Applied Materials Advances Ion Implant Technology for 3D Chip Architectures

June 30, 2014

- *New Applied Varian VIISta® 900 3D system delivers unsurpassed beamline precision for doping complex FinFET and 3D memory structures*
- *Unique beam shape control coupled with SuperScan(TM) 3 technology reduces device variability, while superior particle performance boosts production yields*

SANTA CLARA, Calif., June 30, 2014 - Applied Materials, Inc. today announced the [Applied Varian VIISta® 900 3D](#) system, the industry's state-of-the-art medium-current ion implantation tool developed for manufacturing FinFET and 3D NAND designs at sub-2x nanometer nodes. This system features innovations in precision materials engineering that deliver unprecedented levels of control needed to improve device performance, reduce variability, and boost yields of increasingly complex high-performance, high density 3D devices.

The VIISta 900 3D system offers enhanced beam angle precision, breakthrough beam shape accuracy and superior dose and uniformity control that enable customers to achieve process repeatability and optimize device performance. The system's unique hot implant technology and triple magnet architecture additionally boost yield by minimizing defects. These combined capabilities support the precision implants required for manufacturing complex 3D architectures.

"Consumer demand for enhanced mobility puts tremendous pressure on chip makers to deliver higher performance, lower power devices, which results in complex challenges," said Gary Rosen, vice president and general manager of Applied's Varian Semiconductor Equipment business unit. "Specifically developed for 3D designs, the VIISta 900 3D ion implantation tool helps solve our customers' toughest device challenges by providing the purest, most precise implants available for improved device performance and yield."

A key innovation of the VIISta 900 3D system is its SuperScan 3 technology that utilizes the tool's unique beam shape control to support customized wafer dose patterning by delivering accurate, precise dosing for virtually any desired pattern. SuperScan 3 corrects for non-implant process variations to improve device performance and yield for 3D devices. These capabilities together with productivity improvements and the system's high throughput provide customers significant cost-of-ownership benefits.

Complementing its leading-edge capabilities for FinFET and 3D NAND device fabrication, the precision and low-contamination performance of the VIISta 900 3D tool also makes it an optimal solution for doping the photodiode and logic layers of CMOS image sensors.

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in precision materials engineering solutions for the semiconductor, flat panel display and solar photovoltaic industries. Our technologies help make innovations like smartphones, flat screen TVs and solar panels more affordable and accessible to consumers and businesses around the world. Learn more at www.appliedmaterials.com.

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[PHOTO: Applied Varian VIISta® 900 3D system](#)
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