Lightwave Logic, Inc.
Form 10-K
March 17, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

þ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2016

¨ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (D) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____to_____

Commission file number: **0-52567**

Lightwave Logic, Inc.

(Exact name of registrant as specified in its charter)

Nevada	**82-049-7368**
(State or other jurisdiction of	(I.R.S. Employer

incorporation or organization)	Identification No.)
1831 Lefthand Circle, Suite C, Longmont, CO (Address of principal executive offices)	**80501** (Zip Code)

(Registrant s Telephone Number, including Area Code): **720-340-4949**

Securities registered pursuant to Section 12(b) of the Act

Title of each class registered	Name of each exchange on which registered

Securities registered pursuant to section 12(g) of the Act:

Common Stock, Par Value $0.001

(Title of class)

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No þ

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ¨ No þ

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes þ No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer	¨	Accelerated Filer	¨
Non-Accelerated filer	¨	Smaller reporting company	þ

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act of 1934). Yes ¨ No þ

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $40,997,474 as of June 30, 2016.

As of March 17, 2017, there were 69,717,642 shares outstanding of the registrant s common stock, $.001 par value.

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Forward-Looking Statements

This report on Form 10-K contains forward-looking statements. Forward-looking statements involve risks and uncertainties, such as statements about our plans, objectives, expectations, assumptions or future events. In some cases, you can identify forward-looking statements by terminology such as anticipate, estimate, plan, projec continuing, ongoing, expect, we believe, we intend, may, should, will, could and similar exp uncertainty or an action that may, will or is expected to occur in the future. These statements involve estimates, assumptions, known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from any future results, performances or achievements expressed or implied by the forward-looking statements. You should not place undue reliance on these forward-looking statements.

Factors that are known to us that could cause a different result than projected by the forward-looking statement, include, but are not limited to:

- lack of available funding
- general economic and business conditions
- competition from third parties
- intellectual property rights of third parties
- regulatory constraints
- changes in technology and methods of marketing
- delays in completing various engineering and manufacturing programs
- changes in customer order patterns
- changes in product mix
- success in technological advances and delivering technological innovations
- shortages in components
- production delays due to performance quality issues with outsourced components
- those events and factors described by us in Item 1.A “Risk Factors”
- other risks to which our Company is subject
- other factors beyond the Company's control.

Any forward-looking statement made by us in this report on Form 10-K is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

PART I

Item 1. Business.

Our Company

We were incorporated under the laws of the State of Nevada on June 24, 1997 and in 2004 we acquired PSI-TEC Corp., and in 2006 we merged with PSI-TEC Corp. PSI-TEC Corp. was originally founded by Dr. Frederick J. Goetz in 1991 and incorporated under the laws of the State of Delaware on September 12, 1995. In 2008 we changed our name to Lightwave Logic, Inc. Unless the context otherwise requires, all references to the **Company**, **we**, **our** or and other similar terms means Lightwave Logic, Inc., a Nevada corporation.

Our principal executive office is located at 1831 Lefthand Circle, Suite C, Longmont, CO 80501, and our telephone number is (720) 340-4949. Our website address is www.lightwavelogic.com. No information found on our website is part of this report. Also, this report includes the names of various government agencies and the trade names of other companies. Unless specifically stated otherwise, the use or display by us of such other parties' names and trade names in this report is not intended to and does not imply a relationship with, or endorsement or sponsorship of us by, any of these other parties.

Overview

Lightwave Logic, Inc. is a development stage company whose P^2IC^{TM} technology addresses advanced telecommunication, data communications, and data center markets utilizing its advanced organic electro-optic polymer systems. The Company currently has two business segments to support its development activities, its materials development segment located in Newark, Delaware, and its photonic device design and development segment located in Longmont, Colorado.

Materials Development

The Company designs and synthesizes organic chromophores for use in its own proprietary electro-optic *polymer systems* and photonic device designs. A polymer system is not solely a material, but also encompasses various technical enhancements necessary for its implementation. These include host polymers, poling methodologies, and

molecular spacer systems that are customized to achieve specific optical properties. Our organic electro-optic polymer systems compounds are mixed into solution form that allows for thin film application. Our proprietary electro-optic polymers are designed at the molecular level for potentially superior performance, stability and cost-efficiency. We believe they have the potential to replace more expensive, lower-performance materials and devices used in fiber-optic ground, wireless and satellite communication networks.

Our patented and patent pending molecular architectures are based on a well-understood chemical and quantum mechanical occurrence known as *aromaticity*. Aromaticity provides a high degree of molecular stability that enables our core molecular structures to maintain stability under a broad range of polymerization conditions that otherwise appear to affect other current polymer molecular designs.

We expect our patented and patent-pending optical materials along with trade secrets and licensed materials, to be the core of and the enabling technology for future generations of optical devices, modules, sub-systems and systems that we will develop or potentially out-license to electro-optic device manufacturers. The Company contemplates future applications that may address the needs of semiconductor companies, aerospace companies and government agencies.

Prototype Device Design and Development

Electro-optic Modulators

The Company designs its own proprietary electro-optical modulation devices. Electro-optical modulators convert data from electric signals (binary data) into optical signals that can then be transmitted over high-speed fiber-optic cables. These devices are key components that have historically limited the ability of telecommunications, data communications, data centers networks to keep up with the seemingly endless flow of data in the form of voice calls, text messages, pictures, video streaming that are being transmitted to a growing array of devices.

Polymer Photonic Integrated Circuits (P^2IC^{TM})

The Company also designs its own proprietary Polymer Photonic Integrated Circuits. A Polymer Photonic Integrated Circuit is a photonic device that integrates several photonic functions on a single chip. We believe that our technology can enable the ultra-miniaturization needed to increase the number of photonic functions residing on a chip to create a progression like what was seen in the computer integrated circuits, commonly referred to as Moore s Law.

Current photonic technology is based on inorganic crystalline materials, which due to physical limitations have not been able to address devices such as slot waveguides that require highly miniaturized geometries. Slot modulators have the potential to scale in integration for increased functionality and would be highly beneficial to data center infrastructure. Organic electro-optic polymers have greater potential because they can be applied as a thin film coating. Our polymers are unique in that they can withstand extremely high semiconductor process temperatures to seamlessly integrate into existing CMOS manufacturing lines. Our devices, enabled by our organic electro-optic polymer material systems, work by affecting the optical properties of light in the presence of an electric field at extremely high frequencies (wide bandwidths) and possess inherent advantages over current crystalline electro-optic material contained in most modulator devices such as lithium niobate, indium phosphide and gallium arsenide.

Glossary

Glossary of select technology terms to provide you with a better understanding our Company s technology and devices:

Electro-optic devices - Electro-optic devices convert data from electric signals into optical signals for use in communications systems and in optical interconnects for high-speed data transfer.

Electro-optic material - Electro-optic material is the core active ingredient in high-speed fiber-optic telecommunication systems. Electro-optic materials are materials that are engineered at the molecular level. Molecular level engineering is commonly referred to as nanotechnology.

Electro-optic modulators - Electro-optic (E/O) modulators are electro-optic devices that perform electric-to-optic conversions within the infrastructure of the Internet. Data centers may also benefit from this technology through devices that could significantly increase bandwidth and speed while decreasing costs. Polymer E/O modulators can be designed and fabricated with multiple structures such as Ridge waveguide and slot waveguide. The waveguides allow

the light to be efficiently coupled into and out of the modulators, and provide a basis for integrating modulators together.

Photonic Devices - Photonic devices are components for creating, manipulating or detecting light. This can include modulators, laser diodes, light-emitting diodes, solar and photovoltaic cells, displays and optical amplifiers. Other examples are devices for modulating a beam of light and for combining and separating beams of light of different wavelength.

Polymers - Polymers, also known as plastics, are large carbon-based molecules that bond many small molecules together to form a long chain. Polymer materials can be engineered and optimized using nanotechnology to create a system in which unique surface, electrical, chemical and electro-optic characteristics can be controlled. Materials based on polymers are used in a multitude of industrial and consumer products, from automotive parts to home appliances and furniture, as well as scientific and medical equipment.

Our Business Opportunity

Lightwave Logic, Inc. is developing next generation proprietary photonic devices that are based on our advanced electro-optical polymer material systems. Current legacy technology is based on inorganic crystalline materials, which has allowed for the proliferation of data over fiber optic cables. However, there are inherent molecular deficiencies that have prevented this technology from scaling down in price and up in functionality. This is primarily due to a closed valence structure that does not allow for the molecular improvements. The valence or valency of an element is a measure of its combining power with other atoms when it forms chemical compounds or molecules. Also, the physical properties of a crystal do not allow for its implementation into highly miniaturize slot structures that are in simple terms the pathways that light travels through in the device.

Organic polymer materials on the other hand, have free electrons that allow for limitless potential to combine with other molecular structures, which allows for multiple options and combinations to improving performance characteristics. Importantly, because they can be applied to optical structures in thin-film liquid form, it is possible to imbue electro-optic ability to highly miniaturized slot structures. Organic polymer materials are also vastly cheaper to manufacture in comparison to growing exotic crystals that are prone to contamination and further must be sliced into thin wafers. Our Company believes that the combination of less expensive manufacturing cost, ease of application, and better scalability, together with a lower cost of ownership due to marked less heat dissipation (requiring less cooling), will create enormous demand for our products.

The following chart describes some of the characteristics of crystalline materials and electro-optical polymers.

Inorganic Crystalline Materials	**Organic Polymer Systems**
Must be manufactured in strict dust-free conditions since even slight contamination can render them inoperable	Capable of being manufactured in less stringent environmental conditions. Capable of being tailored at the molecular level for optimal performance characteristics
Crystals in solid form	Can be applied as thin-film
More expensive to manufacture	Less expensive to manufacture
Limited to telecommunication speeds that are less than 40Gb/s (40 billion digital bits of data per second)	Open molecular architecture allows for ability to alter and improve performance indefinitely.
Lithium niobate devices require large power levels (modulation drive voltages) to operate and are large in size -- typically measuring about four inches long compared to most integrated circuits that are literally invisible to the naked eye.	Require significantly lower power levels, up to 60% less (modulation drive voltages) to operate and cancan be used in miniaturized devices
Requires more elaborate, expensive mechanical packaging (housings) generally comprised of materials, such as gold-plated Kovar, in order to assure operational integrity over required time and operating temperature ranges	Currently designing packaging requirements for prototype devices and anticipate the possibility of less expensive packaging.

Many companies early attempts at developing commercially reliable organic polymers were stymied due to the difficulty of creating organic molecules that could remain electro-optically active after being subjected to the high heat of semiconductor manufacturing temperatures (CMOS). These early attempts also encountered difficulty synthesizing materials that could withstand photochemical bleaching (loss of sensitivity to specific frequencies) and material degradation due to high operating temperatures.

Over the last several years, our Company has made various scientific breakthroughs that have allowed for the synthesis of proprietary organic polymer materials that can withstand extremely high process temperatures of 175^{0}C. Additionally, these materials have demonstrated photochemical stability, even after being subjected to tensor light for over 4,000 hours and exhibited little electro optic degradation even after 2,500 hours of continuous exposure to

temperatures at 110^{0}C exceeding typical commercial operating temperatures of approximately 85^{0}C, as found in data center applications. After successfully achieving material test results that either met or exceeded commercial requirements (subsequently confirmed by an outside entity), in late 2016, the Company began production of its first photonic prototype device, a ***ridge waveguide modulator***.

Our First Product The Ridge Waveguide Modulator

A ridge waveguide modulator is a type of modulator where the waveguide is fabricated within a layer of our electro-optic polymer system. Various cladding materials and electrodes are layered over the core polymer.

Initially, we fabricated our ridge waveguide modulator to prove the viability of our materials and anticipated that the initial prototype *alpha* would target the specific OC-48 niche in the telecommunications market operating at 2.5 Gbps. However, our initial prototype demonstrated significantly better potential data rates, which lead us to believe that further refinements to the design could not only address the telecommunications market operating at 2.5 Gbps, but also address certain segments of both the data communications and cloud computing markets. Subsequently, further testing of our electro-optic polymer material conducted by a third-party testing equipment firm indicated that our material could operate at 25 Gbps or higher with further optimization.

A 25 Gbps data rate would allow us to squarely address the 100 Gbps modulator market (composed of transceiver designs that multiplex 4 signals at 25 Gbps together to reach 100 Gbps), which is not only experiencing the greatest market demand today, but is expected to maintain this demand as a key node in data communication performance levels. We believe that the smaller footprint of our ridge waveguide modulator (compared to currently installed inorganic-enabled legacy devices), along with lower potential drive voltage and other undisclosed features, will enable our Company to garner significant market share across the entire telecommunications, data communications and data center value chain.

On December 27, 2016 we announced that our first prototype *alpha* was 10 Gbps capable (four times faster than our initial anticipated rate), and had achieved 3dB bandwidths of up to 20GHz. These performance achievements not only confirmed that our ridge waveguide modulator is capable of 10 Gbps, but with fine-tuning device parameters, that it is capable of 25 Gbps in the very near future. The key to the performance increase at 10 Gbps was attention to utilizing our high performance organic polymers into a robust fabrication design as a ridge waveguide modulator.

While our initial focus is to address data communications and telecommunications network applications along with cloud computing/data center needs, we believe that in the future we will have additional opportunities to address other applications such as: backplane optical interconnects, photovoltaic cells, medical applications, satellite reconnaissance, navigation systems, radar applications, optical filters, spatial light modulators; and all-optical switches.

Electro-Optic Polymer Production Our Approach vs. the BLA Approach

Our Electro-Optic Material Approach

Our core material expertise relates to the production of high-performance, high-stability electro-optic polymers for high-speed (wide bandwidth) telecommunication and datacommunications applications. More specifically, it lies in a less mainstream, yet firmly established, scientific phenomenon called aromaticity. Aromaticity causes a high degree of molecular stability. It is a molecular arrangement wherein atoms combine into multi-membered rings and share their electrons among each other. Aromatic compounds are stable because the electronic charge distributes evenly over a great area preventing hostile moieties, such as oxygen and free radicals, from finding an opening to attack.

Previous and Current Competitive Organic Electro-Optic Polymer Efforts

For the past several decades, diverse corporate interests, including, to our knowledge, IBM, Lockheed Martin, DuPont, AT&T Bell Labs, Honeywell and 3M, as well as numerous universities and U.S. Government Agencies, have been attempted to produce high-performance, high-stability electro-optic polymers for high-speed (wide bandwidth) telecommunication applications. These efforts were largely unsuccessful due, in our opinion, to the industry's singular adherence to an industry pervasive engineering model known as the Bond Length Alternation ("BLA") theory model, which none of our patented molecular designs rely upon. The BLA model, like all other current industry-standard molecular designs, consists of molecular designs containing long strings of atoms called polyene chains. Longer polyene chains provide higher electro-optic performance, but are also more susceptible to environmental threats, which result in unacceptably low-performing, thermally unstable electro-optic polymers.

As a result, high frequency modulators engineered with electro-optic polymers designed on the BLA model or any other polyene chain design models are unstable over typical operating temperature ranges, and often exhibit performance degradation within days, hours or even minutes. Similarly, lower frequency modulators exhibit comparable failings, but to a lesser extent. These flaws, in most cases, have prevented commercial quality polymer-based modulators operating at 10-40Gb/s from entering the commercial marketplace. The thermal stability of these devices does not generally meet the minimum Telcordia GR-468 operating temperature range (-40 degrees Celsius to +85 degrees Celsius) much less the more harsh MILSPEC 883D (military specification) range of -55 degrees Celsius to 150 degrees Celsius. While many new applications do not require full military specifications for polymers, many potential customers prefer to see polymer operate at or near these conditions to convey confidence in the material system. We understand from conversations with data center customers that the temperature specifications that our materials achieve are compliant with their equipment design needs.

We are aware of other academic and commercial development efforts some by larger companies with vastly more financial resources than we possess. However, we believe that no one yet has developed organic polymer materials that have demonstrated the combination of thermal stability, photochemical stability that can meet or exceed commercial specifications.

Our Electro-Optic Photonic P^{2}IC^{TM} Device Approach

Our electro-optic devices are built around our proprietary organic polymer material systems that we believe will enable better performance than the current embedded legacy technology built around inorganic materials. We also believe that the inherent flexibility of being able to apply our organic polymer materials in liquid thin-film form will accelerate the move toward ultra-miniaturization of Polymer Photonic Integrated Circuits (P^{2}IC^{TM}) by increasing the number of photonic circuits on a single chip. Polymer photonics (previously referred in industry as silicon organic hybrid (SOH)) is the application of polymers on to a platform such as silicon where there are both active and passive photonic component designs. In polymer photonics, polymer devices such as modulators, waveguides, and multiplexers can be fabricated on to a silicon platform that acts as a package as well as a base for mounting lasers (which are needed to source the light).

Our initial device, a ridge waveguide modulator, though highly miniaturized utilizes conventional design and fabrication techniques in the industry. Our future devices will utilize silicon photonics (SiP) technology, which can support highly miniaturized slot waveguides structures etched in large format, low cost, and less expensive silicon wafers coated with our organic electro-optic polymers. The low-cost structure compares well to compound semiconductor technologies such as GaAs (Gallium arsenide) and InP (Indium Phosphide), which suffer from small format wafers that do not allow the economies of scale in high volume fabrication plants. The degree of miniaturization possible of the slot modulator using SiP is not technically feasible to accomplish with inorganic crystalline materials. Although this may not always remain the case, presently there are nearly insurmountable technical difficulties that are inherent to a crystalline molecule.

Although we believe that our polymers will be the key differentiating factor in Polymer photonic devices, we do not currently possess the technical skills and instrumentation necessary to fabricate and test PICs at this dramatically reduced scale and intends to seek an external partner to assist with development.

Our Intellectual Property

Our research and development efforts over the last 10 years have yielded our Company an extensive patent portfolio as well as critical trade secrets, unpatented technology and proprietary knowledge related to our optical materials. We currently have 25 granted patents and 3 pending patents issued or filed throughout the world, including the United States, the European Union, Australia, Canada, China and Japan that are in the field of nonlinear optic chromophore design as follows:

- Stable Free Radical Chromophores, processes for preparing the same
- Stable Free Radical Chromophores, processes for preparing the same
- Tricyclic Spacer Systems for Nonlinear Optical Devices
- Anti-Aromatic Chromophore Architectures
- Heterocyclical Anti-Aromatic Chromophore Architectures
- Heterocyclical Chromophore Architectures
- Heterocyclical Chromophore Architectures with Novel Electronic Acceptor Systems

Our strategic plan is to utilize our core proprietary technology and leverage our proprietary optical materials to be the core of and the enabling technology for future generations of optical devices, modules, sub-systems and systems that we will develop or potentially out-license to electro-optic device manufacturers. Our Company contemplates future applications that may address the needs of semiconductor companies, aerospace companies and government agencies.

We rely on a combination of patents, patent applications, trademarks, trade secrets and contractual provisions to protect our technologies. Further, employees are required to surrender any inventions or intellectual property developed as part of their employment agreements. We also have a policy of requiring prospective business partners to enter into non-disclosure agreements (NDAs) before disclosure of any of our confidential or proprietary information. Our Company can make no assurances that we will be able to effectively protect our technologies and know-how or that third parties will not be able to develop similar technologies and know-how independently.

The anti-aromatic nature of these structures dramatically improves the "zwitterionic-aromatic push-pull" of the systems, providing for low energy charge transfer. Low energy charge transfer is important for the production of extremely high electro-optic character.

Heterocyclical Steric Hindering System This patent describes a nitrogenous heterocyclical structure for the integration of steric hindering groups that are necessary for the nanoscale material integration. Due to the [pi]-orbital configuration of the nitrogen bridge, this structure has been demonstrated not to interfere with the conductive nature of the electronic conductive pathway and thus is non-disruptive to the electro-optic character of the core molecular construction. The quantum mechanical design of the system is designed to establish complete molecular planarity (flatness) for optimal performance.

Totally Integrated Material Engineering System This patent covers material integration structures under a design strategy known as Totally Integrated Material Engineering. These integration structures provide for the "wrapping" of the core molecule in sterically hindering groups that maximally protect the molecule from environmental threats and maximally protect it from microscopic aggregation (which is a major cause of performance degradation and optical loss) within a minimal molecular volume. These structures also provide for the integration of polymerizable groups for integration of materials into a highly stable cross-linked material matrix.

Our Recent Significant Events and Milestones Achieved

In November 2013, preliminary testing and initial data on our SOH/polymer photonic slot waveguide modulators demonstrated several promising characteristics. The tested SOH/polymer photonics chip had a 1-millimeter square footprint, enabling the possibility of sophisticated integrated optical circuits on a single silicon substrate. In addition,

the waveguide structure was approximately 1/20 the length of a typical inorganic-based silicon photonics modulator waveguide. With the combination of our proprietary electro-optic polymer material and the extremely high optical field concentration in the slot waveguide modulator, the test modulators demonstrated less than 2.2 volts to operate. Initial speeds exceeded 30-35 GhZ in the telecom, 1550 nanometer frequency band. This is equivalent to four, 10Gb/sec, inorganic, lithium niobate modulators that would require approximately 12-16 volts to move the same amount of information. Our material also operates in the 1310 nanometer frequency band, which is suitable for data communications applications.

In January 2014 we created a new methodology to combine multiple chromophores into a single polymer host that significantly improves their ability to generate more powerful organic, nonlinear electro-optical polymer systems. The new synthetic chemistry process can enable multiple chromophores (dyes) to work in concert with each other within a single polymer host. This proprietary process has created two new material systems, which have demonstrated outstanding electro-optic values. In addition, we now have a significant amount of data on the thermal aging of our materials. We have demonstrated that our materials can withstand more than 2,000 hours at 110 degrees C with little to no change in electro-optic activity in our materials, which is a significant milestone. To our knowledge, this is something that has not been achieved before in any polymer. We are also concurrently coating prototype waveguides with our proprietary material system.

In February 2014 we received our first purchase order for our advanced organic nonlinear electro-optic polymer from Boulder Nonlinear Systems (BNS) of Boulder, Colorado in connection with the development of a next generation LADAR system.

In April 2014 we entered into a sole worldwide license agreement with Corning Incorporated enabling us to integrate Corning's organic electro-optical chromophores into our portfolio of electro-optic polymer materials. The agreement allows us to use the licensed patents within a defined license field that includes communications, computing, power, and power storage applications utilizing the nonlinear optical properties of their materials.

In October 2014 we submitted an order with Reynard Corporation to produce gold-layered fused silica substrates for our bleached waveguide modulators to be coated with several of our organic electro-optical polymers, which we received in early November 2014 and performance tested throughout December 2014. In May, 2015, we subsequently decided to eliminate this product from our commercial development plans due to its limited commercial value, low speed characteristics, difficulty to mass-produce and limited ability to integrate with existing architectures. In lieu of this development program, a commercially viable prototype ridge waveguide modulator program was started to replace the bleached waveguide development. We believe that the ridge waveguide modulator represents a viable telecom device opportunity for the Company that does not have the inherent limitations seen in bleached waveguide structures.

