Lightwave Logic, Inc.
Form 424B3
April 23, 2013

Filed Pursuant to Rule 424(b)(3)

Registration No.: 333-174648

4,791,511 Shares

Common Stock

This prospectus relates to the sale of up to 4,791,511 shares of our common stock which may be offered by the selling shareholder, Lincoln Park Capital Fund, LLC, or Lincoln Park, from time to time. The shares of common stock being offered by the selling shareholder are issuable pursuant to the Lincoln Park Purchase Agreement, which we refer to in this prospectus as the Purchase Agreement. Please refer to the section of this prospectus entitled The Lincoln Park Transaction for a description of the Purchase Agreement and the section entitled Selling Shareholder for additional information. Such registration does not mean that Lincoln Park will actually offer or sell the full number of these shares. We will not receive any proceeds from the sales of shares of our common stock by the selling shareholder; however, we may receive proceeds of up to $20,000,000 under the Purchase Agreement.

As of the date of this prospectus, the Company has issued 5,057,659 shares to Lincoln Park under the Purchase Agreement, including the sale of 4,960,363 purchase shares and the issuance of 97,296 additional commitment shares, for aggregate proceeds to the Company of $6,449,997.89, and 5,057,659 of such shares have been sold by Lincoln Park hereunder, with 4,791,511 shares remaining unsold as of the date of this prospectus.

Our common stock is currently quoted on the OTC Markets (OTCQB) under the symbol LWLG . On April 9, 2013, the last reported sale price of our common stock was $1.25 per share.

Investing in our securities involves a high degree of risk. See Risk Factors beginning on page 11 of this prospectus for a discussion of information that should be considered in connection with an investment in our securities.

The selling shareholder is an underwriter within the meaning of the Securities Act of 1933, as amended. The selling shareholder is offering these shares of common stock and may sell all or a portion of these shares from time to time in market transactions, in negotiated transactions or otherwise, and at prices and on terms that will be determined by the then prevailing market price or at negotiated prices directly or through a broker or brokers, who may act as agent or as principal or by a combination of such methods of sale. For additional information on the methods of sale, you should refer to the section entitled Plan of Distribution .

Neither the Securities and Exchange Commission nor any state securities regulators have approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is April 18, 2013.

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You should rely only on the information contained in this prospectus. We have not, and the selling shareholder has not, authorized any person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell, nor is the selling shareholder seeking an offer to buy, securities in any state where the offer or solicitation is not permitted. The information contained in this prospectus is complete and accurate as of the date on the front cover of this prospectus, but information may have changed since that date. We are responsible for updating this prospectus to ensure that all material information is included and will update this prospectus to the extent required by law.

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that these industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data and we do not make any representation as to the accuracy of the information.

PROSPECTUS SUMMARY

The items in the following summary are described in more detail later in this prospectus. This summary does not contain all of the information you should consider. Before investing in our securities, you should read the entire prospectus carefully, including the Risk Factors beginning on page 11 and the financial statements and related notes beginning on page F-1.

Overview

Lightwave Logic, Inc. (then known as Eastern Idaho Internet Service, Inc.) was organized under the laws of the State of Nevada in 1997, where we engaged in the business of marketing Internet services until June 30, 1998 when our operations were discontinued. We were then inactive until we acquired PSI-TEC Corporation as our wholly owned subsidiary on July 14, 2004, at which time our name was changed to PSI-TEC Holdings, Inc. On October 20, 2006, we completed a parent-subsidiary merger with PSI-TEC Corporation whereby we were the surviving corporation of the merger, and our name was changed to Third-Order Nanotechnologies, Inc. On March 10, 2008, we changed our name to Lightwave Logic, Inc. to better suit our strategic business plan and to facilitate stockholder recognition of our Company and our business. Unless the context otherwise requires, all references to the Company, we, our or us and other similar terms means Lightwave Logic, Inc., a Nevada corporation.

