Onto Innovation Announces Third Customer has Qualified the Atlas® V System for Gate-All-Around Development and Pilot Production

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WILMINGTON, Mass.--(BUSINESS WIRE)-- Onto Innovation Inc. (NYSE: ONTO) (“Onto Innovation,” “Onto,” or the “Company”) today announced it has received repeat orders of its Atlas® V optical critical dimension (OCD) platform for its uniquely powerful metrology solution for gate-all-around (GAA) / nanosheet transistors, the next-generation device architecture for advanced logic.

A model of a GAA device generated using Ai Diffract software, showing the inner spacer region (orange) (Graphic: Business Wire)

“The GAA device is extremely challenging for dimensional metrology. The device structure is significantly more complex than previous FinFET architectures, with a need to control each nanosheet channel separately to tighter control limits measuring much smaller changes,” said Jiangtao Hu, senior director of technology for Onto Innovation.

As the industry migrates from FinFET transistors toward GAA (nanosheet) devices, key challenges directly impacting device performance have emerged. Gate length is defined at the selective source-drain etch, and it directly impacts drive current, which determines transistor performance. The inner spacer etch determines the source-to-gate capacitance, which also directly impacts transistor performance.

“For a GAA device, the physical properties of the ‘worst’ nanosheet will define key device performance metrics. In a stacked nanosheet device, the physical dimensions of each sheet need to be measured individually, especially after selective source drain recess etch and the inner spacer etch. Using conventional OCD (scatterometry) tools it isn’t possible to separate the signals related to each nanosheet due to high levels of parameter correlation, but the Atlas...
V system can overcome this challenge,” said Nick Keller, senior technologist, strategic marketing for Onto Innovation.

The Atlas V system, utilizing the latest improvements in spectrum signal-to-noise ratio (SNR), coupled with Onto Innovation’s Ai Diffrac™ model-guided machine-learning modeling engine, enables the clean separation of signals related to each nanosheet. Individual nanosheet measurements, from an inline tool capable of measuring a single location in less than a second, facilitates a process control feedback loop that is critical for ramping yield to HVM levels.

Prior to the introduction of this revolutionary solution, the ability to conduct GAA metrology of buried, recessed nanosheets was only possible in HVM using slower and potentially damaging HV-SEM tools that are unable to differentiate individual nanosheets.

Onto Innovation is proud to be a trusted strategic partner in the development of GAA technology through the delivery of its Atlas-based GAA metrology solution, helping accelerate the rollout of this new transistor technology that will enable logic devices to continue to scale performance, power, area, and cost (PPAC).

About Onto Innovation Inc.

Onto Innovation is a leader in process control, combining global scale with an expanded portfolio of leading-edge technologies that include: Un-patterned wafer quality; 3D metrology spanning chip features from nanometer scale transistors to large die interconnects; macro defect inspection of wafers and packages; metal interconnect composition; factory analytics; and lithography for advanced semiconductor packaging.

Our breadth of offerings across the entire semiconductor value chain helps our customers solve their most difficult yield, device performance, quality, and reliability issues. Onto Innovation strives to optimize customers’ critical path of progress by making them smarter, faster and more efficient.

Headquartered in Wilmington, Massachusetts, Onto Innovation supports customers with a worldwide sales and service organization.

Additional information can be found at www.ontoinnovation.com.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 (the “Act”) which include statements relating to Onto Innovation’s business momentum and
future growth; the benefit to customers and the capabilities of Onto Innovation’s products and customer service;
Onto Innovation’s ability to both deliver products and services consistent with our customers’ demands and
expectations and strengthen its market position, Onto Innovation’s beliefs about market opportunities as well as
other matters that are not purely historical data. Onto Innovation wishes to take advantage of the “safe harbor”
provisioned for by the Act and cautions that actual results may differ materially from those projected as a result of
various factors, including risks and uncertainties, many of which are beyond Onto Innovation’s control. Such factors
include, but are not limited to, length, severity and potential business impact of the COVID-19 pandemic, the
Company’s ability to leverage its resources to improve its position in its core markets; its ability to weather difficult
economic environments; its ability to open new market opportunities and target high-margin markets; the
strength/weakness of the back-end and/or front-end semiconductor market segments; fluctuations in customer
capital spending and any potential impact as a result of the novel coronavirus situation; the Company’s ability to
effectively manage its supply chain and adequately source components from suppliers to meet customer demand;
its ability to adequately protect its intellectual property rights and maintain data security; its ability to effectively
maneuver global trade issues and changes in trade and export license policies; the Company’s ability to maintain
relationships with its customers and manage appropriate levels of inventory to meet customer demands; and the
Company’s ability to successfully integrate acquired businesses and technologies. Additional information and
considerations regarding the risks faced by Onto Innovation are available in Onto Innovation’s Form 10-K report for
the year ended January 1, 2022 and other filings with the Securities and Exchange Commission. As the forward-
looking statements are based on Onto Innovation’s current expectations, the Company cannot guarantee any
related future results, levels of activity, performance or achievements. Onto Innovation does not assume any
obligation to update the forward-looking information contained in this press release.

Source: Onto Innovation Inc.

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