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EBEAM INITIATIVE MEMBERSHIP GROWS TO 27

Initiative Introduces Design For E-Beam Mask Roadmap for High-Volume Integrated Circuits

SAN JOSE, Calif., February 23, 2010—The eBeam Initiative, a forum dedicated to the education and promotion of a new design-to-manufacturing approach known as design for e-beam (DFEB), today announced that six additional companies spanning the entire semiconductor value chain have joined the Initiative to support the new DFEB mask roadmap for high-volume applications. The roadmap incorporates new innovations to e-beam mask making using DFEB in conjunction with e-beam mask writing equipment currently on the market. Leading mask manufacturers, mask-writing equipment manufacturers, integrated device manufacturers (IDMs), foundries, as well as lithography experts, have joined the 21 founding members. The addition of these new members validates the industry's support for expanding DFEB's role to enable cost-effective production of complex photomasks needed for high-volume chip designs at the 22-nm node and beyond.

Extending 193-nm immersion lithography to the 22-nm node has been an incredible challenge for the semiconductor industry, requiring a number of innovations that have made it technically feasible but costly as well. The last critical piece of the puzzle to enabling cost-effective optical lithography at the 22-nm node turns out to be e-beam mask writing.

New members in the Initiative include: GLOBALFOUNDRIES, JEOL, KLA-Tencor, NuFlare Technology, Petersen Advanced Lithography (PAL) and Samsung Electronics. CEO of D2S and managing sponsor of the Initiative, Aki Fujimura, stated, "The support from all of the Initiative members will enable the cost advantages of DFEB to be brought to bear on one of the fastest cost growth areas in optical lithography—the photomask. We are excited about the new member base given the expertise they bring in mask making, and where DFEB is headed."

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"Using DFEB mask technology with 193i lithography is an innovative approach to a difficult industry problem and I'm delighted to work with other eBeam Initiative members to implement it," said John S. Petersen, president and chairman of Petersen Advanced Lithography, Inc. and past fellow of International SEMATECH. "As we approach the 22-nm logic node, assist feature patterns become more complex and with this complexity the individual features need to become more and more curvilinear. But we have to solve the problem of increased mask costs due to significantly higher e-beam shot counts when using curvilinear assist features. The DFEB mask technology solves this by taking advantage of the naturally rounding nature of electron beams to reduce shot count."

A new white paper on DFEB mask technology and further details surrounding this announcement can be found on the Initiative's website (www.ebeam.org).

About The eBeam Initiative

The eBeam Initiative provides a forum for educational and promotional activities regarding a new design-to-manufacturing approach, known as design for e-beam (DFEB). DFEB reduces mask costs for semiconductor devices by combining design, design software, manufacturing, manufacturing equipment and manufacturing software expertise. The goals of the Initiative are to reduce the barriers to adoption to enable more integrated circuit (IC) design starts and faster time-to-market while increasing the investment in DFEB throughout the semiconductor ecosystem. Members and advisors, which span the semiconductor ecosystem, include: Advantest, Alchip Technologies, Altos Design Automation, Cadence Design Systems, CEA/Leti, D2S, Dai Nippon Printing, Martin M. Deneroff, e-Shuttle, Jack Harding from eSilicon Corporation, Fastrack Design, Fujitsu Microelectronics, GenISys GmbH, GLOBALFOUNDRIES, JEOL, KLA-Tencor, Magma Design Automation, NuFlare Technology, Petersen Advanced Lithography, Colin Harris from PMC-Sierra, Riko Radojcic from Qualcomm, Samsung Electronics, STMicroelectronics, Tela Innovations, Toppan Printing, Virage Logic and Vistec Electron Beam Lithography Group. Membership is open to all companies and institutions throughout the electronics industry. To find out more, please visit www.ebeam.org.

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