We are a development stage, organic nonlinear materials and electro-optical device company. Our primary area of expertise is the chemical synthesis of chromophore dyes used in the development of organic Application Specific Electro-Optic Polymers (ASEOP) and Organic Non-Linear All-Optical Polymers (NLAOP) that have high electro-optic and optical activity. Both types of materials are thermally and photo-chemically stable, which we believe could have utility across a broad range of applications in devices that address markets like, telecommunication, data communications, high-speed computing and photovoltaic cells. Secondarily, the company is developing proprietary electro-optical and all-optical devices utilizing the advanced capabilities of our materials for the application in the fields mentioned above.

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. We expect our patented and patent-pending optical materials, when completed and tested, to be the core of the future generations of optical devices, modules, sub-systems and systems that we will develop or be licensed by electro-optic device manufacturers, such as telecommunications component and systems manufacturers, networking and switching suppliers, semiconductor companies, aerospace companies and government agencies.

Our optical polymers (polymers) are property-engineered at the molecular level (nanotechnology level) to meet the exacting thermal, environmental and performance specifications demanded by electro-optic devices. We believe that

our patented and patent pending technologies will enable us to design optical polymers that are free from the numerous diverse and inherent flaws that plague competitive polymer technologies employed by other companies and research groups. We engineer our polymers with the intent to have temporal, thermal, chemical and photochemical stability within our patented and patent pending molecular architectures.

Our non-linear all optical polymers have demonstrated resonantly enhanced third-order properties approximately 2,630 times larger than fused silica, which means that they are highly photo-optically active in the absence of an RF layer. In this way they differ from other optical polymers and are considered more advanced next-generation materials.

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. Aromaticity is what will enable our core molecular structures to maintain stability under a broad range of polymerization conditions that otherwise appear to affect other current polymer molecular designs. Polymers, polymer-based devices, hybrid devices and the processes used to create them are often patentable, which can provide the developers of such technology with a significant competitive advantage. We consider our proprietary intellectual property to be unique.

Our Business Development

PSI-TEC Corporation (PSI-TEC) was founded in 1991 and incorporated under the laws of the State of Delaware on September 12, 1995. Dr. Frederick J. Goetz founded PSI-TEC in Upland, Pennsylvania where he established a laboratory with a small amount of private funding. PSI-TEC subsequently moved its operations to laboratory space provided by the U.S. Army on the Aberdeen Proving Grounds in cooperation with a division of the Department of Defense for the advancement of ultra wide-bandwidth satellite telecommunications. Thereafter, PSI-TEC commenced operations of its own organic synthesis and thin-films laboratory in Wilmington, Delaware.

In order to become a non-reporting publicly-traded corporation, in July 2004 PSI-TEC reorganized with Eastern Idaho Internet Services, Inc. (Eastern Idaho) whereby (i) Eastern Idaho changed its name to PSI-TEC Holdings, Inc. (PSI-TEC Holdings); (ii) PSI-TEC Holdings acquired all of the issued and outstanding shares of PSI-TEC stock; (iii) PSI-TEC became PSI-TEC Holdings wholly-owned operating subsidiary; and (iv) PSI-TEC Holdings then sole officer and director resigned, PSI-TEC's nominees were elected to PSI-TEC Holdings board of directors and new management was appointed. For accounting purposes, this acquisition transaction was accounted for as a reverse-acquisition, whereby PSI-TEC was deemed to have purchased PSI-TEC Holdings. As a result, the historical financial statements of PSI-TEC became the historical financial statements of PSI-TEC Holdings.

Immediately prior to the time of the reorganization transaction, Eastern Idaho was a non-reporting development stage company whose stock was traded on the OTC: Pink Sheets. It had no substantive business operations and it was seeking other business opportunities. Eastern Idaho was originally incorporated under the laws of the State of Nevada on June 24, 1997 to operate as an Internet services marketing firm. It was unsuccessful in this venture, and in June 1998 it ceased its operations and sold all of its operating assets.

