Integrated Photonics
The Next Wave in Photonics Growth

Thomas R. Mika
Chief Financial Officer

Investor Presentation
December 2017
Safe Harbor

This presentation contains forward-looking statements and forward-looking information within the meaning of U.S. and Canadian securities laws, including but not limited to statements relating to revenue potential, growth and/or projections such as those included at slides 8, 10, 22 and 23 of this presentation. Forward-looking statements and information can generally be identified by the use of forward-looking terminology or words, such as, "continues", "with a view to", "is designed to", "pending", "predict", "potential", "plans", "expects", "anticipates", "believes", "intends", "estimates", "projects", and similar expressions or variations thereon, or statements that events, conditions or results "can", "might", "will", "shall", "may", "must", "would", "could", or "should" occur or be achieved and similar expressions in connection with any discussion, expectation, or projection of future operating or financial performance, events or trends. Forward-looking statements and forward-looking information are based on management's current expectations and assumptions, which are inherently subject to uncertainties, risks and changes in circumstances that are difficult to predict.

The forward-looking statements and information in this presentation are subject to various risks and uncertainties, including those described under the heading "Risk Factors" in the Corporation's annual information form, many of which are difficult to predict and generally beyond the control of the Corporation, including without limitation risks; associated with the Corporation's limited operating history; associated with the Corporation's need for additional financing, which may not be available on acceptable terms or at all; that the Corporation will not be able to compete in the highly competitive semiconductor market; that the Corporation's objectives will not be met within the time lines the Corporation expects or at all; associated with research and development; associated with the integration of recently acquired businesses; associated with successfully protecting patents and trademarks and other intellectual property; concerning the need to control costs and the possibility of unanticipated expenses; associated with manufacturing and development; that the trading price of the common shares of the Corporation will be volatile; and that shareholders' interests will be diluted through future stock offerings or options and warrant exercises. For all of the reasons set forth above, investors should not place undue reliance on forward-looking statements.

Other than any obligation to disclose material information under applicable securities laws or otherwise as may be required by law, the Corporation undertakes no obligation to revise or update any forward-looking statements after the date hereof.
What is Photonics?

The technology of generation / transmission / detection of photons through light and other forms of radiant energy

What are Indium Phosphide (InP) and Gallium Arsenide (GaAs)?

Two materials that emit photons when charged with electrons
Photonics is a part of everyone’s life today

**Photonic Sensing**
- Guidance & Navigation
- Test & Measurements
- LIDAR systems
- Medical & Healthcare
- Oil & Gas

**Data Communications**
- Telecommunications
- Optical communications
- Server to server
- Rack to rack
- Data center to metro
Who is POET?

We make photonic products **smaller, faster and less expensive** for the sensing and datacom markets through disruptive innovation in chip design, integration and packaging.
We are an **Integrated Photonics** device manufacturer.

<table>
<thead>
<tr>
<th>Employees</th>
<th>67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>58</td>
</tr>
<tr>
<td>Technology Platforms</td>
<td>03</td>
</tr>
</tbody>
</table>

- **Indium Phosphide (InP)**
  - DenseLight Semiconductor, Pte., acquired in May 2016
  - Lasers, SLEDs, ELEDs, modules for optical sensing
  - Hybrid Integrated Photonics Packaging (HiPP)
- **Dielectric Photonics**
  - BB Photonics, acquired in June 2016
  - Passive Dielectric Waveguides
- **Gallium Arsenide (GaAs)**

**Publicly Traded** – TSX Venture (Canada) – PTK.V

- Admin, Design, and Lab
  - Silicon Valley, California
- Corporate HQ
  - Toronto, Canada
- Design, Fabrication and Testing
  - Changi Road, Singapore
- OTC QX (US)
  - POETF (SEC Compliant)
Investment Highlights

1. Multi-Billion $ high-growth market opportunity
2. Robust product development pipeline with strong IP position
3. High-margin Business Model with sustainable cost advantages
4. Technology developing for mass market commercialization
5. Paradigm Shift: Photonic Integrated Circuits – only path to dramatic cost reductions
6. Able to leverage existing design, manufacturing and sales capabilities

© POET Technologies Inc. | TSXV: PTK.V | Public
Photonics market fueled by growth of the Internet

24% CAGR 2016-2021

Exabytes per month

Source: Cisco VNI Global IP Traffic Forecast; 2016-2021

Gaming (1%, 4%)
File Sharing (8%, 3%)
Web/Data (18%, 11%)
IP VOD (22%, 14.5%)
Internet Video (51%, 67.4%)

Photonics market fueled by growth of the Internet

Source: Cisco VNI Global IP Traffic Forecast; 2016-2021

Old phone Kbps  Kilo=10^3
Home Mbps  Mega = 10^6
Datacenter Gbps  Giga = 10^9
Front plates Tbps  Tera = 10^12
Traffic  Peta = 10^{15}
Traffic Today  Exa = 10^{18}
Traffic Tomorrow  Zetta = 10^{21} | Yotta = 10^{24}
Mega data centers require **new technology**

