Applied Materials Joins EMC-3D Equipment and Materials Consortium

February 24, 2009

International Alliance Focused on Developing Cost-Effective Through-Silicon Via (TSV) Technology for Next Generation Chips and Sensors

SANTA CLARA, Calif.--(BUSINESS WIRE)--Feb. 24, 2009-- The international EMC-3D semiconductor equipment and materials consortium today announced that Applied Materials, Inc. (Nasdaq:AMAT) has joined the organization. As the industry's leading provider of nanomanufacturing technology solutions, Applied offers critical process and integration expertise in the fields of etching, dielectric and metal deposition, chemical-mechanical polishing, metrology, and inspection. These capabilities will be utilized for developing a cost-effective and manufacturable through-silicon via (TSV) process flow for 3D* chip stacking and MEMS* integration.

Through-silicon via technology is a new method of combining integrated circuits in a vertical stack to enable higher functionality and lower power consumption in a small footprint. While employing many standard chip processes, TSVs present several new technical challenges for production-worthy manufacturing: maintaining wafer structural and edge integrity of thin wafers, stress and thermal profile control, via processing and device reliability.

"Applied Materials sees the TSV approach as an important enabling technology for tomorrow's sophisticated image sensors, memory and mixed-signal applications," said Hans Stork, group vice president and CTO of Applied's Silicon Systems Group. "Joining forces with other leading equipment and materials suppliers is an effective way to qualify contiguous processes, drive down the cost and enable the widespread adoption of TSV technology. By deploying fabrication equipment, materials and process technology from the EMC-3D member companies, our customers can take advantage of a complete, validated process flow, greatly reducing their own development time and initial investment."

"We're very pleased to bring Applied Materials into this consortium and look forward to a productive relationship in developing cost-effective TSV solutions for chip stacking applications," said Paul Siblerud, EMC-3D chairman and vice president of marketing at Semitool. "EMC-3D is currently at the mid-point of a 3 year objective to bring cost-effective TSV to market. Each member is addressing the technical integration challenges of TSV technology for chip stacking and advanced MEMS/sensors packaging."

The original goal of the consortium was to create a robust integrated process flow at a cost of less than $200USD per wafer. That goal has expanded to include both a via-first (*i*TSV™) and via-last (*µ*TSV™) process flow at a total cost of ownership of under $150USD.

About Applied Materials

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.

About EMC3D

EMC3D (Semiconductor 3D Equipment and Materials Consortium) was created in September 2006 to develop and market wafer level 3D chip stacking technology by demonstrating a cost-effective, manufacturable, stackable TSV interconnection process for IC and MEMS/Sensor packaging. **www.EMC3D.org.**

*3D: three dimensional; MEMS: microelectromechanical systems

Contacts for EMC^{3D} Members include:

Equipment Members:

Applied Materials Inc., California USA; (NASDAQ: AMAT) Sesh Ramaswami, Sr. Director Strategy; Silicon Systems Group; Technology: etching, dielectric and metal deposition, chemical-mechanical polishing, metrology, and inspection

Datacon Technology GmbH, Austria; Christoph Scheiring, Director Product Marketing Technology: Precision Diebonding & Sorting

EV Group, Austria; Thorsten Matthias, Director of Technology North America Technology: bonding, thin wafer handling, mask alignment lithography, conformal coat and develop

SEMITOOL Inc, USA; (NASDAQ: SMTL), Rozalia Beica, Director TSV business development Technology: electroplating, metal/barrier etch, photoresist strip, wafer cleaning and thinning

Isonics Corp, USA; (NASDAQ: ISON) Fred Schiele, V.P. & General Manager Technology: wafer service (reclaim and test wafers, wafer thinning, and thick-film SOI wafers)

Materials Members:

AZ Electronic Materials, USA; Aldo Orsi, Global Product Manager Technology: positive and negative acting photoresists

Enthone (Cookson Electronics), USA; Yun Zhang, Director, Research and Development Technology: chemistry for electroplating and metal etch

Rohm and Haas, USA; Bob Forman, Advanced Packaging Business Manager Technology: chemistry for lithography, plating, etching, dielectric formation, and bonding

Brewer Science, Inc., USA; Mark Privett, Product Manager, Bonding Materials Technology: Anti-reflective coatings, specialty materials for compound semiconductor, optoelectronics, and MEMS applications. Spin coat, bake and develop processing equipment, planarization systems

Technology Members:

CEA-LETI, Grenoble France; Mark Scannell, Microelectronics Program Manager

Fraunhofer IZM, Germany; Jürgen Wolf, Group and Project Manager

NXP, Dr. Fred Roozeboom, Technical Advisor

KAIST (Korea Advanced Institute of Science and Technology), Korea; Dr. Kyung-Wook Paik, Professor

SAIT (Samsung Advanced Institute of Technology), Korea; Dr. Yoon-Chul Sohn, Researcher

TAMU (Texas A&M University), USA; Dr. Manuel Soriaga, Professor

Photos/Multimedia Gallery Available: http://www.businesswire.com/cgi-bin/mmg.cgi?eid=5902701&lang=en

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