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SEMATECH and Asahi Glass Form Joint Development Partnership to Commercialize Defect Free EUV Mask Blanks

AGC Asahi Glass Co., Ltd.

Albany, NY and Tokyo, Japan (24 February, 2009) – SEMATECH, a global consortium of the world's leading chip manufacturers, today announced that it has entered into a joint development partnership to accelerate mask blank commercialization with Asahi Glass Co. (AGC), a commercial mask blank supplier in Japan. SEMATECH and AGC will collaborate at the College of Nanoscale Science and Engineering (CNSE) of the University at Albany on methods for improving extreme ultraviolet (EUV) mask blank yield to accelerate commercial manufacturing readiness.

In this latest move toward enabling critical infrastructure for EUV lithography, a team of engineers from AGC has been assigned to SEMATECH's EUV Mask Blank Development Center at CNSE's Albany NanoTech with the goal of reducing defect levels to the 0.003 defects/cm2 at the printable defect size, which is required for manufacturing success. Mask blanks are the starting material used to make the finished mask that contains the device pattern for the lithographic process. Producing defect-free mask blanks in the quantities required for high volume manufacturing is a key technical challenge that must be solved to prepare EUV lithography for cost-effective insertion at the 22 nm half-pitch generation and below.

"SEMATECH and AGC have already shared a great deal of technical success through collaboration over the past several years," said Mitsuhiko Komakine, manager of AGC's EUV Mask Blank Development Group. "AGC is the only vertically integrated EUV blanks manufacturer from Low Thermal Expansion Material (LTEM) synthesis, to EUV mask blanks consisting of LTEM, deposited film, and resist film. Now in this side-by-side working relationship, our AGC team will benefit from accelerated learning as we leverage SEMATECH's integration within the IC industry."

In a cooperative approach to this challenge, SEMATECH's Mask Blank Development Center, one of several major R&D centers within CNSE's Albany NanoTech Complex in Albany, NY, provides access to state-of-the-art mask and lithography tools and materials as well as immediate feedback and assistance from SEMATECH member company assignees working there.

A traditional problem in any technology ramp from the development stage to high volume manufacturing is the time lost in transferring knowledge and experience from group to group. Creating an environment in which both the development team and the commercial supplier learn concurrently is a sure method to maximize transfer speed.

"SEMATECH's incorporation of a commercial supplier within its programs is a highly innovative means to minimize this technology's time to manufacturing readiness," said John Warlaumont, vice president of advanced technologies at SEMATECH. "The industry must have access to high quality EUV mask blanks in

order to stay on its timeline for EUV lithography introduction, and especially with Asahi's expertise and new level of engagement, this activity is positioned to deliver."

"We are pleased to welcome Asahi Glass Company as the newest global corporate partner to locate at the UAlbany NanoCollege through the highly successful SEMATECH-CNSE partnership," said Richard Brilla, vice president for strategy, alliances and consortia at CNSE. "The addition of Asahi Glass will further serve the needs of our industrial partners by accelerating the introduction of EUV lithography into manufacturing, enhancing New York's recognition as a global leader in innovative nanotechnology education, research and economic development."

About CNSE:
The UAlbany CNSE is the first college in the world dedicated to research, development, education, and deployment in the emerging disciplines of nanoscience, nanoengineering, nanobioscience, and nanoeconomics. In May 2007, it was ranked as the world's number one college for nanotechnology and microtechnology in the Annual College Ranking by Small Times magazine. CNSE's Albany NanoTech complex is the most advanced research enterprise of its kind at any university in the world: a $4.5 billion, 450,000-square-foot complex that attracts corporate partners from around the world and offers students a one-of-a-kind academic experience. The UAlbany NanoCollege houses the only fully-integrated, 300mm wafer, computer chip pilot prototyping and demonstration line within 65,000 square feet of Class 1 capable cleanrooms. More than 2,000 scientists, researchers, engineers, students, and faculty work on site at CNSE's Albany NanoTech complex, from companies including IBM, AMD, SEMATECH, Toshiba, ASML, Applied Materials, Tokyo Electron, Vistec Lithography and Freescale. An expansion currently underway will increase the size of CNSE's Albany NanoTech complex to over 800,000 square feet, including over 80,000 square feet of Class 1 capable cleanroom space, to house over 2,500 scientists, researchers, engineers, students, and faculty by mid-2009. For more information, visit http://www.cnse.albany.edu/.

About SEMATECH:

For 20 years, SEMATECH® (www.sematech.org), the global consortium of leading semiconductor manufacturers, has set global direction, enabled flexible collaboration, and bridged strategic R&D to manufacturing. Today, we continue accelerating the next technology revolution with our nanoelectronics and emerging technology partners.

About Asahi Glass Company:

Asahi Glass Co., Ltd. (http://www.agc.co.jp/english/index.html) whose Glass Company, Display Company and Chemicals Company hold one of the first places has expanded our business fields towards the frontier and the growth industries such as electronics & energy through these core companies. For over a century, the AGC group is utilizing its plentiful technology base in glass and fluorine chemistry as we focus on cultivating new businesses that will serve as pillars of growth.

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