FLEXCOMPUTE AND ASML

Collaborate To Enhance The Accuracy Of A Critical Portion Of Simulation Software Used In The Semiconductor Patterning Process

Given the escalating complexity of chip designs, materials, structures and manufacturing techniques, it would be impossible for the semiconductor industry to manufacture at dimensions of 10 nanometers (nm) or smaller without ASML's sophisticated simulation software.

Known as computational lithography, ASML works to understand and model the physical effects that influencethe chip patterning process. It stimulates and optimizes the propagation of optical waves in order to improve the resolution attainable through photolithography, a process that uses light to define transistor patterns on a silicon wafer.

Computational lithography gained prominence in 2008, as the semiconductor industry grappled with challenges associated with transitioning to 22 nm CMOS process technology and beyond. It requires an immense amount of computational power, running hundreds of thousands of CPU processors in parallel for many days.

As chipmakers continue to shrink the sizes of transistors, computational lithography solutions are pushed to meet ever-tighter parameters. Together, Flexcompute and ASML will develop next-generation electrodynamic solver technologies to provide record-breaking performance in both speed and accuracy at an important point of the simulation process.