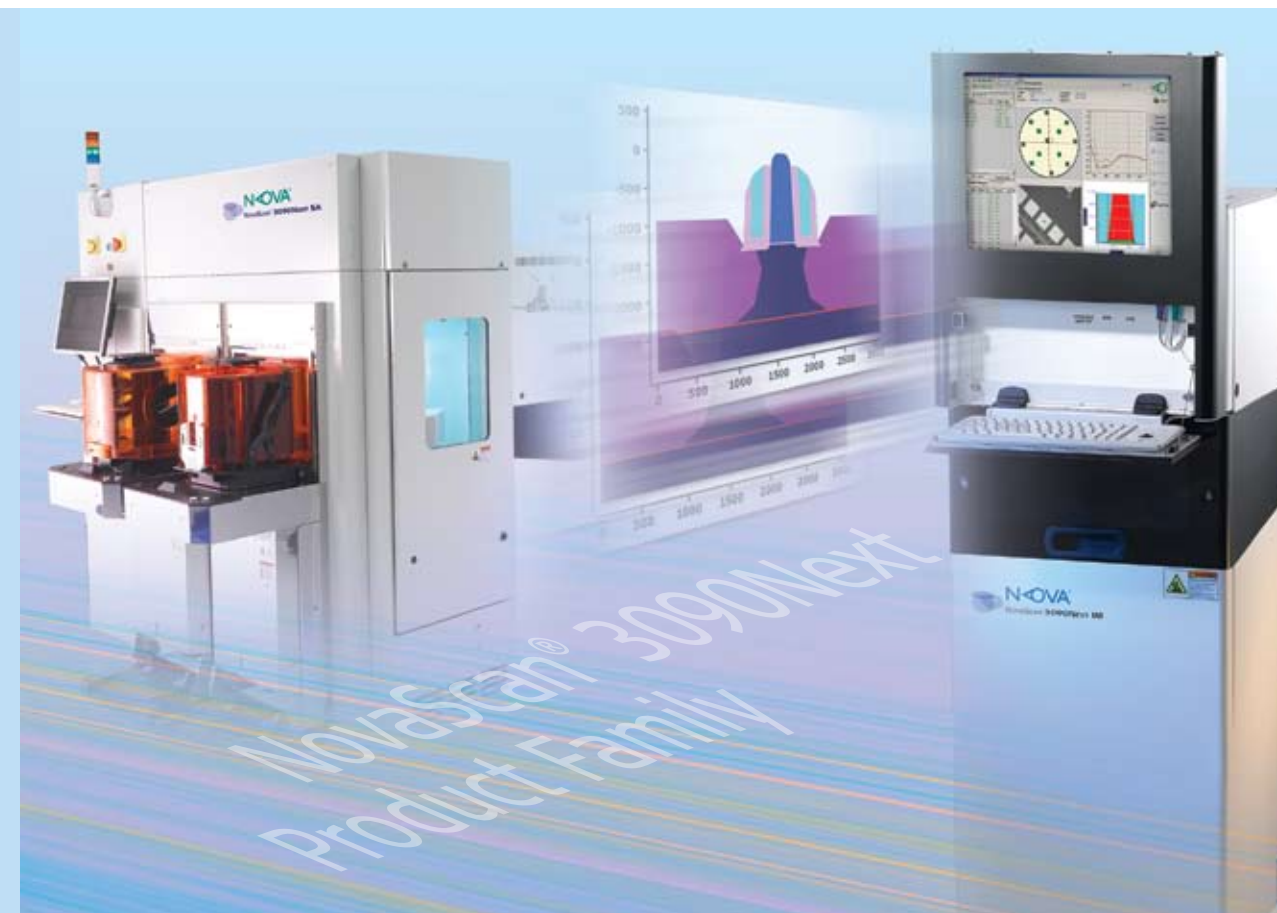
The NovaScan 3090Next platform provides measurement of multiple parameters for copper CMP process control, including copper line thickness, dielectric thickness, erosion and cap layer thickness.

Patterning Applications

Handling patterning applications by providing real-time measurement line profile parameters, NovaScan 3090Next enables Advanced Process Control (feed forward and feedback) of lithography and etch modules. APC, based on NovaScan profiling, improves the process control of Line CD, side-wall angle, thin side-wall spacer and trench depth control.