On October 20, 2006, in order to consolidate the operations of PSI-TEC Holdings, Inc. and PSI-TEC Corp. (PSI-TEC Holdings, Inc.'s wholly owned subsidiary), PSI-TEC Holdings, Inc. and PSI-TEC Corp. merged; and PSI-TEC Holdings, Inc., a Nevada corporation, became the surviving entity and subsequently changed its name to Third-Order Nanotechnologies, Inc. No change of control or domicile occurred as a result of the merger.

On March 10, 2008, Third-order Nanotechnologies, Inc. changed its name to Lightwave Logic, Inc. to better suit its strategic business plan and to facilitate stockholder recognition of the Company and its business. Therefore, unless the context otherwise requires, all references herein to the Company, we, our or us and other similar terms means Lightwave Logic, Inc., a Nevada corporation.

In February and April 2011, respectively, the United States Patent Office granted our Company two patents: US Patent No. 7,894,695 covering our Tricyclic Spacer System for Non-Linear Optical Devices and US Patent No. 7,919,619 for Heterocyclical Chromophore Architectures directed to our Perkinamine ™ chromophores. These composition of matter patents taken together protect the core of our electro-optical materials portfolio.

In March 2011, we entered into a research and development agreement with the City University of New York s Laboratory for Nano Micro Photonics (LaNMP) to develop Third-order non-linear devices. We believe that the combination of LaNMP s device capabilities together with our materials expertise should accelerate the development of all-optical devices.

In March 2011, the United States Patent Office granted our Company 2 patents: US Patent No. 7,919,619 for Heterocyclical Chromophore Architectures directed to our Perkinamine ™ chromophores and US Patent No. 7,894,695 covering our Tricyclic Spacer System for Non-Linear Optical Devices. These composition of matter patents taken together protect the core of our electro-optical materials portfolio.

In March 2011, the City University of New York s Laboratory for Nano Micro Photonics (LaNMP) fabricated our first-ever all optical waveguide using one of our Perkinamine NR ™ chromophores. It is anticipated that LaNMP will use this device architecture to develop various all-optical devices including an all-optical transistor.

In March 2011, we announced a two-year research and development collaboration with the University of Alabama to explore the advanced energy capture properties of our Perkinamine ™ class of chromophores. Our material absorbs light across a wide range of wavelengths from near infra-red into the near ultraviolet. The University intends to explore how to efficiently capture a wide range of solar radiation with our material.

In December 2011, we announced the discovery of a new material named Perkinamine Indigo™. We believe this represents a major advancement in the field of organic nonlinear optical materials. The material demonstrated an unusually high electro-optical effect of greater than 250 picometers per volt with excellent thermal and photo stability. Independent research laboratories at Photon-X and The University of Colorado confirmed these characteristics. We do, however, have to do a complete characterization of these materials to fully understand what material properties are causing these results before any of our partners will move forward with this material. The major microelectronics company we are working with will be characterizing the material at their location using their proprietary devices while we continue our work with the University of Colorado, Boulder. In order to further characterize our Perkinamine class of materials, including Perkinamine Indigo™, the Company has developed Mach-Zehnder interferometry and standard Teng-Man test set-ups in its own facilities. The Company s optical lab is starting to test materials.

In June 2012 we opened a new internal research laboratory facility in Newark, Delaware in the Delaware Technology Park, near the University of Delaware. This new lab facility enables us to synthesize and test our materials in the same facility and will help us accelerate our development efforts. It is equipped with state of the art equipment necessary to expand our ability to conduct synthetic chemistry in much more tightly controlled conditions. Additionally, we have equipped a separate advanced optical laboratory at the same location where the necessary testing of material candidates will be performed as they emerge from our new synthesis laboratory.

In July 2012 we entered into an agreement with The University of Colorado, Boulder to conduct analytical testing and to carry out studies that will give a better understanding of the properties of a new class of composite organic electro-optic materials. This class of materials is our Perkinamine Indigo™. The processing and measurements are to be carried out primarily at the Guided Wave Optics Laboratory (GWOL). The work is being done in close collaboration with Company personnel.

