

Executive Summary as of 9/07

Company Overview

Optical InterLinks, a leader in polymer waveguide technology, specializes in the design, fabrication, and packaging, of optical waveguide circuits and interconnection products. Our proprietary polymer waveguide and fiber ribbonization technologies are enabling for a number of applications. These include high speed data Tx/Rx systems at chip and board levels, military/aerospace fly by light signal distribution including backplane / daughter board connectivity, specialty flexible or substrate bound links, optical devices and sensors, custom fiber ribbons and distribution cabling and delay lines, and biofluidic capillary chips and optical sensors.

Optical InterLinks (OIL) was founded in December 2006 as a result of an asset buy out of Optical CrossLinks who in turn evolved from the initial start up, Polymer Photonics, Inc., formed in 1998 from former DuPont inventors of the polymer waveguide technology. OIL operates from an ~ 10,000 square foot facility in Kennett Square, Pennsylvania. The Company currently has 5 employees and utilizes additional independent contractors and consultants on an as needed basis some of whom were former employees. OIL is owned by Martra, LLC but does business as Optical InterLinks.

Technology Overview

OIL's intellectual property and processing techniques allow optical waveguide circuits to be imaged directly into its self-developing photo polymer films. The practicality of a "reel-to-reel" or "printing press" process offers rapid scalability to high-volume, low-cost production. Key members of OIL's founding team developed this acrylate based polymer/monomer waveguide technology at DuPont beginning about 1985 though 1997.

OIL has acquired thru the asset buy out the contractually licensed non-exclusive rights to a portfolio of 11 patents from DuPont to the original PolyGuide™ (now GuideLink™) polymer optical waveguide manufacturing process and related applications. OIL also assumed all the intellectual property developed by Optical CrossLinks including GuideLink™ and DistributionLink™ technologies. At OIL the founding team continues to develop additional proprietary application-specific technology through custom prototype product developments with customers. Although the DuPont license is non-exclusive, by combining the acquired and licensed technology with extensive implementation knowledge

and practical trade secret information, OIL effectively has a de facto exclusive proprietary position for unique polymeric and fiber based optical interconnections and functionality.

Applications

OIL develops and manufactures products with extremely versatile optical interconnection circuitry, connectivity, and functionality. OIL's products provide for higher levels of performance and configurability for novel TxRx for datacom, computer chip to chip and board to board level optical interconnections, and control signal transmission for military/aerospace. Parallel links and functionality at both the board level bonded to substrates or as a flex film or stand alone packaged devices are being configured including dense array links, splitters, star couplers, crossovers and combiners as well as device/sensor read heads and biofluidic products. OIL's approach is to provide the customer versatile configurability, enabling a higher level of integration, and higher circuit/connector interface density. These capabilities and products all drive the economics of high-speed circuitry and compact devices superior to any known competitor. OIL's configurable optical product platform is well positioned to enable the move toward high-speed, high-density optical data interconnections as well as biochip opportunities that are scalable and broadly applicable. OIL's optical interconnectivity complements copper-based electronics in those areas where inflexible routing, signal density and data rates are constrained or where EMI considerations, as in aerospace applications, are paramount.

OIL's proprietary technology provides a full system optical interconnect solution for the design and manufacture of connectorized optical circuitry. It depends on both a proprietary polymer platform and a custom fiber ribbonization and distribution system. All products have specialized custom and proprietary interconnect technologies. The result is a highly scalable, automated, assembly process forming the foundation unique for optoelectronic products.

Products

Optical InterLinks' has two fully connectorized platform products, *GuideLink™* polymer waveguides and *DistributionLink™* custom optical fiber distribution or wiring harnesses, providing complementary full optical system interconnect solutions. Both *GuideLink™* and *DistributionLink™* product applications are now targeted for point-to-point and

functional interconnection links for high speed computer interconnection, datacom, military aerospace markets. Specific configurations include interconnections for chip-to-chip, within daughter board and to/from backplane and daughter boards, complemented with novel optical functionality and sensor systems. Using our proprietary connectorization designs for both *GuideLink™* and *DistributionLink™*, precise single or stacked 2D arrays of polymer and/or fiber guides can be connected with extremely high density interfaces within custom or industry standard (MT style or custom ferrules) connectors and footprints that are also amenable for insertion into industry standard latchable housings.

