NOVELLUS SYSTEMS LAUNCHES SOLA®xT UVTP SYSTEM FOR SUB-45nm HIGH VOLUME MANUFACTURING

Flexible Multistation Sequential Processing (MSSP) Architecture Delivers ULK Films With 25 Percent Hardness Improvement over Competitive Approach

San Jose, California - January 13, 2010 - Novellus Systems (NASDAQ: NVLS) today introduced its next-generation ultra-violet thermal processing (UVTP) system, the SOLA xT. The SOLA xT is used in the manufacturing of advanced logic devices at 45nm and below and incorporates a proprietary UVTP treatment process that modifies the physical characteristics of a previously-deposited film through exposure to ultraviolet light and heat. The new system, featuring on-board UV monitoring and a customizable optics assembly, provides process flexibility and extendibility over multiple device generations. The first SOLA xT system will be shipped to UMC's Fab 12i in Singapore.

The multi-station sequential processing (MSSP) architecture of SOLA allows independent control of temperature, wavelength and intensity at each station to deliver best-in-class uniformity and productivity. This high degree of process configurability results in UV treated ultra low-k (ULK) films with a 25 percent greater hardness compared to single wavelength, single temperature curing solutions. For example, UVTP is used to remove porogen and improve the mechanical strength of ULK dielectric films used as inter-metal layers. This treatment facilitates device integration and prepares the films to withstand subsequent semiconductor processing steps like packaging and chemical mechanical planarization (CMP). Other advanced manufacturing integration schemes use spin-on dielectrics, which sometimes incur damage during etching, wet cleaning or photoresist ashing steps. In this instance, UVTP can be used to repair this damage through chemical bond reconstruction. In the front-end-of-the-line, UVTP may also be employed to induce strain in the transistor channel of N-type Metal Oxide Semiconductor (NMOS) devices. Strain is induced by depositing a high tensile stress dielectric film, and subsequently exposing it to UV, resulting in an increase of device performance.

For all of the applications cited above, monitoring equipment health and delivering uniform wafer performance is necessary to improve production efficiencies in a high volume manufacturing environment. To achieve this goal, the new SOLA xT platform features on-board UV monitoring and advanced algorithms to maintain stable wafer-to-wafer performance. Best-in-class within-wafer uniformity results are achieved with SOLA xT's customizable optics assembly, where the UV lamps and reflectors can be oriented differently at each of the four treatment stations. The MSSP architecture ensures that each wafer is processed through a single wafer path, resulting in one statistical distribution of data compared to competitive solutions with up to four or six different wafer paths, and hence as many different statistical distributions.

"The new SOLA xT is designed to meet the market needs for a robust UVTP system suitable for high volume manufacturing at 32 nm," said Kevin Jennings, senior vice president of the PECVD business unit at Novellus Systems. "The independent control of temperature, UV wavelength, and UV intensity enable SOLA xT to extend to future technology generations, where new materials are likely to be introduced."

For more information about Novellus' UVTP technology, visitwww.novellustechnews.com

About Novellus' SOLA UVTP Technology:
Novellus' SOLA ultraviolet thermal processing system (UVTP) is used for the post-deposition treatment of low dielectric constant films to improve mechanical and electrical properties. It is also used in the front end of the line, to improve the stress of high tensile nitride films used to enhance NMOS device performance. The multi-station sequential processing architecture of the SOLA platform results in high system throughput and excellent wafer non-uniformity and wafer-to-wafer repeatability.

About Novellus:
Novellus Systems, Inc. (NASDAQ: NVLS) is a leading provider of advanced process equipment for the global semiconductor industry. 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

Novellus and SOLA are registered trademarks, and SOLA xT is a trademark of Novellus Systems, Inc.

Contact:
Bob Climo
Novellus Systems, Inc.
Phone: + 1 408/943-9700
E-mail: bob.climo@novellus.com

Marla Kertzman
The Hoffman Agency for Novellus Systems, Inc.
Phone: + 1 408/975-3032
E-mail: mkertzman@hoffman.com

---

https://newsroom.lamresearch.com/2010-01-13-NOVELLUS-SYSTEMS-LAUNCHES-SOLA-R-xT-UVTP-SYSTEM-FOR-SUB-45nm-HIGH-VOLUME-MANUFACTURING