POET

The “Smart” Opto Electronic Solution

Dr. Suresh Venkatesan
CEO, POET Technologies
During today’s presentation, management will provide “forward-looking information” (within the meaning of applicable Canadian securities laws) and “forward-looking statements” (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) and the Company is relying on the protections of the safe-harbor created thereby.

Many factors could affect our current expectations and could cause actual results to differ materially. The forward-looking statements and information are based on a number of assumptions and are subject to various risks and uncertainties, including those described in the company’s filings with the U.S. Securities and Exchange Commission and the applicable Canadian securities regulators, many of which are difficult to predict and generally beyond the control of the Company.

Although the Company believes that the expectations reflected in the forward-looking information or statements are reasonable, prospective investors in the Company’s securities should not place undue reliance on forward-looking statements because the Company can provide no assurance that such expectations will prove to be correct. Forward-looking information and statements contained in this presentation are as of the date of this presentation.
POET Technologies has created a revolutionary integrated opto-electronic III–V semiconductor technology

Defensible and comprehensive patent portfolio, inclusive of process and device IP

Publicly listed:

- TSX Venture Exchange (Canada) – PTK
- OTC QX (US) – POETF
- Fully SEC Compliant – Form 20F registration

Offices:

- Lab facilities and operations – Silicon Valley, California
- Administrative office – Toronto, Canada
## Management Team

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dr. Suresh Venkatesan</strong></td>
<td>CEO</td>
<td>25 year semiconductor industry experience – Motorola, Freescale and GLOBALFOUNDRIES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technology Development and Commercialization</td>
</tr>
<tr>
<td><strong>Dr. Subhash Deshmukh</strong></td>
<td>COO</td>
<td>25 years semiconductor industry experience – Applied Materials, Varian, Lam Research, AMI Semiconductors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Management and Business Development</td>
</tr>
<tr>
<td><strong>Dr. Geoffrey Taylor</strong></td>
<td>Chief Scientist</td>
<td>Technology and IP generation pioneer and world renowned expert in GaAs and inventor of the POET platform</td>
</tr>
<tr>
<td></td>
<td></td>
<td>POET technology development for over 20 years</td>
</tr>
<tr>
<td><strong>Peter Copetti</strong></td>
<td>Exec. Co-Chairman</td>
<td>Chief architect and strategist of POET transformation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leading POET’s resurgence and monetization activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capital markets expertise</td>
</tr>
<tr>
<td><strong>Ajit Manocha</strong></td>
<td>Exec. Co-Chairman</td>
<td>Most recently CEO of GLOBALFOUNDRIES (second largest semiconductor foundry in the world with multi-billions $US revenues)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35 years of semiconductor industry experience with deep knowledge of the technology and operations</td>
</tr>
<tr>
<td><strong>TBA in 2015</strong></td>
<td>VP, Product Development</td>
<td>Tier 1 VP, Product Development</td>
</tr>
</tbody>
</table>
Monetization Strategy

Product Sales
- Direct Sales of Transceiver Chipsets for Data Center and Consumer (Direct Attach Cables) applications

Product Licensing
- Enable second source licensing for high volume applications / customers

Foundry Licensing
- POET to transfer and enable foundry with POET process – applications in market adjacencies outside of short wavelength Data Communications

Chipset Royalties
- Royalties on future chip set sales by foundry or licensees

Initial NRE Revenues expected to start in 2H2016
- End Customer NRE, Foundry NRE or a combination thereof
Navigating 2016

Building a World Class team in 2016

• Product Development
• Product Management
• Product Design
• Packaging and Optical Assembly

Outlook

• Expect to be attracting customers in 2016
• Market ready product by 2017
New Challenges Require New Solutions

Power Consumption

Broadband Connectivity

Aggressive Cost Curves

High-Voltage Analog Applications

Autonomous Sensing

Integrated Intelligence

Technology Mega Trends
POET is the only technology that enables monolithic integration of **high speed electronics** and **high speed photonics**

The range of applications are varied and diverse, ranging from consumer to military applications
POET (Planar Opto–Electronic Technology) is a novel Gallium Arsenide III–V compound semiconductor process technology.

First GaAs process technology to support complementary HFETs AND vertical and horizontal Lasers, Detectors and Photonic elements.

POET enables SMART optical components.

Compatible with existing and planned package technology.

Standard wafer epitaxy techniques and equipment.

Standard lithography-based fabrication techniques and equipment.
## Segment Value Propositions