In September 2012 the United States Patent Office granted our Company U.S. Patent No. 8,269,004, entitled Heterocyclical Anti-Aromatic Chromophore Architectures. This patent protects the unique molecular structures that give our chromophores the thermal stability necessary to withstand CMOS processing temperatures without compromising electro-optical effects.

Corporate Information

Our principal executive office is located at 111 Ruthar Drive, Newark, DE 19711, and our telephone number is (302) 356-2709. 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 prospectus is not intended to and does not imply a relationship with, or endorsement or sponsorship of us by, any of these other parties.

As of the date of this prospectus, the Company has issued 5,057,659 shares to Lincoln Park under the Purchase Agreement, including the sale of 4,960,363 purchase shares and the issuance of 97,296 additional commitment shares, for aggregate proceeds to the Company of $6,449,997.89, and 5,208,489 of such shares have been sold by Lincoln Park pursuant to the Existing Registration Statement, with 4,791,511 shares remaining unsold under the Existing Registration Statement.

The Offering

Common stock outstanding prior to the offering (1)	51,428,455 shares, including 150,830 initial commitment shares previously issued to Lincoln Park under the Purchase Agreement (and included in this offering), 4,960,363 shares issued and sold to Lincoln Park under the Purchase Agreement and 97,296 additional commitment shares issued to Lincoln Park under the Purchase Agreement.
Common Stock offered by the selling shareholder	4,791,511 shares, consisting of the 150,830 initial commitment shares already issued to Lincoln Park, up to 97,296 shares to be issued to Lincoln Park as additional commitment shares and the remaining shares to be purchased from time to time under the Purchase Agreement
Common stock to be outstanding after giving effect to the issuance of 4,791,511 shares to Lincoln Park under the Purchase Agreement	56,219,966 shares
Use of proceeds	We will not receive any proceeds from the sale of the shares of common stock by Lincoln Park. However, we may receive up to $20,000,000 from sales of shares under the Purchase Agreement. Any proceeds that we receive from sales to Lincoln Park under the Purchase Agreement will be used to further our business plan of expanding our research and development of our polymer materials technologies, commercialize potential optical devices and materials and for general and administrative purposes. See Use of Proceeds .
OTC Markets (OTCQB) symbol	LWLG
Risk factors	This investment involves a high degree of risk. See Risk Factors for a discussion of factors you should consider carefully before making an investment decision.

(1) The number of shares of our common stock set forth above is based on 51,428,455 shares of common stock outstanding as of the date of this prospectus, and excludes:

options to purchase 5,447,000 shares of our common stock pursuant to our 2007 Employee Stock Plan, of which 4,647,000 have vested as of the date of this prospectus, at a weighted average exercise price of $1.23 per share; and

warrants to purchase an aggregate of 3,189,000 shares of our common stock, of which 3,095,612 have vested as of the date of this prospectus at a weighted average exercise price of $1.05 per share.

On May 3, 2011, we executed a Purchase Agreement and a Registration Rights Agreement with the selling shareholder, Lincoln Park Capital Fund, LLC, or Lincoln Park. Under the Purchase Agreement, we have the right to sell to Lincoln Park up to an aggregate $20,000,000 of our common stock at our option as described below.

Pursuant to the Registration Rights Agreement, we are filing this prospectus with the SEC covering the shares that may be issued to Lincoln Park under the Purchase Agreement. We did not have the right to commence any sales of our shares to Lincoln Park until the SEC declared effective the registration statement of which this prospectus is made a part (Registration No. 333-174648). Thereafter, over approximately 30 months, and subject to certain terms and conditions, we have the right to direct Lincoln Park to make periodic purchases of up to $1,000,000 of our common stock per sale depending on certain conditions as set forth in the Purchase Agreement as often as every five business days up to the aggregate

commitment of $20,000,000. The purchase price of the shares will be based on the market prices of our shares immediately prior to the time of sale as computed under the Purchase Agreement without any fixed discount. In no event, however, will Lincoln Park be obligated to purchase shares of our common stock under the Purchase Agreement at a price of less than $1.00 per share. We may, at any time, and in our sole discretion, terminate the Purchase Agreement without fee, penalty or cost upon notice to Lincoln Park. Lincoln Park may not assign or transfer its rights and obligations under the Purchase Agreement.

