



## **New Aktiv Preclean Extends Applied Materials' PVD Barrier-Seed Technology Leadership in 45nm and Beyond**

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SANTA CLARA, Calif.--(BUSINESS WIRE)--July 10, 2006--Applied Materials, Inc. today announced a significant enhancement to its Applied Endura(R) CuBS (copper barrier/seed) system with the new Aktiv(TM) Preclean chamber, extending the system's leadership position in 45nm-generation copper-low k interconnects. In addition to effectively removing polymeric residues and copper oxide from the interconnect, the Aktiv Preclean chamber has the first preclean technology that effectively preserves the integrity of ultra-low k (k less than or equal to 2.5) dielectrics, resulting in up to 10% improvement in RC delay over previous reactive preclean technologies.

"Aktiv Preclean extends the Applied Endura CuBS PVD(1) technology with a highly effective, damage-free process that helps chipmakers transition to second-generation low k films, such as our Black Diamond II," said Dr. Farhad Moghadam, senior vice president and general manager of Applied Materials' Thin Films Group. "Conventional preclean technology can raise the k-value of ultra-low k films by as much as 20%. With Aktiv Preclean, customers can confidently utilize this highly-effective technology with ultra-low k films knowing that k-value is preserved."

The Applied Aktiv Preclean chamber provides a benign clean process before depositing the barrier and Cu seed layer in copper interconnects. Its highly reactive hydrogen radicals gently clean complex interconnect stacks, assuring low via and line resistance and increasing parametric yield. The design of the Aktiv Preclean chamber reduces defects and enables up to 30,000 wafers between maintenance cycles, an increase of up to 3x over reactive preclean chambers.

The Applied Endura CuBS PVD system has been chosen Tool of Record by leading chipmakers in the U.S., Europe, Taiwan and Japan for critical 45nm development, including advanced microprocessor, foundry and graphics chip manufacturers. This high level of customer acceptance demonstrates how the Endura CuBS system's latest technology advances, plus Applied's interconnect integration expertise, can play a cost effective, critical role in creating the electronic drivers that will power tomorrow's most exciting consumer products. More information on the Endura CuBS PVD system can be found at [http://www.appliedmaterials.com/products/endura\\_cubs](http://www.appliedmaterials.com/products/endura_cubs).

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in nanomanufacturing technology(TM) solutions for the electronics industry with a broad portfolio of innovative equipment, service and software products. At Applied Materials, we apply nanomanufacturing technology to improve the way people live. Learn more at [www.appliedmaterials.com](http://www.appliedmaterials.com).

(1) PVD = physical vapor deposition

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