

Abstract: Industrial Light Sources for Semiconductor Manufacturing

Light drives innovation – the wavelength, the power, the intrinsic qualities. From the mask shop to the packaging fab, from lithography to metrology, each technology node has relied on light invention to enable scaling, process control, reliability, and even ensuring supply chain security. However, the increasing cost and complexity of new light sources to meet industry demands has become prohibitive, leading to stagnation in technology development and reliance on the status quo in terms of the light available and the applications it permits. Now, a leap is required to develop the new generation of light source that will serve the semiconductor industry indefinitely, providing low-cost EUV as well as any wavelength required for manufacturing or R&D applications. xLight is building an accelerator-based light source to drive the semiconductor industry into the next decade and beyond, providing high power, quality light to any application and delivering light as a utility.

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Bruce Dunham is the VP of Accelerator Systems at xLight, Inc., in Palo Alto, California. Previously, he was a Distinguished Scientist at the Nevada National Security Sites, Accelerator Director at SLAC National Accelerator Lab, Director for ERL R&D at Cornell University, and a systems engineer at GE Healthcare. His expertise covers a wide range of accelerator physics and machine operations, including development of the highest-ever average brightness electron injector.