Optical InterLinks' *GuideLink™* planar waveguide products are based on a unique and proprietary waveguide formation process, which is the key for our novel product attributes. *GuideLink™* products are passive optical waveguide circuits for point-to-point, or functional splitting and multi-signal mixing for broad distribution. They also can combine low loss crossing using internally imaged structures for dense array routing circuits. These devices enable in or out of plane mirror deflection connectivity and precise array connectorization, with the added capability for multi-layer stacking, and integration of complex and dense circuits. OIL's passive device structures also permit incorporation of switches, filters, gratings, or embedded active components or devices in the waveguides. OIL waveguide products can also be utilized as robust freestanding self-supporting links for flexible circuits or can be stably bonded to various board or wafer substrates. OIL's self-supporting flexible circuits with specialized guide designs permit ROC to <1mm with negligible bend loss for bend repetitions exceeding many thousands with upper limits not yet defined.

In summary, OIL's *GuideLink™* technology enables unique chip and board level interconnectivity and is scalable to volume production. Preprocessing, micromachining, connectorization and QC are completed before application to final substrates or system application. The technologies manifest a high-yield manufacturing process, use low-cost materials, permit flexible design platforms, high levels of integration, and rapid prototyping (speed-to-market). Thermo-mechanical robustness for cycling, IR solder reflow, and broad operating ranges has been demonstrated. Considerable new application-based intellectual property (IP) has been and continues to be developed. OIL is also developing next generation formulations for advanced waveguide products to enhance *GuideLink™* capabilities

OIL's patented *DistributionLink™* fiber management technology platform creates perfect or custom fiber shuffles, within a pencil sized footprint. Perfect shuffles can be configured to have millimeter or less path length variations between fiber channels.

DistributionLink™ point-to-point custom fiber ribbons and cables with custom or standard connectorization for optical distribution and wiring harnesses are typically glass but can be plastic as well. They are available in custom ribbon or harness configurations, hybrid single and multimode fibers in the same ribbons, and perform across a wide thermal range (-55°C to +125°C). All fibers are encapsulated into ribbons using DSM Desotech materials with up to 64 fiber ribbons thus far with designed capability to handle 256 fibers. The fiber ribbons elegantly interface through the Company's proprietary precision connectorization designs to other fiber array ribbons or to *GuideLink™* waveguide arrays thru either standard or custom configurations.

Customers

Optical InterLinks has achieved product traction with industry leaders and key customers for both *GuideLink™* and *DistributionLink™*. Prototype *GuideLink™* optical chip-to-chip and board interconnects have been and are being supplied to large chip manufacturers and board assemblers for high speed Tx Rx applications. Deployment scale up is anticipated once qualification is completed and/or critical market needs mature for board level optical interconnectivity. OIL's flexible bendable waveguide arrays are under evaluation for flip phone thru the hinge and board link optical interconnection applications by several companies. OIL has achieved design interest for its *DistributionLink™* products with major telecom systems companies and defense contractors. Contractual programs were completed with Boeing and Optelecom for the unmanned military aircraft control (UAV) effort for custom connectorized light distribution networks and participation has begun with the Air Forces AVE3I next generation program that is expected to utilize both *GuideLink™* and *DistributionLink™* products.

Management Team

Thomas Musser CEO, Founder and owner of Tri-M; and Martra, LLC d/b/a Optical InterLinks (OIL)

Robert Gose CFO: VP/CFO for Tri-M Group and Martra, LLC (d/b/a OIL) ; holds CPA

Dr. Bruce L. Booth, President, Founder and CTO. of OIL- –DuPont 31 yrs; Optical CrossLinks 8 yrs., invented PolyGuide™/ GuideLink™ technology.