In May 2015 we achieved operating capability of our in-house Class 100 Clean Room where we conduct thin film processing and complete the development of prototype photonic devices enabled by our advanced organic electro-optic polymer material systems in a timelier manner. Additionally, the Joint Institute for Laboratory Astrophysics (JILA) certified some of our employees, which allows us access to JILA s world-class semiconductor facility located at the University of Colorado, Boulder. Access to this facility provides us with better control over the quality of our development work and the speed at which it progresses.

In August 2015 we completed 2,500 hours of thermal aging tests of several blends of materials created by our multi-chromophore process, which included lengthy exposure to high temperatures (85^0C and 110^0C). The data collected indicated minimal loss of electro-optical activity (R_{33}) of our materials, which means that our organic polymers are expected to provide decades of operational performance. These results exceed previously published efforts for other organic polymers and are an important part of our commercialization effort as we begin to implement these material systems into advanced photonic devices for the telecom and datacom markets.

Additionally, in August 2015, we completed 500+ hours of photochemical stability testing of our material candidates by exposing them to the visible light spectrum. The data collected indicated no discernible change in the chemical structures in an oxygen free environment. This stability testing was begun to help us understand more clearly the processing and manufacturing requirements of our future commercial products, and provide initial assurances to expect the same results as we move these materials into actual photonic device structures. This, in turn, has enabled us to begin initial device testing on devices that utilize our silicon photonic chips.

In October 2015, we successfully surpassed 2,000 hours of photochemical stability testing of our material candidates with little to no change in the electro-optic characteristics (R_{33}) of our material; and, in January 2016, we successfully surpassed 4,000 hours of photochemical stability testing of our material candidates with little to no change in the electro-optic characteristics (R_{33}) of our material. These photochemical stability test results, along with the thermal stability at 110°C, should enable our Company to demonstrate that organic polymers can compete head-to-head with inorganic crystalline legacy telecom and datacom devices which currently provide the backbone for the entire infrastructure that converts almost incalculable amounts of electronic (binary) data into pulses of light and back on a daily basis.

In November of 2015, we successfully fabricated ridge waveguide structures from our core material system. At the same time we successfully developed a proprietary methodology to segment individual chips from our silicon wafers that contain our ridge waveguide devices. These critical steps in our process provide us with a clear path towards a commercial telecommunication device. These same processes can be used for the fabrication of modulators to be used in data centers. The individual chips are now being analyzed and passively tested in our Longmont, CO optical test facility.

In February 2016, we successfully guided laser single-mode light through 16 of our passive ridge waveguides made entirely out of our advanced organic polymer systems, which are the building block of waveguide modulators that can achieve high modulator performance. As a result, our commercialization effort has entered the next phases of development: passive-waveguide loss measurements, followed by the development and active testing of electro-optic modulators. Utilizing continuous-wave input laser light, electro-optic modulators convert digital (binary) electrical data into output pulses of light that can be transported across fiber optic communication networks. Active testing is accomplished by applying an electrical signal to a modulator and evaluating the resulting output optical signal.

In April 2016, we successfully achieved modulation of light in our first in-house all-polymer ridge waveguide modulator prototype. This important step towards commercialization proved that our proprietary organic electro-optic polymer systems could modulate light in an in-house designed and produced polymer ridge waveguide modulator. We expect this significant achievement to eventually lead to high-speed, low input voltage modulators capable of penetrating the current market. We are still testing and modifying the poling profiles in prototype devices to duplicate the results seen in previous Teng-Man R_{33} material testing.

In May 2016, we broadened our photonic device development to include our new P^2IC (Polymer Photonics Integrated Circuit) design platform. The P^2IC design platform utilizes high-speed ridge waveguide and slot waveguide modulator designs that scale up in performance as well as down in cost structure. Furthermore, the Lightwave Logic P^2IC design platform combines the best of Polymer Photonics with the best of Silicon Photonics (SiP) to create a powerful, yet scalable platform that addresses the desires of both the telecom and datacom industries.

In August 2016, we gained enormous industry exposure for our first organic electro-optic polymer-enabled prototype photonic device when our board member, Michael Lebby, Ph.D., presented to the Prestigious European Conference on Optical Communication (ECOC) Exhibition, the scientific and economic case for our Company's high-performance polymer photonics for next-generation photonic integrated circuits as future competition for installed legacy photonic devices and emerging silicon photonic systems.

In August 2016, we obtained highly successful independent third party verification of our organic polymer thin film properties from Metricon, a Company that specializes in making precision instruments designed to obtain optical measurements on thin film materials and optical waveguides. Metricon concluded a battery of scientific tests to verify the inherent properties of several of our advanced organic electro-optic polymer materials, which are currently being implemented into a series of photonic devices. Measurements by Metricon of several planar waveguide samples determined that our polymer thin film materials at 1550 nm (Telecom frequency band) should exceed industry requirements that target overall device loss at <4 dB/cm. Additionally, Metricon was also able to provide very accurate refractive index measurements on our Company s materials, which is very important for designing high-speed multi-layer polymer modulators.

In December 2016, we achieved high-speed modulation in our first all-organic polymer ridge waveguide intensity modulator prototype, which constituted one of the most significant moments in the history of our Company. Our initial "alpha" prototype device, enabled by our P2IC polymer system, demonstrated bandwidth suitable for data rates up to about 10 Gbps. This performance exceeds the telecom OC-48 standard (2.5 Gbps). This device demonstrated true amplitude (intensity) modulation in a Mach-Zehnder modulator structure incorporating our polymer waveguides. Presently, we are continuing to move towards extending our initial "alpha" prototype device to operate up to 25 Gbps, which is important to the optical networking industry because this data rate is a major node to achieve 100 Gbps (using 4 channels of 25 Gbps).

As we move forward through 2017, we expect to (i) bring in-house more specific skill sets in materials engineering and in device testing and fabrication, as well as personnel to orchestrate our various Company activities; and (ii) attract an industry partner with the synergistic capabilities necessary to help develop future products that are in various stages of design, such as a slot waveguide modulator and our integrated fiber optic polymer-based transceiver.

The Photonic Device Market

General

Photonic devices such as fiber-optic modulators translate electric signals into optical signals and optical signals back into electrical signals. Such devices are used in communication systems to transfer data over fiber-optic networks. Optical data transfer is significantly faster and more efficient than transfer technologies using only electric signals, permitting more cost-effective use of bandwidth for broadband Internet and voice services.

Two distinct technologies currently exist for the fabrication of fiber-optic devices, such as fiber-optic modulators. The first, which is the more traditional technology, utilizes an electro-optically active inorganic core crystalline material (e.g. lithium niobate and indium phosphide). The second, which is the focus of the Company s research and development, involves the exploitation of electro-optic polymers.

Our Target Markets

Cloud computing and data centers

Big data is a general term used to describe the voluminous amount of unstructured and semi-structured data a Company creates -- data that would take too much time and cost too much money to load into a relational database for analysis. Companies are looking to cloud computing in their data centers to access all the data. Inherent speed and bandwidth limits of traditional solutions and the potential of organic polymer devices offer an opportunity to increase the bandwidth, reduce costs and improve speed of access.

While the number of data centers is declining, the overall square footage has been growing rapidly. Data centers are confronted with the problem of moving vast amounts of data not only around the data center itself, but also between data centers. The size of these data center links are often measured in kilometers and employ optical modulators to convert stored electrical/binary information to optical and back. Links that are shorter than 500 meters can employ direct modulation, which accomplishes modulation by mechanically turning a laser on and off. However, for links greater than 500 meters, it is necessary to employ optical modulators. We intend to target optical devices that are aimed at the 500m to 10km distance segment of the market. These are single mode fiber links and require polymer optical devices that operate in single optical mode. While some data center customers are planning their architectures using single mode fiber links even below 500m, others are focusing on cost-performance to make their decisions for their particular architectures. Our technology is both single mode and scalable, which means that it can be implemented in either data center application depending on how we achieve the customer metrics and specifications. We believe that our single mode modulator solutions will not only be competitive at 500m to 10km link distances, but also at distances below 500m depending on the customer architecture designs.

Telecommunications/Data Communications

The telecommunications industry has evolved from transporting traditional analogue voice data over copper wire into the movement of digital voice and data. Telecommunication companies are faced with the enormous increasing challenges to keep up with the resulting tremendous explosion in demand for bandwidth. This has been further exacerbated by a recent trend for content providers to store large amounts of data closer to the end user. This results in enormous demands on telecommunication metro networks (less than 10 Kilometers in length) and their ability to facilitate the transportation of content.

We believe that our ridge waveguide modulator, when completed will have the potential to address several segments within telecommunications networks.

Our Business Strategy

Our business strategy anticipates that our revenue stream will be derived from one or some combination of the following: (i) technology licensing for specific product application; (ii) joint venture relationships with significant industry leaders; or (iii) the production and direct sale of our own electro-optic device components. Our objective is to be a leading provider of proprietary technology and know-how in the electro-optic device market. In order to meet this objective, we intend to:

- Further the development of proprietary organic electro-optic polymer material systems
- Develop photonic devices based on our P^2IC^{TM} technology
- Continue to develop proprietary intellectual property
- Continue to add device development capabilities
- Continue to add to material development capabilities
- Maintain/develop strategic relationships with major telecommunications and data communications companies to further the awareness and commercialization of our technology.
- Continue to add high-level science and technology personnel in key areas of our materials and device development programs.

Create Organic Polymer-Enabled Electro-Optic Modulators

We intend to utilize our proprietary optical polymer technology to create an initial portfolio of commercially feasible electro-optic polymer product devices and applications for various markets, including telecommunications, data communications and data centers.

We expect our initial product device line will be a high-speed 4 x 25 Gbps ridge waveguide modulator to compete in the growing 100 Gbps modulator market.

Continue to Expand Our Intellectual Property Portfolio and Reliance on Trade Secrets

We plan to continuously advance the development of unique organic electro-optic polymer materials along with proprietary designs and device configurations. We intend to protect our technology by filing patent applications where appropriate or by obtaining exclusive technology rights where available. However, in some cases, we will refrain from protecting certain proprietary with patents in favor of trade secrets.

Maintain/Develop Strategic Relationships Private Firms, and Academic Institutions

Since the formation of our Company, we have had numerous strategic relationships with government agencies that have provided us with funding and access to important technology. From the time that we developed our own in-house testing capability and Class 100 clean room facility in Longmont, Colorado we have attempted to minimize outside academic and government agency relationships.

After completion of our initial prototype ridge waveguide, we will seek to enter into partnership/JV discussions with outside parties to co-develop a slot waveguide modulator.

Continue to utilize outside consultants to gain technical expertise

In December 2011, we retained Dr. Frederick Leonberger, PhD as our Senior Advisor. Dr. Leonberger is the former Chief Technology Officer of JDS Uniphase, Inc. We previously retained EOvation Advisors LLC, a technology and business advisory firm founded by Dr. Frederick Leonberger, as a consultant to the Company. Dr. Leonberger is presently assisting our Company with strategic planning and the design of optical modulators that we intend to develop. Starting January 2013, Dr. Leonberger also serves as an advisor to our Board of Directors.

Our Research and Development Process

Our research and development process consists of the following steps:

- We develop novel polymer materials utilizing our patented and patent pending technology to meet certain performance specifications. We then develop methods to synthesize larger quantities of such material.
- We conduct a full battery of tests at the completion of the synthesis of each new polymer material to evaluate its characteristics. We also create development strategies to optimize materials to meet specifications for specific applications. We model and simulate each new polymer material so that we can further understand how to optimize the material for device operation.
- We integrate data from the material characterization and test results to fabricate devices. We analyze device-testing results to refine and improve fabrication processes and methods. In addition, we investigate alternative material and design variations to possibly create more efficient fabrication processes.
- We create an initial device design using simulation software. Following device fabrication, we run a series of optical and electronic tests on the device.

We have and expect to continue to make significant operating and capital expenditures for research and development. Our research and development expenses were $2,474,689 and $2,825,099 for the years ended December 31, 2016 and 2015, respectively.

Our Proprietary Products in Development

As part of a two-pronged marketing strategy, our Company is developing several optical devices, which are in various stages of development and that utilize our organic nonlinear optical materials. They include:

Ridge Waveguide Modulator

Our ridge electro-optic waveguide modulator was designed and fabricated in our Longmont, Colorado laboratory. The fabrication of our first in-house device is significant to our entire device program and is an important starting point for modulators that are being developed for target markets. We have multiple generations of new materials that we will soon be optimizing for this specific design. On December 27, 2016, we announced that our initial alpha prototype ridge waveguide modulator, enabled by our P^2IC polymer system, demonstrated bandwidth suitable for data rates up to about 10 Gbps, which exceeds the telecom OC-48 standard (2.5 Gbps).

This device demonstrated true amplitude (intensity) modulation in a Mach-Zehnder modulator structure incorporating our polymer waveguides. Presently, we are continuing to move towards extending our initial alpha prototype device to operate up to 25 Gbps, which is important to the optical networking industry because this data rate is a major node to achieve 100 Gbps (using 4 channels of 25 Gbps).

The ridge waveguide modulator represents our first commercially viable device, and targets metro networks (< 10Km) within large scale telecommunications and data communications networks and represents approximately a $300MM per year market opportunity for us.

Slot Waveguide Modulator

Our functional polymer photonics slot waveguide modulator utilizes an existing modulator structure with one of our proprietary electro-optic polymer material systems as the enabling material layer, and is functional as an operating prototype device.

Preliminary testing and initial data on our polymer photonics slot waveguide modulators demonstrated several promising characteristics. The tested polymer photonic chip had a 1-millimeter square footprint, enabling the

possibility of sophisticated integrated optical circuits on a single silicon substrate. In addition, the waveguide structure was approximately 1/20 the length of a typical inorganic-based silicon photonics modulator waveguide.

With the combination of our proprietary electro-optic polymer material and the extremely high optical field concentration in the slot waveguide modulator, the test modulators demonstrated less than 2.2 volts to operate. Initial speeds exceeded 30-35 GhZ in the telecom, 1550 nanometer frequency band. This is equivalent to four, 10Gb/sec, inorganic, lithium niobate modulators that would require approximately 12-16 volts to move the same amount of information.

Our material also operates in the 1550 nanometer frequency band, which is suitable for data communications applications. We continued with our collaborative development of our SOH/ Polymer photonic slot waveguide modulator in 2014 and continued our collaboration with an associated third party research group through 2016.

Our Long-Term Device Development Goal - Multichannel Integrated Nanophotonic Transceiver

While we consider our ridge waveguide and slot waveguide modulators currently under development to be commercially viable products, in another sense they are intermediate steps in the development of our long-term goal a multichannel integrated nanophotonic transceiver for application in data communications.

The transceiver consists of a silicon photonic chip fabricated with nonlinear polymer infused modulators (polymer photonic), multiplexers, demultiplexers, detectors and grating fiber couplers to an external light source. The CMOS-compatible optical modulators are key components for future silicon-based photonic transceivers. Our solution, the silicon-organic hybrid (polymer photonic) platform has been proposed and is being prototyped. In the polymer photonic approach, the optical signal is guided by a silicon waveguide while an organic cladding provides the electro-optic effect.

Other Potential Applications for Our Products

We believe that there are myriad potential applications for our organic polymer materials and devices outside of our initial focus of data communications, telecommunications and data centers. These potential applications encompass areas as diverse as military, space, optical computing, and life sciences. We believe that as viable organic polymer materials gain acceptance, their increased flexibility, functionality and low cost will create new applications that may not yet be technically feasible. Two such future applications with revolutionary potential are:

All-Optical Switches

An all-optical switch is one that enables signals in optical fibers or networks to be selectively switched from one fiber or circuit to another. Many device designs have been developed and commercialized in today s telecom networks to effect optical switching by using mechanical or electrical control elements to accomplish the switching event. Future networks will require all-optical switches that can be more rapidly activated with a low energy and short duration optical (light) control pulse.

Multi-Channel Optical Modem

The availability of low cost electro-optic modulators will enable low cost multichannel optical modems that will use many wavelengths in parallel and employ high efficiency modulation techniques such as QAM (quadrature amplitude modulation). Such modems would enable an order of magnitude increase in the Internet capacity of legacy fiber. Our Company is in the early feasibility stage of such a multichannel optical modem.

Our Past Government Program Participation

Our Company has been a participant in several vital government sponsored research and development programs with various government agencies that protect the interests of our country. The following is a list of some of the various divisions of government agencies that have provided us with advisory, financial and/or materials support in the pursuit of high-speed electro-optic materials. We are not currently partnered with, strategically related to, or financially supported by any governmental agency at this time, however, we may explore future opportunities as our Company grows and gains the additional resources and personnel necessary to support these efforts. Our previous relationships included:

- National Reconnaissance Office (NRO)
- Properties Branch of the Army Research Laboratory on the Aberdeen Proving Grounds in Aberdeen, Maryland.
- Defense Advance Research Project Agency (DARPA)
- Naval Air Warfare Center Weapons Division in China Lake, California
- Air Force Research Laboratory at Wright-Patterson Air Force Base in Dayton, Ohio

Our Competition

The markets we are targeting for our electro-optic polymer technology are intensely competitive. Among the largest fiber-optic component manufactures are Finisar, JDSU, Oclaro, NeoPhotonics, OpLink, CyOptics. Additionally, the five largest inorganic modulator component manufacturers hold approximately 85% of the electro-optic modulator component market. They are JDSU, Sumitomo, Oclaro, Fujitsu and ThorLabs. These companies are heavily invested in the production of crystalline-based electro-optic modulator technologies, as well as the development of novel manufacturing techniques and modulator designs.

GigPeak, Inc. may be considered our primary polymer competitor. They design and have patented potentially commercially feasible electro-optic polymers and hold an exclusive license to all electro-optic polymeric technology developed at the University of Washington. GigPeak presently has a joint venture with CPqD, an independent Brazil institution. GigPeak has sold a majority interest of their polymer IP to BrPhotonics S/A based in Brazil. Recently, GigPeak announced that it signed an agreement for Integrated Device Technology, Inc. (IDT) to acquire GigPeak. We do not know at this time what IDT s intention is regarding polymer technology.

We believe that as our organic polymer technology gains industry acceptance, we will be poised to obtain a significant portion of the component manufacturing market. Electro-optic polymers demonstrate several advantages over other technologies, such as inorganic-based technologies, due to their reduced manufacturing and processing costs, higher performance and lower power requirements. Our patented organic polymers and future electro-optic photonic devices have demonstrated significant stability advantages over our known competitor's materials.

We believe the principal competitive factors in our target markets are:

- The ability to develop and commercialize highly stable optical polymer-based materials and optical devices in commercial quantities.
- The ability to obtain appropriate patent and proprietary rights protection.
- Lower cost, high production yield for these products.
- The ability to enable integration and implement advanced technologies.
- Strong sales and marketing, and distribution channels for access to products.

We believe that our current business planning will position our Company to compete adequately with respect to these factors. Our future success is difficult to predict because we are an early stage company with all of our potential products still in development.

Many of our existing and potential competitors have substantially greater research and product development capabilities and financial, scientific, marketing and human resources than we do. As a result, these competitors may:

- Succeed in developing products that are equal to or superior to our potential products or that achieve greater market acceptance than our potential products.
- Devote greater resources to developing, marketing or selling their products.
- Respond quickly to new or emerging technologies or scientific advances and changes in customer requirements, which could render our technologies or potential products obsolete.
- Introduce products that make the continued development of our potential products uneconomical.
- Obtain patents that block or otherwise inhibit our ability to develop and commercialize our potential products.
- Withstand price competition more successfully than we can.
- Establish cooperative relationships among themselves or with third parties that enhance their ability to address the needs of our prospective customers.
- Take advantage of acquisition or other opportunities more readily than we can.

Our Laboratory Facilities

Newark, Delaware

We have an internal research laboratory facility in Newark, Delaware in the Delaware Technology Park, near the University of Delaware. This lab facility enables us to synthesize and test our materials in the same facility and to accelerate our development efforts. It is equipped with state of the art equipment necessary to conduct synthetic chemistry in much more tightly controlled conditions.

Longmont, Colorado

Within our corporate headquarters, we have an advanced optical testing laboratory, as well as a class 100 clean room laboratory where material candidates are spin coated on to prototype devices as these materials emerge from our synthetic laboratory. This clean room enables us to expand our in-house prototype development capabilities.

Employees

We currently have 10 full-time employees and 2 part-time employees, and we retain several independent contractors on an as-needed basis. Based on our current development plan we expect to add 3 to 6 additional full-time employees in 2017. We believe that we have good relations with our employees.

Properties

Our executive and business office headquarters are located at 1831 Lefthand Circle, Suite C, Longmont, CO 80501. We coordinate our operations, optical device design, optical laboratory, thin films laboratory and clean room, and market our services from this space. Our annual base rent for this space is $47,578.

We also lease approximately 2,000 square feet of laboratory space at 1 Innovation Way, Newark, Delaware 19711, which we utilize to operate an organic synthesis and thin-films laboratory. Our annual rent for this space is approximately $71,662.

Legal Proceedings

We are not currently a party to or engaged in any material legal proceedings and we are not aware of any litigation or threatened litigation of a material nature. However, we may be subject to various claims and legal actions arising in the ordinary course of business from time to time.

Item 1A. Risk Factors.

Investing in our common stock is risky. In addition to the other information contained in this annual report, you should consider carefully the following risk factors in evaluating our business and us. If any of the following events actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our common stock to decline and you may lose all or part of your investment. The risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also significantly impair our business operations and could result in a complete loss of your investment.

We have incurred substantial operating losses since our inception and will continue to incur substantial operating losses for the foreseeable future.

Since our inception, we have been engaged primarily in the research and development of our electro-optic polymer materials technologies and potential products. As a result of these activities, we incurred significant losses and experienced negative cash flow since our inception. We incurred a net loss of $4,407,208 for the year ended

December 31, 2016 and $4,845,432 for the year ended December 31, 2015. We anticipate that we will continue to incur operating losses through at least 2016.

We may not be able to generate significant revenue either through development contracts from the U.S. government or government subcontractors or through customer contracts for our potential products or technologies. We expect to continue to make significant operating and capital expenditures for research and development and to improve and expand production, sales, marketing and administrative systems and processes. As a result, we will need to generate significant additional revenue to achieve profitability. We cannot assure you that we will ever achieve profitability.

We are subject to the risks frequently experienced by early stage companies.

The likelihood of our success must be considered in light of the risks frequently encountered by early stage companies, especially those formed to develop and market new technologies. These risks include our potential inability to:

- Establish product sales and marketing capabilities;
- Establish and maintain markets for our potential products;
- Identify, attract, retain and motivate qualified personnel;
- Continue to develop and upgrade our technologies to keep pace with changes in technology and the growth of markets using polymer based materials;
- Develop expanded product production facilities and outside contractor relationships;
- Maintain our reputation and build trust with customers;
- Scale up from small pilot or prototype quantities to large quantities of product on a consistent basis;
- Contract for or develop the internal skills needed to master large volume production of our products; and
- Fund the capital expenditures required to develop volume production due to the limits of our available financial resources.

