



Applied Materials Introduces Breakthrough Etch Technology for the Terabit Era

June 27, 2012

- **Applied Centura Avatar system overcomes challenges to etching new 3D NAND Flash chips**
- **Etches 80:1 aspect ratio features, as well as structures with greatly varying depths, in a single process**
- **More than 30 chambers already shipped to customers**

SANTA CLARA, Calif., June 27, 2012 - Applied Materials, Inc. today advanced the state of the art in etch technology with the launch of the [Applied Centura® Avatar™ dielectric etch](#) system. This breakthrough system is designed to solve one of the most demanding challenges in creating the three-dimensional (3D) [memory](#) architectures that deliver the high-density, terabit storage capability required for tomorrow's data-intensive mobile devices.

"With the Avatar system, we've capitalized on our leadership in plasma technology to address the unmet challenges of fabricating three-dimensional memory structures that require the etching of deep features in complex multi-layer material stacks," said Dr. Prabu Raja, vice president and general manager of Applied's Etch business group. "Customers are very enthusiastic about the breakthrough capabilities of this new system. We have already shipped more than 30 chambers to multiple customers for critical applications including the pilot production of future chips."

Newly designed from the ground up, the Avatar system etches the deep, narrow features that are a hallmark of [3D NAND](#) memory arrays. These 3D arrays represent an exciting new type of [Flash](#) device in which as many as 64 layers of memory cells are built up vertically to create extraordinary [bit density](#) in a small area.

The Avatar system can etch holes and trenches in complex film stacks with depth to width [aspect ratios](#) of up to 80:1. To illustrate this proportion, the aspect ratio of the [Washington Monument](#) is just 10:1. In addition, the system enables the simultaneous and precise etching of features with greatly varying depths - which is critical to fabricating the "staircase" contact structures that connect each layer of memory cells to the outside world.

The Avatar system is one of several new chipmaking technologies that will be showcased by Applied at [SEMICON West 2012](#) to be held July 10-12. Find out more about opportunities to connect with Applied before and during the show at www.appliedmaterials.com/semicon-west-2012.

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in providing innovative equipment, services and software to enable the manufacture of advanced semiconductor, flat panel display and solar photovoltaic products. Our technologies help make innovations like smartphones, flat screen TVs and solar panels more affordable and accessible to consumers and businesses around the world. At Applied Materials, we turn today's innovations into the industries of tomorrow. Learn more at www.appliedmaterials.com.

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[Photo: The Applied Centura Avatar Dielectric Etch System](#)

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