

NOVELLUS' PETER WOLTERS SUBSIDIARY INTRODUCES INNOVATIVE GAP MEASUREMENT TECHNOLOGY FOR DOUBLE-SIDE WAFER POLISHING

San Jose, California - May 9, 2011 - [Novellus Systems](#) (NASDAQ: NVLS) today announced that its German subsidiary Peter Wolters GmbH has introduced innovative gap measurement technology for double-side silicon prime wafer polishing (DSP). The new high resolution sensors and software algorithms result in outstanding control of wafer quality, as well as increased throughput for the company's AC2000-P³ system.

In order to achieve ultra-flat wafer geometries, double-side polishing is the technology of choice to manufacture 300 mm and 450 mm prime silicon wafers. The polishing wheel gap dimension and control throughout the polishing process is critical in determining the total within-wafer and wafer-to-wafer thickness variation (GBIR/TTV). Figure 1 shows the impact of gap profile control on the GBIR measurement, a measure of the final prime wafer quality.

To address the need for precise polishing wheel control during the double-side polishing process, Peter Wolters engineers have incorporated several innovative features into the latest variant of the AC2000-P³ system. New contactless gauges with increased accuracy now provide sub-micron resolution during the in-situ gap measurement. This new sensor technology has been incorporated into Peter Wolters' upper platen adaptive control (UPAC) system and provides ultra-fast response times to process variations incurred throughout the polishing process.

Additionally, the AC2000-P³ polishing process has been revolutionized with the industry's first non-contact, sensor-based end point detection feature. This technology ensures repeatable within-batch and batch-to-batch wafer thickness (Figure 2), along with extremely low edge roll-off values (ESFQR) (Figure 3). The new sensor technology incorporates a proprietary software algorithm that replaces time-based statistical process control (SPC) to precisely measure the final wafer thickness. By eliminating non-value added polishing time, the system throughput has also been significantly increased.

"In preparation for next generation technology nodes, the new gauges and software algorithms developed for the AC2000-P³ will provide our customers with the combination of high productivity, process flexibility and precision polishing control that they require," said Dave Celli, chief executive officer of Novellus' Industrial Applications Group. "While designed for today's 300 mm wafers, the AC2000-P³ can also simultaneously process up to five 450 mm wafers, thus preparing Peter Wolters' customers for the next wafer size transition as well."

For more information about the AC2000-P³, please visit www.novellustechnews.com

About Peter Wolters:

Peter Wolters GmbH, part of Novellus' Industrial Applications Group, is a leading manufacturer of high precision surface polishing systems for substrates made of silicon, sapphire, gallium arsenide, silicon carbide and other materials used to manufacture microelectronic, micro-optical, and micromechanical devices. Peter Wolters is headquartered in Rendsburg, Germany. For more information on Peter Wolters, please visit www.peter-wolters.com

About Novellus:

Novellus Systems, Inc. (Nasdaq: NVLS) is a leading provider of advanced process equipment for the global semiconductor industry. The company's products deliver value to customers by providing innovative technology backed by trusted productivity. An S&P 500 company, Novellus is headquartered in San Jose, Calif. with subsidiary offices across the globe. For more information, please visit www.novellus.com

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