If we fail to effectively manage our growth, and effectively transition from our focus on research and development activities to commercially successful products, our business could suffer.

Failure to manage growth of operations could harm our business. To date, a large number of our activities and resources have been directed at the research and development of our technologies and development of potential related products. The transition from a focus on research and development to being a vendor of products requires effective planning and management. Additionally, growth arising from the expected synergies from future acquisitions will require effective planning and management. Future expansion will be expensive and will likely strain management and other resources.

In order to effectively manage growth, we must:

- Continue to develop an effective planning and management process to implement our business strategy;
- Hire, train and integrate new personnel in all areas of our business; and
- Expand our facilities and increase capital investments.

We cannot assure you that we will be able to accomplish these tasks effectively or otherwise effectively manage our growth.

We will require additional capital to continue to fund our operations and if we do not obtain additional capital, we may be required to substantially limit our operations.

Our business does not presently generate the cash needed to finance our current and anticipated operations. Based on our current operating plan and budgeted cash requirements, we believe that we have sufficient funds to finance our operations through September 2017; however, we will need to obtain additional future financing after that time to finance our operations until such time that we can conduct profitable revenue-generating activities. We expect that we will need to seek additional funding through public or private financings, including equity financings, and through other arrangements, including collaborative arrangements. Poor financial results, unanticipated expenses or unanticipated opportunities could require additional financing sooner than we expect. Other than with respect to the purchase agreement (the Purchase Agreement) we entered into with Lincoln Park Capital Fund, LLC (Lincoln Park), we have no plans or arrangements with respect to the possible acquisition of additional financing, and such financing may be unavailable when we need it or may not be available on acceptable terms.

Our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors, including the factors discussed elsewhere in this annual report. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect.

Additional financing may not be available to us, due to, among other things, our Company not having a sufficient credit history, income stream, profit level, asset base eligible to be collateralized, or market for its securities. If we raise additional funds by issuing equity or convertible debt securities, the percentage ownership of our existing shareholders may be reduced, and these securities may have rights superior to those of our common stock. If adequate funds are not available to satisfy our long-term capital requirements, or if planned revenues are not generated, we may be required to substantially limit our operations.

We are entering new markets, and if we fail to accurately predict growth in these new markets, we may suffer substantial losses.

We are devoting significant resources to engineer next-generation organic nonlinear optical materials and devices for future applications to be utilized by electro-optic device manufacturers, such as telecommunications component and systems manufacturers, networking and switching suppliers, semiconductor companies, aerospace companies and government agencies as well as the our proprietary photonic devices. We expect to continue to develop products for these markets and to seek to identify new markets. These markets change rapidly and we cannot assure you that they will grow or that we will be able to accurately forecast market demand, or lack thereof, in time to respond appropriately. Our investment of resources to develop products for these markets may either be insufficient to meet actual demand or result in expenses that are excessive in light of actual sales volumes. Failure to predict growth and demand accurately in new markets may cause us to suffer substantial losses. In addition, as we enter new markets, there is a significant risk that:

- The market may not accept the price and/or performance of our products;
- There may be issued patents we are not aware of that could block our entry into the market or could result in excessive litigation; and
- The time required for us to achieve market acceptance of our products may exceed our capital resources that would require additional investment.

Our plan to develop relationships with strategic partners may not be successful.

Part of our business strategy is to maintain and develop strategic relationships with government agencies, private firms, and academic institutions to conduct research and development of technologies and products. For these efforts to be successful, we must identify partners whose competencies complement ours. We must also successfully enter into agreements with them on terms attractive to us, and integrate and coordinate their resources and capabilities with our own. We may be unsuccessful in entering into agreements with acceptable partners or negotiating favorable terms in these agreements. Also, we may be unsuccessful in integrating the resources or capabilities of these partners. In addition, our strategic partners may prove difficult to work with or less skilled than we originally expected. If we are unsuccessful in our collaborative efforts, our ability to develop and market products could be severely limited.

The failure to establish and maintain collaborative relationships may have a materially adverse affect on our business.

We plan to sell many of our products directly to commercial customers or through potential industry partners. For example, we expect to sell our proprietary electro-optic polymer systems to electro-optic device manufacturers, such as telecommunications component and systems manufacturers, networking and switching suppliers, semiconductor companies, aerospace companies and government agencies. Our ability to generate revenues depends significantly on the extent to which potential customers and other potential industry partners develop, promote and sell systems that incorporate our products, which, of course, we cannot control. Any failure by potential customers and other potential industry partners to successfully develop and market systems that incorporate our products could adversely affect our sales. The extent to which potential customers and other industry partners develop, promote and sell systems incorporating our products is based on a number of factors that are largely beyond our ability to control.

We may participate in joint ventures that expose us to operational and financial risk.

We may participate in one or more joint ventures for the purpose of assisting us in carrying out our business expansion, especially with respect to new product and/or market development. We may experience with our joint venture partner(s) issues relating to disparate communication, culture, strategy, and resources. Further, our joint venture partner(s) may have economic or business interests or goals that are inconsistent with ours, exercise their rights in a way that prohibits us from acting in a manner which we would like or they may be unable or unwilling to fulfill their obligations under the joint venture or other agreements. We cannot assure you that the actions or decisions of our joint venture partners will not affect our operations in a way that hinders our corporate objectives or reduces any anticipated cost savings or revenue enhancement resulting from these ventures.

If we fail to develop and introduce new or enhanced products on a timely basis, our ability to attract and retain customers could be impaired and our competitive position could be harmed.

We plan to operate in a dynamic environment characterized by rapidly changing technologies and industry standards and technological obsolescence. To compete successfully, we must design, develop, market and sell products that provide increasingly higher levels of performance and reliability and meet the cost expectations of our customers. The introduction of new products by our competitors, the market acceptance of products based on new or alternative technologies, or the emergence of new industry standards could render our anticipated products obsolete. Our failure to anticipate or timely develop products or technologies in response to technological shifts could adversely affect our operations. In particular, we may experience difficulties with product design, manufacturing, marketing or certification that could delay or prevent our development, introduction or marketing of products. If we fail to introduce products that meet the needs of our customers or penetrate new markets in a timely fashion our Company will be adversely affected.

Our future growth will suffer if we do not achieve sufficient market acceptance of our organic nonlinear optical material products or our proprietary photonic devices.

We are developing our proprietary electro-optic polymer systems to be utilized by electro-optic device manufacturers, such as telecommunications component and systems manufacturers, networking and switching suppliers, semiconductor companies, aerospace companies and government agencies, as well as our proprietary photonic devices. All of our potential products are still in the development stage, and we do not know when a market for these products will develop, if at all. Our success depends, in part, upon our ability to gain market acceptance of our products. To be accepted, our products must meet the technical and performance requirements of our potential customers. OEMs, suppliers or government agencies may not accept polymer-based products. In addition, even if we achieve some degree of market acceptance for our potential products in one industry, we may not achieve market acceptance in other industries for which we are developing products.

Achieving market acceptance for our products will require marketing efforts and the expenditure of financial and other resources to create product awareness and demand by customers. We may be unable to offer products that compete effectively due to our limited resources and operating history. Also, certain large corporations may be predisposed against doing business with a company of our limited size and operating history. Failure to achieve broad acceptance of our products by customers and to compete effectively would harm our operating results.

Our potential customers require our products to undergo a lengthy and expensive qualification process, which does not assure product sales.

Prior to purchasing our products, our potential customers will require that our products undergo extensive qualification processes. These qualification processes may continue for several months or more. However, qualification of a product by a customer does not assure any sales of the product to that customer. Even after successful qualification and sales of a product to a customer, a subsequent revision to the product, changes in our customer s manufacturing process or our selection of a new supplier may require a new qualification process, which may result in additional delays. Also, once one of our products is qualified, it could take several additional months or more before a customer commences volume production of components or devices that incorporate our products. Despite these uncertainties, we are devoting substantial resources, including design, engineering, sales, marketing and management efforts, to qualifying our products with customers in anticipation of sales. If we are unsuccessful or delayed in qualifying any of our products with a customer, sales of our products to a customer may be precluded or delayed, which may impede our growth and cause our business to suffer.

Obtaining a sales contract with a potential customer does not guarantee that a potential customer will not decide to cancel or change its product plans, which could cause us to generate no revenue from a product and adversely affect our results of operations.

Even after we secure a sales contract with a potential customer, we may experience delays in generating revenue from our products as a result of a lengthy development cycle that may be required. Potential customers will likely take a considerable amount of time to evaluate our products; it could take 12 to 24 months from early engagement by our sales team to actual product sales. The delays inherent in these lengthy sales cycles increase the risk that a customer will decide to cancel, curtail, reduce or delay its product plans, causing us to lose anticipated sales. In addition, any delay or cancellation of a customer s plans could materially and adversely affect our financial results, as we may have incurred significant expense and generated no revenue. Finally, our customers failure to successfully market and sell their products could reduce demand for our products and materially and adversely affect our business, financial condition and results of operations. If we were unable to generate revenue after incurring substantial expenses to develop any of our products, our business would suffer.

Many of our products will have long sales cycles, which may cause us to expend resources without an acceptable financial return and which makes it difficult to plan our expenses and forecast our revenue.

Many of our products will have long sales cycles that involve numerous steps, including initial customer contacts, specification writing, engineering design, prototype fabrication, pilot testing, regulatory approvals (if needed), sales and marketing and commercial manufacture. During this time, we may expend substantial financial resources and management time and effort without any assurance that product sales will result. The anticipated long sales cycle for some of our products makes it difficult to predict the quarter in which sales may occur. Delays in sales may cause us to expend resources without an acceptable financial return and make it difficult to plan expenses and forecast revenues.

Successful commercialization of our current and future products will require us to maintain a high level of technical expertise.

Technology in our target markets is undergoing rapid change. To succeed in our target markets, we will have to establish and maintain a leadership position in the technology supporting those markets. Accordingly, our success will depend on our ability to:

- Accurately predict the needs of our target customers and develop, in a timely manner, the technology required to support those needs;
- Provide products that are not only technologically sophisticated but are also available at a price acceptable to customers and competitive with comparable products;
- Establish and effectively defend our intellectual property; and
- Enter into relationships with other companies that have developed complementary technology into which our products may be integrated.

We cannot assure you that we will be able to achieve any of these objectives.

Two of our significant target markets are the telecommunications and networking markets, which are subject to slow growth and overcapacity.

Two of our significant target markets are the telecommunications and networking markets, and developments that adversely affect the telecommunications or networking markets, including delays in traffic growth and changes in U.S. government regulation, could slow down, or even halt our efforts to enter into these markets. Reduced spending and technology investment by telecommunications companies may make it more difficult for our products to gain market acceptance. Such companies may be less willing to purchase new technology such as ours or invest in new technology development when they have reduced capital expenditure budgets.

Our inability to successfully acquire and integrate other businesses, assets, products or technologies could harm our business and cause us to fail at achieving our anticipated growth.

We may grow our business through strategic acquisitions and investments and we are actively evaluating acquisitions and strategic investments in businesses, products or technologies that we believe could complement or expand our product offering, create and/or expand a client base, enhance our technical capabilities or otherwise offer growth or cost-saving opportunities. From time to time, we may enter into letters of intent with companies with which we are negotiating potential acquisitions or investments or as to which we are conducting due diligence. Although we are currently not a party to any binding definitive agreement with respect to potential investments in, or acquisitions of, complementary businesses, products or technologies, we may enter into these types of arrangements in the future, which could materially decrease the amount of our available cash or require us to seek additional equity or debt financing. We have limited experience in successfully acquiring and integrating businesses, products and technologies. We may not be successful in negotiating the terms of any potential acquisition, conducting thorough due diligence, financing the acquisition or effectively integrating the acquired business, product or technology into our existing business and operations. Our due diligence may fail to identify all of the problems, liabilities or other shortcomings or challenges of an acquired business, product or technology, including issues related to intellectual property, product quality or product architecture, regulatory compliance practices, revenue recognition or other accounting practices, or employee or customer issues.

Additionally, in connection with any acquisitions we complete, we may not achieve the synergies or other benefits we expected to achieve, and we may incur write-downs, impairment charges or unforeseen liabilities that could negatively affect our operating results or financial position or could otherwise harm our business. If we finance acquisitions using existing cash, the reduction of our available cash could cause us to face liquidity issues or cause other unanticipated problems in the future. If we finance acquisitions by issuing convertible debt or equity securities, the ownership interest of our existing stockholders may be diluted, which could adversely affect the market price of our stock.

Further, contemplating or completing an acquisition and integrating an acquired business, product or technology could divert management and employee time and resources from other matters, which could harm our business, financial condition and operating results.

We may not be able to access the full amounts available under the Lincoln Park Purchase Agreement, which could prevent us from accessing the capital we need to continue our operations that could have an adverse affect on our business.

Under the purchase agreement (the **Purchase Agreement**) we entered into with Lincoln Park Capital Fund, LLC (Lincoln Park), we may direct Lincoln Park to purchase up to $20,000,000 worth of shares of our common stock over a 36-month period. On any trading day selected by us, we may sell shares of common stock to Lincoln Park in amounts up to 100,000 shares per regular sale (Regular Purchases), which may be increased to up to 200,000 shares depending on certain conditions as set forth in the Purchase Agreement, up to the aggregate commitment of $20,000,000. If the market price of our common stock is not below $1.00 per share on the purchase date, then the Regular Purchase amount may be increased to 150,000 shares. If the market price is not below $1.50 per share on the purchase date, then the Regular Purchase amount may be increased to 200,000 shares. Although there are no upper limits on the per share price Lincoln Park may pay to purchase our common stock, the Company may not sell more than $500,000 in shares of common stock to Lincoln Park per Regular Purchase.

In addition to Regular Purchases, we may in our sole discretion direct Lincoln Park on each purchase date to make accelerated purchases on the following business day up to the lesser of (i) two (2) times the number of shares purchased pursuant to such Regular Purchase or (ii) 30% of the trading volume on the accelerated purchase date at a purchase price equal to the lesser of (i) the closing sale price on the accelerated purchase date and (ii) 95% of the accelerated purchase date s volume weighted average price.

The purchase price of the shares related to the Purchase Agreement will be based on the prevailing market prices of the Company s shares of common stock, which shall be equal to the lesser of the lowest sale price of the common shares during the purchase date and the average of the three (3) lowest closing sale prices of the common shares during the twelve (12) business days prior to the purchase date without any fixed discount.

Depending on the prevailing market price of our common stock, we may not be able to sell shares to Lincoln Park for the maximum $20,000,000 over the term of the Purchase Agreement.

The sale of shares of our common stock to Lincoln Park under the Purchase Agreement may cause substantial dilution to our existing stockholders and could cause the price of our common stock to decline.

Under the Purchase Agreement, we may sell to Lincoln Park, from time to time and under certain circumstances, up to $20,000,000 of our common stock over approximately 36 months subsequent to the effective date of the registration statement that covers the resale by Lincoln Park of up to 5,000,000 shares of our common stock. We may be required to file and have declared effective one or more additional registration statements to cover the resale by Lincoln Park of additional shares of our common stock that we may sell and issue to Lincoln Park. Generally, with respect to the Purchase Agreement, we have the right, but no obligation, to direct Lincoln Park to periodically purchase up to $20,000,000 of our common stock in specific amounts under certain conditions, which periodic purchase amounts can be increased under specified circumstances.

We also agreed to issue to Lincoln Park up to an aggregate of 1,000,000 shares of common stock as a fee for Lincoln Park s commitment to purchase our shares under the Purchase Agreement. Of these commitment shares, we issued 350,000 shares upon entering into the Purchase Agreement. The remaining 650,000 commitment shares are issuable to Lincoln Park on a pro rata basis as additional purchases are made under the Purchase Agreement.

Depending upon market liquidity at the time, sales of shares of our common stock to Lincoln Park may cause the trading price of our common stock to decline. Lincoln Park may ultimately purchase all, some or none of the $20,000,000 of common stock under the Purchase Agreement, and after it has acquired shares, Lincoln Park may sell all, some or none of those shares. Therefore, sales to Lincoln Park by us could result in substantial dilution to the interests of other holders of our common stock. The sale of a substantial number of shares of our common stock to Lincoln Park, or the anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales. However, we have the right to control the timing and amount of any sales of our shares to Lincoln Park, and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

The exercise of options and warrants and other issuances of shares of common stock or securities convertible into common stock will dilute your interest.

As of December 31, 2016, we have outstanding options and warrants to purchase an aggregate of 18,101,367 shares of our common stock at exercise prices ranging from $0.57 - $1.69 per share with a weighted average exercise price of $0.90 per share. The exercise of options and warrants at prices below the market price of our common stock could adversely affect the price of shares of our common stock. Additional dilution may result from the issuance of shares of our capital stock in connection with any collaboration (although none are contemplated at this time) or in connection with other financing efforts, including pursuant to the Purchase Agreement with Lincoln Park.

Any issuance of our common stock that is not made solely to then-existing stockholders proportionate to their interests, such as in the case of a stock dividend or stock split, will result in dilution to each stockholder by reducing his, her or its percentage ownership of the total outstanding shares. Moreover, if we issue options or warrants to purchase our common stock in the future and those options or warrants are exercised or we issue restricted stock, stockholders may experience further dilution. Holders of shares of our common stock have no preemptive rights that entitle them to purchase their pro rata share of any offering of shares of any class or series.

We may incur debt in the future that might be secured with our intellectual property as collateral, which could subject our Company to the risk of loss of all of our intellectual property.

If we incur debt in the future, we may be required to secure the debt with our intellectual property, including all of our patents and patents pending. In the event we default on the debt, we could incur the loss of all of our intellectual property, which would materially and adversely affect our Company and cause you to lose your entire investment in our Company.

Our quarter-to-quarter performance may vary substantially, and this variance, as well as general market conditions, may cause our stock price to fluctuate greatly and even potentially expose us to litigation.

We have generated no significant sales to date and we cannot accurately estimate future quarterly revenue and operating expenses based on historical performance. Our quarterly operating results may vary significantly based on many factors, including:

- Fluctuating demand for our potential products and technologies;
- Announcements or implementation by our competitors of technological innovations or new products;
- Amount and timing of our costs related to our marketing efforts or other initiatives;
- The status of particular development programs and the timing of performance under specific development agreements;
- Timing and amounts relating to the expansion of our operations;
- Product shortages requiring suppliers to allocate minimum quantities;
- Announcements or implementation by our competitors of technological innovations or new products;
- The status of particular development programs and the timing of performance under specific development agreements;
- Our ability to enter into, renegotiate or renew key agreements;
- Timing and amounts relating to the expansion of our operations;
- Costs related to possible future acquisitions of technologies or businesses; or
- Economic conditions specific to our industry, as well as general economic conditions.

Our current and future expense estimates are based, in large part, on estimates of future revenue, which is difficult to predict. We expect to continue to make significant operating and capital expenditures in the area of research and development and to invest in and expand production, sales, marketing and administrative systems and processes. We may be unable to, or may elect not to, adjust spending quickly enough to offset any unexpected revenue shortfall. If our increased expenses were not accompanied by increased revenue in the same quarter, our quarterly operating results would be harmed.

Our failure to compete successfully could harm our business.

The markets that we are targeting for our proprietary electro-optic polymer systems and photonic devices are intensely competitive. Most of our present and potential competitors have or may have substantially greater research and product development capabilities, financial, scientific, marketing, manufacturing and human resources, name recognition and experience than we have. As a result, these competitors may:

- Succeed in developing products that are equal to or superior to our potential products or that will achieve greater market acceptance than our potential products;
- Devote greater resources to developing, marketing or selling their products;
- Respond more quickly to new or emerging technologies or scientific advances and changes in customer requirements, which could render our technologies or potential products obsolete;
- Introduce products that make the continued development of our potential products uneconomical;
- Obtain patents that block or otherwise inhibit our ability to develop and commercialize our potential products;
- Withstand price competition more successfully than we can;
- Establish cooperative relationships among themselves or with third parties that enhance their ability to address the needs of our prospective customers.

The failure to compete successfully against these existing or future competitors could harm our business.

We may be unable to obtain effective intellectual property protection for our potential products and technology.

Our intellectual property, or any intellectual property that we have or may acquire, license or develop in the future, may not provide meaningful competitive advantages. Our patents and patent applications, including those we license, may be challenged by competitors, and the rights granted under such patents or patent applications may not provide meaningful proprietary protection. For example, numerous patents held by third parties relate to polymer materials and electro-optic devices. These patents could be used as a basis to challenge the validity or limit the scope of our patents or patent applications. A successful challenge to the validity or limitation of the scope of our patents or patent applications could limit our ability to commercialize our polymer materials technology and, consequently, reduce our revenues.

Moreover, competitors may infringe our patents or those that we license, or successfully avoid these patents through design innovation. To combat infringement or unauthorized use, we may need to resort to litigation, which can be expensive and time-consuming and may not succeed in protecting our proprietary rights. In addition, in an infringement proceeding a court may decide that our patents or other intellectual property rights are not valid or are unenforceable, or may refuse to stop the other party from using the intellectual property at issue on the ground that it is non-infringing. Policing unauthorized use of our intellectual property is difficult and expensive, and we may not be able to, or have the resources to, prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect these rights as fully as the laws of the United States.

We also rely on the law of trade secrets to protect unpatented technology and know-how. We try to protect this technology and know-how by limiting access to those employees, contractors and strategic partners with a need to know this information and by entering into confidentiality agreements with these parties. Any of these parties could breach the agreements and disclose our trade secrets or confidential information to our competitors, or these competitors might learn of the information in other ways. Disclosure of any trade secret not protected by a patent could materially harm our business.

We may be subject to patent infringement claims, which could result in substantial costs and liability and prevent us from commercializing our potential products.

Third parties may claim that our potential products or related technologies infringe their patents. Any patent infringement claims brought against us may cause us to incur significant expenses, divert the attention of our management and key personnel from other business concerns and, if successfully asserted against us, require us to pay substantial damages. In addition, as a result of a patent infringement suit, we may be forced to stop or delay developing, manufacturing or selling potential products that are claimed to infringe a patent covering a third party's intellectual property unless that party grants us rights to use its intellectual property. We may be unable to obtain these rights on terms acceptable to us, if at all. Even if we are able to obtain rights to a third party's patented intellectual property, these rights may be non-exclusive, and therefore our competitors may obtain access to the same intellectual property. Ultimately, we may be unable to commercialize our potential products or may have to cease some of our business operations as a result of patent infringement claims, which could severely harm our business.

If our potential products infringe the intellectual property rights of others, we may be required to indemnify customers for any damages they suffer. Third parties may assert infringement claims against our current or potential customers. These claims may require us to initiate or defend protracted and costly litigation on behalf of customers, regardless of the merits of these claims. If any of these claims succeed, we may be forced to pay damages on behalf of these customers or may be required to obtain licenses for the products they use. If we cannot obtain all necessary licenses on commercially reasonable terms, we may be unable to continue selling such products.

