# ACM Research Strengthens Atomic Layer Deposition Portfolio with Qualification of Thermal and Plasma-Enhanced ALD Furnace Tools

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## Thermal and Plasma-Enhanced ALD furnace tools qualified for high-volume 300mm semiconductor manufacturing

FREMONT, Calif., Dec. 10, 2024 (GLOBE NEWSWIRE) -- ACM Research, Inc. ("ACM") (NASDAQ: ACMR), a leading supplier of wafer processing solutions for semiconductor and advanced packaging applications, today announced the qualification of its Ultra Fn A Plasma-Enhanced Atomic Layer Deposition (PEALD) Furnace tool. The tool has achieved process qualification at a mainland China semiconductor customer, and is now entering mass production. ACM also announced that its Ultra Fn A Thermal Atomic Layer Deposition (Thermal ALD) Furnace tool, introduced in 2022, has successfully completed process qualification with another leading mainland China customer, demonstrating performance parameters that it believes match or exceed competitive tools.

"Modern integrated circuit (IC) manufacturing increasingly relies on the deposition of ultra-thin films with excellent step coverage and high quality," said Dr. David Wang, ACM's President and Chief Executive Officer. "Addressing the complexity of depositing materials such as silicon carbon nitride, silicon nitride films, and low-k film requires true innovation, and ACM's R&D team has delivered with its ALD platforms and processes. We believe ACM's proprietary design is differentiated from other suppliers and enables us to address challenges faced in advanced 3D structure manufacturing."

Both the Thermal ALD and PEALD configurations of ACM's Ultra Fn A Furnace ALD products can perform various film deposition tasks such as hard mask, barrier, spacer, and sidewall protection layers, supporting a range of requirements of target process applications. Both configurations feature a six-unit system capable of batch processing up to one-hundred 300mm wafers. The tools also include four loadport systems with oxygen concentration control in the loading area, an Integrated Gas Supply system (IGS), and in-situ dry cleaning, all designed to meet SEMI standards.

**Ultra Fn A PEALD Tool**

ACM's Ultra Fn A PEALD tool is designed for the deposition of ultra-thin silicon nitride (SiN) films. It features a double-layer tube with airflow balancing technology, which significantly improves both wafer-in-wafer (WIW) and wafer-to-wafer (WTW) uniformity. Using plasma-enhanced technology, the tool effectively reduces the device's thermal budget. Furthermore, the critical dimensions and pattern profiles of devices can be precisely controlled by fine-tuning the precursors storage and release amount to reaction tube.

**Ultra Fn A Thermal ALD Tool**

ACM's Ultra Fn A Thermal ALD Tool has been qualified for the deposition of silicon carbon nitride (SiCN) films. It enables ultra-thin, void-free film deposition with precise control over film thickness, achieving atomic-level deposition accuracy. The tool also ensures precise carbon doping, enhancing film hardness and improving corrosion resistance. Additionally, it includes an in-situ dry cleaning step to maintain particle stability, even when the film reaches low accumulated thickness.

**Forward-Looking Statements**

Certain statements contained in this press release are not historical facts and may be forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "plans," "expects," "believes," "anticipates," "designed," and similar words are intended to identify forward-looking statements. Forward-looking statements are based on ACM management's current expectations and beliefs and involve a number of risks and uncertainties that are difficult to predict and that could cause actual results to differ materially from those stated or implied by the forward-looking statements. A description of certain of these risks, uncertainties and other matters can be found in filings ACM makes with the U.S. Securities and Exchange Commission, all of which are available at www.sec.gov. Because forward-looking statements involve risks and uncertainties, actual results and events may differ materially from results and events currently expected by ACM. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. ACM undertakes no obligation to publicly update these forward-looking statements to reflect events or circumstances that occur after the date hereof or to reflect any change in its expectations with regard to these forward-looking statements or the occurrence of unanticipated events.

**About ACM Research, Inc.**

ACM develops, manufactures and sells semiconductor process equipment for single-wafer or batch wet cleaning, electroplating, stress-free polishing, vertical furnace processes, Track and PECVD, which are critical to advanced semiconductor device manufacturing and packaging. ACM is committed to delivering customized, high-performance, cost-effective process solutions that semiconductor manufacturers can use in numerous manufacturing steps to improve productivity and product yield. For more information, visit www.acmr.com.

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