Dai Nippon Printing, Brion and STMicroelectronics Demonstrate the Efficacy of Model-Based Photomask Verification for 45-Nanometer Device Manufacturing

SANTA CLARA, Calif., April 16, 2008 — Brion Technologies today announced that its joint development effort with Japan's Dai Nippon Printing Co., Ltd. (DNP) has resulted in the first successful demonstration of model-based photomask verification on critical 45 nanometer (nm) logic masks. This development work – which will be described later today in a paper presented at the Photomask Japan conference in Yokohama – was conducted in Crolles, France, with the cooperation of STMicroelectronics.

As demands for critical dimension (CD) uniformity increase at the 45nm process node and below, model-based photomask verification allows chip makers to more accurately understand how specific mask patterns will print on wafers by simulating and verifying the mask portion of the photolithography process prior to volume manufacturing. The resulting information can help chip makers enhance their strategies for optical proximity correction (OPC) and other resolution enhancement (RET) technologies. This week’s Photomask Japan paper describes how mask process signatures were simulated, and the effects on CD uniformity and OPC hot spots measured.

“Model-based photomask verification is helping us to optimize our mask verification, and our RET and OPC strategies. We look forward to continuing this valuable collaboration,” said Joël Hartmann, Silicon Technology Development director for STMicroelectronics, in Crolles, France.

“We are pleased that our collaboration with Brion is providing valuable support to advanced IC makers such as STMicroelectronics,” said Naoya Hayashi, Research Fellow, at DNP. “This joint initiative helps us to pursue our mission of continual quality improvement and producing increasingly accurate photomasks.”

“Photomasks are an integral part of the lithographic process, and we’re working to incorporate mask-aware modeling into our solutions,” said Jim Koonmen, general manager of Brion. “We appreciate the opportunity to pursue this important work with outstanding partners such as DNP and STMicroelectronics.” Brion and DNP have been working together since 2006 to apply Brion’s technology to photomask production.
About Dai Nippon Printing
DNP is a world-class printing conglomerate (Yoshitoshi Kitajima, President) with 1.5578 trillion yen in annual revenues and approximately 38,000 employees. Based in Tokyo, Japan, DNP offers a broad range of products and services for publishing, commercial printing, smart cards, networking, and electronics components, among others. Its products in the electronics field include color filters and other components for LCDs, photomasks, PCBs and semiconductor-related components. In the photomask market DNP is a world leader, utilizing its time honored printing techniques and know-how in the fabrication of cutting-edge photomasks.

About Brion Technologies
Brion Technologies is an ASML company and industry leader in computational lithography for integrated circuits. Brion’s Tachyon™ platform, an OPC and OPC verification system, enables capabilities that address chip design, photomask making and wafer printing for semiconductor manufacturing. Brion is headquartered in Santa Clara, California. For more information: www.brion.com or www.ASML.com

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