Under the Purchase Agreement and the Registration Rights Agreement, we are required to register an aggregate 10,000,000 shares, which originally included the 150,830 shares previously issued to Lincoln Park upon signing the Purchase Agreement as a commitment fee and an aggregate 301,659 additional commitment shares which we are required to issue pro rata in the future as a commitment fee if and when we sell shares to Lincoln Park under the Purchase Agreement.

As of the date of this prospectus, we have issued 5,057,659 shares to Lincoln Park under the Purchase Agreement, including the sale of 4,960,363 purchase shares and the issuance of 97,296 of the 301,659 additional commitment shares, and received aggregate proceeds of $6,449,997.89. We originally registered for resale by Lincoln Park the 10,000,000 shares of our common stock in June 2011 under the Existing Registration Statement (File No. 333-174648) and as of the date of this prospectus, 4,791,511 shares remain unsold.

Although the Purchase Agreement provides that we may sell up to a remaining $13,550,002.11 of our common stock to Lincoln Park, we are only registering 4,791,511 remaining shares to be purchased thereunder, which may or may not cover all such shares purchased by Lincoln Park under the Purchase Agreement, depending on the purchase price per share. Of the 4,791,511 remaining shares offered under this prospectus:

150,830 shares were already issued to Lincoln Park as a commitment fee for entering into the Purchase Agreement; and

204,363 shares represent remaining shares that we are required to issue proportionally in the future, as a commitment fee, if and when we sell additional shares to Lincoln Park under the Purchase Agreement; and

The remainder represents shares we may sell to Lincoln Park under the Purchase Agreement.

Except as otherwise indicated herein, all information in this prospectus, including the number of shares that will be outstanding after this offering, assumes or gives effect to no exercise of options or warrants outstanding on the date of this prospectus or in the future, except as specifically set forth herein.

As of the date of this prospectus, there were 51,428,455 shares outstanding, of which 35,699,919 shares were held by non-affiliates. If all of the 4,791,511 remaining shares offered by Lincoln Park were issued and outstanding as of the date hereof, such shares would represent 8.54% of the total common stock outstanding, or 11.8% of the non-affiliates shares outstanding (assuming that the shares offered by Lincoln Park are not held by affiliates). The number of shares ultimately offered for sale by Lincoln Park is dependent upon the number of shares that we sell to Lincoln Park under the Purchase Agreement. If we elect to issue more than the 4,791,511 shares offered under this prospectus, which we have the right but not the obligation to do, we must first register under the Securities Act the resale by Lincoln Park of any additional shares we may elect to sell to Lincoln Park before we can sell such additional shares.

Glossary of Select Technology Terms Used Herein

All-optical devices

All-optical devices convert data in the form of input light signals to a secondary light data stream. The future market of all-optical devices and switches is expected to include all-optical transistors.

All-optical transistors

All-optical transistors are devices currently under development that use an input light signal to switch a secondary light signal. All-optical transistors are expected to enable the fabrication of an entirely new generation of high-speed computers that operate on light instead of electricity. We believe that this will significantly improve computation speeds.

Aromaticity

Aromaticity causes an extremely high degree of molecular stability. It is a molecular arrangement wherein atoms combine into a ring or rings and share their electrons among each other. Aromatic compounds are extremely 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.

CLD-1

An electro-optic material based upon unstable polyene molecular architectures. Unlike our own molecular designs, CLD-1 is not a CSC model molecule and exhibits thermal degradation at low temperatures (~250 C) making it less suitable for commercial and military applications.

