ACM Research Launches Furnace Tool for Power Device Industry to Address IGBT Process Challenges

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New Ultra Fn Capability Improves Performance of the Alloy Anneal Process Used in IGBT Device Manufacturing

FREMONT, Calif., Dec. 17, 2020 (GLOBE NEWSWIRE) -- ACM Research, Inc. (ACM) (NASDAQ: ACMR), a leading supplier of wafer processing solutions for semiconductor and advanced wafer-level packaging applications, today introduced alloy anneal capabilities for its Ultra Fn Furnace tool to extend its furnace product line to power device manufacturers. The new capabilities are critical to meet the ever-increasing production requirements of insulated gate bipolar transistor (IGBT) devices as transistors get thinner, smaller and faster.

According to industry research firm Mordor Intelligence, “The IGBT market was valued at USD 5.4 billion in 2019, and it is expected to reach USD 9.38 billion by 2025, at a CAGR of 9.66%, during the forecast period (2020-2025). The broad application range of IGBTs lured several new companies to venture into the market. IGBT activates/modifies electrical energy in several modern appliances, such as cookers, microwaves, electric cars, trains, variable-frequency drives (VFDs), variable speed refrigerators, air conditioners, lamp ballasts, municipal power transmission systems, and stereo systems, which are well-equipped with switching amplifiers.”[1]

In addition to rapid end-market growth, manufacturing requirements for IGBT are also increasing as chip technology becomes more advanced. Today’s IGBT applications, particularly EVs, require faster switching capabilities, increased power efficiency, and higher power density.

“Today’s IGBT devices must be smaller, faster and thinner than ever,” said David Wang, CEO of ACM Research. “ACM entered this product category earlier this year with our Thin Wafer Backside Cleaning System. We have built on our experience and understanding of power device manufacturing to add alloy anneal capabilities to the Ultra Fn. This extends our furnace product offering from foundry customers to now include power device customers.”

The Ultra Fn Furnace tool with alloy anneal capabilities is customized to perform anneal processes under protective inert gas, reductive gas conditions or high vacuum conditions down to the micro-Torr level. With the special design in the wafer handling system, process tube and boat, it also can be applied for thin wafers or taiko wafers. The system is intended for batch processing of up to 100 12-inch (300mm) wafers. The applications of the Ultra Fn system also can be extended into the low pressure chemical vapor deposition (LPCVD) process for SIN, HTO, un-doped poly and doped poly deposition, gate oxide deposition process, ultra-high temperature processes up to 1200°C, and atomic layer deposition (ALD).

ACM delivered its first tool customized for alloy anneal processing early this December to a power device manufacturer in China. Contact ACM to learn how the Ultra Fn Furnace tool can be customized to your specifications.

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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1. https://www.mordorintelligence.com/industry-reports/insulated-gate-bipolar-transistor-igbt-market

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

Company Contacts:
U.S.
Robert Metter
ACM Research, Inc.
+1-503-367-9753

Europe
Sally-Ann Henry
ACM Research, Inc.
+43 660 7769721

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

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

Subsidiary Contacts

Singapore
Adrian Ong
+65 8813-1107

Taiwan
David Chang
+866 921-999-884