<table>
<thead>
<tr>
<th>Consumer</th>
<th>Data Comms / HPC</th>
<th>Automotive/ Military</th>
<th>Industrial</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VCSEL Transceivers</strong></td>
<td><strong>VCSEL Transceivers</strong></td>
<td><strong>Detectors</strong></td>
<td><strong>VCSEL Arrays</strong></td>
<td><strong>VCSELs</strong></td>
</tr>
<tr>
<td>- USB3.0/4.0</td>
<td>- Data Centers</td>
<td>- LWIR/MWIR Detectors</td>
<td>- Industrial Heating</td>
<td>- Gesture Recognition</td>
</tr>
<tr>
<td>- HDMI</td>
<td>- Servers/Routers</td>
<td>- VCSEL Arrays</td>
<td>- Commercial Print</td>
<td>- Non Contact Navigation</td>
</tr>
<tr>
<td>- High Speed Short Range Communications</td>
<td>- FPGA optical IO</td>
<td>- IR Camera</td>
<td>- Cosmetics and Health Care</td>
<td>- Depth Imaging – 3D Vision</td>
</tr>
<tr>
<td>- High Speed Data Comms (AOC)</td>
<td>- LAN/SAN</td>
<td>- Illumination [850nm VCSEL arrays]</td>
<td>- Pump Lasers</td>
<td>- Smart Pixel Arrays (SPA)</td>
</tr>
<tr>
<td>- Module Cost</td>
<td>- Module Cost</td>
<td>- Module Cost</td>
<td>- Module Cost</td>
<td>- VCSEL Cost</td>
</tr>
<tr>
<td>- Power</td>
<td>- Power</td>
<td>- Power Density for VCSEL arrays</td>
<td>- Power Density for VCSEL arrays</td>
<td>- Integration [?]</td>
</tr>
<tr>
<td>- Speed</td>
<td>- Speed</td>
<td>- Electronic feedback for Power control</td>
<td>- Switched Optical Element</td>
<td>- Switched Optical Element for SPA</td>
</tr>
<tr>
<td>- Form Factor</td>
<td>- Form Factor</td>
<td>- Electronic feedback for Power control</td>
<td>- Switched Optical Element</td>
<td>- Form Factor</td>
</tr>
</tbody>
</table>
What is a Data Center?

Making a hot datacenter a “cooler” place
• Volume increases as the “reach” gets smaller
• POET enables the cost structure to compete in the high volume segment
Ethernet Transceiver Market dominated by the Data Centers

Does not include potential accessible market of Direct Attach Copper Cables

All of the short reach revenue is accessible by POET technology due to disruptive cost and power
Social networking, cloud computing and mobility driving data center requirements and growth

Data Center power requirements are acute

5% of all energy consumption worldwide, growing to 20%

POET provides revolutionary innovation that is able to deal with more data at the speed of light

POET integrates the optical communications module on a single chip

Significant reduction in power dissipation, size and cost of optical interconnects

Performance of light at the cost of copper
POET Enables Green Data Centers

Optical “MODULE on a CHIP”

- Reduced Power Consumption
- Highest Bandwidth with multiplexing (SDM or WDM)
- Integration with Electronics
- Form Factor
- Low Cost due to assembly simplification of multiple chips
- Up to 10X lower cost
- Up to 10X lower power per link
Continuous replacement of traditional copper-based links by optical interconnects at ever shorter transmission distance

One to One Attach Rate with silicon ASICs

Enable silicon to communicate optically
POET Technologies

Expanding Image Sensor Applications

POET powers

* Smart VCSELs
* Smart VCSEL Arrays
* Smart Pixel Arrays
* Room Temperature MWIR and LWIR Sensors
## Technical Milestones and Roadmap

<table>
<thead>
<tr>
<th>Milestone Date</th>
<th>Technical Achievement</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4’2015</td>
<td>Establish External Epitaxy Source</td>
<td>Finalize supply agreements with epitaxial vendors</td>
</tr>
<tr>
<td>Q1’2016</td>
<td>Functional VCSEL, Detectors, NFETs at Foundry Partner</td>
<td>Establish manufacturing capability and process flow capable of building 25GHz FETs and 10GHz VCSELs and Detectors</td>
</tr>
<tr>
<td>Q2’2016</td>
<td>Functional Transmit and Receive Components</td>
<td>Demonstrate integrate Transmit and Receive Functions – integrated flow with FETs, VCSELs and Detectors</td>
</tr>
<tr>
<td>Q3’2016</td>
<td>Tape out first Transceiver Prototype</td>
<td>First pass design for 10Gbps and 25Gbps Transceivers</td>
</tr>
<tr>
<td>Q4’2016</td>
<td>First integrated Transceiver Prototypes</td>
<td>First demonstration of integrated transceivers at 10Gbps – enables start of customer validation</td>
</tr>
</tbody>
</table>

### Roadmap

#### Module Prototypes

- **2017**
  - 40/100Gb QSFP, CFP
  - 850nm, MMF
  - SR4, SR10
  - 10/25 AOC

- **2018**
  - 100Gb QSFP
  - 980nm, SMF
  - 850nm, MMF, SR4
  - Mid Board Optics

- **2019**
  - 400Gb QSFP
  - 980nm, SMF
  - PSM4, PAM4
  - On Chip Optics
Summary

POET - Ready at the right time
- Optical interconnects need a disruption in cost and power to meet growing bandwidth needs
- POET will provide a much needed performance and power enhancement to Moore’s Law
- Industry is ready for a paradigm shift for the fabrication of integrated photonic chips

POET enables new innovations
- POET enables mixing on the same chip analog, digital and optical devices that will lead to new innovative products and device consolidation never before possible
- POET offers a monolithic III-V opto-electronic process with very high performance and power gains over traditional copper interconnects

POET enables system cost savings
- Possible device consolidation will lower manufacturing costs at the module and system level
- POET will enable much lower system OPEX due to application power and weight savings
- POET enables the performance of light at the cost of copper