

# AMF and Lumerical Deliver Key Component of Ecosystem for Silicon Photonic Integrated Circuits

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## *Highlights:*

- *Lumerical Compact Model Libraries support AMF Silicon Photonics process*
- *Global leaders team to bolster productivity of photonic designers*

Advance Micro Foundry (<http://www.advmf.com>) is a spin off from Singapore renowned A\*STAR Institute of Microelectronics. AMF is a Singapore-based manufacturer of Silicon Photonics integrated circuits, and Lumerical Inc. ([www.lumerical.com](http://www.lumerical.com)), a leading developer of photonic simulation tools, today announced the availability of the Compact Model Library (CML) for AMF's Silicon Photonics process.

Integrating multiple photonic components on a single chip enables Silicon Photonics integrated circuit chips to achieve unprecedented performance, functionality, and economies of scale when compared to traditional photonics equivalents; rendering Silicon Photonics invaluable in multiple technologies and market domains. Smaller form factor and performance gain present Silicon Photonics with disruptive opportunities which were never possible for traditional optics, limited by material which could not be integrated and scaled like electronics.

AMF's Silicon Photonics process is ideal for applications such as cloud computing, cloud security, hyper scale data centers, 5G communications, autonomous vehicles, robotics, telecommunications, AI and VR, and point-of-care diagnostic systems. Through a decade long intensive effort, AMF developed a comprehensive silicon photonic device library, which includes active and passive functional blocks. These blocks are now able to be simulated through the new CML using Lumerical's INTERCONNECT Circuit Simulator.

The CML includes passive devices such as optical waveguide device, wavelength division multiplexer (WDM), micro resonator devices, and fiber-to-waveguide couplers as well as active

devices such as thermally tunable devices, high-speed modulator, and large-bandwidth waveguide photodetector.

Photonic designers can leverage these pre-developed blocks to design and verify their photonics products more quickly and efficiently without crafting physical prototypes. These predictive capabilities enable photonics designers to validate designs prior to manufacturing, create new product concepts, and explore long-term innovative photonics research such as quantum computing.

“Combining our decade of silicon photonic leadership with Lumerical’s 15 years of photonic simulation leadership results in a capability that will increase our customers’ productivity and throughput. I’m looking forward to accelerating the amount of Silicon Photonic based commercial products as a result,” said Louis Lee, Business Operations Director of AMF.

James Pond, CTO of Lumerical said “Silicon Photonics is a key technology in enabling photonics to realize its potential by taking it from the research lab into the commercial world. This collaboration with AMF will help Silicon Photonics make its huge impact on technology advancement.”

AMF Silicon Photonics CML is available immediately from AMF. CML Reader licenses are available immediately from Lumerical.

### **About AMF**

AMF specializes in customizable prototyping and volume wafer manufacturing services for Silicon Photonics integrated circuits. AMF manufacturing services are the back-bone technology to a global customer base in the emerging markets of Data Centers, Telecom, Automotive, Medical and environmental sensors.

A spin off from IME, A\*STAR, AMF was incorporated in 2017. AMF’s core technology has been globally acclaimed as technology par excellence over the last decade and widely deployed in multiple markets.

AMF offers customize Foundry services which enable customers to design, develop and manufacture integrated Photonics Chips for a broad range of applications – Cloud computing, Cloud security, 5G communications, Autonomous Vehicles and Diagnostic chips. AMF services are offered in the format of customizable technology platforms based on Silicon, SOI (Silicon On Insulator), SiN (Silicon Nitride) & Germanium materials.

From concept to the manufacturing of a final product, our multidisciplinary team of Optical and Semiconductor experts work closely with our customers to ensure their utmost satisfaction. At AMF, we are focused on our customer's success and strive to support them through their entire product development and manufacturing ramp stages.

As AMF expands its fabrication facilities and operations to address the growing volume demands of our customers, we continue to leverage on our core strengths of Technology Innovation, Customer Service, Quality and Flexibility.

### **About Lumerical**

Lumerical develops photonic simulation software – tools which enable product designers to understand light, and predict how it behaves within complex structures, circuits, and systems. Since being founded in 2003, Lumerical has grown to license its design tools in over 50 countries and its customers include 10 of the top 15 companies in the S&P 1200 Global IT index, and 46 of the top 50 research universities as rated by the Times Higher Education rankings. Lumerical's substantial impact on the photonic design and simulation community means its tools are among the most widely cited in the scientific press, with references in more than 10,000 academic publications and patents. Lumerical enables its customers to achieve more with light, and establish a leading position in the development of transformative technologies employing photonics.

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