CSC (Cyclical Surface Conduction) theory

Most charge-transfer dyes (e.g. Disperse Red 1, CLD, FTC) are based upon a polyene architecture wherein the ground state and first excited state differ by the alteration of single and double bonds. CSC model molecules use nitrogenous heterocyclical structures.

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 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.

Nanotechnology

Nanotechnology refers to the development of products and production processes at the molecular level, which is a scale smaller than 100 nanometers (a nanometer is one-billionth of a meter).

Nitrogenous heterocyclical structure

A multi-atom molecular ring or combination of rings that contain nitrogen.

Plastics/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.

Polymerization

Polymerization is a molecular engineering process that provides the environmental and thermal stability necessary for functional electro-optical devices. 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.

Thermal Gravimetric Analysis (TGA)

The basic principle in TGA is to measure the mass of a sample as a function of temperature. This, in principle, simple measurement is an important and powerful tool in solid-state chemistry and materials science. The method, for example, can be used to determine water of crystallization, follow degradation of materials, determine reaction kinetics, study oxidation and reduction, or to teach the principles of stoichiometry, formulae and analysis.

Zwitterionic-aromatic push-pull

Most charge-transfer dyes (e.g. Disperse Red 1, CLD, FTC) have an excited state (such as during photonic absorption) wherein a full charge is separated across the molecule. Such a molecule is said to be excited-state zwitterionic. Within such a molecular system the zwitterionic state is unstable and the molecule typically collapses rapidly into its lower dipole ground state. In our patented molecular designs, the excited state is further stabilized by the aromatization of the molecular core. In that aromaticity stabilizes this excited state, it is said to "pull" the molecule into this higher energy state; on the other hand, the unstable zwitterionic state is said to "push" the molecule out of the excited state.

SUMMARY FINANCIAL DATA

The following tables summarize our financial data. We have derived the following summary of our balance sheet data as of December 31, 2012 and 2011 and our statement of operations data for the years ended December 31, 2012 and 2011 from our audited financial statements appearing later in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in the future. You should read the summary of our financial data set forth below together with our financial statements and the related notes to those statements, as well as Management s Discussion and Analysis of Financial Condition and Results of Operations appearing later in this prospectus.

	Years Ended December 31,	
	2012	**2011**
Statement of Operations Data:		
NET SALES	$ -$	-
COST AND EXPENSE		
Research and development	2,489,747	1,682,557
General and administrative	1,936,417	1,633,786
LOSS FROM OPERATIONS	(4,426,164)	(3,316,343)
OTHER INCOME (EXPENSE)	(130,374)	(166,279)
NET LOSS	$ (4,556,538)$	(3,482,622)
Basic and Diluted Loss per Share	$ (0.09)$	(0.08)
Basic and Diluted Weighted Average Number of Shares	$ 48,778,783 $	44,386,149

	As of December 31,
Balance Sheet Data:	**2012**
Current assets	$ 3,026,854
Property and equipment - net	300,994
Other assets	-
Intangible assets - net	488,526
TOTAL ASSETS	$ 3,816,374
TOTAL LIABILITIES	155,328
TOTAL STOCKHOLDERS' EQUITY	3,661,046

TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$	3,816,374

RISK FACTORS

Before you make a decision to invest in our securities, you should consider carefully the risks described below, together with other information in this prospectus. 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 have incurred significant losses and experienced negative cash flow since our inception. We incurred a net loss of $4,556,538 for the year ended December 31, 2012 and $3,482,622 for the year ended December 31, 2011. We anticipate that we will continue to incur operating losses through at least the end of 2013.

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 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 electro-optic polymers 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. 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 which could have a materially adverse affect on our business.

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 electro-optic polymer products 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 electro-optic polymer products.

We are developing our electro-optic polymer products 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. 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 require that both 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, the absence of which could have a materially adverse affect on our business.

