



SkyWater Technology and Multibeam Corporation Form Partnership to Deploy Multibeam's Innovative MEBL System

Advanced lithography technology to serve as a key enabler for SkyWater's domestic foundry roadmap to 45 nm

SANTA CLARA, Calif. and BLOOMINGTON, Minn., – November 18, 2020 – [SkyWater Technology](#), the trusted technology realization partner, and **[Multibeam Corporation](#)**, the maskless lithography technology leader, today disclosed a partnership to deploy Multibeam's Multicolumn Electron-Beam Lithography (MEBL) system into SkyWater's newly expanded fabrication facility in support of SkyWater's roadmap to advance its manufacturing capabilities and accelerate growth. The ground-breaking MEBL system, set to launch in 2021, will be capable of full-wafer, all-maskless patterning at 45 nm and beyond.

"As a Trusted Foundry, we take great pride in meeting stringent security and quality criteria," said Thomas Sonderman, president and chief executive officer of SkyWater. "We seek innovative solutions that can add high value while reducing manufacturing cost and cycle times; MEBL's deployment will benefit all of our customers, both government and commercial. Further, this key capability will support SkyWater's pursuit of a unique foundry offering by combining the flexibility and agility of 200 mm manufacturing with the advanced performance of 45 nm process technology."

According to David K. Lam, chairman and chief executive officer of Multibeam, SkyWater represents a showcase customer that can take full advantage of MEBL's high-mix production capabilities. He noted that MEBL greatly simplifies patterning processes, adding, "In product development, MEBL cuts prototyping cost and time because 'respins' no longer require a new set of masks. Since all e-beam columns in our MEBL system write independently and in parallel, they empower production of multi-project wafers and chips larger than the typical optical field of view. Our versatile MEBL system design has a throughput capability that extends significantly beyond single e-beam approaches to support volume manufacturing."

Security Lithography

As a proprietary maskless platform, MEBL can be applied to ensure "security lithography" by embedding unique security information into each IC during routine wafer fabrication. Multibeam's Secure Chip ID enables chip traceability throughout its lifecycle as well as the confirmation of its unique identity and provenance. Technology development is well under way

for the MEBL platform to hardcode unique chip ID into each IC during fabrication – a most secure and cost-efficient way to thwart IC counterfeiting.

About SkyWater Technology

SkyWater is the only U.S.-owned and U.S.-based pure play semiconductor foundry and is a DOD-accredited Trusted supplier, specializing in custom technology development services and volume manufacturing for integrated circuits and micro devices. Through its Technology Foundry model, SkyWater's world-class operations and unique processing capabilities enable mixed-signal CMOS, power, rad-hard and ROIC solutions. SkyWater's Advanced Technology Services empower development of superconducting and 3D ICs, along with carbon nanotube, photonic and MEMS devices. The company serves customers in growing markets such as aerospace & defense, automotive, biomedical, cloud & computing, consumer, industrial and IoT. For more information, visit: www.skywatertechnology.com/.

About Multibeam Corporation

Multibeam is a leader in multicolumn electron-beam lithography (MEBL). With a robust IP portfolio comprising 43 patents, Multibeam is building MEBL production systems and developing applications under DoD contracts. The company targets applications such as high-mix production lithography, complementary e-beam lithography (CEBL), security lithography, and applications in which MEBL holds competitive advantages and offers compelling benefits to semiconductor chipmakers. Multibeam is led by David K. Lam, the founder and first CEO of Lam Research. Widely recognized as a key contributor to the growth of the semiconductor industry, Lam was inducted into the Silicon Valley Engineering Hall of Fame in 2013. For more information, visit: www.multibeamcorp.com

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