Our technology may be subject to government rights.

We may have obligations to government agencies in connection with the technology that we have developed, including the right to require that a compulsory license be granted to one or more third parties selected by certain government agencies. It may be difficult to monitor whether these third parties will limit their use of our technology to these licensed uses, and we could incur substantial expenses to enforce our rights to our licensed technology in the event of misuse.

The loss of certain of our key personnel, or any inability to attract and retain additional personnel, could impair our ability to attain our business objectives.

Our future success depends to a significant extent on the continued service of our key management personnel, particularly Thomas E. Zelibor, our Chief Executive Officer and Chair of the Board of Directors and James S. Marcelli our President and Chief Operating Officer. Accordingly, the loss of the services of either of these persons would adversely affect our business and our ability to timely commercialize our products, and impede the attainment of our business objectives.

Our future success will also depend on our ability to attract, retain and motivate highly skilled personnel to assist us with product development and commercialization. Competition for highly educated qualified personnel in the polymer industry is intense. If we fail to hire and retain a sufficient number of qualified management, engineering, sales and technical personnel, we will not be able to attain our business objectives.

If we fail to develop and maintain the quality of our manufacturing processes, our operating results would be harmed.

The manufacture of our potential products is a multi-stage process that requires the use of high-quality materials and advanced manufacturing technologies. Also, polymer-related device development and manufacturing must occur in a highly controlled, clean environment to minimize particles and other yield and quality-limiting contaminants. In spite of stringent quality controls, weaknesses in process control or minute impurities in materials may cause a substantial percentage of a product in a lot to be defective. If we are not able to develop and continue to improve on our manufacturing processes or to maintain stringent quality controls, or if contamination problems arise, our operating results would be harmed.

The complexity of our anticipated products may lead to errors, defects and bugs, which could result in the necessity to redesign products and could negatively, impact our reputation with customers.

Products as complex as those we intend to market might contain errors, defects and bugs when first introduced or as new versions are released. Delivery of products with production defects or reliability, quality or compatibility problems could significantly delay or hinder market acceptance of our products or result in a costly recall and could damage our reputation and adversely affect our ability to sell our products. If our products experience defects, we may need to undertake a redesign of the product, a process that may result in significant additional expenses.

We may also be required to make significant expenditures of capital and resources to resolve such problems. There is no assurance that problems will not be found in new products after commencement of commercial production, despite testing by our suppliers, our customers and us.

If we decide to make commercial quantities of products at our facilities, we will be required to make significant capital expenditures to increase capacity.

We lack the internal ability to manufacture products at a level beyond the stage of early commercial introduction. To the extent we do not have an outside vendor to manufacture our products, we will have to increase our internal production capacity and we will be required to expand our existing facilities or to lease new facilities or to acquire entities with additional production capacities. These activities would require us to make significant capital investments and may require us to seek additional equity or debt financing. We cannot assure you that such financing would be available to us when needed on acceptable terms, or at all. Further, we cannot assure you that any increased demand for our potential products would continue for a sufficient period of time to recoup our capital investments associated with increasing our internal production capacity.

In addition, we do not have experience manufacturing our potential products in large quantities. In the event of significant demand for our potential products, large-scale production might prove more difficult or costly than we anticipate and lead to quality control issues and production delays.

We may not be able to manufacture products at competitive prices.

To date, we have produced limited quantities of products for research, development, demonstration and prototype purposes. The cost per unit for these products currently exceeds the price at which we could expect to profitably sell them. If we cannot substantially lower our cost of production as we move into sales of products in commercial quantities, our financial results will be harmed.

We conduct significantly all of our research and development activities at a limited number of facilities, and circumstances beyond our control may result in considerable interruptions.

We conduct significantly all of our research and development activities at a limited number of facilities. A disaster such as a fire, flood or severe storm at or near one of our facilities could prevent us from further developing our technologies or manufacturing our potential products, which would harm our business.

We are subject to regulatory compliance related to our operations.

We are subject to various U.S. governmental regulations related to occupational safety and health, labor and business practices. Failure to comply with current or future regulations could result in the imposition of substantial fines, suspension of production, alterations of our production processes, cessation of operations, or other actions, which could harm our business.

We may be unable to export our potential products or technology to other countries, convey information about our technology to citizens of other countries or sell certain products commercially, if the products or technology are subject to United States export or other regulations.

We are developing certain polymer-based products that we believe the United States government and other governments may be interested in using for military and information gathering or antiterrorism activities. United States government export regulations may restrict us from selling or exporting these potential products into other countries, exporting our technology to those countries, conveying information about our technology to citizens of other countries or selling these potential products to commercial customers. We may be unable to obtain export licenses for products or technology if necessary. We currently cannot assess whether national security concerns would affect our potential products and, if so, what procedures and policies we would have to adopt to comply with applicable existing or future regulations.

We may incur liability arising from the use of hazardous materials.

Our business and our facilities are subject to a number of federal, state and local laws and regulations relating to the generation, handling, treatment, storage and disposal of certain toxic or hazardous materials and waste products that we use or generate in our operations. Many of these environmental laws and regulations subject current or previous owners or occupiers of land to liability for the costs of investigation, removal or remediation of hazardous materials. In addition, these laws and regulations typically impose liability regardless of whether the owner or occupier knew of, or was responsible for, the presence of any hazardous materials and regardless of whether the actions that led to the presence were taken in compliance with the law. In our business, we use hazardous materials that are stored on site. We use various chemicals in our manufacturing process that may be toxic and covered by various environmental controls. An unaffiliated waste hauler transports the waste created by use of these materials off-site. Many environmental laws and regulations require generators of waste to take remedial actions at an off-site disposal location even if the disposal was conducted lawfully. The requirements of these laws and regulations are complex, change frequently and could become more stringent in the future. Failure to comply with current or future environmental laws and regulations could result in the imposition of substantial fines, suspension of production, alteration of our production processes, cessation of operations or other actions, which could severely harm our business.

Our data and information systems and network infrastructure may be subject to hacking or other cyber security threats. If our security measures are breached and an unauthorized party obtains access to our proprietary business information, our information systems may be perceived as being unsecure, which could harm our business and reputation, and our proprietary business information could be misappropriated which could have an adverse effect on our business and results of operations.

Our Company stores and transmits its proprietary information on its computer systems. We have offices and research and development facilities in Colorado and Delaware, and our operations are dependent upon the connectivity and continuity of our facilities and operations. Despite our security measures, our information systems and network infrastructure may be vulnerable to cyber-attacks or could be breached due to an employee error or other disruption that could result in unauthorized disclosure of sensitive information that has the potential to significantly interfere with our business operations. Breaches of our security measures could expose us to a risk of loss or misuse of this information, litigation and potential liability. Since techniques used to obtain unauthorized access or to sabotage information systems change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventive measures in advance of such an attack on our systems. In addition, we use a vendor that uses cyber or Cloud storage of information as part of their service or product offerings, and despite our attempts to validate the security of such services, our proprietary information may be misappropriated by third parties. In the event of an actual or perceived breach of our security, or the security of one of our vendors, the market perception of the effectiveness of our security measures could be harmed and we could suffer damage to our reputation or our business. Additionally, misappropriation of our proprietary business information could prove competitively harmful to our business.

A material weakness in internal controls may remain undetected for a longer period because of our Company's exemption from the auditor attestation requirements under Section 404(b) of Sarbanes-Oxley.

Our annual report does not include an attestation report of the Company s independent registered public accounting firm regarding internal control over financial reporting. Management s report was not subject to attestation by the Company s registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit the Company to provide only management s attestation in this annual report. As a result, a material weakness in our internal controls may remain undetected for a longer period.

Shares eligible for future sale may adversely affect the market.

From time to time, certain of the Company s shareholders may be eligible to sell all or some of their shares of common stock by means of ordinary brokerage transactions in the open market pursuant to Rule 144, promulgated under the Securities Act of 1933, as amended (the Securities Act), subject to certain limitations. In general, a non-affiliate stockholder who has satisfied a six-month holding period may, under certain circumstances, sell its shares, without limitation. Any substantial sale of the Company s common stock pursuant to Rule 144 or pursuant to any resale prospectus may have a material adverse effect on the market price of our common stock.

There is a limited market for our common stock, which may make it more difficult for you to sell your stock.

Our Company s common stock is quoted on the OTC Market (OTCQB) under the symbol "LWLG." The trading market for our common stock is limited, accordingly, there can be no assurance as to the liquidity of any markets that may develop for our common stock, your ability to sell our common stock, or the prices at which you may be able to sell our common stock.

We are subject to the penny stock rules and brokers cannot generally solicit the purchase of our common stock, which adversely affects its liquidity and market price.

The SEC has adopted regulations that generally define penny stock to be an equity security that has a market price of less than $5.00 per share, subject to specific exemptions. The market price of our common stock on the over-the-counter market has been substantially less than $5.00 per share and therefore we are currently considered a penny stock according to SEC rules. This designation requires any broker-dealer selling these securities to disclose certain information concerning the transaction, obtain a written agreement from the purchaser and determine that the purchaser is reasonably suitable to purchase the securities. These rules limit the ability of broker-dealers to solicit purchases of our common stock and therefore reduce the liquidity of the public market for our shares.

Our Company s stock price may be volatile.

The market price of our Company s common stock is likely to be highly volatile and could fluctuate widely in price in response to various factors, many of which are beyond our control, including:

- Technological innovations or new products and services by our Company or our competitors;
- Additions or departures of key personnel;
- Sales of our Company's common stock;
- Our Company's ability to integrate operations, technology, products and services;
- Our Company's ability to execute our business plan;
- Operating results below expectations;
- Loss of any strategic relationship;
- Industry developments
- Economic and other external factors; and
- Period-to-period fluctuations in our Company s financial results.

Because we have a limited operating history, you may consider any one of these factors to be material. Our stock price may fluctuate widely as a result of any of the above listed factors.

In addition, the securities markets have from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. These market fluctuations may also materially and adversely affect the market price of our Company s common stock.

Our board of directors has the authority, without stockholder approval, to issue preferred stock with terms that may not be beneficial to existing common stockholders and with the ability to affect adversely stockholder voting power and perpetuate their control over us.

Our certificate of incorporation allows us to issue shares of preferred stock without any vote or further action by our stockholders. Our board of directors has the authority to fix and determine the relative rights and preferences of preferred stock. Our board of directors also has the authority to issue preferred stock without further stockholder approval, including large blocks of preferred stock. As a result, our board of directors could authorize the issuance of a series of preferred stock that would grant to holders thereof the preferred right to our assets upon liquidation, the right to receive dividend payments before dividends are distributed to the holders of common stock or other preferred stockholders and the right to the redemption of the shares, together with a premium, prior to the redemption of our common stock or existing preferred stock, if any.

Preferred stock could be used to dilute a potential hostile acquirer. Accordingly, any future issuance of preferred stock or any rights to purchase preferred stock may have the effect of making it more difficult for a third party to acquire control of us. This may delay, defer or prevent a change of control or an unsolicited acquisition proposal. The issuance of preferred stock also could decrease the amount of earnings attributable to, and assets available for distribution to, the holders of our common stock and could adversely affect the rights and powers, including voting rights, of the holders of our common stock and preferred stock.

Our articles of incorporation and bylaws, and certain provisions of Nevada corporate law, as well as certain of our contracts, contain provisions that could delay or prevent a change in control even if the change in control would be beneficial to our stockholders.

Nevada law, as well as our amended certificate of incorporation and bylaws, contains anti-takeover provisions that could delay or prevent a change in control of our Company, even if the change in control would be beneficial to our stockholders. These provisions could lower the price that future investors might be willing to pay for shares of our common stock. These anti-takeover provisions:

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authorize our board of directors to create and issue, without stockholder approval, preferred stock, thereby increasing the number of outstanding shares, which can deter or prevent a takeover attempt;

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prohibit cumulative voting in the election of directors, which would otherwise allow less than a majority of stockholders to elect director candidates;

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empower our board of directors to fill any vacancy on our board of directors, whether such vacancy occurs as a result of an increase in the number of directors or otherwise;

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provide that our board of directors be divided into three classes, with approximately one-third of the directors to be elected each year;

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provide that our board of directors is expressly authorized to adopt, amend or repeal our bylaws; and

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provide that our directors will be elected by a plurality of the votes cast in the election of directors.

Nevada Revised Statutes, the terms of our employee stock option agreements and other contractual provisions may also discourage, delay or prevent a change in control of our Company. Nevada Revised Statutes sections 78.378 to 78.3793 provide state regulation over the acquisition of a controlling interest in certain Nevada corporations unless the articles of incorporation or bylaws of the corporation provide that the provisions of these sections do not apply. Our articles of incorporation and bylaws do not state that these provisions do not apply. The statute creates a number of restrictions on the ability of a person or entity to acquire control of a Nevada company by setting down certain rules of conduct and voting restrictions in any acquisition attempt, among other things. The statute contains certain limitations and it may not apply to our Company. Our 2016 Equity Incentive Plan includes change-in-control provisions that allow us to grant options that may become vested immediately upon a change in control. Our board of directors also has the power to adopt a stockholder rights plan that could delay or prevent a change in control of our Company even if the change in control is generally beneficial to our stockholders. These plans, sometimes called poison pills, are oftentimes criticized by institutional investors or their advisors and could affect our rating by such investors or advisors. If our board of directors adopts such a plan, it might have the effect of reducing the price that new investors are willing to pay for shares of our common stock.

Together, these charter, statutory and contractual provisions could make the removal of our management and directors more difficult and may discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our common stock. Furthermore, the existence of the foregoing provisions, as well as the significant common stock beneficially owned by our founders, executive officers, and members of our board of directors, could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our Company, thereby reducing the likelihood that you could receive a premium for your common stock in an acquisition.

Item 1B. Unresolved Staff Comments.

Not Applicable

Item 2. Properties.

Our executive and business office headquarters are located at 1831 Lefthand Circle, Suite C, Longmont, CO 80501. We coordinate our operations, optical device design, optical laboratory, thin films laboratory and clean room, and market our services from this space. Our annual base rent for this space is $47,349.

We also lease approximately 2,000 square feet of laboratory space at 1 Innovation Way, Newark, Delaware 19711, which we utilize to operate an organic synthesis and thin-films laboratory. Our annual rent for this space is approximately $71,662.

Item 3. Legal Proceedings.

We are not aware of any litigation or threatened litigation of a material nature.

Item 4. Mine Safety Disclosures.

Not Applicable.

PART II

Item 5. Market For Registrant s Common Equity, Related Stockholder Matters and Issuer Purchases Of Equity Securities.

Market Information

Our common stock is traded on the OTCQB under the symbol LWLG . The following table set forth below lists the range of high and low bids for our common stock for our two most recent fiscal years. The prices in the table reflect inter-dealer prices, without retail markup, markdown or commission and may not represent actual transactions or a liquid trading market.

		High	Low
2015	1st Quarter	$1.02	$0.73
	2nd Quarter	$0.97	$0.68
	3rd Quarter	$0.79	$0.60
	4th Quarter	$0.87	$0.48
2016	1st Quarter	$0.687	$0.421
	2nd Quarter	$0.64	$0.512
	3rd Quarter	$0.8201	$0.63
	4th Quarter	$0.66	$0.5401

As of March 17, 2017, we have a total of 69,717,642 shares of common stock outstanding, held by approximately 127 record shareholders. We do not have any shares of preferred stock outstanding.

Dividends

No cash dividends have been declared or paid on our common stock to date. No restrictions limit our ability to pay dividends on our common stock. The payment of cash dividends in the future, if any, will be contingent upon our Company's revenues and earnings, if any, capital requirements and general financial condition. The payment of any dividends is within the discretion of our board of directors. Our board of director's present intention is to retain all earnings, if any, for use in our business operations and, accordingly, the board of directors does not anticipate paying any cash dividends in the foreseeable future.

Securities Authorized for Issuance under Equity Compensation Plans

Equity Compensation Plans as of December 31, 2016.

Equity Compensation Plan Information

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders (1)	5,637,500 (1)	$0.82	2,720,000
Equity compensation plans not approved by security holders (2)	1,462,500	$0.78	0
Total	7,100,000	$0.81	2,720,000

1. Reflects shares issued pursuant to our 2007 Employee Stock Plan and our 2016 Equity Incentive Plan, both of which are for the benefit of our directors, officers, employees and consultants. We have reserved 3,000,000 shares of common stock for such persons pursuant to our 2016 Equity Incentive Plan. On June 24, 2016, we terminated our 2007 Employee Stock Plan, except as to options to acquire up to 5,738,050 shares of common stock outstanding on that date, and no further awards are made under that plan.
2. Comprised of common stock purchase warrants we issued for services.

Penny Stock Regulations and Restrictions on Marketability

The SEC has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a market price of less than $5.00, other than securities registered on certain national securities exchanges or quoted on the NASDAQ system, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system. The penny stock rules require a broker-dealer, prior to a transaction in a penny stock, to deliver a standardized risk disclosure document prepared by the SEC, that: (a) contains a description of the nature and level of risk in the market for penny stocks in both public offerings and secondary trading; (b) contains a description of the broker's or dealer's duties to the customer and of the rights and remedies available to the customer with respect to a violation of such duties or other requirements of the securities laws; (c) contains a brief, clear, narrative description of a dealer market, including bid and ask prices for penny stocks and the significance of the spread between the bid and ask price; (d) contains a toll-free telephone number for inquiries on disciplinary actions; (e) defines significant terms in the disclosure document or in the conduct of trading in penny stocks; and (f) contains such other information and is in such form, including language, type size and format, as the SEC shall require by rule or regulation.

The broker-dealer also must provide, prior to effecting any transaction in a penny stock, the customer with (a) bid and offer quotations for the penny stock; (b) the compensation of the broker-dealer and its salesperson in the transaction; (c) the number of shares to which such bid and ask prices apply, or other comparable information relating to the depth and liquidity of the market for such stock; and (d) a monthly account statement showing the market value of each penny stock held in the customer's account.

In addition, the penny stock rules require that prior to a transaction in a penny stock not otherwise exempt from those rules, the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser's written acknowledgment of the receipt of a risk disclosure statement, a written agreement as to transactions involving penny stocks, and a signed and dated copy of a written suitability statement.

These disclosure requirements may have the effect of reducing the trading activity for our common stock. Therefore, stockholders may have difficulty selling our securities.

Recent Sales of Unregistered Securities

During the period covered by this report, our Company has sold the following securities without registering the securities under the Securities Act:

Securities issued for services

Date	Security
January 2016	Warrant right to buy 125,000 shares of common stock at $.60 per share issued for services.
Jan. March 2016	Common Stock 10,282 shares of common stock at average price of $.583 per share issued for services.
April June 2016	Common Stock 10,145 shares of common stock at average price of $.59 per share issued for services.
July 2016	Warrant right to buy 150,000 shares of common stock at $.63 per share issued for services.
July Sept. 2016	Common Stock 8,517 shares of common stock at average price of $.70 per share issued for services.
November 2016	Warrants right to buy 350,000 shares of common stock at $.615 per share issued for services.
Oct Dec. 2016	Common Stock 9,551 shares of common stock at average price of $.628 per share issued for services.

Securities issued pursuant to our Employee Stock Plan

Date	Security	
February 2016	Option	right to buy 300,000 shares of common stock at $0.68 per share issued for services.
May 2016	Option	right to buy 205,000 shares of common stock at $0.60 per share issued for services.
July 2016	Option	right to buy 15,000 shares of common stock at $0.63 per share issued for services.
November 2016	Option	right to buy 15,000 shares of common stock at $0.60 per share issued for services.
December 2016	Option	right to buy 250,000 shares of common stock at $0.565 per share issued for services.

No underwriters were utilized and no commissions or fees were paid with respect to any of the above transactions. These persons were the only offerees in connection with these transactions. We relied on Section 4(a)(2), 4(a)(5) and Rule 506 of Regulation D of the Securities Act since the transaction does not involve any public offering.

Item 6. Selected Financial Data.

Not Applicable.

Item 7. MANAGEMENT S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The following management's discussion and analysis of financial condition and results of operations provides information that management believes is relevant to an assessment and understanding of our plans and financial condition. The following selected financial information is derived from our historical financial statements and should be read in conjunction with such financial statements and notes thereto set forth elsewhere herein and the "Forward-Looking Statements" explanation included herein.

Overview

Lightwave Logic, Inc. is a development stage company whose P^2IC^{TM} technology addresses advanced telecommunication, data communications, and data center markets utilizing its advanced organic electro-optic polymer systems. The Company currently has two business segments to support its development activities, its materials development segment located in Newark, Delaware, and its photonic device design and development segment located in Longmont, Colorado.

Capital Requirements

As a development stage company, we do not generate revenues. We have incurred substantial net losses since inception. We have satisfied our capital requirements since inception primarily through the issuance and sale of our common stock. During 2015 we received $4,315,000 in total cash proceeds from the issuance and sale of our common stock and warrants to purchase our common stock. During 2016 we received $$1,553,190 in total cash proceeds from the issuance and sale of our common stock.

Results of Operations

Comparison of fiscal 2016 to fiscal 2015

Revenues

As a development stage company, we had no revenues during the year ended December 31, 2016 and December 31, 2015. The Company is in various stages of photonic device and material development and evaluation. We expect the next revenue stream to be in product development agreements, prototype devices and sale of nonlinear optical polymer materials prior to moving into production.

Operating Expenses

Our operating expenses were $4,135,578 and $4,845,681 for the years ended December 31, 2016 and 2015, respectively, for a decrease of $710,103. The decrease in operating expenses is primarily due to decreases in non-cash stock option and warrant amortization, outsourced testing and product development expenses, investor relations expenses, laboratory materials and supplies and disposal of material and obsolete equipment offset by increases in consulting expenses, salaries and wages and depreciation.

Included in our operating expenses for the year ended December 31, 2016 was $2,474,689 for research and development expenses compared to $2,825,099 for the year ended December 31, 2015, for a decrease of $350,410. The decrease in research and development expenses is primarily due to decreases in non-cash stock option and warrant amortization, outsourced testing and product development expenses, laboratory materials and supplies and disposal of material and obsolete equipment offset by increases in consulting expenses, salaries and wages and depreciation.

Research and development expenses currently consist primarily of compensation for employees and consultants engaged in internal research, product development activities; laboratory operations, internal material and device testing and prototype electro-optic device design, development and prototype device processing; costs; and related operating expenses.

We expect to continue to incur substantial research and development expense to develop and commercialize our photonic devices and electro-optic materials platform. These expenses will increase as a result of accelerated development effort to support commercialization of our non-linear optical polymer materials technology; to build photonic device prototypes in our in-house laboratories; hiring additional technical and support personnel; engaging a senior technical advisor; pursuing other potential business opportunities and collaborations; customer testing and evaluation; and incurring related operating expenses.