Deposition

NovaScan 3090Next enables advanced process control of thin-film deposition and epitaxial growth by measuring solid test structures, test patterns and in-die array measurements.



Nova Measuring Instruments Ltd.

P.O. Box 266, Weizmann Science Park, Rehovot 76100, Israel • Tel: +972-8-938-7505 Fax: +972-8-940-7776

Nova Measuring Instruments Inc.

4701 Patrick Henry Drive, Suite 1701, Santa Clara, CA 95054 USA • Tel: +1-408-200-4344 Fax: +1-408-200-4349
4050 East Cotton Center Blvd., Suite 38, Phoenix, AZ 85040, USA • Tel: +1-602-553-8899 Fax: +1-602-553-8898

Nova Measuring Instruments Inc. - Microstructure Division

3006 Research Drive, Suite A-1, State College, PA 16801, USA • Tel: +1-814-235-0606 Fax: +1-814-235-0605

Nova Measuring Instruments Europe

C/O ECTRA, 91 rue de la Tuilerie, 38920 Crolles, France • Tel/Fax: 33-4-76751546

Nova Measuring Instruments K.K.

Koho Bldg. 4F, 1-5-11, Irifune, Chuo-ku Tokyo 104-0042, Japan • Tel: +81-3-3537-6790 Fax: +81-3-3537-6791

Nova Measuring Instruments Taiwan

Empire Commercial Bldg., 13F-6, No. 295, Sec. 2, Kuang-Fu Road, • Hsin-Chu City, Taiwan R.O.C.
Tel: +886-3-575-2411 Fax: +886-3-575-2403

NovaScan[®] 3090Next

Fastest, Next-Generation, Production-Proven Metrology Platform for HVM Environments

- High-end solution for 90nm to demanding 45 & 32nm technology nodes
- Fastest metrology platform for increased sampling and lower Cost of Ownership
- Industry-leading fleet (tool-to-tool) matching requiring no additional calibration
- Together with NovaMARS[™] provides advanced 2D/3D and in-die modeling & measurement

NovaScan® 3090Next Product Family

NovaScan 3090Next - Next Generation Metrology Platform

NovaScan 3090Next, the next generation in Nova's industry-leading, production-proven NovaScan series of metrology platforms, leverages upon a combination of Spectroscopic, Reflectometry and Optical Scatterometry technologies in tandem with Nova's proprietary productivity tools to deliver the market's most advanced solution for HVM environments.

Leading Edge Fleet Matching

Low-error budget of leading process technologies makes it imperative that metrology tools are able to provide the same measurement results across all applications - not only within the fab - but also across different sites as processes are being developed in one site and duplicated at others. The high accuracy, long term stability and fleet matching of the NovaScan 3090Next are designed into the optical metrology unit measuring at normal incidence, perpendicular to the wafer, making the NovaScan 3090Next metrology solution the choice of the industry.

Metrology for 3D and In-die Applications

Moving from one technology node to the next, test structures become less and less representative of the actual features within the device. There is an increased need to measure actual features within the die. NovaMARS advanced 3D modeling software is key for developing complex structure metrology applications.

