Applied Materials' High-k/Metal Gate Technology Selected by STMicroelectronics for 28nm Chip Production

December 8, 2009

SANTA CLARA, Calif.--(BUSINESS WIRE)--Dec. 8, 2009-- Applied Materials, Inc. announced today that STMicroelectronics (ST), a leading semiconductor manufacturer, has selected Applied Materials' high-k/metal gate (HKMG) technology for the production of its 28nm logic devices. Applied's state-of-the-art HKMG technology will be used to fabricate the critical transistor gate layers in ST's next-generation system-on-chip devices at its facility in Crolles, France.

HKMG is an emerging technology that allows the continuation of Moore's Law, enabling faster switching speed while reducing device power consumption. Replacing traditional silicon dioxide as the main gate dielectric, the new HKMG structure integrates a hafnium-based high-k material with a new metal gate electrode to increase capacitance and control leakage current.

"We are impressed and extremely pleased with the speed at which Applied has developed integrated high-k/metal gate solutions that address our 28nm device requirements," said Joël Hartmann, Silicon Technology Development Director for STMicroelectronics in Crolles, France. "We are confident that through our continued collaboration with Applied Materials we can quickly bring our 28nm HKMG solution into volume production."

Major challenges to implementing HKMG technology for the industry have been the development of manufacturable processes using new materials that can provide optimum transistor characteristics while maintaining the integrity of the dielectric stack. Applied has developed a multi-step process combining its leading-edge technologies to provide ST with a robust and reliable HKMG solution. For more information on Applied's HKMG technology, visit: www.appliedmaterials.com/products/Highk_MetalGate_4.html.

"This important collaboration with ST demonstrates that our high-k/metal gate solution can be successfully integrated in their logic devices with superior performance," said Steve Ghanayem, Corporate Vice President and General Manager of Applied's Front End and Metal Deposition Products business unit. "ST's selection of our high-k/metal gate processes is a strong testament to the work we've done to provide production-worthy solutions for this challenging new transistor technology."

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in Nanomanufacturing Technology™ solutions with a broad portfolio of innovative equipment, service and software products for the fabrication of semiconductor chips, flat panel displays, solar photovoltaic cells, flexible electronics and energy efficient glass. At Applied Materials, we apply Nanomanufacturing Technology to improve the way people live. Learn more at www.appliedmaterials.com.

Source: Applied Materials, Inc.

Applied Materials, Inc.
Betty Newboe, 408-563-0647 (editorial/media)
Michael Sullivan, 408-986-7977 (financial community)