Non-cash stock compensation and stock option and warrant amortization decreased $397,684 from $760,119 for the year ended December 31, 2015 to $362,435 for the year ended December 31, 2016.

Laboratory material testing expense and electro-optic device development decreased $145,056 from $295,767 for the year ended December 31, 2015 to $150,711 for the year ended December 31, 2016.

Laboratory materials and supplies also decreased $52,508 from $204,115 for the year ended December 31, 2015 to $151,607 for the year ended December 31, 2016.

Disposal of material and obsolete equipment decreased $21,276 from $24,841 for the year ended December 31, 2015 to $3,565 for the year ended December 31, 2016.

Consulting expenses increased $209,859 from $82,424 for the year ended December 31, 2015 to $292,283 for the year ended December 31, 2016.

Wages and salaries and benefits increased $64,274 from $1,031,610 for the year ended December 31, 2015 to $1,095,884 for the year ended December 31, 2016.

Depreciation expense increased $19,804 from $153,261 for the year ended December 31, 2015 to $173,065 for the year ended December 31, 2016.

General and administrative expense consists primarily of compensation and support costs for management staff, and for other general and administrative costs, including executive, sales and marketing, investor relations, accounting and finance, legal, consulting and other operating expenses.

General and administrative expenses decreased $359,693 to $1,660,889 for the year ended December 31, 2016 from $2,020,582 for the year ended December 31, 2015. The decrease is due primarily to decreases in non-cash stock option and warrant amortization and investor relations expenses offset by increases in salaries and wages and consulting expenses.

Non-cash stock compensation and stock option amortization decreased $422,684 from $670,836 for the year ended December 31, 2015 to $248,152 for the year ended December 31, 2016.

Investor relations expenses decreased by $54,685 from $92,138 for the year ended December 31, 2015 to $37,453 for the year ended December 31, 2016.

General and administrative wages and salaries increased $63,886 from $572,096 for the year ended December 31, 2015 to $635,982 for the year ended December 31, 2016.

Professional fees increased $17,146 from $9,854 for the year ended December 31, 2015 to $27,000 for the year ended December 31, 2016.

General and administrative expense consists primarily of compensation and support costs for management staff, and for other general and administrative costs, including executive, sales and marketing, investor relations, accounting and finance, legal, consulting and other operating expenses.

Other Income (Expense)

Other expense increased $271,879 to $271,630 for the year ending December 31, 2016 from ($249) for the year ending December 31, 2015, relating to the commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement during the nine-month period.

Net Loss

Net loss was $4,407,208 and $4,845,432 for the years ended December 31, 2016 and 2015, respectively, for a decrease of $438,224, due primarily to decreases in non-cash stock option and warrant amortization, outsourced testing and product development expenses, investor relations expenses, laboratory materials and supplies and disposal of material and obsolete equipment offset by increases in consulting expenses, salaries and wages, commitment fee associated with the purchase of shares by an institutional investor for sale under a stock purchase agreement and depreciation.

Significant Accounting Policies

Our Company's accounting policies are more fully described in Note 1 of Notes to Financial Statements. As disclosed in Note 1 of Notes to Financial Statements, the preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying disclosures. Although these estimates are based on our management s best knowledge of current events and actions our Company may undertake in the future, actual results could differ from the estimates.

Stock Based Compensation

Our Company uses the Black-Scholes option pricing model to calculate the grant-date fair value of an award, with the following assumptions for 2016 and 2015: no dividend yield in both years, expected volatility, based on our Company s historical volatility, 64% to 78% in 2016 and between 75% to 79% in 2015, risk-free interest rate between 1.05% to 2.06% in 2016 and between 1.44% to 1.70% in 2015 and expected option life of 5 to 5.6 years in 2016 and 5 to 5.75 years in 2015.

As of December 31, 2016, there was $103,451 of unrecognized compensation expense related to non-vested market-based share awards that is expected to be recognized through September 2018.

Liquidity and Capital Resources

During the year ended December 31, 2016, net cash used in operating activities was $3,153,292 and net cash used in investing activities was $173,759, which was due primarily to the Company s research and development activities and general and administrative expenditures. Net cash provided by financing activities for the year ended December 31, 2016 was $1,553,190. At December 31, 2016, our cash and cash equivalents totaled $1,956,844, our assets totaled $3,187,408, our liabilities totaled $127,886, and we had stockholders equity of $3,059,522.

During the year ended December 31, 2015, net cash used in operating activities was $3,440,755 and net cash used in investing activities was $309,480, which was due primarily to the Company s research and development activities and general and administrative expenditures. Net cash provided by financing activities for the year ended December 31, 2015 was $4,315,000. At December 31, 2015, our cash and cash equivalents totaled $3,730,705, our assets totaled $5,110,025, our liabilities totaled $102,957, and we had stockholders equity of $5,007,068.

Sources and Uses of Cash

Our future expenditures and capital requirements will depend on numerous factors, including: the progress of our research and development efforts; the rate at which we can, directly or through arrangements with original equipment manufacturers, introduce and sell products incorporating our polymer materials technology; the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; market acceptance of our products and competing technological developments; and our ability to establish cooperative development, joint venture and licensing arrangements. We expect that we will incur approximately $3,960,000 of expenditures over the next 12 months. Our cash requirements are expected to increase at a rate consistent with the Company s path to revenue growth as we expand our activities and operations with the objective of commercializing our electro-optic polymer technology during 2017.

Our business does not presently generate the cash needed to finance our current and anticipated operations. We believe we have raised sufficient capital to finance our operations through September 2017; however, we will need to obtain additional future financing after that time to finance our operations until such time that we can conduct profitable revenue-generating activities. Such future sources of financing may include cash from equity offerings, exercise of stock options, warrants and proceeds from debt instruments; but we cannot assure you that such equity or borrowings will be available or, if available, will be at rates or prices acceptable to us.

On January 29, 2016, we signed a purchase agreement (the Purchase Agreement) with Lincoln Park Capital Fund, LLC (Lincoln Park) to sell up to $20,000,000 of common stock whereby subject to certain conditions and at our sole discretion, Lincoln Park has committed to purchase up to $20,000,000 of our common stock over a 36-month period. In April 2016, our registration statement became effective, which registered for resale by Lincoln Park under the Purchase Agreement 5,000,000 shares of our common stock. Pursuant to the Purchase Agreement, Lincoln Park is obligated to make purchases as the Company directs in accordance with the Purchase Agreement, which may be terminated by the Company at any time, without cost or penalty. Sales of shares will be made in specified amounts and at prices that are based upon the market prices of our common stock immediately preceding the sales to Lincoln Park. We expect this financing to provide us with sufficient funds to maintain our operations for the foreseeable future. With the additional capital, we expect to achieve a level of revenues attractive enough to fulfill our development activities and adequate enough to support our business model for the foreseeable future. We cannot assure you that we will meet the conditions of the Purchase Agreement with Lincoln Park in order to obligate Lincoln Park to purchase our shares of common stock. In the event we fail to do so, and other adequate funds are not available to satisfy long-term capital requirements, or if planned revenues are not generated, we may be required to substantially limit our operations. This limitation of operations may include reductions in capital expenditures and reductions in staff and discretionary costs.

There are no trading volume requirements or restrictions under the Purchase Agreement and we will control the timing and amount of any sales of our common stock to Lincoln Park. Lincoln Park has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. We can also accelerate the amount of common stock to be purchased under certain circumstances. There are no limitations on use of proceeds, financial or business covenants, restrictions on future funding, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. Lincoln Park may not assign or transfer its rights and obligations under the purchase agreement.

We expect that our cash used in operations will increase during 2016 and beyond as a result of the following planned activities:

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The addition of management, sales, marketing, technical and other staff to our workforce;

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Increased spending for the expansion of our research and development efforts, including purchases of additional laboratory and production equipment;

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Increased spending in marketing as our products are introduced into the marketplace;

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Developing and maintaining collaborative relationships with strategic partners;

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Developing and improving our manufacturing processes and quality controls; and

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Increases in our general and administrative activities related to our operations as a reporting public company and related corporate compliance requirements.

Analysis of Cash Flows

For the year ended December 31, 2016

Net cash used in operating activities was $3,153,292 for the year ended December 31, 2016, primarily attributable to the net loss of $4,407,208 adjusted by $174,359 in warrants issued for services, $436,228 in options issued for services, $295,885 in common stock issued for services, $195,610 in depreciation expenses and patent amortization expenses, $127,549 in prepaid expenses, $24,929 in accounts payable and accrued expenses and $644 gain on disposal of property and equipment. Net cash used in operating activities consisted of payments for research and development, legal, professional and consulting expenses, rent and other expenditures necessary to develop our business infrastructure.

Net cash used by investing activities was $173,759 for the year ended December 31, 2016, consisting of $64,096 for purchase of intangibles, $129,163 in asset additions primarily for the Colorado lab facility and $19,500 in proceeds from sale of equipment.

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Net cash provided by financing activities was $1,553,190 for the year ended December 31, 2016 and consisted of $1,553,190 in proceeds from resale of common stock to an institutional investor.

For the year ended December 31, 2015

Net cash used in operating activities was $3,440,755 for the year ended December 31, 2015, primarily attributable to the net loss of $4,845,432 adjusted by $91,263 in warrants issued for services, $1,339,692 in options issued for services, $48,963 in common stock issued for services, $179,907 in depreciation expenses and patent amortization expenses, ($136,264) in prepaid expenses and other current assets and ($118,884) in accounts payable and accrued expenses. Net cash used in operating activities consisted of payments for research and development, legal, professional and consulting expenses, rent and other expenditures necessary to develop our business infrastructure.

Net cash used by investing activities was $309,480 for the year ended December 31, 2015, consisting of $29,577 in cost for intangibles and $279,903 in asset additions primarily for the new lab facility.

Net cash provided by financing activities was $4,315,000 for the year ended December 31, 2015 and consisted of $4,315,000 proceeds from private placement.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not Applicable

Item 8. Financial Statements and Supplementary Data

Our Financial Statements of are attached as Appendix A (following Exhibits) and included as part of this Form 10-K Report. A list of our Financial Statements is provided in response to Item 15 of this Form 10-K Report.

Item 9. Changes In And Disagreements With Accountants On Accounting and Financial Disclosure

Not Applicable.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, our Company evaluated the effectiveness and design and operation of its disclosure controls and procedures. Our Company s disclosure controls and procedures are the controls and other procedures that we designed to ensure that our Company records, processes, summarizes, and reports in a timely manner the information that it must disclose in reports that our Company files with or submits to the Securities and Exchange Commission. Our principal executive officer and principal financial officer reviewed and participated in this evaluation. Based on this evaluation, our Company made the determination that its disclosure controls and procedures were effective.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal controls over financial reporting based on the framework in Internal Control -Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2016.

The Company's internal control over financial reporting includes policies and procedures that (1) pertain to maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of the assets of the Company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. In addition, the design of any system of controls is based in part on certain assumptions about the likelihood of future events, and controls may become inadequate if conditions change. There can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

This annual report does not include an attestation report of the Company s independent registered public accounting firm regarding internal control over financial reporting. Management s report was not subject to attestation by the Company s registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit the Company to provide only management s attestation in this annual report.

Changes in Company Internal Controls

No change in our Company s internal control over financial reporting occurred during our fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Not Applicable.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

Identity of directors, executive officers and significant employees

Name	Age	Position
Thomas E. Zelibor	62	Chair of the Board of Directors; Chief Executive Officer
James S. Marcelli	69	Director; President; Chief Operating Officer
Andrew J. Ashton	43	Director; Senior Vice President; Secretary
William C. Pickett, III	73	Director
Joseph A. Miller	75	Director
Ronald A Bucchi	62	Director
Siraj Nour El-Ahmadi	52	Director
Michael Lebby	56	Director

Business experience of directors, executive officers, and significant employees

Thomas E. Zelibor, Rear Admiral, USN (Ret). RADM Zelibor has served as our Chief Executive Officer and Chair of the Board of Directors (executive) since May 2012. Mr. Zelibor previously served as Non-Executive Chair of the Board of Directors of our Company since October 2011, and has served as a director of our Company since July 2008. He also previously served on our Operation Committee. Mr. Zelibor is in charge of the overall general management of the Company and supervision of Company policies, setting the Company s strategies, formulating and overseeing the Company s business plan, raising capital, expanding the Company s management team and the general promotion of the Company. Mr. Zelibor has over twenty years of strategic planning and senior leadership experience. Mr. Zelibor is currently a director of Nuvectra Corp. Since April 2011, Mr. Zelibor served as the Chief Executive Officer and President of Zelibor & Associates, LLC, a management-consulting firm. From July 2008 to April 2011, Mr. Zelibor served as the Chief Executive Officer and President of Flatirons Solutions Corp., a professional services firm that provides consulting, systems integration, systems & software engineering, and program management expertise to corporate and government clients. Prior to that time, Mr. Zelibor served in the U.S. Navy in a number of positions, including as the Dean of the College of Operational and Strategic Leadership at the United States Naval War College where he was responsible for the adoption of a corporate approach to leadership development; Director of Global Operations, United States Strategic Command; Director, Space, Information Warfare, Command and Control on the Navy staff; Department of the Navy, Deputy Chief Information Officer (CIO), Navy; Commander, Carrier Group Three and Commander, Naval Space Command. Mr. Zelibor earned his bachelor s degree from the United States

Naval Academy and has been a participant in the Senior Leader in Residence Program and a visiting scholar for the Zell Center for Risk Research at the Kellogg School of Management, Northwestern University.

Mr. James S. Marcelli. Mr. Marcelli has served as an officer and director of our Company since August 2008. Since May 2012, Mr. Marcelli has served as our Company s President and Chief Operating Officer. Previously, from August 2008 to April 2012, Mr. Marcelli served as our President and Chief Executive Officer. Mr. Marcelli is in charge of the day-to-day operations of our Company and its movement to a fully functioning commercial corporation, and also serves as our Company s principal financial officer. Since 2000, Mr. Marcelli has served as the president and chief executive officer of Marcelli Associates, a consulting company that offers senior management consulting, mentoring, and business development services to start-up and growth companies. Business segments Mr. Marcelli has worked with included an Internet networking gaming center, high-speed custom gaming computers, high tech manufacturing businesses and business service companies.

Mr. Andrew J. Ashton. Mr. Ashton has served as an officer and director of our Company since July 2004. Mr. Ashton has served as our Senior Vice president since April 2009. Since 2004, his assistance in the creation of the synthetic chemistry of our novel molecular architecture has been fundamental to our Company's success. His current duties include the development of chemical synthesis, providing extensive analytical support and assisting with our Company's management goals. Mr. Ashton is a skilled computer scientist and organic chemist who began his career in 1998 at the Army Research Laboratory on the Aberdeen Proving Grounds where he helped to design and implement computer interfaces for fiberglass composite analysis.

Mr. William C. Pickett. Mr. Pickett has served as a director of our Company since January 2008, and he currently serves a member of our Audit Committee. Mr. Pickett enjoyed a 32 year career with E.I. DuPont de Nemours & Co., where he worked in numerous financial leadership positions, including serving from February 2002 to April 2004 as Chief Financial Officer of Invista, DuPont s $7 billion man-made fibers company, which was ultimately sold to Koch Industries, Inc. From 2005 through 2011, Mr. Pickett served on the Board of Directors of the Ronald McDonald House of Delaware. He also served as Treasurer, was a member of the Executive Committee, and chaired the Finance Committee. From 2004 through 2015, Mr. Pickett served on the Board of Trustees of Operation Warm, a not-for-profit organization, and chaired their Audit Committee. Mr. Pickett received his MBA from the Harvard Business School and a BA from Trinity College.

Dr. Joseph A. Miller, Jr. Dr. Miller has served as a director of our Company since May 10, 2011. From 2002 to May 2012, Dr. Miller served as Executive Vice President and Chief Technology Officer of Corning Incorporated, having joined Corning Incorporated in 2001 as Senior Vice President and Chief Technology Officer. Prior to joining Corning Incorporated, Dr. Miller was with E.I. DuPont de Nemours, Inc., where he served as Chief Technology Officer and Senior Vice President for Research and Development since 1994. Dr. Miller began his career with DuPont in 1966. Dr. Miller is a director and Non-executive Chairman of Nuvectra Corp., and he previously served as a director for Greatbatch, Inc. He holds a doctorate degree in Chemistry from Penn State University.

Mr. Ronald A. Bucchi. Mr. Bucchi has served as a director of our Company since June 11, 2012, and he currently serves a member of our Audit Committee. Mr. Bucchi is currently a self employed C.P.A. with a specialized practice that concentrates in CEO consulting, strategic planning, mergers, acquisitions, business sales and tax. He works with domestic and international companies. Mr. Bucchi is currently a member of the board of directors of First Connecticut Bancorp, Inc., serving on Asset Liability Committee, the Governance and Loan committees in addition to chairing the Audit committee. He is currently the Treasurer and a member of the Board of Directors of the Petit Family Foundation, Inc. He has served on numerous other community boards and is past Chairman of the Wheeler Clinic and the Wheeler YMCA. He is a member of the Connecticut Society of Certified Public Accountants, American Institute of Certified Public Accountants and the National Association of Corporate Directors. Mr. Bucchi is a graduate of the Harvard Business School Executive Education program with completed course studies in general board governance, audit and compensation and a graduate of Central Connecticut State University where he received his B.S. in Accounting.

Mr. Siraj Nour El-Ahmadi. Mr. El-Ahmadi has served as a director of our Company since October 2, 2013, and he currently serves a member of our Audit Committee. Since 2004, Mr. El-Ahmadi has served as Founder, President and Chief Executive Officer of Menara Networks, a developer of innovative products and solutions that simplify layered optical transport networks. Mr. El-Ahmadi has over 17 years of experience in optical transmission in particular and the telecom industry in general. Prior to founding Menara, Mr. El-Ahmadi served as Vice President-Marketing & Product Management at Nortel where he was responsible for the OPTera LH 4000 ULR product (acquired from Qtera) that achieved over $200M in revenues in its first two years. Prior to that, Mr. El-Ahmadi was the Product Architect & Vice President of Product Management at Qtera Corporation, a successful technology start-up acquired by Nortel in 2000 for $3.25 billion. Mr. El-Ahmadi also held a Senior Manager position at Bell Northern Research and worked as a Transmission Engineer at WilTel (WorldCom) where he evaluated and deployed the world first bidirectional EDFA

and bi-directional WDM transmission. Mr. El-Ahmadi holds a BS and MS in Electrical Engineering from the University of Oklahoma, is a member of Eta Kappa Nu and is the inventor of 11 patents, issued or pending, in the area of optical communications. He has authored a number of publications and is a frequent speaker at telecom and optical networking events and conferences.

Dr. Michael Lebby. Dr. Lebby has served as a director of our Company since August 26, 2015, and he currently serves a member of our Operations Committee. From June 2013 to present, Dr. Lebby has served as President and CEO of OneChip Photonics, Inc., a privately held company headquartered in Ottawa, Canada, that is a leading provider of low-cost, small-footprint, high-performance indium phosphide (InP)-based photonic integrated circuits (PICs) and PIC-based optical sub-assemblies (OSAs) for the Data Center markets. Also, Dr. Lebby presently serves as part-time full professor, and chair of optoelectronics at Glyndwr University in Wales, UK, and as a consultant to bring forward advanced materials, device, and integrated photonics technologies that will generate high margin value as products. Since 2015, Dr. Lebby has been focusing on InP-based photonic integrated circuits (PICs) and optoelectronic integrated circuits (OEICs) for the datacenter segment and has been instrumental in assembling California s proposal (via USC) to the Federal Government for an integrated photonics manufacturing institute. Dr. Lebby holds a Doctor of Engineering, a Ph.D., a MBA and a Bachelors degree, all from the University of Bradford, United Kingdom.

The Board of Directors believes that each of the Directors named above has the necessary qualifications to be a member of the board of directors. Each Director has exhibited during his prior service as a director the ability to operate cohesively with the other members of the board of directors. Moreover, the Board of Directors believes that each director brings a strong background and skill set to the Board of Directors, giving the Board of Directors as a whole competence and experience in diverse areas, including corporate governance and board service, finance, management and industry experience.

Our bylaws provide that the number of directors who constitute our Board of Directors is determined by resolution of the Board of Directors, but the total number of directors constituting the entire Board of Directors shall not be less than three or more than nine. Our Board of Directors currently consists of eight directors. On July 25, 2013, certain provisions of our bylaws were amended, including provisions relating to: (i) Classes of Directors, whereby the Board of Directors is divided into three classes, as nearly equal in number as possible, designated: Class I, Class II and Class III. Prior to the amendment, there was only one class of directors; and (ii) Terms of Office, whereby provisions were created for staggered terms with each director serving for a term ending on the date of the third annual meeting following the annual meeting at which such director was elected; provided, that each director initially appointed to Class I shall serve for an initial term expiring at the first annual meeting of stockholders following the effectiveness of this provision; each director initially appointed to Class II shall serve for an initial term expiring at the second annual meeting of stockholders following the effectiveness of this provision; and each director initially appointed to Class III shall serve for an initial term expiring at the third annual meeting of stockholders following the effectiveness of this provision; provided further, that the term of each director shall continue until the election and qualification of a successor and be subject to such director's earlier death, resignation or removal. Prior to the amendment, there were no staggered terms and each director served for a term of one (1) year.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934 requires that our executive officers and directors, and persons who own more than ten percent of a registered class of our equity securities, file reports of ownership and changes in ownership with the SEC. Executive officers, directors and greater-than-ten percent stockholders are required by SEC regulations to furnish us with all Section 16(a) forms they file. To the best of our knowledge, based solely upon a review of Forms 3 and 4 and amendments thereto furnished to our Company during its most recent fiscal year and Forms 5 and amendments thereto furnished to our Company with respect to its most recent fiscal year, and any written representation referred to in paragraph (b)(1) of Item 405 of Regulation S-K, all of our executive officers, directors and greater-than-ten percent stockholders complied with all Section 16(a) filing requirements with the following exception: Mr. Tom Zelibor filed one late Form 4 to report an employee stock option he acquired directly from the Company, which occurred due to clerical error.

Code of Ethics

Our Company has adopted a Code of Ethics and Business Conduct that applies to all of the Company s employees, including its principal executive officer and principal financial officer. A copy of our Code of Ethics and Business Conduct is available for review on the Investors - Governance page of our Company s website www.lightwavelogic.com. The Company intends to disclose any changes in or waivers from its Code of Ethics and Business Conduct by posting such information on its website.

Nominating Committee

Our Board of Directors does not have a nominating committee. This is due to our development stage and smaller sized Board of Directors. Instead of having such a committee, our entire Board of Directors historically has searched for and evaluated qualified individuals to become nominees for membership on our Board of Directors. No material changes to the procedures by which our stockholders may recommend nominees to our Board of Directors has occurred since we last provided disclosure regarding these procedures in our Definitive Schedule 14A filed on April 20, 2016.

