

# Intel, Corning to Develop Extreme Ultraviolet Photomask Substrates for 32nm Node

July 6 2005

---

Intel Corporation and Corning Incorporated have entered into an agreement to develop ultra low thermal expansion ULE glass photomask substrates required for Extreme Ultraviolet (EUV) [lithography](#) technology. These substrates are needed to develop low defect EUV photomasks to enable 32nm node high-volume production using EUV lithography.

“Corning has a rich history of developing innovative products and our extensive optical materials and process knowledge have positioned the ULE product as the optimal material for EUV photomask substrates,” stated Jim Steiner, senior vice president and general manager, Corning Specialty Materials.

Intel’s leading position in advanced semiconductor manufacturing will provide the expertise Corning requires to respond rapidly to industry requirements. The joint development program will help to enable chip production using EUV technology starting in 2009.

“The cooperative efforts of Corning and Intel will provide the opportunity to develop ULE® glass substrates and position them as the material of choice for EUV photomasks,” Steiner said. “We are excited to be working with a technology leader in the semiconductor industry, and this reaffirms Corning’s commitment to develop the best optical materials available for semiconductor lithography”.

“Driving down EUV photomask defect levels is a critical issue for the

commercialization of EUV technology. Corning and Intel plan to address the mask substrate contribution to this issue,” said Janice Golda, Intel’s director of lithography. “The development of higher-quality EUV masks, along with Intel’s related efforts in light sources, lithography equipment and new photo resists, will help create the infrastructure needed to position EUV lithography as the key technology for the future.”

Lithography tools are used in chip making to “print” patterns on a silicon wafer. Today, the industry uses lithography tools that use a 193nm wavelength of light to “print” transistors as small as 50nm. That is equivalent to a painter trying to draw very fine lines using a thick brush. EUV lithography technology will use light that is only 13.5nm wavelength of light, so it can provide chip makers with a very “fine brush” to “draw” smaller transistors in the future.

EUV lithography has been identified by the International Roadmap of Semiconductor Technology as the leading technology solution for next-generation lithography after the current 193nm generation of lithography tools.

Citation: Intel, Corning to Develop Extreme Ultraviolet Photomask Substrates for 32nm Node (2005, July 6) retrieved 21 September 2024 from <https://phys.org/news/2005-07-intel-corning-extreme-ultraviolet-photomask.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.