ACM Research Expands Ultra C Family with Suite of Semi-Critical Cleaning Systems

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Broadens ACM's Product Portfolio to Deliver More Value to Customers

FREMONT, Calif., May 06, 2020 (GLOBE NEWSWIRE) -- ACM Research, Inc. (NASDAQ: ACMR), a leading supplier of wafer-processing solutions for semiconductor and advanced wafer-level packaging (WLP) applications, today announced its offering of a suite of three Ultra C wet cleaning tools for front- and backside processes. These semi-critical cleaning tools--the Ultra C b for backside clean, Ultra C wb automated wet bench, and Ultra C s scrubber--extend ACM's innovative wet-processing technology into broader applications.

"Our China-based customers have requested that we provide additional tools beyond the leading-edge ACM products that have been deployed for the most critical process steps. We have responded with so-called 'semi-critical tools,' which offer high-quality processing to support additional, less demanding but still important steps in their production chain," noted David Wang, Chief Executive Officer and President of ACM. "We developed the Ultra C suite to meet this demand with an expanded portfolio, helping move ACM toward becoming a one-stop shop that can serve our customers with a more competitive product offering."

The three new Ultra C tools target the advanced IC, power device, and advanced WLP markets. The Ultra C b and Ultra C wb tools have already begun to demonstrate their benefits in production environments at advanced semiconductor plants in China. The initial Ultra C s was delivered to a Chinese customer in the first quarter of 2020, with revenue recognition expected upon qualification and acceptance.

Backside clean

The Ultra C b is a cost-effective backside cleaning tool that provides good particle performance and etch uniformity control for three key applications: backside metal removal or RCA clean; backside silicon etching for wet wafer thinning or wet through-silicon via (TSV) reveal; and backside film removal on poly silicon, oxide and nitride layers for wafer recycling. With features that help mitigate high warpage, the system is especially well suited for processing 200mm or 300mm ultra-thin wafers and bonding wafers.

Instead of a conventional wafer chuck, which can damage the front side of the wafer, the tool's chuck implements the Bernoulli effect to float the wafer above the chuck without physical contact. Once the solvents are sprayed onto the wafer backside, its device side is dried using nitrogen (N2) gas. The proprietary design, using ACM's patented technology on a Bernoulli chuck with a recipe-controlled gap between the wafer and chuck, meets requirements for undercut width control on the wafer device side edge and pin mark-free control. The unit can be customized for high throughput above 300 wph for applications with short chemical process times. Options include an advanced non-contact robot for ultra-thin wafer handling.

Auto bench

The Ultra C wb tool performs batch cleaning of up to 50 wafers, utilizing the same advanced wet bench technology developed for ACM's Ultra C Tahoe hybrid bench and single-wafer cleaning tool. Key applications for the auto bench include pre-furnace clean, RCA clean, photoresist strip, oxide etch, silicon nitride removal, and removal of FEOL poly/oxide or BEOL metal for wafer recycling. The tool is configured with different tanks of chemicals, such as sulfuric acid, phosphoric acid, hydrofluoric acid (HF), buffer oxide etchant (BOE), SC1 and SC2 for a specific application step. The wafers are successively dipped in the baths, rinsed with deionized (DI) water, and dried with an ATOMO dryer with vaporized isopropyl alcohol (IPA), leaving no watermark. The system's modular design and small footprint allow for ease of configuration on the production floor. With its efficient use of chemistries and DI water, the Ultra C wb tool is environmentally friendly with a low cost of ownership.

Scrubber

The new Ultra C s scrubber leverages ACM's proven scrubber capabilities for WLP and extends them to IC processing in the foundry. Its soft brush uses precise pressure control to remove particles following wafer frontside, bevel and backside cleans of wafers. The tool features an advanced dual-fluid (gas and liquid phase) spray cleaning technique; it can also be equipped with ACM's patented Space Alternated Phase Shift (SAPS) megasonic technology for customers requiring further, more intense cleaning for smaller particles. The modular system can be configured with eight chambers for 300mm IC applications – four each for frontside and backside cleaning. The scrubber is highly cost effective due to its flexibility, small footprint and high throughput.

The Ultra C suite of semi-critical wet processing tools are available now for individual or group purchase. For more information, please call the ACM regional company contact listed below.

About ACM Research, Inc.
ACM develops, manufactures and sells semiconductor process equipment for single wafer or batch wet cleaning, electroplating, stress-free polishing and thermal process are critical to advanced semiconductor device manufacturing, as well as wafer-level packaging. The company 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.

Media Contact:
Eric Lawson
Kiterocket
+1 480.276.9572
elawson@kiterocket.com

Company Contact:
USA
Sallyann Henry
ACM Research, Inc.
+1 510.445.3700

China
Xi Wang
ACM Research (Shanghai), Inc.
+86 21 50808868

Korea
YY Kim
ACM Research (Korea), Inc.
+821041415171

Taiwan
Arthur Hsu
+886 910663885

Singapore
Adrian Ong
+65 8813-1107

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