Audit Committee

Our Company has in place a separately designated standing audit committee in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended. Our audit committee is governed by an audit committee charter, a current copy of which is available to security holders on our web site located at www.lightwavelogic.com.

Our audit committee has reviewed and discussed the audited financial statements with management and has discussed with its independent auditors the matters required to be discussed by the statement on Auditing Standards No. 61, as amended (AICPA, Professional Standards, Vol. 1, AU section 380) as adopted by the Public Company Accounting Oversight Board in Rule 3200T. The audit committee has received the written disclosures and the letter from its independent accountant required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent accountant s communications with the audit committee concerning independence, and has discussed with its independent accountant the independent accountant s independence. Based on the review and discussions described above, the audit committee recommended to the Board of directors that the audited financial statements be included in our Annual Report on Form 10-K for the last fiscal year for filing with the Securities and Exchange Commission.

Our audit committee is comprised of Ronald A. Bucchi, William C. Pickett, III and Siraj Nour El-Ahmadi. Mr. Bucchi serves as our audit committee financial expert as that term is defined by the rules promulgated by the Securities and Exchange Commission. Mr. Bucchi is an independent director, as defined below in Certain Relationships and Related Transactions, and Director Independence.

Item 11. Executive Compensation.

The table below summarizes all compensation awarded to, earned by, or paid to our named executive officers for the fiscal years ended December 31, 2016 and 2015.

Summary Compensation Table

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)	Option Awards ($)	All Other Compensation ($)	Total ($)
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Thomas E. Zelibor	2016	350,000	0	0	105,493	2,440	457,933
CEO, Chmn. of the Board (1)	2015	350,000	0	0	188,402	2,440	540,842
James S. Marcelli	2016	225,000	15,000	0	7,203	11,051	258,254
President, COO, Director (2)	2015	219,167	0	0	522,716	2,150	744,033

1.

Mr. Zelibor receives a salary of $29,166.66 per month pursuant to his March 3, 2014 employment agreement, which also provided for him to receive an option to purchase up to 40,000 shares of common stock at an exercise price of $0.92 per share. Additionally, in the event Mr. Zelibor s employment terminates upon his death and key man life insurance is in place for Mr. Zelibor, our Company will continue to pay the base cash compensation described in Mr. Zelibor s employment agreement to his estate through the remainder of term of his employment agreement, or 12 months, whichever is longer. On July 1, 2015, (i) an option to purchase up to 100,000 shares of common stock at an exercise price of $1.75 per share issued July 11, 2008 and set to expire on July 10, 2015; (ii) an option to purchase up to 150,000 shares of common stock at an exercise price of $1.42 per share issued August 29, 2008 and set to expire on August 29, 2015; and (iii) an option to purchase up to 100,000 shares of common stock at an exercise price of $1.00 per share issued December 13, 2010 and set to expire on December 12, 2015 were cancelled, and on that same date, Mr. Zelibor received an option to purchase up to 350,000 shares of common stock at an exercise price of $.70 that vested immediately. On November 10, 2015, Mr. Zelibor was granted an option to purchase up to 100,000 shares of common stock at an exercise price of $.86 per share. The option vests 12,500 shares on January 1, 2016 and the remaining vest quarterly in equal installments of 12,500 shares beginning April 1, 2016. On December 20, 2016, Mr. Zelibor was awarded an option to purchase up to 250,000 shares of common stock at an exercise price of $0.565 per share that vested immediately. The amount in column (g) reflects a salary gross up for long term disability premium payments. Mr. Zelibor s compensation includes the amount for services rendered to the Company in his capacity as both an officer and a director.

2.

Mr. Marcelli receives a salary of $18,750 per month pursuant to his August 1, 2015 employment agreement, which also provides for him to receive an option to purchase up to 50,000 shares of common stock at an exercise price of $0.67 per share. The options vest 12,500 immediately and the remainder in equal quarterly installments of 12,500 shares. Additionally, in the event Mr. Marcelli s employment terminates upon his death and key man life insurance is in place for Mr. Marcelli, our Company will continue to pay the base cash compensation described in Mr. Marcelli s employment agreement to his estate through the remainder of term of his employment agreement, or 12 months, whichever is longer. On July 1, 2015, (i) an option to purchase up to 100,000 shares of common stock at an exercise price of $1.50 per share issued August 1, 2010 and set to expire on July 31, 2015; and (ii) an option to purchase up to 1,050,000 shares of common stock at an exercise price of $1.75 per share issued August 1, 2008 and set to expire on July 31, 2015, were cancelled, and on that same date, Mr. Marcelli received an option to purchase up to1,150,000 shares of common stock at an exercise price of $.70 that vested immediately. On March 31, 2016, Mr. Marcelli received a cash bonus of $15,000. The amount in column (g) reflects a salary gross up for long term disability premium payments and, during 2016, a gross up for payment of taxes on the cash bonus. Mr. Marcelli s compensation includes the amount for services rendered to the Company in his capacity as both an officer and a director.

At no time during the last fiscal year was any outstanding option otherwise modified or re-priced, and there was no tandem feature, reload feature, or tax-reimbursement feature associated with any of the stock options we granted to our executive officers or otherwise.

We grant stock awards and stock options to our executive officers based on their level of experience and contributions to our Company. The aggregate fair value of awards and options are computed in accordance with FASB ASC 718 and are reported in the Summary Compensation Table above in the columns (e) and (f).

The table below summarizes all of the outstanding equity awards for our named executive officers as of December 31, 2016, our latest fiscal year end.

Outstanding Equity Awards At Fiscal Year-End

	Option Awards					Stock Awards			
Name	**Number of securities underlying unexercised options(#)**	**Number of securities underlying unexercised options(#)**	**Equity incentive plan awards: number of**	**Option exercise price**	**Option expiration date**	**Number of shares or units of stock**	**Market value of shares of units of stock**	**Equity incentive plan awards: number**	**Equity incentive plan awards: market or**
(a)									

	exercisable	unexercisable	securities underlying unexercised unearned options	($)		that have not vested	that have not vested	of unearned shares, units or other rights that have not vested	payout value of unearned shares, units or other rights that have not vested
	(b)	(c)	(#) (d)	(e)	(f)	(#) (g)	($) (h)	(#) (i)	($) (j)
Thomas E. Zelibor									
CEO, Chairman of the	50,000	50,000		0.86	11/09/25				
Board(1)(3)	350,000			0.70	6/30/25				
	250,000			0.565	12/19/26				
	500,000			1.30	4/30/22				
	40,000			0.92	3/4/24				
James S. Marcelli	50,000			0.67	8/9/25				
President, COO,	1,150,000			0.70	6/30/25				
Director(2)(3)	100,000			1.00	5/16/23				

(1)

On November 10, 2015, Mr. Zelibor received an option to purchase up to 100,000 shares of common stock at an exercise price of $.86 per share. The option vests 12,500 shares on January 1, 2016 and the remaining vest quarterly in equal installments of 12,500 shares beginning April 1, 2016. On July 1, 2015, Mr. Zelibor received an option to purchase up to 350,000 shares of common stock at an exercise price of $.70 that vested immediately. On March 4, 2014, Mr. Zelibor received an option to purchase 40,000 shares of common stock at an exercise price of $0.92 per share. The options vested quarterly over one year in equal installments of 10,000 beginning April 1, 2014. On May 1, 2012, Mr. Zelibor received an option to purchase up to 500,000 shares of common stock at an exercise price of $1.30 per share. The options vested quarterly over one year in equal installments of 125,000 shares per quarter beginning May 1, 2012. On December 20, 2016, Mr. Zelibor received an option to purchase up to 250,000 shares of common stock at an exercise price of $0.565 per share. The option vested immediately.

(2)

On August 10, 2015, Mr. Marcelli received an option to purchase 50,000 shares of common stock. The options vest 12,500 immediately and the remainder in equal quarterly installments of 12,500 shares. On July 1, 2015, Mr. Marcelli received an option to purchase up to 1,150,000 shares of common stock at an exercise price of $.70 that vested immediately. August 1, 2013, Mr. Marcelli received an option to purchase up to 100,000 shares of common stock. The options vested in equal installments of 25,000 options with the first installment vesting on August 1, 2013 and the remaining installments vesting quarterly commencing on October 1, 2013.

(3)

In the event of a change in control of our Company, such person s options will become fully vested and/or exercisable, as the case may be, immediately prior to such change in control, and shall remain exercisable as set forth in their stock option agreement.

Compensation of Directors

Set forth below is a summary of the compensation of our directors during our December 31, 2016 fiscal year.

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	Non-Qualified Deferred Compensation Earnings ($)	All Other Compensation ($)	Total ($)
Thomas E. Zelibor (1)							
James S. Marcelli (1)							
Andrew J. Ashton (1)							

William C. Pickett, III (2)			21,475	21,475
Joseph A. Miller (3)			88,851	88,851
Ronald A. Bucchi, (4)			21,475	21,475
Siraj Nour El-Ahmadi (5)			57,726	57,726
George L. Lauro (6)			52,187	52,187
Michael Lebby (7)	40,000	24,000	44,129	108,129

(1)

Serves as an executive officer and a director, but receives no additional compensation for serving as a director.

(2)

On March 4, 2015, Mr. Pickett received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2015. On February 1, 2016, Mr. Pickett received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2016. As of December 31, 2016, Mr. Pickett holds options to purchase up to 600,000 shares of common stock.

(3)

On May 10, 2016, Dr. Miller received an option to purchase up to 200,000 shares of common stock at an exercise price of $.60 that vest immediately. On March 4, 2015, Dr. Miller received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2015. On February 1, 2016, Dr. Miller received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2016. As of December 31, 2016, Dr. Miller holds options to purchase up to 350,000 shares of common stock.

(4)

On June 11, 2012, Mr. Bucchi received an option to purchase up to 200,000 shares of common stock at an exercise price of $0.90 that vest pursuant to the following schedule: 50,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 50,000 options per year commencing on June 11, 2013. On March 4, 2015, Mr. Bucchi received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2015. On February 1, 2016, Mr. Bucchi received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2016. As of December 31, 2016, Mr. Bucchi holds options to purchase up to 400,000 shares of common stock.

(5)

On November 1, 2013, Mr. El-Ahmadi received an option to purchase up to 200,000 shares of common stock at an exercise price of $0.93 that vest pursuant to the following schedule: 50,000 shares on November 1, 2013 and the remaining options vest in equal annual installments of 50,000 options per year commencing on November 1, 2014. On March 4, 2015, Mr. El-Ahmadi received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2015. On February 1, 2016, Mr. El-Ahmadi received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2016. As of December 31, 2016, Mr. El-Ahmadi holds options to purchase up to 350,000 shares of common stock.

(6)

On May 12, 2014, Mr. Lauro received an option to purchase up to 200,000 shares of common stock at an exercise price of $0.763 that vest pursuant to the following schedule: 50,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 50,000 options per year commencing on May 12, 2015. On March 4, 2015, Mr. Lauro received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2015. On February 1, 2016, Mr. Lauro received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual

installments of 10,000 options per year commencing on April 1, 2016. Mr. Lauro resigned as a member of our Board of Directors, effective on July 31, 2016.

(7)

During 2016 Dr. Lebby received $40,000 in cash and 35,498 shares of common stock as compensation for serving on our Operations Committee. On August 26, 2015, Dr. Lebby received an option to purchase up to 200,000 shares of common stock at an exercise price of $0.69 that vest pursuant to the following schedule: 50,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 50,000 options per year commencing on August 26, 2016. On February 1, 2016, Dr. Lebby received an option to purchase up to 50,000 shares of common stock at an exercise price of $0.80 that vest pursuant to the following schedule: 20,000 shares vested immediately; and the remaining options vest in 3 equal annual installments of 10,000 options per year commencing on April 1, 2016. As of December 31, 2016, Dr. Lebby holds options to purchase up to 250,000 shares of common stock.

In the event of a change in control of our Company, all of the above person s options become fully vested and/or exercisable, as the case may be, immediately prior to such change in control, and shall remain exercisable as set forth in their stock option agreement.

Compensation Committee

Our Board of Directors currently has no standing compensation committee or committee performing similar functions. This is due to the Company s development stage, lack of business operations, the small number of executive officers involved with the Company, and the fact that the Company operates with few employees. The Company s entire Board of Directors currently participates in the consideration of executive officer and director compensation. Our Board of Directors will continue to evaluate, from time to time, whether it should appoint standing compensation committee.

Compensation Policies and Practices As They Relate To Our Risk Management

No risks arise from our Company s compensation policies and practices for our employees that are reasonably likely to have a material adverse effect on our Company.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The following table sets forth, as of March 17, 2017, the names, addresses, amount and nature of beneficial ownership and percent of such ownership of each person or group known to our Company to be the beneficial owner of more than five percent (5%) of our common stock:

Security Ownership of Certain Beneficial Owners

Name and Address of Beneficial Owner (1)	Amount and Nature of Beneficial Ownership (2)	% of Class Owned (3)
Mary Goetz	4,517,306	6.4%

(1)

In care of our Company at 1831 Lefthand Circle, Suite C, Longmont, CO 80501.

(2)

To our best knowledge, as of the date hereof, such holders had the sole voting and investment power with respect to the voting securities beneficially owned by them, unless otherwise indicated herein. Includes the person's right to obtain additional shares of common stock within 60 days from the date hereof.

(4)

Based on 69,717,642 shares of common stock outstanding on March 17, 2017. Does not include shares underlying: (i) options to purchase shares of our common stock under our 2007 Employee Stock Plan and our 2016 Equity Incentive Plan; or (ii) outstanding warrants to purchase shares of our common stock.

The following table sets forth, as of March 17, 2017, the names, addresses, amount and nature of beneficial ownership and percent of such ownership of our common stock of each of our officers and directors, and officers and directors as a group:

Security Ownership of Management

Name and Address (1)	Amount and Nature of Beneficial Ownership (2)	% Owned (3)(4)
Thomas E. Zelibor Chief Executive Officer, Principal Executive Officer and Chair of the Board of Directors	1,271,824(5)	1.8%
James S. Marcelli President, Chief Operating Officer, Principal Financial Officer and Director	1,553,400(6)	2.2%
Andrew J. Ashton Senior Vice President, Secretary, and Director	2,981,667	4.2%
William C. Pickett, III Director	651,000(7)	*
Joseph A. Miller, Jr. Director	406,800(8)	*
Ronald A. Bucchi Director	617,400(9)	*
Siraj Nour El-Ahmadi Director	350,000(10)	*
Michael Lebby Director	217,156(11)	*
Directors and Officers as a Group (8 Persons):	8,049,247	11.5%

* Less than 1%.

(1)

In care of our Company at 1831 Lefthand Circle, Suite C, Longmont, CO 80501.

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(2)

To our best knowledge, as of the date hereof, such holders had the sole voting and investment power with respect to the voting securities beneficially owned by them, unless otherwise indicated herein. Includes the person's right to obtain additional shares of common stock within 60 days from March 17, 2017.

(3)

Based on 69,717,642 shares of common stock outstanding on March 17, 2017. Does not include shares underlying: (i) options to purchase shares of our common stock under our 2007 Employee Stock Plan and our 2016 Equity Incentive Plan and (ii) outstanding warrants to purchase shares of our common stock.

(4)

If a person listed on this table has the right to obtain additional shares of common stock within 60 days from March 17, 2017, the additional shares are deemed to be outstanding for the purpose of computing the percentage of class owned by such person, but are not deemed to be outstanding for the purpose of computing the percentage of any other person.

(5)

Consists of 50,124 shares of common stock, an option to purchase up to 1,215,000 shares of common stock exercisable within 60 days from March 17, 2017 and a warrant to purchase up to 6,700 shares of common stock exercisable within 60 days from March 17, 2017.

(6)

Consists of 246,700 shares of common stock, an option to purchase up to 1,300,000 shares of common stock exercisable within 60 days from March 17, 2017, and a warrant to purchase up to 6,700 shares of common stock exercisable within 60 days from March 17, 2017.

(7)

Consists of 21,000 shares of common stock and an option to purchase up to 630,000 of common stock exercisable within 60 days from March 17, 2017.

(8)

Consists of 13,400 shares of common stock, options to purchase up to 380,000 shares of common stock exercisable within 60 days from March 17, 2017 and warrants to purchase up to 13,400 shares of common stock exercisable within 60 days from March 17, 2017.

(9)

Consists of 174,000 shares of common stock, an option to purchase up to 430,000 shares of common stock exercisable within 60 days from March 17, 2017 and warrants to purchase up to 13,400 shares of common stock exercisable within 60 days from March 17, 2017. Mr. Bucchi disclaims beneficial ownership of 53,000 shares held by his spouse.

(10)

Consists of an option to purchase up to 350,000 shares of common stock exercisable within 60 days from March 17, 2017.

(11)

Consists of 57,156 shares of common stock and an option to purchase up to 160,000 shares of common stock exercisable within 60 days from March 17, 2017.

We are not aware of any arrangements that could result in a change of control.

Securities Authorized for Issuance under Equity Compensation Plans

Information regarding our compensation plans under which our equity securities are authorized for issuance can be found in Part II Item 5 of this report.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

No related party transaction was required to be reported under this Item 13.

Policies and Procedures for Related-Party Transactions

Our Company does not have any formal written policies or procedures for related party transactions, however in practice, our Board of Directors reviews and approves all related party transactions and other matters pertaining to the integrity of management, including potential conflicts of interest, trading in our securities, or adherence to standards of business conduct.

Director Independence

Although we are currently traded on the Over-the-Counter Markets, our Board of Directors has reviewed each of the Directors relationships with the Company in conjunction with NASDAQ Listing Rule 5605(a)(2) that provides that an

independent director is a person other than an Executive Officer or employee of the Company or any other individual having a relationship which, in the opinion of the Company's board of directors, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Our Board of Directors has affirmatively determined that five of our directors, William C. Pickett, III, Joseph A. Miller, Jr., Ronald A. Bucchi, Siraj Nour El-Ahmadi and Michael Lebby are independent directors in that they are independent of management and free of any relationship that would interfere with their independent judgment as members of our Board of Directors. In making such determination, our Board of Directors considered the relationships that each such non-employee director has with our Company and all other facts and circumstances that our Board of Directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. Three members of our Board of Directors, Thomas E. Zelibor, James S. Marcelli and Andrew J. Ashton, are not are independent directors pursuant to the standards described above.

Our Company does not have a separately designated nominating or compensation committee or committee performing similar functions; therefore, our full Board of Directors currently serves in these capacities

Item 14.

Principal Accounting Fees and Services.

Audit Fees.

The aggregate fees billed for the years ended December 31, 2016 and 2015 for professional services rendered by Morison Cogen, LLP for the audit of the Company s annual financial statements and review of financial statements included in the Company s Form 10-Q or services that are normally provided by Morison Cogen, LLP in connection with statutory and regulatory filings or engagements were $61,375 for the year ended December 31, 2016; and $54,400 for the year ended December 31, 2015.

Audit-Related Fees.

Fees billed for the years ended December 31, 2016 and December 31, 2015 for assurance and related services by Morison Cogen, LLP that are reasonably related to the performance of the audit or review of the Company s financial statements and are not reported under the category Audit Fees described above were $0 for the year ended December 31, 2016 and $0 for the year ended December 31, 2015.

Tax Fees.

Fees billed for the year ended December 31, 2016 for tax compliance by Morison Cogen, LLP was $6,000; and for the year ended December 31, 2015 was $6,000.

All Other Fees.

Fees billed for the years ended December 31, 2016 and December 31, 2015 for products and services provided by Morison Cogen, LLP, other than the services reported in the Audit Fees, Audit-Related Fees, and Tax Fees categories above were $0 for the year ended December 31, 2016 and $0 for the year ended December 31, 2015.

Audit Committee Pre-Approval Policies.

The Company s audit committee currently does not have any pre-approval policies or procedures concerning services performed by Morison Cogen, LLP. All the services performed by Morison Cogen, LLP that are described above were pre-approved by the Company s audit committee.

None of the hours expended on Morison Cogen, LLP s engagement to audit the Company s financial statements for the years ended December 31, 2016 were attributed to work performed by persons other than Morison Cogen, LLP s full-time, permanent employees.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following Audited Financial Statements are filed as part of this Form 10-K Report:

Report of Independent Registered Public Accounting Firm

Balance Sheets
Statements of Operations

Statement of Stockholders Equity

Statements of Cash Flows

Notes to Financial Statements

(b) The following exhibits are filed as part of this report.

Exhibit No.	Description of Exhibit	Location
3.1	Articles of Incorporation	Incorporated by reference to Company s Form 10-SB as filed with the SEC on April 13, 2007
3.2	Certificate of Amendment to Articles of Incorporation	Incorporated by reference to Company s Definitive Schedule 14C Information Statement as filed with the SEC on February 19, 2008
3.3	Certificate of Amendment to Articles of Incorporation filed June 8, 2015	Incorporated by reference to Company s Form S-1 Registration Statement as filed with the SEC on August 3, 2015
3.2	Bylaws	Incorporated by reference to Company s Form 10-SB as filed with the SEC on April 13, 2007
3.3	Amendments to Bylaws	Incorporated by reference to the Company s Form 8-K as filed with the SEC on July 31, 2013
10.1	Purchase Agreement, dated as of January 29, 2016, by and between the Company and Lincoln Park Capital Fund, LLC	Incorporated by reference to the Company's Form 8-K as filed with the SEC on February 1, 2016
10.2	Registration Rights Agreement, dated as of January 29, 2016, by and between the Company and Lincoln Park Capital Fund, LLC	Incorporated by reference to the Company's Form 8-K as filed with the SEC on February 1, 2016
10.3	Termination Agreement, dated as of February 1, 2016, by and between the Company and Lincoln Park Capital Fund, LLC	Incorporated by reference to the Company's Form 8-K as filed with the SEC on February 1, 2016

10.4	Operations Committee Charter	August 2016	Incorporated by reference to the Company's Form 10-Q as filed with the SEC on August 15, 2016
10.5	2016 Equity Incentive Plan		Incorporated by reference to Appendix A to the Company's Definitive Schedule 14A filed with the SEC on April 20, 2016
10.6	Form of Non-qualified Stock Option Award Agreement - Employees		Filed herewith
10.7	Form of Non-qualified Stock Option Award Agreement - Executive Officers		Filed herewith
10.8	Form of Non-qualified Stock Option Award Agreement - Non Employee Directors		Filed herewith
14.1	Code of Ethics and Business Conduct		Filed herewith
31.1	Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, executed by the Principal Executive Officer of the Company.		Filed herewith

31.2	Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, executed by the Principal Financial Officer of the Company.	Filed herewith
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by the Principal Executive Officer of the Company.	Filed herewith
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by the Principal Financial Officer of the Company.	Filed herewith
101	XBRL data files of Financial Statements and Notes contained in this Annual Report on Form 10-K	

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

LIGHTWAVE LOGIC, INC.

