ASML and TSMC Announce Initiative to Pioneer Industry Transition to Large-Format Photomasks for High NA EUV

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- On September 7, in advance of the SPIE Bacus Conference, ASML and TSMC formed a collaborative industry initiative to drive the transition to 12-inch photomasks, maximizing the value of High NA EUV lithography.
- The initiative targets establishing a 12-inch mask pilot line by 2031, supporting full lithography system readiness for advanced node production by 2033.
- Underscoring broad industry support, High NA EUV adopters and other major suppliers, have expressed their interest to join the initiative.

HSINCHU, Taiwan, R.O.C. and VELDHOVEN, the Netherlands – September 8, 2026 – Taiwan Semiconductor Manufacturing Company (TWSE: 2330, NYSE: TSM) and ASML Holding N.V. (Euronext: ASML, Nasdaq: ASML) announced a collaborative initiative to lead the semiconductor industry's transition to a larger-format Extreme Ultraviolet (EUV) lithography photomask.

While High NA EUV will be adopted for production using the current, 6-inch masks, the transition to larger, 12-inch masks is expected to further increase fab productivity, lower chipmaking costs and remove stitching constraints, benefiting the entire semiconductor industry. It will enable advanced chip manufacturers to fully leverage the advantages of High NA EUV, making future generations of leading-edge chips more cost-effective.

"We expect the adoption of High NA EUV to increase progressively along the device scaling roadmap, first using current 6-inch masks and then further supported by 12-inch masks, which enable greater scanner productivity and allow the industry to meet the demand for smaller, faster and more energy-efficient chips." said Christophe Fouquet, president & CEO, ASML. "We are pleased by the strong initial support of semiconductor manufacturers, mask suppliers and partners for this initiative."

"We have always believed that when the industry works together to solve complex problems, we unlock possibilities that no single company could achieve alone," said TSMC Chairman and CEO Dr. C.C. Wei. "By bringing together expertise from across the industry's value chain, we hope to keep providing the benefits of cutting-edge technology through continuous innovation that lowers barriers and puts advanced solutions accessible at scale."

TSMC intends to use ASML's High NA technology in high-volume manufacturing for advanced nodes starting in 2030. As technology nodes advance, TSMC expects the number of layers requiring High NA EUV will rise, driven primarily by the increasingly complex transistor architectures required for AI applications.

On September 7, in advance of the annual SPIE BACUS Conference in Monterey, California, ASML and TSMC established an industry-wide collaborative initiative to drive the transition to 12-inch photomasks. This effort aims to establish a 12-inch mask pilot line by 2031, paving the way for 12-inch High-NA lithography systems to enter advanced node production by 2033.

Underscoring broad industry support, major ecosystem partners and suppliers attended the event and expressed their interest in this transition.

About ASML
ASML is a leading supplier to the semiconductor industry. The company provides chipmakers with hardware, software and services to mass produce the patterns of integrated circuits (microchips). Together with its partners, ASML drives the advancement of more affordable, more powerful, more energy-efficient microchips. ASML enables groundbreaking technology to solve some of humanity's toughest challenges, such as in healthcare, energy use and conservation, mobility and agriculture. ASML is a multinational company headquartered in Veldhoven, the Netherlands, with offices across EMEA, the US and Asia. Every day, ASML's more than 44,000 employees (FTE) challenge the status quo and push technology to new limits. ASML is traded on Euronext Amsterdam and NASDAQ under the symbol ASML. Discover ASML – our products, technology and career opportunities – at www.asml.com.

About TSMC
TSMC pioneered the pure-play foundry business model when it was founded in 1987, and has been the world's leading dedicated semiconductor foundry ever since. The Company supports a thriving ecosystem of global customers and partners with the industry's leading process technologies and portfolio of design enablement solutions to unleash innovation for the global semiconductor industry. With global operations spanning Asia, Europe, and North America, TSMC serves as a committed corporate citizen around the world.

TSMC deployed 305 distinct process technologies, and manufactured 12,682 products for 534 customers in 2025 by providing the broadest range of advanced, specialty and advanced packaging technology services. The Company is headquartered in Hsinchu, Taiwan. For more information please visit https://www.tsmc.com.

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Forward Looking Statements
This document and related discussions contain statements that are forward-looking within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, including statements with respect to expanding the strategic collaboration for next generation semiconductor manufacturing, 12-inch photomask transition and the anticipated benefits thereof, plans for technology adoption and manufacturing, plans to introduce high-NA EUV into manufacturing and expected timing thereof and expected adoption and benefits of high-NA EUV and other non-historical statements. You can generally identify these statements by the use of words like “expect”, “intend”, “will”, “target”, “positioned”, “plan”, “and variations of these words or comparable words. Forward-looking statements do not guarantee future performance and involve risks and uncertainties, including risks related to the strategic collaboration for next generation semiconductor manufacturing and 12-inch photomask transition, risks relating to high-NA EUV technology and the adoption and benefits thereof, including the expected timing of adoption, and other risks indicated in the risk factors included in ASML’s most recent Annual Report on Form 20-F and other filings with the U.S. Securities and Exchange Commission. These forward-looking statements are made only as of the date of this document. We undertake no obligation to update any forward-looking statements after the date of this document or to conform such statements to actual results or revised expectations, except as required by law.

Attachment

- Link to press release