COMPOUNDTEK AND VOYANT PHOTONICS LEAD THE WAY ON LIDAR
Collaboration to Establish High-volume Automotive Silicon Photonics Wafer Test

Singapore, 13 April 2022 – CompoundTek Pte Ltd (CompoundTek), a global foundry service provider in emerging silicon photonics (SiPh) solutions formed a strategic collaboration with Voyant Photonics (Voyant), a US based revolutionary Light Detection and Ranging (LiDAR) solution provider to establish cost-effective high-volume SiPh Wafer Test for LiDar designed specifically for automotive as well as other fast growing applications such as robotics and drones.

Addressing the growing need for consistency and reliability for LiDAR products, this collaboration aims to use SiPh wafer test as a cost-effective method to identify known good dies through stringent testing at elevated temperature to meet global quality requirement for automotive and industrial applications. Wafer-level testing also allows LiDAR product companies like Voyant to have faster yield feedback to capture potential excursion in the fab earlier and also minimise cost of yield dropouts in the later stages of packaging process.

LiDAR is a remote sensing method that uses a pulsed laser to measure distances and generate precise, three-dimensional map of geographical locations. This is commonly used today in autonomous vehicles, drones and robots to enable obstacle detection, avoidance, and safe navigation. SiPh is the choice of technology that LiDAR products use currently. It is leveraged on well-established silicon integrated circuits manufacturing process which are cost effective and relatively easy to manufacture.

IGSSV's Founder and Group Chief Executive Officer, Raj Kumar, who is also CompoundTek's Chief Executive Officer, said, "CompoundTek is thrilled to be working with Voyant to provide a cost-effective test strategy that is capable of meeting stringent international standards. The key to market wider adoption of wafer-level SiPh tests lies in the cost and efficiencies of the test. This is particularly true for LiDAR where comprehensive testing is done to meet the highest quality requirements for its end application, specifically in the automotive industry."

Today, the integration of optical with electrical components on a single chip creates multiple new challenges in wafer-level testing of SiPh devices as large volumes of optical, electrical and opt-electrical device-performance data are required through various stages of the product development life cycles, from prototyping to qualification and subsequently into production. This is especially true for LiDAR, where it is used in automotive applications which demand higher level of stringent quality and reliability requirements than usual consumer products. Stringent wafer testing for defects is necessary as the consequences of test escapes can be very costly, not to mention hazardous and detrimental to life as well as property.

Most of the companies have homegrown SiPh bench solutions which are perhaps sufficient for small scale engineering characterisation during the initial design verification phase, but inefficient for the high-throughput and low-cost test required for testing from risk production to mass production phase.

Voyant's Principal Engineer, Lawrence Tzuang, said, "The explosive growth of incorporating LiDAR in many applications requires us to test our SiPh chips in both timely and cost-efficient ways. A test platform that offers repeatable and reliable SiPh wafer level electro-optical testing is critical to achieve this goal. Working with a partner such as CompoundTek, which has both the test expertise and the capacity, allows us to focus on chip architecture and design, leading to both improved quality control for the manufactured chips and identifying failures in the earlier assembly steps."

An agnostics SiPh wafer test service provider with a cost-efficient wafer test solution is needed to address market gaps including for the largest SiPh product companies who had to make do with modified testers and limited inhouse capabilities. CompoundTek and Voyant's combined capabilities helps the industry to drive down associated product costs and time from product development cycle to mass manufacturing, and helps to accelerate the time to market.

Since its launch in 2017, Singapore-based CompoundTek has secured 20 global commercial customers and collaborates with over 20 research institutes and universities in various applications such as telecommunications, automotive radar, data communications, bio-sensing, artificial intelligence, quantum computing and smart sensors. CompoundTek has invested in a dedicated SiPh water testing cleanroom with state-of-the-art testing capabilities through multiple collaborations with specialized SiPh hardware testing companies to spur leading edge capabilities.

For more information, please visit https://compoundtek.com and https://voyantphotonics.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.

About Voyant Photonics

Voyant is creating a new category of LiDAR sensors for machine perception. Founded by top scientists with more than a decade of work in silicon photonics, Voyant fabricates sophisticated optical systems optimized for FMCW LiDAR using low-cost semiconductor chips. Voyant's compact, active sensing solutions will revolutionize machine perception for transportation, robotics, and monitoring application.

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

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