

Applied Materials' Vantage RadOx System Delivers 10X Oxide Reliability

May 17 2005

Applied Materials, Inc. introduces the Applied Vantage RadOx RTP system for depositing superior oxide films using a proven, high-productivity platform. The system's proprietary radical oxidation technology reduces device leakage by up to 10X over batch systems, while also demonstrating a 10x improvement in oxide reliability -- an important requirement for Flash memory chips. Key to the Vantage system's high productivity is its small-footprint, production-proven platform that addresses chipmakers' needs for reduced manufacturing costs.

"The quality of conventional batch oxidation technology is inadequate below the 90nm generation, where thin films and complex transistor structures cannot tolerate leakage or poor reliability, especially in advanced Flash memories," said Dr. Randhir Thakur, group vice president and general manager of Applied Materials' Front End Products group. "We've worked closely with our customers to develop this unique combination of high quality radical oxidation (RadOx) technology on the Vantage platform to meet their performance and cost-of-ownership requirements and to provide the extendibility needed for multiple device generations."

The significant benefits of Applied's RadOx technology have been proven for multiple critical flash oxidation applications, including tunnel, top and bottom oxide/nitride/oxide (ONO), shallow trench isolation (STI), liner, and gate oxides. Based on the industry-leading Radiance(R) chamber, the RadOx technology grows a higher density

film, with smoother interfaces, increased conformality and higher growth rates compared to furnace oxidation.

Applied Materials' Vantage platform enables chipmakers to use advanced RTP technology for applications that require high productivity with low cost of ownership. The compact Vantage system is configured with up to two Radiance chambers which are mounted directly to a factory interface. The Vantage platform has become the system of choice for RTP volume production, with over 100 systems shipped to chipmakers worldwide since its introduction in 2003.

Citation: Applied Materials' Vantage RadOx System Delivers 10X Oxide Reliability (2005, May 17) retrieved 9 April 2024 from

<https://phys.org/news/2005-05-materials-vantage-radox-10x-oxide.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--