Registrant

By: /s/ Thomas E. Zelibor
Thomas E. Zelibor,
Chief Executive Officer
(Principal Executive Officer)

Date: March 17, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Thomas E. Zelibor Thomas E. Zelibor	Chief Executive Officer, (Principal Executive Officer) Chmn. of the Board of Directors	March 17, 2017
/s/ James S. Marcelli James S. Marcelli	President, Chief Operating Officer, (Principal Financial Officer) Director	March 17, 2017
/s/ Andrew J. Ashton Andrew J. Ashton	Senior Vice President & Secretary, Director	March 17, 2017
/s/ Siraj Nour El-Ahmadi Siraj Nour El-Ahmadi	Director	March 17, 2017
/s/ William C. Pickett, III William C. Pickett, III	Director	March 17, 2017

/s/ Joseph A. Miller Joseph A. Miller	Director	March 17, 2017
/s/ Ronald A. Bucchi Ronald A. Bucchi	Director	March 17, 2017
/s/ Michael Lebby Michael Lebby	Director	March 17, 2017

LIGHTWAVE LOGIC, INC.

FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors

Lightwave Logic, Inc.

Longmont, Colorado

We have audited the accompanying balance sheets of Lightwave Logic, Inc., as of December 31, 2016 and 2015 and the related statements of operations, stockholders equity and cash flows for the years then ended. Lightwave Logic, Inc. s management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Lightwave Logic, Inc., as of December 31, 2016 and 2015 and results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

/s/ MORISON COGEN LLP

Blue Bell, Pennsylvania

March 17, 2017

LIGHTWAVE LOGIC, INC.

BALANCE SHEETS

	December 31, 2016	December 31, 2015
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 1,956,844	$ 3,730,705
Prepaid expenses and other current assets	136,942	264,491
	2,093,786	3,995,196
PROPERTY AND EQUIPMENT - NET	425,650	495,062
OTHER ASSETS		
Intangible assets - net	667,972	619,767
TOTAL ASSETS	$ 3,187,408	$ 5,110,025
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Accounts payable	$ 65,027	$ 32,852
Accounts payable and accrued expenses - related parties	5,559	5,069
Accrued expenses	57,300	65,036
TOTAL LIABILITIES	127,886	102,957
STOCKHOLDERS' EQUITY		
Preferred stock, $0.001 par value, 1,000,000 authorized, no shares issued or outstanding		
Common stock $0.001 par value, 250,000,000 authorized, 68,077,288 and 65,237,879 issued and outstanding at December 31, 2016 and December 31, 2015	68,078	65,238
Additional paid-in-capital	48,998,073	46,541,251
Accumulated deficit	(46,006,629)	(41,599,421)
TOTAL STOCKHOLDERS' EQUITY	3,059,522	5,007,068
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 3,187,408	$ 5,110,025

The accompanying notes are an integral part of these financial statements.

LIGHTWAVE LOGIC, INC.

STATEMENTS OF OPERATIONS

FOR THE YEARS ENDING DECEMBER 31, 2016 AND 2015

	For the Year Ending December 31, 2016	For the Year Ending December 31, 2015
NET SALES	$	$
COST AND EXPENSE		
Research and development	2,474,689	2,825,099
General and administrative	1,660,889	2,020,582
	4,135,578	4,845,681
LOSS FROM OPERATIONS	(4,135,578)	(4,845,681)
OTHER INCOME (EXPENSE)		
Interest income	255	249
Commitment fee	(271,885)	
NET LOSS	$ (4,407,208)	$ (4,845,432)
Basic and Diluted Loss per Share	$ (0.07)	$ (0.08)
Basic and Diluted Weighted Average Number of Shares	66,201,531	60,326,470

The accompanying notes are an integral part of these financial statements.

LIGHTWAVE LOGIC, INC.

STATEMENT OF STOCKHOLDERS' EQUITY

FOR THE YEARS ENDING DECEMBER 31, 2016 AND 2015

	Number of Shares	Common Stock	Additional Paid-in Capital	Accumulated Deficit	Total
BALANCE AT DECEMBER 31, 2014	58,381,854	$ 58,382	$ 40,753,189	$ (36,753,989)	$ 4,057,582
Common stock issued in private placement	6,793,767	6,794	4,308,206		4,315,000
Common stock issued for services	62,258	62	48,901		48,963
Options issued for services			1,339,692		1,339,692
Warrants issued for services			91,263		91,263
Net loss for the year ending December 31, 2015				(4,845,432)	(4,845,432)
BALANCE AT DECEMBER 31, 2015	65,237,879	$ 65,238	$ 46,541,251	$ (41,599,421)	$ 5,007,068
Common stock issued to institutional investor	2,400,000	2,400	1,550,790		1,553,190
	400,481	401	271,484		271,885

Common stock issued for additional commitment shares					
Common stock issued for services	38,928	39	23,961		24,000
Options issued for services			436,228		436,228
Warrants issued for services			174,359		174,359
Net loss for the year ending December 31, 2016				(4,407,208)	(4,407,208)
BALANCE AT DECEMBER 31, 2016	68,077,288	$ 68,078	$ 48,998,073	$ (46,006,629)	$ 3,059,522

The accompanying notes are an integral part of these financial statements.

LIGHTWAVE LOGIC, INC.

STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDING DECEMBER 31, 2016 AND 2015

	For the Year Ending December 31, 2016	For the Year Ending December 31, 2015
CASH FLOWS FROM OPERATING ACTIVITIES		
Net loss	$ (4,407,208)	$ (4,845,432)
Adjustment to reconcile net loss to net cash used in operating activities		
Warrants issued for services	174,359	91,263
Stock options issued for services	436,228	1,339,692
Common stock issued for services and fees	295,885	48,963
Depreciation and amortization of patents	195,610	179,907
Gain on disposal of property and equipment	(644)	
(Increase) decrease in assets		
Prepaid expenses and other current assets	127,549	(136,264)
Increase (decrease) in liabilities		
Accounts payable	32,175	(145,313)
Accounts payable and accrued expenses-related parties	490	(5,254)
Accrued expenses	(7,736)	31,683
Net cash used in operating activities	(3,153,292)	(3,440,755)
CASH FLOWS FROM INVESTING ACTIVITIES		
Cost of intangibles	(64,096)	(29,577)
Purchase of equipment, furniture and leasehold improvements	(129,163)	(279,903)
Sale of property and equipment	19,500	
Net cash used in investing activities	(173,759)	(309,480)
CASH FLOWS FROM FINANCING ACTIVITIES		
Issuance of common stock, private placement		4,315,000
Issuance of common stock, institutional investor	1,553,190	
Net cash provided by financing activities	1,553,190	4,315,000
NET (DECREASE) IN CASH AND CASH EQUIVALENTS	(1,773,861)	564,765
CASH AND CASH EQUIVALENTS - BEGINNING OF YEAR	3,730,705	3,165,940
CASH AND CASH EQUIVALENTS - END OF YEAR	$ 1,956,844	$ 3,730,705

The accompanying notes are an integral part of these financial statements.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

History and Nature of Business

Lightwave Logic, Inc. is a technology Company focused on the development of next generation photonic devices and non-linear optical polymer materials systems for applications in high speed fiber-optic data communications and optical computing markets. Currently the Company is in various stages of photonic device and materials development and evaluation with potential customers and strategic partners. The Company expects to obtain a revenue stream from dotcom and telecom devices, sales of non-linear optical polymers, and product development agreements prior to moving into full-scale production.

The Company s current development activities are subject to significant risks and uncertainties, including failing to secure additional funding to operationalize the Company s technology now under development.

Lightwave Logic, Inc., (the Company) was organized under the laws of the State of Nevada in 1997 as Eastern Idaho Internet Service, Inc. The Company was engaged in an unrelated business until June 30, 1998, at which time the principal assets of that business were sold and operations were discontinued. The Company was inactive until the acquisition of PSI-TEC Corporation (PSI-TEC) on July 14, 2004, which is when the Company commenced with its current business and changed its name to PSI-TEC Holdings, Inc.

Merger

On July 14, 2004, the Company acquired PSI-TEC in a share exchange, which was considered to be a capital transaction in substance rather than a business combination, and was accounted for as a change of capital structure under accounting principles generally accepted in the United States. On October 20, 2006, the Company and PSI-TEC merged and the Company changed its name to Third-Order Nanotechnologies, Inc. On March 10, 2008, the Company changed its name to Lightwave Logic, Inc.

Basis of Presentation

The accompanying financial statements are presented in accordance with accounting principles generally accepted in the United States of America.

Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying disclosures. Although these estimates are based on management s best knowledge of current events and actions the Company may undertake in the future, actual results could differ from the estimates.

Cash Equivalents

For the purposes of the statement of cash flows, the Company considers all highly liquid instruments with maturities of three months or less at the time of purchase to be cash equivalents.

Concentration of Credit Risk

Certain financial instruments potentially subject the Company to concentrations of credit risk. These financial instruments consist primarily of cash. At December 31, 2016, the Company did have deposits with a financial institution that exceed the Federal Depository Insurance coverage.

Property and Equipment

Equipment is stated at cost. Depreciation is principally provided by use of straight-line methods for financial and tax reporting purposes over the estimated useful lives of the assets, generally 5 years. When property is retired or otherwise disposed of, the cost and accumulated depreciation are removed from the accounts and any resulting gain or loss is included in operations.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Intangible Assets

Definite-lived intangible assets are stated at cost. Patents are amortized over their estimated useful lives, commencing from the date of grant for the remaining legal lives of the patents. The patents generally have a term of up to 20 years from the date of filing of the earliest related patent application. When certain patent applications are abandoned by the Company for claims that are covered by patents already granted to the Company, the cost of patent applications are removed from the accounts and the resulting expense is reflected in the statement of operations.

Fair Value of Financial Instruments

The Company s financial instruments consist of cash, accounts payable and accrued expenses. The carrying values of cash, accounts payable and accrued expenses approximate fair value because of their short maturities.

Income Taxes

The Company follows FASB ASC 740, Income Taxes, which requires an asset and liability approach to financial accounting and reporting for income taxes. Deferred income tax assets and liabilities are computed annually for temporary differences between the financial statement and tax bases of assets and liabilities that will result in taxable or deductible amounts in the future based on enacted tax laws and rates applicable to the periods in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the tax payable or refundable for the period plus or minus the change during the period in deferred tax assets and liabilities.

Stock-based Payments

The Company accounts for stock-based compensation under the provisions of Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 718, "Compensation - Stock Compensation", which requires the measurement and recognition of compensation expense for all stock-based awards made to employees and directors based on estimated fair values on the grant date. The Company estimates the fair value of stock-based awards on the date of grant using the Black-Scholes model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the shorter of the vesting period or the requisite service periods using the straight-line

method. The Company accounts for stock-based compensation awards to nonemployees in accordance with FASB ASC 505-50, "Equity-Based Payments to Non-Employees (ASC 505-50). Under ASC 505-50, the Company determines the fair value of the warrants or stock-based compensation awards granted as either the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable. All issuances of stock options or other equity instruments to non-employees as consideration for goods or services received by the Company are accounted for based on the fair value of the equity instruments issued. Any stock options issued to non-employees are recorded as an expense and additional paid in capital in stockholders equity over the applicable service periods. Non-employee equity based payments are recorded as an expense over the service period, as if the Company had paid cash for the services. At the end of each financial reporting period, prior to vesting or prior to the completion of the services, the fair value of the equity based payments will be re-measured and the non-cash expense recognized during the period will be adjusted accordingly. Since the fair value of equity based payments granted to non-employees is subject to change in the future, the amount of the future expense will include fair value re-measurements until the equity based payments are fully vested or the service completed.

Loss Per Share

The Company follows FASB ASC 260, Earnings per Share , resulting in the presentation of basic and diluted earnings per share. Because the Company reported a net loss in 2016 and 2015, common stock equivalents, including stock options and warrants were anti-dilutive; therefore, the amounts reported for basic and dilutive loss per share were the same.

Recoverability of Long Lived Assets

The Company follows FASB ASC 360, Property, Plant, and Equipment . Long-lived assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the related carrying amount may not be recoverable. When required, impairment losses on assets to be held and used are recognized based on the excess of the asset s carrying amount.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Comprehensive Income

The Company follows FASB ASC 220.10, Reporting Comprehensive Income. Comprehensive income is a more inclusive financial reporting methodology that includes disclosure of certain financial information that historically has not been recognized in the calculation of net income. Since the Company has no items of other comprehensive income, comprehensive income (loss) is equal to net loss.

Recently Adopted Accounting Pronouncements

In August 2014, the FASB issued ASU 2014-15, Presentation of Financial Statements Going Concern (Subtopic 205-40), Disclosure of Uncertainties about an Entity s Ability to Continue as a Going Concern. The amendments in this Update provide guidance about management s responsibility to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the entity s ability to continue as a going concern within one year after the date that the financial statements are issued and to provide related footnote disclosures. Substantial doubt about an entity s ability to continue as a going concern exists when relevant conditions and events, considered in the aggregate, indicate that it is probable that the entity will be unable to meet its obligations as they become due within one year after the date that the financial statements are issued. The amendments in this Update are effective for the annual period ending after December 15, 2016, and for annual periods and interim periods thereafter. The amendments were adopted as of December 31, 2016, see Note 2 for management s evaluation and disclosure.

Recently Issued Accounting Pronouncements Not Yet Adopted

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

In August 2015, FASB issued ASU 2015-14 which deferred the effective date of Update 2014-09 to annual reporting periods beginning after December 15, 2017. The Company anticipates that the impact of this guidance on the financial

statements will not be material.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The amendments in this Update specify the accounting for leases. The core principle of Topic 842 is that a lessee should recognize the assets and liabilities that arise from leases. For public business entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently assessing the impact of adoption of this guidance will have on the financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, which simplifies several aspects of the accounting for share-based payment award transactions, including: (1) income tax consequences; (2) classification of awards as either equity or liabilities, and (3) classification on the statement of cash flows. For public companies, the amendments in this ASU are effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company is currently assessing the impact of adoption of this guidance will have on the financial statements.

NOTE 2 MANAGEMENT S PLANS

As a technology company focusing on the development of the next generation photonic devices and non-linear optical polymer materials systems, substantial net losses have been incurred since inception. The Company has satisfied capital requirements since inception primarily through the issuance and sale of its common stock. The Company currently has a cash position of approximately $2,360,000. Based upon the current cash position and expenditures of approximately $330,000 per month and no debt service, management believes the Company has sufficient funds to finance its operations through September 2017. In January 2016, the Company signed a purchase agreement (Purchase Agreement) with an institutional investor to sell up to $20,000,000 of common stock. A registration statement related to the transaction filed with the U.S. Securities and Exchange Commission registering 5,000,000 shares of the Company s common stock went effective on April 7, 2016. Under the Purchase Agreement and at Company's sole discretion, the institutional investor has committed to invest up to $20,000,000 in common stock over a 36-month period with the remaining available amount of $17,374,650. The Company has raised $1,553,190 as of December 31, 2016. Since January 1, 2017, the Company has raised an additional $1,072,160.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 3 PROPERTY AND EQUIPMENT

Property and equipment consists of the following:

	December 31, 2016	December 31, 2015
Office equipment	$ 55,817	$ 51,323
Lab equipment	789,135	722,555
Furniture	32,693	26,028
Leasehold improvements	231,859	231,859
	1,109,504	1,031,765
Less: Accumulated depreciation	683,854	536,703
	$ 425,650	$ 495,062

Depreciation expense for the years ending December 31, 2016 and 2015 was $179,720 and $160,068. During the second quarter of 2016, the Company sold equipment for proceeds of $19,500 and a gain of $644.

NOTE 4 INTANGIBLE ASSETS

This represents legal fees and patent fees associated with the prosecution of patent applications. The Company has recorded amortization expenses on the Spacer and Chromophore patents granted by the United States Patent and Trademark Office in February 2011, April 2011 and September 2012, which are amortized over the remaining legal life and Chromophore patent granted by the Australian Patent Office in November 2012, which is amortized over the remaining legal life. Certain patent applications are abandoned by the Company when the claims are covered by patents already granted to the Company. Patent applications abandoned have been written off at full capitalized cost. No amortization expense has been recorded on the remaining patent applications since patents have yet to be granted.

Patents consists of the following:

	December 31, 2016	December 31, 2015
Patents	$ 754,259	$ 690,162
Less: Accumulated amortization	86,287	70,395
	$ 667,972	$ 619,767

Amortization expense for the years ending December 31, 2016 and 2015 was $15,891 and $19,839. Expense for abandoned patents for claims covered by patents already granted to the Company for the years ending December 31, 2016 and 2015 was $0 and are recorded in research and development expenses.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 5 COMMITMENTS

The Company is obligated under an operating lease for office and laboratory space. The aggregate minimum future lease payments under the operating leases are as follows:

DECEMBER 31,	AMOUNT
2017	$ 66,732
2018	50,274
2019	6,307
TOTAL	$ 123,313

Rent expense approximating $100,072 and $18,940 is included in research and development and general and administrative expenses for the year ended December 31, 2016. Rent expense approximating $104,724 and $18,347 is included in research and development and general and administrative expenses for the year ended December 31, 2015.

NOTE 6 INCOME TAXES

As discussed in Note 1, the Company utilizes the asset and liability method of accounting for income taxes in accordance with FASB ASC 740.

The income tax benefit (provision) consists of the following:

	2016	2015
Current	$ (1,633,000)	$ (1,468,000)
Deferred	568,000	346,000

Change in valuation allowance	1,065,000	1,122,000
	$	$

The reconciliation of the statutory federal rate to the Company s effective income tax rate is as follows:

	2016		2015	
	Amount	**%**	**Amount**	**%**
Income tax benefit at U.S. federal income tax rate	$ (1,499,000)	(34)	$ (1,647,000)	(34)
State tax, net of federal tax effect	(397,000)	(9)	(436,000)	(9)
Non-deductible share-based compensation	831,000	19	961,000	20
Other non-deductible				
Change in valuation allowance	1,065,000	24	1,122,000	23
	$		$	

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 6 INCOME TAXES (CONTINUED)

The components of deferred tax assets as of December 31, 2016 and 2015 are as follows:

	2016	2015
Deferred tax asset for NOL carryforwards	$ 14,676,000	$ 13,043,000
Share-based compensation	2,649,000	3,217,000
Accrued expenses		
Valuation allowance	(17,325,000)	(16,260,000)
	$	$

The valuation allowance for deferred tax assets as of December 31, 2016 and 2015 was $17,325,000 and $16,260,000, respectively. The change in the total valuation for the years ended December 31, 2016 and 2015 was an increase of $1,065,000 and $1,122,000, respectively. In assessing the realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the net operating losses and temporary differences become deductible. Management considered projected future taxable income and tax planning strategies in making this assessment. The value of the deferred tax assets was offset by a valuation allowance, due to the current uncertainty of the future realization of the deferred tax assets.

As of December 31, 2016, the Company had net operating loss carry forwards of approximately $34,129,000, expiring through the year ending December 31, 2036. This amount can be used to offset future taxable income of the Company.

The timing and manner in which the Company can utilize operating loss carryforwards in any year may be limited by provisions of the Internal Revenue Code regarding changes in ownership of corporations. Such limitation may have an impact on the ultimate realization of its carryforwards and future tax deductions.

The Company follows FASB ASC 740.10, which provides guidance for the recognition and measurement of certain tax positions in an enterprise s financial statements. Recognition involves a determination of whether it is more likely than not that a tax position will be sustained upon examination with the presumption that the tax position will be examined by the appropriate taxing authority having full knowledge of all relevant information. The adoption of FASB ASC 740.10 did not require an adjustment to the Company s financial statements.

The Company s policy is to record interest and penalties associated with unrecognized tax benefits as additional income taxes in the statement of operations. As of January 1, 2016, the Company had no unrecognized tax benefits and no charge during 2016, and accordingly, the Company did not recognize any interest or penalties during 2016 related to unrecognized tax benefits. There is no accrual for uncertain tax positions as of December 31, 2016.

The Company files U.S. income tax returns and a state income tax return. With few exceptions, the U.S. and state income tax returns filed for the tax years ending on December 31, 2013 and thereafter are subject to examination by the relevant taxing authorities.

NOTE 7 STOCKHOLDERS EQUITY

Preferred Stock

Pursuant to the Company s Articles of Incorporation, the Company s board of directors is empowered, without stockholder approval, to issue series of preferred stock with any designations, rights and preferences as they may from time to time determine. The rights and preferences of this preferred stock may be superior to the rights and preferences of the Company s common stock; consequently, preferred stock, if issued could have dividend, liquidation, conversion, voting or other rights that could adversely affect the voting power or other rights of the common stock. Additionally, preferred stock, if issued could be utilized, under special circumstances, as a method of discouraging, delaying or preventing a change in control of the Company s business or a takeover from a third party.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants

In November 2010, under the 2007 Employee Stock Option Plan the board of directors approved a grant to an outside director an option to purchase up to 100,000 shares of common stock at a purchase price of $1.00 per share. The option was granted on December 13, 2010, vesting 25,000 on December 13, 2010 and the remaining in equal annual installments of 25,000 over the next three years commencing November 4, 2011. In September 2015, the option to purchase 100,000 shares of common stock was extended for 5 years. The incremental increase in fair value of the modified option was $33,393, using the Black-Scholes Option Pricing Formula, and was expensed immediately. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $33,393 of expense. As of December 31, 2016, the option to purchase 100,000 shares of common stock is still outstanding.

In June 2012, under the 2007 Employee Stock Option Plan the board of directors appointed a new member of the board of directors and approved a grant of an option to purchase up to 200,000 shares of common stock at a purchase price of $0.90 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at $145,150, fair value. The option expires in 5 years and vests 50,000 immediately and the remaining in annual equal installments of 50,000 over the next three years. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $16,008 of expense. As of December 31, 2016, options to purchase 200,000 shares of common stock are still outstanding.

In March 2013, under the 2007 Employee Stock Option Plan the board of directors approved a grant to a new employee of an option to purchase up to 75,000 shares of common stock at a purchase price of $1.16 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at $81,076, fair value. The option expires in 10 years with 9,375 vesting quarterly from date of grant. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $6,551 of expense. In November 2015, the options to purchase 75,000 shares of common stock forfeited.

In June 2013, the Company signed a purchase agreement and registration rights agreement with an institutional investor to sell up to $20,000,000 of common stock. For the year ending December 31, 2016 and 2015, the institutional investor did not purchase shares of common stock and the Company did not issue shares of common

stock as additional commitment fee. On February 1, 2016, the Company and the institutional investor entered into an agreement to terminate the purchase agreement and registration rights agreement.

In October 2013, under the 2007 Employee Stock Option Plan the Company issued an option to a new director to purchase 200,000 shares of common stock at a purchase price of $0.93 per share for a directorship commencing November 1, 2013. The option was valued at $174,106, fair value using the Black-Scholes option pricing model. The option expires in 10 years with 50,000 vesting in annual installments commencing November 1, 2013. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $36,251 and $43,527 of expense. As of December 31, 2016, the option to purchase 200,000 shares of common stock is still outstanding.

