

Joint Press Release

CompoundTek and Lumerical to present Inverse Design Success Story at OFC 2020

Grating Couplers with 20x smaller footprint

Singapore, 27 February 2020 – CompoundTek, a global foundry services leader in emerging silicon photonic (SiPh) solutions and leading photonic simulation software provider Lumerical announces a joint presentation of their grating coupler photonic inverse design success story at OFC 2020.

Designed as part of an ongoing effort to offer highly flexible solutions for photonic integrated circuit developers requiring rapid design and manufacture, the collaboration between Lumerical and CompoundTek additionally addresses improvements to one of the most complex photonic components, the SiPh grating coupler. Responding to the industry's increased time-to-market demands in photonics commercialisation, Lumerical's PID flow running on AWS EC2, are new SiPh grating couplers developed with a footprint 20x smaller than CompoundTek's existing coupler.

With predicted improvements in performance, results are achieved through PID flow configuration that automatically optimises a parameterised 2D model of the grating coupler in FDTD with over 50 design parameters. The optimisation goal was set to minimise insertion loss over the entire band while adhering to minimum feature constraints enforced to ensure manufacturability.

Learn more:

- Lumerical's Photonic Inverse Design (PID) flow was used to design and optimise the new grating couplers and new Y-branches in conjunction with Lumerical's industry-leading FDTD nanophotonic simulator
- CompoundTek's world-class foundry services and open silicon photonics process successfully fabricated Lumerical's Photonic Inverse Design (PID) design and optimized new grating couplers and new Y-branches
- How a 20x smaller footprint grating coupler with 2-week design cycle was achieved
- An overview of measurement results available to date
- Upcoming developments to look forward to

This innovation is part of CompoundTek's broader niche services agenda established to spearhead development processes that deliver higher component operation, reduced costs, improved yield, increased engineering productivity, and shorter design cycles.

Kickstart your design tapeout journey at OFC 2020 by visiting CompoundTek's at booth #6206, and Lumerical's at booth #5326, San Diego Convention Centre on 10-12 March 2020.

Contact CompoundTek (enquiries@compoundtek.com) and Lumerical (info@lumerical.com) for more details.

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About CompoundTek Pte Ltd

Established 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. Uniquely positioned to address customers cost optimisation and time-to-market goals, CompoundTek's end-to-end technologies include proprietary fabrication process expertise on both 8" and 12" wafers, Southeast Asia's first SiPh testing centre, product design support, and extended services for product manufacturing. Enabling the adoption of revolutionary semiconductor applications capable of high bandwidth and high data transfer, its customers span leading brands and FORTUNE 500s in high-growth industries including artificial intelligence, automotive, bio-medical diagnostics, data centre, lidar, smart sensor, telecommunication, quantum optical computing and organisations focused on smart city and urbanisation solutions. CompoundTek is a subsidiary of IGSS Ventures Pte Ltd, a technology holding company with a portfolio of niche businesses offering customers an ecosystem of innovative and tailored semiconductor services. Visit <https://compoundtek.com/> for more information.

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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 13 of the top 15 technology companies in the FORTUNE Global 500 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 scientific 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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