CompoundTek PDK Supported by Latest Ansys Lumerical Layer Builder to automate and streamline Custom Design Flows

Singapore, 15 June 2020 – CompoundTek, a global foundry services leader in emerging silicon photonics (SiPh) solutions announces the company's collaboration with Ansys to expand CompoundTek's Photonic/electronic process design kit (PDK) to include a process file for custom design in Ansys Lumerical DEVICE Suite. Designers are now empowered to quickly augment existing CompoundTek PDKs with custom components that adhere to foundry specifications. The more efficient and reliable simulation flow based on the new process file will help CompoundTek's customers achieve their design goals and accelerate the time-to-market of their products.

SiPh integrated circuits are becoming widespread particularly in applications related to datacom, radio frequency, and sensing. Yole's Silicon Photonics Market and Technology 2020, shows that in 2019, shipments of SiPh transceivers for datacenters reached almost 3.5 million units, generating revenues worth approximately US$364 million as a result of development of transceivers to penetrate the silicon photonics world for telecom/datacom applications. Led by the demand from global network traffic such as applications in Cloud, video streaming, and Internet of Things (IoT), the SiPh transceiver market is expected to be worth US$3.6 billion in 2025 with 24 million units shipped.

In parallel, the development of silicon photonic transceivers as an industry with millions of units shipped has driven the emergence of an ecosystem with PDKs, design rules, simulation software, testing equipment, and foundries.

CompoundTek PDKs are key to commercialising silicon photonics for these applications, with the Ansys partnership facilitating innovative PDK-driven methodologies such as the new process-enabled custom design flow in Ansys Lumerical DEVICE Suite. The key enabler in this flow is the Layer Builder, which generates a 3D CAD model from the design layout (typically in GDS format) and the foundry process file. The latter is now provided by CompoundTek and it contains critical technology information such as the vertical position, thickness, material and sidewall angle of each process layer.

The technology information is typically delivered in handbooks provided by foundries, but lack of a process file necessitates manual configurations of the CAD model which is both time-consuming and error-prone. By using a process file verified by CompoundTek, customers spend less time configuring the geometry of their simulation and more time focusing on the actual design and optimisation stages of their work.

Also, the Layer Builder is extremely versatile as it can be fully accessed and configured using Ansys Lumerical's scripting language. Combined with the powerful Python API supported by Ansys Lumerical tools, the Layer builder can enable highly-customized flows for component design (Figure 1).

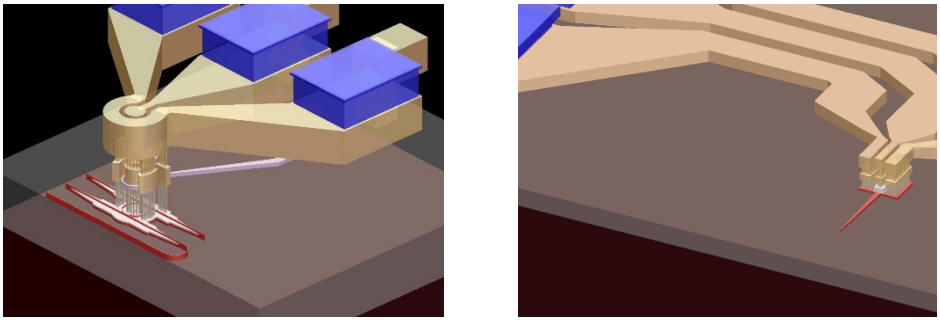

Fig 1: 3D rendering of CompoundTek PDK generated using Ansys Layer Builder

Since its launch in 2017, Singapore-based CompoundTek has 20 global commercial customers and > 20 research institutes and universities in various applications such as telecommunications, automotive radar, data communications, bio-sensing, artificial intelligence, quantum computing and smart sensors. The company is scheduled to showcase its cutting-edge solutions at the 22nd China International Optoelectronic Exposition (CIOE 2020), on September 9-11, 2020 at the Shenzhen World Exhibition & Convention Center. Parties interested in learning more about the facility and its testing capabilities can contact CompoundTek's office or at enquiries@compoundtek.com

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About CompoundTek Pte Ltd

Founded and supported by industry veterans and technologists, Singapore-based CompoundTek combines world-class commercial foundry with leading silicon photonics (SiPh) research institutes to provide cutting-edge SiPh technologies that enhance foundry services capabilities. As one of the elites offering SiPh solutions internationally, CompoundTek brings to the marketplace revolutionary semiconductor applications designed to meet critical requirements in high bandwidth and high data transfer solutions particularly in emerging connectivity driving Industry 4.0. The company's in-depth know-how includes end-to-end technologies - from proprietary fabrication process expertise to product design support with strategic partners and extended services for end-product manufacturing. CompoundTek's global customers span leading brands and FORTUNE 500 companies in high-growth industries including artificial intelligence, automotive, bio-medical diagnostics, data centre, lidar, smart sensor, telecommunication and quantum optical computing.

Visit https://compoundtek.com/ for more information.

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