In March 2014, under the 2007 Employee Stock Option Plan the Company issued options to a new employee to purchase 30,000 shares of common stock at a purchase price of $0.92 per share. The options were valued at $23,304, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years vesting in quarterly equal installments of 3,750 from date of employment. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $1,552 and $11,652 of expense. As of December 31, 2016, the options to purchase 30,000 shares of common stock are still outstanding.

In March 2014, under the 2007 Employee Stock Option Plan the Company issued options to a new employee to purchase 75,000 shares of common stock at a purchase price of $0.92 per share. The options were valued at $58,384, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years vesting in quarterly equal installments of 9,375 from date of employment. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $4,363 and $29,192 of expense. As of December 31, 2016, the options to purchase 75,000 shares of common stock are still outstanding.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants (Continued)

In March 2014, under the 2007 Employee Stock Option Plan the Company issued options to a new employee to purchase 50,000 shares of common stock at a purchase price of $0.92 per share. The options were valued at $38,922, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years vesting in quarterly equal installments of 6,250 from date of employment. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $3,331 and $19,427 of expense. As of December 31, 2016, the options to purchase 50,000 shares of common stock are still outstanding.

In March 2014, under the 2007 Employee Stock Option Plan, the Company issued an option to an employee to purchase 125,000 shares of common stock at a purchase price of $0.92 per share. The option was valued at $96,211, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years vesting in quarterly equal installments of 15,625 commencing April 1, 2014. The option is expensed over the vesting term. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $24,183 of expense. In August 2015, the right to purchase 31,250 shares of common stock under the option forfeited. In November 2015, the right to purchase the remaining 93,750 shares of common stock under the option forfeited.

In March 2014, under the 2007 Employee Stock Option Plan the Company issued options to an employee to purchase 30,000 shares of common stock at a purchase price of $0.92 per share. The options were valued at $22,222, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years vesting in quarterly equal installments of 7,500 commencing April 1, 2014. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $60 of expense. As of December 31, 2016, the options to purchase 30,000 shares of common stock are still outstanding.

In March 2014, under the 2007 Employee Stock Option Plan the Company issued options to purchase 40,000 shares of common stock at a purchase price of $0.92 per share to its Chief Executive Officer as part of a new employment agreement. The options were valued at $29,630, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years vesting in quarterly equal installments of 10,000 commencing April 1, 2014. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0

and $80 of expense. As of December 31, 2016, the options to purchase 40,000 shares of common stock are still outstanding.

In May 2014, under the 2007 Employee Stock Option Plan the Company issued options to a new director to purchase 200,000 shares of common stock at a purchase price of $0.763 per share. The options were valued at $122,515 using the Black-Scholes Option Pricing Formula. The options expire in 10 years with 50,000 vesting immediately and the remainder vesting in annual equal installments of 50,000 commencing on the one year anniversary of the date of grant. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $30,712 and $30,628 of expense. As of December 31, 2016, the options to purchase 200,000 shares of common stock are still outstanding.

During July 2014, the Company issued a warrant to purchase 100,000 shares of common stock at a purchase price of $0.95 per share for accounting services to be rendered over a twelve month period commencing July 1, 2014. The warrant was valued at $53,288, fair value, using the Black-Scholes Option Pricing Formula, vesting over the next twelve months with 8,333 vesting immediately, 8,333 vesting per month on the first day of the next ten months and 8,337 vesting on the first day of the twelfth month of the corresponding service agreement. The warrant expires in five years. The expense is being recognized based on service terms of the agreement over a twelve month period. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $21,238 of expense. As of December 31, 2016, the warrant to purchase 100,000 shares of common stock is still outstanding.

In December 2014, the board of directors approved a grant to a senior advisor effective January 1, 2015 of a warrant to purchase up to 100,000 shares of common stock at a purchase price of $0.77 per share. Using the Black-Scholes Option Pricing Formula, the warrant was valued at $46,576, fair value. The warrant expires in 5 years and vests 25,000 immediately and the remaining in equal monthly installments of 7,500 over the next 10 months. The warrant is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $46,576 of expense. As of December 31, 2016, the warrants to purchase 100,000 shares of common stock are still outstanding.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants (Continued)

In December 2014, under the 2007 Employee Stock Option Plan the board of directors approved a grant to an employee effective January 1, 2015 to purchase 15,000 shares of common stock at a purchase price of $0.77 per share. The options were valued at $7,362, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years vesting 7,500 immediately and 7,500 in 3 months from the effective date of the option agreement. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $7,362 of expense. As of December 31, 2016, the options to purchase 15,000 shares of common stock are still outstanding.

During 2015 the Company issued 37,500 shares, with a fair value of $30,575, to a firm for investor relations services. For the year ending December 31, 2015, the Company recognized $30,575 of expense.

In March 2015, under the 2007 Employee Stock Option Plan, the Company issued options to the Company s five independent directors to each purchase 50,000 shares of common stock at a purchase price of $0.80 per share. Each option was valued at $24,901, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years with 20,000 vesting immediately and the remainder vesting in quarterly equal installments of 10,000 commencing April 1, 2015. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $124,505 of expense. As of December 31, 2016, the options to purchase 250,000 shares of common stock are still outstanding.

In March 2015, under the 2007 Employee Stock Option Plan the Company issued an option to an employee to purchase 2,500 shares of common stock at a purchase price of $0.80 per share. The option was valued at $1,231, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years vesting immediately. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $0 and $1,231 of expense. As of December 31, 2016, the options to purchase 2,500 shares of common stock are still outstanding.

In May 2015, the Company increased the authorized shares of common stock from 100,000,000 to 250,000,000.

During May 2015 through June 2015, the Company issued 2,816,199 shares of common stock and warrants to purchase 2,816,199 shares of common stock expiring five years from the date of purchase, for proceeds of $1,915,000 in accordance to a private placement memorandum as amended on May 27, 2015. Pursuant to the terms of the offerings, up to 20 units were offered at the purchase price of $100,000 per unit, with each unit comprised of 147,060 shares and a warrant to purchase 73,530 shares of common stock at $0.85 per share and a warrant to purchase 73,530 shares of common stock at $1.02 per share. The warrants to purchase 1,408,102 shares of common stock at $0.85 per share are still outstanding as of December 31, 2016. The warrants to purchase 1,408,097 shares of common stock at $1.02 per share are still outstanding as of December 31, 2016. Since the warrants are considered indexed to its own stock and qualify for equity classification, there is no requirement to separately account for the warrants.

During July 2015, under the 2007 Employee Stock Option Plan, the Company issued to employees and a director options to purchase 2,100,000 shares of common stock at a purchase price of $0.70 per share. The options were valued at $931,284, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years and vest immediately. The options are expensed over the vesting terms. All the options issued replaced options that either expired or were canceled. For the year ending December 31, 2016 and 2016, the Company recognized $0 and $931,284 of expense. As of December 31, 2016, the options to purchase 2,100,000 shares of common stock are still outstanding.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants (Continued)

During July 2015, the Company issued a warrant to purchase 125,000 shares of common stock at a purchase price of $0.70 per share for accounting services to be rendered over a twelve month period commencing July 1, 2015. The warrant was valued at $46,897, fair value at December 31, 2015, using the Black-Scholes Option Pricing Formula, vesting over the next twelve months with 10,416 vesting immediately, 10,416 vesting per month on the first day of the next ten months and 10,424 vesting on the first day of the twelfth month of the corresponding service agreement. The warrant expires in five years. The expense is being recognized based on service terms of the agreement over a twelve month period. For the year ending December 31, 2016 and 2015, the Company recognized $23,452 and $23,449 of expense. As of December 31, 2016, the warrants to purchase 125,000 shares of common stock are still outstanding.

During August 2015, under the 2007 Employee Stock Option Plan, the Company issued an option to an employee to purchase 50,000 shares of common stock at a purchase price of $0.67 per share. The option was valued at $19,930, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests 12,500 immediately and the remaining in equal quarterly installments of 12,500 over the next three quarters. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $7,203 and $12,727 of expense. As of December 31, 2016, the options to purchase 50,000 shares of common stock are still outstanding.

During August 2015, under the 2007 Employee Stock Option Plan, the Company issued options to three employees to purchase an aggregate of 75,000 shares of common stock at a purchase price of $0.69 per share. The options were valued at $32,734, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years and vest 15,000 immediately and the remaining in equal quarterly installments of 15,000 over the next four quarters. The options are expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $17,142 and $15,582 of expense. As of December 31, 2016, the options to purchase 75,000 shares of common stock are still outstanding.

During August 2015, under the 2007 Employee Stock Option Plan, the Company issued an option to a new director to purchase 200,000 shares of common stock at a purchase price of $0.69 per share. The option was valued at $90,615,

fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests 50,000 immediately and the remaining in equal annual installments of 50,000 over the next three years. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $22,654 and $30,518 of expense. As of December 31, 2016, the options to purchase 200,000 shares of common stock are still outstanding.

During October 2015, under the 2007 Employee Stock Option Plan, the Company issued options to a new employee to purchase 35,000 shares of common stock at a purchase price of $0.74 per share. The option was valued at $16,393, fair value, using the Black-Scholes Option Pricing Formula. The options expire October 12, 2025 with 4,375 shares vesting on the anniversary date of the third month of employment and the remaining vesting in seven equal installments of 4,375 at the end of every three month period thereafter. The option is expensed over the vesting terms. For the year ending December 31, 2016 and 2015, the Company recognized $8,196 and $1,782 of expense. As of December 31, 2016, the options to purchase 35,000 shares of common stock are still outstanding.

During November 2015 through December 2015, the Company issued 3,977,568 shares of common stock and warrants to purchase 3,977,568 shares of common stock expiring five years from the date of purchase, for proceeds of $2,400,000 in accordance with a private placement memorandum, as amended on November 10, 2015. Pursuant to the terms of the offering, up to 60 units were offered at the purchase price of $50,000 per unit, with each unit comprised of 82,866 shares and a warrant to purchase 82,866 shares of common stock at $0.80 per share. The warrants to purchase 3,977,568 shares of common stock at $0.80 per share are still outstanding as of December 31, 2016. Since the warrants are considered indexed to its own stock and qualify for equity classification, there is no requirement to separately account for the warrants.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants (Continued)

During November 2015, under the 2007 Employee Stock Option Plan, the Company granted options effective January 1, 2016 to the Chief Executive Officer to purchase 100,000 shares of common stock at a purchase price of $0.86 per share. The options expire November 9, 2025 with 12,500 shares vesting on January 1, 2016 and the remaining vesting quarterly in equal installments of 12,500 options commencing April 1, 2016. The options were valued at $33,108, fair value, using the Black-Scholes Option Pricing Formula. The option is expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $20,649 of expense. As of December 31, 2016, the options to purchase 100,000 shares of common stock are still outstanding.

In December 2015, the board of directors approved a grant to a senior advisor effective January 1, 2016 of a warrant to purchase up to 125,000 shares of common stock at a purchase price of $0.60 per share. Using the Black-Scholes Option Pricing Formula, the warrant was valued at $44,868, fair value. The warrant expires in 5 years and vests 31,250 immediately and the remaining in equal monthly installments of 9,375 over the next 10 months. The warrant is expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $46,947 of expense. As of December 31, 2016, the warrant to purchase 125,000 shares of common stock is still outstanding.

During 2016 and 2015 the Company issued 38,928 shares and 24,758 shares, respectively, with a fair value of $42,387, to directors serving as a member of the Company s Operations Committee. For the year ending December 31, 2016 and 2015, the Company recognized $24,000 and $18,387 of expense. During January and February 2017, the Company issued 5,510 additional shares of common stock valued at $4,000.

In January 2016, the Company signed a Purchase Agreement with an institutional investor to sell up to $20,000,000 of common stock. The Company also entered into a registration rights agreement with the institutional investor whereby the Company agreed to file a registration statement related to the transaction with the U.S. Securities and Exchange Commission registering 5,000,000 shares of the Company s common stock. The registration statement was filed on March 25, 2016. The registration statement became effective April 7, 2016. Under the Purchase Agreement and at Company's sole discretion, the institutional investor has committed to invest up to $20,000,000 in common stock over a 36-month period. The Company issued 350,000 shares of restricted common stock to the institutional investor as an

initial commitment fee valued at $237,965, fair value, and 650,000 shares of common stock are reserved for additional commitment fees to the institutional investor in accordance with the terms of the Purchase Agreement. During the year ending December 31, 2016, the institutional investor purchased 2,400,000 shares of common stock for proceeds of $1,553,190 and the Company issued 50,481 shares of common stock as an additional commitment fee, valued at $33,920, fair value, leaving 599,519 in reserve for additional commitment fees. During January, February and March 2017, the institutional investor purchased 1,600,000 shares of common stock for proceeds of $1,072,160 and the Company issued 34,844 shares of common stock as additional commitment fee, valued at $24,754, fair value, leaving 564,675 in reserve for additional commitment fees.

In February 2016, under the 2007 Employee Stock Option Plan, the Company issued options to the Company s six independent directors to each purchase 50,000 shares of common stock at a purchase price of $0.68 per share. Each option was valued at $21,475, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years with an aggregate of 20,000 vesting immediately and the remaining vest in quarterly equal installments of 10,000 commencing April 1, 2016. The options are expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $128,850 of expense. As of December 31, 2016, the options to purchase 300,000 shares of common stock are still outstanding.

In May 2016, under the 2007 Employee Stock Option Plan, the Company issued an option to a director to purchase 200,000 shares of common stock at a purchase price of $0.60 per share. The option was valued at $67,376, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests immediately. The option is expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $67,376 of expense. As of December 31, 2016, the option to purchase 200,000 shares of common stock is still outstanding.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants (Continued)

In May 2016, under the 2007 Employee Stock Option Plan, the Company issued an option to an employee to purchase 5,000 shares of common stock at a purchase price of $0.60 per share. The option was valued at $1,738, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vesting in quarterly equal installments of 625 commencing August 4, 2016. The option is expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $571 of expense. As of December 31, 2016, the option to purchase 5,000 shares of common stock is still outstanding.

Effective June 24, 2016, the 2007 Employee Stock Plan was terminated. The Board of Directors approved a new 2016 Equity Incentive Plan in the amount of 3,000,000 shares on April 15, 2016, which the Company s shareholders approved on May 20, 2016.

In July 2016, under the 2016 Equity Incentive Plan, the Company issued an option to a new employee to purchase 15,000 shares of common stock at a purchase price of $0.63 per share. The option was valued at $6,216, fair value, using the Black-Scholes Option Pricing Formula. The option expires in 10 years and vests in quarterly equal installments of 1,875 commencing on September 27, 2016. The option is expensed over the vesting term. For the year ending December 31, 2016, the Company recognized $1,580 of expense. As of December 31, 2016, the option to purchase 15,000 shares of common stock is still outstanding.

During July 2016, the Company issued a warrant to purchase 150,000 shares of common stock at a purchase price of $0.63 per share for accounting services to be rendered over a twelve month period commencing July 1, 2016. The warrant was valued at $60,272, fair value, using the Black-Scholes Option Pricing Formula, vesting over the next twelve months with 12,500 vesting immediately, 12,500 vesting per month on the first day of the next ten months and 12,500 vesting on the first day of the twelfth month of the corresponding service agreement. The warrant expires in five years. The expense is being recognized based on service terms of the agreement over a twelve month period. For the year ending December 31, 2016, the Company recognized $25,703 of expense. As of December 31, 2016, the warrants to purchase 150,000 shares of common stock are still outstanding.

During November 2016, under the 2016 Equity Incentive Plan, the Company issued options to an employee to purchase 15,000 shares of common stock at a purchase price of $0.60 per share. The option was valued at $5,674, fair value, using the Black-Scholes Option Pricing Formula. The options expire November 9, 2026 with 1,875 shares vesting on December 1, 2016 and the remaining vesting in seven equal quarterly installments of 1,875. The option is expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $954 of expense. As of December 31, 2016, the option to purchase 15,000 shares of common stock is still outstanding.

During November 2016, the Company issued a warrant to an employee to purchase 250,000 shares of common stock at a purchase price of $0.615 per share for services. The warrant was valued at $55,898, fair value, using the Black-Scholes Option Pricing Formula, vesting immediately. The warrant expires in five years. The expense is being recognized based on service period. For the year ending December 31, 2016, the Company recognized $55,898 of expense. As of December 31, 2016, the warrants to purchase 250,000 shares of common stock are still outstanding.

During November 2016, the Company issued a warrant to an employee to purchase 100,000 shares of common stock at a purchase price of $0.615 per share for services. The warrant was valued at $22,359, fair value, using the Black-Scholes Option Pricing Formula, vesting immediately. The warrant expires in five years. The expense is being recognized based on service period. For the year ending December 31, 2016, the Company recognized $22,359 of expense. As of December 31, 2016, the warrants to purchase 100,000 shares of common stock are still outstanding.

During December 2016, under the 2016 Equity Incentive Plan, the Company issued options to the Chief Executive Officer to purchase 250,000 shares of common stock at a purchase price of $0.565 per share. The option was valued at $84,844, fair value, using the Black-Scholes Option Pricing Formula. The options expire December 20, 2026 and vest immediately. The option is expensed over the vesting terms. For the year ending December 31, 2016, the Company recognized $84,844 of expense. As of December 31, 2016, the option to purchase 250,000 shares of common stock is still outstanding.

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 7 STOCKHOLDERS EQUITY (CONTINUED)

Common Stock and Warrants (Continued)

During January 2015, warrants to purchase 487,500 shares of common stock at an exercise price of $1.51 expired. During July 2015, options to purchase 1,150,000 shares of common stock at an exercise price of $1.75 were cancelled. During July 2015, options to purchase 400,000 shares of common stock at an exercise price of $1.42 were cancelled. During July 2015, options to purchase 100,000 shares of common stock at an exercise price of $1.75 expired. During July 2015, options to purchase 100,000 shares of common stock at an exercise price of $1.50 were cancelled. During July 2015, options to purchase 450,000 shares of common stock at an exercise price of $1.00 were cancelled. During August 2015, options to purchase 150,000 shares of common stock at an exercise price of $1.42 expired. During December 2015, options to purchase 35,000 shares of common stock at an exercise price of $1.00 expired. During April 2016 warrants to purchase 150,000 shares of common stock at an exercise price of $1.18 expired. During May 2016, an option to purchase 200,000 shares of common stock at an exercise price of $1.12 expired. During October 2016, options to purchase 150,000 shares of common stock at an exercise price of $0.63 expired. During November 2016, options to purchase 1,002,000 shares of common stock at an exercise price of $0.72 expired. During December 2016 an options to purchase 250,000 shares of common stock at an exercise price of $1.01 expired. During December 2016 warrants issued to purchase 150,000 shares of common stock at an exercise price of $1.30 expired.

NOTE 8 STOCK BASED COMPENSATION

The Company uses the Black-Scholes option pricing model to calculate the grant-date fair value of an award, with the following assumptions for 2016 and 2015: no dividend yield in both years, expected volatility, based on the Company s historical volatility, 58% to 78% in 2016 and between 75% to 79% in 2015, risk-free interest rate between 1.05% to 2.06% in 2016 and between 1.44% to 1.70% in 2015 and expected option life of 2.5 to 5.6 years in 2016 and 5 to 5.75 years in 2015.

As of December 31, 2016, there was $103,451 of unrecognized compensation expense related to non-vested market-based share awards that is expected to be recognized through September 2018.

The following tables summarize all stock option and warrant activity of the Company during the year ended December 31, 2016 and 2015:

	Non-Qualified Stock Options and Warrants Outstanding and Exercisable			
	Number of Shares		**Exercise Price**	**Weighted Average Exercise Price**
Outstanding, December 31, 2014	11,819,600	$	0.25 - $1.75	$ 1.15
Granted	9,746,267	$	0.67 - $1.02	$ 0.81
Expired	(2,837,500)	$	1.00 - $1.75	$ 1.52
Forfeited	(200,000)	$	0.92 - $1.16	$ 1.01
Exercised				
Outstanding, December 31, 2015	18,528,367	$	0.63 - $1.69	$ 0.92
Granted	1,510,000	$	0.57 - $0.86	$ 0.63
Expired	(1,937,000)	$	0.63 - $1.30	$ 0.88
Forfeited				
Exercised				
Outstanding, December 31, 2016	18,101,367	$	0.57 - $1.69	$ 0.90
Exercisable, December 31, 2016	17,780,742	$	0.57 - $1.69	$ 0.90

LIGHTWAVE LOGIC, INC.

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2016 AND 2015

NOTE 8 STOCK BASED COMPENSATION (CONTINUED)

The aggregate intrinsic value of options and warrants outstanding and exercisable as of December 31, 2016 was $22,063. The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying options and warrants and the closing stock price of $.62 for the Company s common stock on December 31, 2016. The total intrinsic value of options and warrants exercised during the year ended December 31, 2015 was $0. No options or warrants were exercised during 2016.

	Non-Qualified Stock Options and Warrants Outstanding		
Range of Exercise Prices	Number Outstanding Currently Exercisable at December 31, 2016	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price of Options and Warrants Currently Exercisable
$0.57 - $1.69	17,780,742	4.59 Years	$0.90

NOTE 9 RELATED PARTY

At December 31, 2016 the Company had a legal accrual to related party of $2,900 and travel and office expense accruals of officers in the amount of $2,659. At December 31, 2015 the Company had a legal accrual to related party of $1,420 and travel and office expense accruals of officers in the amount of $3,649.

NOTE 10 RETIREMENT PLAN

The Company established a 401(k) retirement plan covering all eligible employees beginning November 15, 2013. A contribution of $20,000 was charged to expense and accrued for the year ending December 31, 2016 to all eligible non-executive participants. There were no contributions charged to expense in 2015.

NOTE 11 SUBSEQUENT EVENTS

In November 2016, under the 2016 Equity Incentive Plan, the board of directors approved a grant to a director effective January 9, 2017 of an option to purchase up to 100,000 shares of common stock at a purchase price of $0.75 per share. Using the Black-Scholes Option Pricing Formula, the option was valued at $44,789, fair value. The option expires in 10 years and vests immediately. The option is expensed over the vesting terms.

In December 2016, the board of directors approved a grant to a senior advisor effective January 1, 2017 of a warrant to purchase up to 275,000 shares of common stock at a purchase price of $0.60 per share. Using the Black-Scholes Option Pricing Formula, the warrant was valued at $102,222, fair value. The warrant expires in 5 years and vests 181,250 immediately and the remaining in equal monthly installments of 9,375 over the next 10 months. The warrant is expensed over the vesting terms.

In January 2017, the Company issued options to the Company s five independent directors under the 2016 Equity Incentive Plan to each purchase 50,000 shares of common stock at a purchase price of $0.85 per share. Each option was valued at $26,547, fair value, using the Black-Scholes Option Pricing Formula. The options expire in 10 years with 20,000 vesting immediately and the remainder vesting in quarterly equal installments of 10,000 commencing April 1, 2017. The options are expensed over the vesting terms.