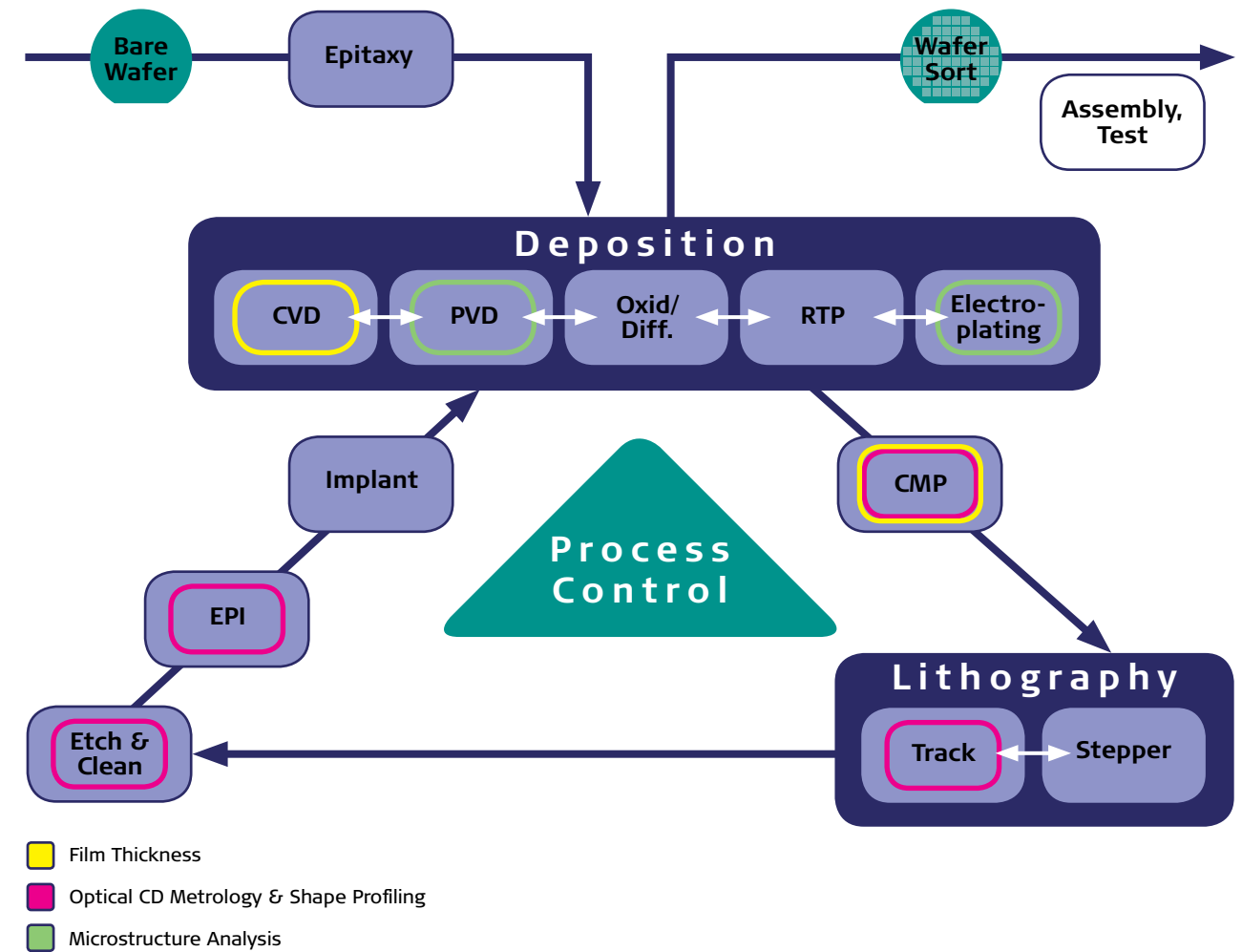
NovaMARS provides a friendly user interface and a high degree of automation for fast recipe creation and consistency between application developers. Process Oriented Modeling Flexibility (POMF) implemented in NovaMARS allows process engineers to model complex structures in much the same way that they design their process steps, allowing them to easily develop and measure their own scatterometry applications.

NovaScan 3090Next and NovaMARS put together all the ingredients required for a good in-die metrology solution: highly accurate scatterometry/metrology hardware, process-oriented flexible 3D modeling, highly automatic solution setup and recipe creation and prediction of solution quality.

Industry's Highest Throughput

NovaScan 3090Next products feature the industry's highest throughput of more than 150 Wafers Per Hour (WPH) for Stand-alone (SA) and more than 200 WPH for Integrated Metrology (IM). The high throughput of the NovaScan 3090Next platform allows more sampling for tighter process control and lower cost-of-ownership.

Nova's Process Control Solutions for IC Manufacturing



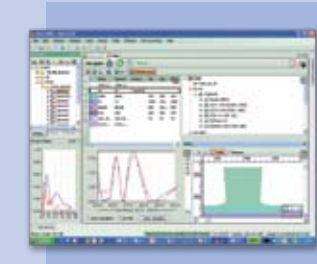
NovaScan 3090Next family members:



NovaScan 3090Next SA - Stand-alone Metrology platform for Optical CD and Shape Profiling metrology applications



NovaScan 3090Next IM - Integrated Metrology platform for high sampling rate and closed-loop control



NovaMARS advanced structure modeling and application development software tool, providing fab engineers with the automation and flexibility necessary to develop in-fab 2D/3D and in-die applications