



Applied Materials Solves Critical Interconnect Challenge with Breakthrough Flowable Copper Technology

July 10, 2012

- **Revolutionary method of depositing the vital wiring seed layer has no foreseeable node limit**
- **Tool of record at leading chipmakers; more than 30 chambers shipped**
- **New system introduced in [live webcast from Semicon West](#) today at 8:00am PDT**

SANTA CLARA, Calif., July 10, 2012 - Applied Materials, Inc. today pushed the boundaries of [interconnect](#) technology, the pathways that connect the billions of [transistors](#) on a chip, with the announcement of its [Applied Endura® Amber™ PVD](#) system. Featuring revolutionary copper reflow technology, the Amber system is the only single-chamber solution proven to enable void-free copper structures at the 1Xnm node - a critical challenge in the manufacturing of advanced logic and memory devices.

"The Applied Endura Amber system delivers a breakthrough solution for scaling interconnects beyond the 20nm node while maintaining good production yields," said Sundar Ramamurthy, vice president and general manager of Applied's Metal Deposition Products business unit. "Applied has extended its leading [PVD](#) technology with a unique system that achieves rapid, void-free fill of these structures at virtually any device node. We're seeing strong customer momentum for the Amber system with more than 30 chambers already in the field. Systems are already qualified as tool of record at leading logic and memory device manufacturers."

Today's high-density microchips feature complex, multilevel networks with more than 60 miles of copper wiring and as many as 10 billion vertical connections, or vias, between layers. Moving forward, these numbers will significantly increase, with interconnect structures becoming much narrower and deeper, making it extremely difficult for conventional technologies to completely and reliably fill the structure with copper. At the 1Xnm node, this is a major concern, since a single void can render the chip useless.

Applied's Amber copper reflow technology solves this critical challenge by turning the small size of these features from a problem to an advantage. Using capillary action, the deposited copper is drawn into even the smallest features, filling from the bottom upwards to enable rapid, void-free fill from the smallest to the largest features on any die layout.

The Amber system is built on the innovations pioneered with the highly-successful [Applied Endura CuBS RFX PVD](#) system. The CuBS RFX system's unique selective PVD technology provides the precise deposition profile - thicker at the bottom and no copper overhang - that is essential for the subsequent reflow process.

The exciting Applied Endura Amber PVD system is one of several important new products to be highlighted by Applied Materials at [SEMICON West 2012](#) from July 10-12. More information can be found at Applied's online booth at [www.becauseinnovationmatters.com](#), which will be updated regularly throughout the show.

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 Revolutionary Applied Endura Amber PVD System](#)

HUG#1625431