

Almere, The Netherlands
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ASM INTERNATIONAL N.V. LAUNCHES INTREPID® ES™ EPITAXY TOOL FOR ADVANCED-NODE HIGH-VOLUME SEMICONDUCTOR MANUFACTURING

System Reduces Process Costs; Seeing Adoption by Manufacturers

ASM International N.V. (Euronext Amsterdam: ASM) today introduced the Intrepid® ES™ 300mm epitaxy (epi) tool for advanced-node CMOS logic and memory high-volume production applications. Intrepid ES introduces innovative closed loop reactor control technology that enables optimal within wafer and wafer-to-wafer process performance, critical for today's advanced transistors and memories. Furthermore, Intrepid ES reduces the cost per wafer significantly for a 7nm epi process compared with prior node processes. The new tool has been qualified for production at a leading-edge foundry customer, and is targeting production applications in other industry segments as well. To date, over 40 reactors have been delivered.

"Over the past several years, multiple customers have been very clear that there is a need to address several technical and cost challenges in the epi market," said Chuck del Prado, President and Chief Executive Officer of ASM International. "Intrepid ES is the result of a focused development program to address major challenges in this market, including film non-uniformity, process repeatability, tool uptime and high cost per wafer. This early success of the Intrepid ES clearly demonstrates that we are on track in addressing our customers' emerging epi requirements."

The new Intrepid ES tool is based on a combination of reactor and platform design improvements. It demonstrates improved film performance and enhanced reactor stability. Fundamental to its technology is an isothermal reactor environment in which the wafer is processed. This provides consistent and repeatable temperature control across the wafer and wafer-to-wafer.

Intrepid ES achieves improved on-wafer film uniformity and more stable results wafer-to-wafer. Intrepid ES features multi-wafer processing before a required clean cycle, improving throughput. Furthermore, the chamber clean efficiency reduces cleaning chemical usage. The result is optimal performance at a lower cost per wafer.

"Ultimately, performance and cost reductions go hand in hand," said Dr. Hichem M'Saad, ASM General Manager and Senior Vice President for the Thermal Products Business Unit. "We've made a significant investment in this platform to allow us to achieve what we call the new 'epi-nomics' benefit for our customers."

Intrepid ES addresses 7nm-and-below advanced transistor channel and strain epi layers for FinFET and gate all-around devices, as well as advanced 3D-NAND and DRAM epi applications. Films include Si, SiGe, SiP and other doped epi materials. The Intrepid ES system can be configured with up to four epi process modules. A surface clean process is optionally available by integrating ASM's Previm® pre-clean process modules onto the platform. Previm enables removal of native oxides, carbon and other materials for integrated pre-epi surface preparation.

About ASM International

ASM International NV, headquartered in Almere, the Netherlands, its subsidiaries and participations design and manufacture equipment and materials used to produce semiconductor devices. ASM International, its subsidiaries and participations provide production solutions for wafer processing (Front-end segment) as well as for assembly & packaging and surface mount technology (Back-end segment) through facilities in the United States, Europe, Japan and Asia. ASM International's common stock trades on the Euronext Amsterdam Stock Exchange (symbol ASM). For more information, visit ASM's website at www.asm.com.

Cautionary Note Regarding Forward-Looking Statements: All matters discussed in this press release, except for any historical data, are forward-looking statements. Forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those in the forward-looking statements. These include, but are not limited to, economic conditions and trends in the semiconductor industry generally and the timing of the industry cycles specifically, currency fluctuations, corporate transactions, financing and liquidity matters, the success of restructurings, the timing of significant orders, market acceptance of new products, competitive factors, litigation involving intellectual property, shareholders or other issues, commercial and economic disruption due to natural disasters, terrorist activity, armed conflict or political instability, epidemics and other risks indicated in the Company's reports and financial statements. The Company assumes no obligation nor intends to update or revise any forward-looking statements to reflect future developments or circumstances.

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