Need smaller, faster, cheaper and lower power integrated photonic transceivers

A single Mega data center (500,00 sq. ft.) is estimated to require
~700,000 100G long reach transceivers @ $250 ASP = $175M

Source: Needham & Co., Research Note on AAOI, May 22, 2017
Integrated photonic transceivers meet critical requirements of next-generation data centers

<table>
<thead>
<tr>
<th>Goal</th>
<th>Today</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>More bandwidth</td>
<td>MM with parallel &gt;10w/port</td>
<td>SM fiber and WDM</td>
</tr>
<tr>
<td>Faster speed</td>
<td>Now 25G</td>
<td>100/400G*</td>
</tr>
<tr>
<td>Denser geometries</td>
<td>Discrete</td>
<td>Integrated</td>
</tr>
<tr>
<td>Greener Power</td>
<td>&gt;10W/port</td>
<td>&lt;2W/port</td>
</tr>
<tr>
<td>More Economical</td>
<td>&gt;$10/Gbps</td>
<td>&lt;$1/Gbps</td>
</tr>
</tbody>
</table>

*Conversion to 100G already underway
Current conventional photonics design and packaging

**Conventional**
Optical Engine

High labor, testing and assembly costs

“Active” precision alignment of discrete optical components

Expensive, hermetically sealed packaging – “gold box”
POET’s **Integrated Photonic Engine**

Proprietary technology enables the integration of dielectric waveguides, filters, spot size converters on both active and passive device components.

**Dielectric Photonics Drive Down Costs of Optical Engine**

Ultra-low loss dielectric reduces power consumption and improves thermals.

No “Active” precision alignment.

Eliminates costly components, including gold boxes, lenses and Thin Film Filters.

Wafer-scale packaging.

---

POET’s Integrated Photonic Engine

Proprietary technology enables the integration of dielectric waveguides, filters, spot size converters on both active and passive device components.

**Dielectric Photonics Drive Down Costs of Optical Engine**

Ultra-low loss dielectric reduces power consumption and improves thermals.

No “Active” precision alignment.

Eliminates costly components, including gold boxes, lenses and Thin Film Filters.

Wafer-scale packaging.

---

POET Technologies

50%*
Reduction in BOM cost for POET Optical Engine

Scalable
Inexpensive
Low-power Consumption
Simple

*Compared to conventional optics.
Integrated photonic transceivers will dominate the market

Integrated transceivers forecast to

$20 Billion by 2025

from

$3.2 Billion today surpassing current discrete-based devices in 2021

Integrated Transceivers Sales Forecast

Source: Oculi, llc
Dielectric Photonics is a distinct competitive advantage for POET

Sustainable cost advantage over other solutions

Dielectric waveguides can be integrated or embedded into several components of the optical engine, dramatically lowering cost and increasing performance.

Transceivers built with POET Dielectric Photonics devices have BOM costs ~40% lower than competitive products.
POET Integrated Photonic Engine Solution

The next wave of innovation

Integration at every possible level to create the lowest cost optical engine for a range of transceivers targeted at the datacom market.

- **100Gbps**
  Supports QUAD 25Gbs channels

- **200Gbps**
  Supports EIGHT 25Gbps channels

- **400Gbps**
  Supports EIGHT 50Gbps channels
In-house source of lasers, detectors and based on Indium Phosphide platform technology

4 inch “state of the art” InP manufacturing capabilities

Developing suites of laser products for 100/200/400G transceiver optical engines

Light Sources and Detectors
Proprietary Dielectric Waveguide Technology

Waveguides function as mux-demux and spot size converters
Eliminates need for “active” optical alignment
Allows coupling of devices inside transceiver without lenses, prisms and mirrors

Passive devices fabricated and tested at wafer scale
Lowest cost compared to incumbent technologies

Linked Dielectrics
Integration into optical bench for even lower cost and higher performance
Hybrid Integrated Photonics Packaging (HiPP)

Packaging represents 70% of BOM cost of conventional optical engine

HiPP offers
- Higher power
- Higher coupling efficiency
- Better light performance
- Better thermal management
- Dramatically lower BOM cost
- Lower fabrication cost
- Lower testing cost
- Scalability
POET WDM Optical Engine in Transceiver Assembly

100G LAN WDM4 Transceiver Optical Engine
Scalable to 400Gbps

Single Mode Fiber (SMF) with Wavelength Division Multiplexing (WDM)
Eliminates costly fibers using WDM
Longer reach (10m – 2km) than PSM4
Integrated with proprietary dielectric photonic technology for lowest-cost integration and packaging

Sustainable cost advantage compared to all incumbent technologies

Low Loss, Low Power
Potential to reach economic goal of $1/Gbps cost

© POET Technologies Inc. | TSXV: PTK.V | Public
POET Optical Engines address top two transceiver market segments:

**Ethernet Data Centers**
- <1km reach both within and between data centers

**Wide Area Networks**
- (Metro – intermediate) served by 1km - 10km links

### Serviceable Available Markets (SAM)

- **CAGR 27%**
- **2017 - 2021**

<table>
<thead>
<tr>
<th>Year</th>
<th>Ethernet Data Centers</th>
<th>Wide Area Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$2,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>2018</td>
<td>$3,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>2019</td>
<td>$4,000</td>
<td>$7,000</td>
</tr>
<tr>
<td>2020</td>
<td>$5,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>2021</td>
<td>$6,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>Products</td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Discrete Devices for Merchant Market and Internal Use for Optical Engines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CW DFB Lasers (1310, 1550, 1650)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor PD, 10G APD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discrete Laser Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-assemblies &amp; Optical Engines</strong></td>
<td>Receive Optical Engines (ROSA)</td>
<td></td>
</tr>
<tr>
<td>Transmit / Receive Optical Engines (TXRX)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
September ‘17 Product Announcements

Introduces High-Power 1310nm Distributed Feedback (DFB) Lasers for 100G Silicon Photonics Applications

Announces Sampling of Avalanche Photodiodes and PIN Photodiodes for the 10G Datacom & Telecom Markets

Announces New Family of External Cavity Narrow Linewidth Lasers

New “Constellation Series” provides enhanced performance, lower Relative Intensity Noise (RIN) and industry leading external cavity wavelength tuning capability.
POET capitalization and key statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total common shares outstanding</td>
<td>259,923,853</td>
</tr>
<tr>
<td>Warrants Outstanding ($0.52 CAD)</td>
<td>34,800,000</td>
</tr>
<tr>
<td>Share price</td>
<td>$0.26 CAD*</td>
</tr>
<tr>
<td>Market cap</td>
<td>$66.5M CAD*</td>
</tr>
<tr>
<td>TTM revenue (9/30/17)</td>
<td>$2.5M USD</td>
</tr>
<tr>
<td>TTM gross margin (9/30/17)</td>
<td>48%</td>
</tr>
<tr>
<td>Cash and short-term investment (9/30/17)</td>
<td>$7.5M USD</td>
</tr>
</tbody>
</table>

*As of 12/1/17
Management Team

Dr. Suresh Venkatesan
CEO
25 years semiconductor industry experience
Motorola, Freescale & GLOBALFOUNDRIES
Technology Development & Commercialization

Thomas R. Mika
CFO
25 years semiconductor industry experience,
Tegal Corporation (NASDAQ: TGAL)
CEO and CFO leading IPO, several follow-on financings and restructurings

Rajan Rajgopal
GM and President, DenseLight
Over 28 years of industry experience
Former VP at Global Foundries and Micron

David E. Lazovsky
Executive Chairman
Founder, CEO and Director of Intermolecular (NASDAQ: IMI)
20 years of semiconductor industry experience - IMI and Applied Materials

Dr. William “Bill” Ring
SVP
20 years semiconductor industry experience:
HP, Tyco, BB Photonics
Optical technology, product and business development

Dr. Yee-Loy Lam
CTO DenseLight
Co-founder of DenseLight Semiconductors
Professor Nanyang Technological University
Specialist in optoelectronics, fiber-optics sensors and photonics systems applications
Board of Directors

David E. Lazovsky
Executive Chairman

Founder, CEO and Director of Intermolecular (NASDAQ: IMI)
20 years of semiconductor industry experience - IMI and Applied Materials

John F. O'Donnell
Director

Counsel to Stikeman Keeley Spiegel Pasternack LLP
Canadian attorney with 43 years of experience specializing in corporate and securities law

Chris Tsiofas
Director

Partner at Toronto Chartered Professional Accountancy firm Myers Tsiofas Norheim LLP
25 years of experience on both financial and operational issues

Jean-Louis Melinge
Director

Partner with ARCH Venture Partners
Managing Director, YADAIS
Former CEO, Kotura
Leading expert in silicon photonics and optical components

Todd A. DeBonis
Director

CEO of Pixelworks (NASDAQ:PXLW)
Semiconductor veteran with over 27 years of expertise in sales, marketing and corporate development

Mohandas Warrior
Director

President & CEO of Alfalight, 2004-2016
15 years at Motorola Semiconductors (Freescale) leading test and assembly operations
Commercialization Strategy

- Engage with a commercial partner to accelerate the introduction of dielectric optical engine to the datacom transceiver market

- Continue to leverage and invest in Singapore-based DenseLight manufacturing facility to effectively manage all aspects of production for optical engine and sensing products

- Employ integration and packaging know-how across an expanded sensing product line

- Pursue complementary ecosystem alliances and/or acquisition opportunities

- Secure strategic partner to complete development of breakthrough monolithic devices
  - first ever combination of a laser, detector and electronic circuit on a single GaAs chip