ACM Research Significantly Improves Copper Plating Rate and Uniformity for Advanced Packaging Applications with New High-Speed Plating Technology

March 10, 2021

New ECP ap capability controls the wafer-level electric field to deliver better uniformity within wafer and within die while achieving higher throughputs

FREMONT, Calif., March 10, 2021 (GLOBE NEWSWIRE) -- ACM Research, Inc. (ACM) (NASDAQ: ACMR), a leading supplier of wafer processing solutions for semiconductor and advanced wafer-level packaging (WLP) applications, today introduced its high-speed copper (Cu) plating technology, which is now available for its ECP ap system. The tool supports Cu pillar bumping for Cu, nickel (Ni) and tin-silver (SnAg) plating; solder bumping Ni and SnAg plating; and high-density fan-out (HDFO) WLP products' warpage wafers, with Cu, Ni, SnAg and gold plating. The new high-speed plating technology supports the Cu plating chamber with stronger mass transfer during the plating process.

According to Mordor Intelligence, the fan-out packaging market is expected to witness a compound annual growth rate (CAGR) of 18% during the forecasted period (2021 - 2026). It reports that fan-out technologies' prevalence is mainly due to cost, reliability and customer adoption. Approximately more than 20% thinner than traditional flip-chip assembly, fan-out packaging is supplementing the slim profile trend of smartphones.[1]

"One of the major challenges in 3D plating applications is to plate metal film in deep vias or troughs, which have a depth of more than 200 microns, at high speed and with better uniformity," said Dr. David Wang, ACM's Chief Executive Officer and President. "Historically, performing copper plating for pillars at high plating rates encountered mass transport limitations that reduced the deposition rate and generated an uneven top profile of the pillar. Our new high-speed plating technology solves the mass transfer challenge while achieving a better pillar top profile and delivering improved height uniformity at a higher throughput."

ACM's high-speed plating technology can enhance the mass transfer of Cu ions during Cu film deposition, at the same time coating all pillars on the entire wafer at the same plating rate. This allows for better uniformity within wafer and within die during high-speed plating. Wafers processed using this technology achieve wafer-level uniformity below 3%, an improvement over other approaches' performance at the same plating rate. It also offers better coplanarity performance and higher throughput.

ACM upgraded an existing customer's ECP ap system with its new high-speed plating technology in December 2020, and has received an order for the first system equipped with the high-speed plating technology which it expects to ship to a major outsourced assembly and test (OSAT) facility in China later this month.

Contact ACM to learn more about its ECP ap tool and high-speed plating technology.

1. Mordor Intelligence, FAN OUT PACKAGING MARKET - GROWTH, TRENDS, COVID-19 IMPACT, AND FORECASTS (2021 - 2026)

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 processes that 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.

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