

PRESS RELEASE

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POET Technologies Announces Entry into Telecom Market with 100G LR4 (Long Reach) Optical Engines

TORONTO, Ontario, April 22, 2021 – POET Technologies Inc. (“POET” or the “Company”) (TSX Venture: PTK; OTCQX: POETF), the designer and developer of the POET Optical Interposer and Photonic Integrated Circuits (PICs) for the data center and tele-communication markets, announced that it has completed design of a 100G LR4 (4 channel Long Reach) optical engine with a reach of 10km (kilometers) for client-side interconnects to data centers, enterprises and edge computing networks.

Of the five common types of 100G transceiver modules found within the data center, two types - CWDM4 and PSM4 are targeted at data communications up to 2km. SR4 (500m), LR4 (10km) and ER4 (40km) are the other types typically specified for 100G data communications. POET’s focus on CWDM4 and LR4 designs is based on its unique and differentiating capability to integrate a fully monolithic 4-channel multiplexing and demultiplexing functionality directly into its waveguides, avoiding the costly requirement to align and couple additional devices into a transceiver module. POET’s LR4 design converts 4 input channels of 25Gb/s electrical data into 4 LAN WDM (wavelength division multiplexing) optical signals and then multiplexes them into a single channel for 100Gb/s optical transmission along a single fiber. PSM4 and SR4 transceivers are not multiplexed and so require 4 parallel fibers, which are especially costly over distances of 2km to 10km. Although completing separate designs for TX (transmit), RX (receive) and combination TX-RX optical engines (see accompanying link to TX-only graphic), POET intends to focus first on the TX design, which offers significant cost and performance advantages, and represents a fast go-to-market approach for the Company.

Commenting on the new POET design for 100G LR4, Vivek Rajgarhia, the Company’s President and General Manager said: “A 100G LR4 transceiver sells for about 2X to 3X the price of a 100G CWDM4 module, due to its higher complexity and performance requirements. POET’s integrated monolithic multiplexer significantly reduces the cost of the optical engine allowing us to provide a savings to customers in the range of 25%. By flip-chipping 4 DML lasers onto an Optical Interposer with inherently superior thermal management and the ability to tune the waveguides to specific center wavelengths, we are able to design an optical engine that uses 10% to 15% less power to deliver data at the same speed and over the same distance as comparable modules. Further, because of the small size of the optical engine, we anticipate

seeing potential novel applications of this technology from customers. Since we have had the LR4 Optical Interposer wafers in fabrication since December, we expect to be able to deliver Alpha samples to customers in the third quarter of 2021. Deploying an LR4 design in a short time after the CWDM design exemplifies the power of our platform approach as major elements of the CWDM interposer design are reused in the LR4 derivative.”

As the standard for interconnects to long-haul networks, 100G LR4 transceivers are purchased in high volumes by telecom equipment providers and are not being replaced by 400G transceivers even as speeds in long-haul networks increase. In an April 2021 client webinar by LightCounting, shipments in 100G LR4 modules were forecasted to be essentially stable at approximately 4 million units annually from 2021 through 2026, with prices having stabilized as a result of there being no room left for cost reductions using the traditional manufacturing approach for these devices. This cost barrier and the high power consumption of current transceiver designs allows POET to provide competitive designs for this segment which represents a second large market opportunity for POET, complementing its previously announced 100G CWDM designs.

Powering these optical engines will be 25Gb/s Directly Modulated Lasers (DML) from Sanan Integrated Circuits (SAIC), which has incorporated POET’s interposer compatibility requirements into their line of LR4 DML lasers. These lasers have been independently tested and validated to operate to LR4 specifications and are already in their qualification phase. SAIC will also be sourcing the monitor photodiodes and the high-speed photodiodes which rounds out the bill of materials for the optical engine. Assembly, manufacture and sales of these optical engines will be accomplished through POET’s joint venture with SAIC, Super Photonics Xiamen (SPX). SPX has accepted delivery of the first of a kind equipment set for the assembly of optical engines based on POET’s Optical Interposer and will be actively engaged in the assembly of POET’s Alpha optical engine prototypes later this quarter. POET and SPX are working with two Alpha customers today and the design win funnel has been active with increasing demand for both standard and custom designs for LR4 optical engines.

“Beyond The Press Release”

POET Technologies goes “Beyond The Press Release” to discuss today’s news. Shareholders and other interested parties are encouraged to check back at the following link before market open on the morning of Friday April 23, 2021.

<https://agoracom.com/ir/POETTechnologies/forums/discussion/topics/759484-poet-technologies-goes-beyond-the-press-release/messages/2312957#message>

About POET Technologies Inc.

POET Technologies is a design and development company offering integration solutions based on the POET Optical Interposer™ a novel platform that allows the seamless integration of electronic and photonic devices into a single multi-chip module using advanced wafer-level semiconductor manufacturing techniques and packaging methods. POET’s Optical Interposer eliminates costly components and labor-intensive assembly, alignment, burn-in and testing methods employed in conventional photonics. The cost-efficient integration scheme and scalability of the POET Optical Interposer brings value to any device or system that integrates electronics and photonics, including some of the highest growth areas of computing, such as

Artificial Intelligence (AI), the Internet of Things (IoT), autonomous vehicles and high-speed networking for cloud service providers and data centers. POET is headquartered in Toronto, with operations in Allentown, PA and Singapore. More information may be obtained at www.poet-technologies.com.

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