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, and failure to achieve such objectives could have a materially adverse affect on our business.

Two of our significant target markets are the telecommunications and networking markets, which continue to be subject to overcapacity and slow growth or decline which could have a materially adverse affect on our business.

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 or anticipated growth.

It is our intent to continue to 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 will require additional capital to continue to fund our operations as our Purchase Agreement with Lincoln Park expires in December 2013.

Our business does not presently generate the cash needed to finance our current and anticipated operations. 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 the Lincoln Park financing transaction, 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.

The Purchase Agreement with Lincoln Park expires in December 2013. If we make sales of our common stock under the Purchase Agreement, we would be able to fund our operations for a longer period of time. However, the extent to which we will rely on the Purchase Agreement with Lincoln Park as a source of funding will depend on a number of factors, including the prevailing market price of our common stock and volume of trading and the extent to which we are able to secure working capital from other sources. Specifically, Lincoln Park does not have the obligation to purchase any shares of our common stock on any business day that the price of our common stock is less than $1.00 per share.

We originally registered for resale by Lincoln Park 10,000,000 shares of our common stock. In the event we elect to issue more than 10,000,000 shares, we would be required to file a new registration statement and have it declared effective by the SEC. If obtaining sufficient funding from Lincoln Park does not occur or is prohibitively dilutive, we will need to secure another source of funding in order to satisfy our working capital needs. Should the financing we require to sustain our working capital needs be unavailable or prohibitively expensive when we require it, the consequences could be a material adverse effect on our business, operating results, financial condition and prospects.

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 may not be able to access the full amounts available under the 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, we may direct Lincoln Park to purchase up to $20,000,000 worth of shares of our common stock over a 30-month period. On any trading day selected by us, we may sell to Lincoln Park up to $200,000 of common stock by delivering a purchase notice to Lincoln Park. The Purchase Price of such shares is equal to the lesser of: (i) the lowest sale price of our common stock on the purchase date; or (ii) the arithmetic average of the three lowest closing sale prices for our common stock during the twelve consecutive trading days ending on the trading day immediately preceding the purchase date. Lincoln Park does not have the right or the obligation to purchase any shares of our common stock on any business day that the market price of our common stock is less than $1.00. To the extent that the market price of our common stock is below $1.00 per share on a trading day, we would not receive any proceeds under the Purchase Agreement for that day.

If the market price of our common stock is not below $9.50 per share, our sales will be limited to up to $1,000,000 of our common stock on each purchase date. If the market price of our common stock is not below $4.50 per share, our sales will be limited to up to $500,000 of our common stock on each purchase date. If the market price of our common stock is not below $3.50 per share, our sales will be limited to up to $400,000 of our common stock on each purchase date. If the market price of our common stock is not below $2.50 per share, our sales will be limited to up to $300,000 of our common stock on each purchase date.

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. In addition, we are only registering up to 10,000,000 shares of our common stock in connection with the Purchase Agreement. Assuming a purchase price of $1.25 per share, the closing sale price of our common stock on April 9, 2013, and the issuance to Lincoln Park of 10,000,000 shares, which would be comprised of 9,851,412 shares purchased at $1.25 per share and 148,588 shares issued as additional pro rata commitment shares for no additional consideration, the proceeds to us would only be $12,500,000. In the event we elect to issue more than 10,000,000 shares, we would be required to file a new registration statement and have it declared effective by the SEC.

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 30 months from the date that the SEC originally declared the resale registration statement effective in June 2011. Generally, 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 452,489 shares of common stock as a fee for Lincoln Park s commitment to purchase our shares. Of these commitment shares, we issued 150,830 shares upon entering into the agreement with Lincoln Park and 97,296 additional commitment shares issued on a pro rata basis as purchases were made under the Purchase Agreement as of the date of this prospectus. The remaining 204,363 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, 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, 2012, we have outstanding options and warrants to purchase an aggregate of 7,714,850 shares of our common stock at exercise prices ranging from $0.25 per share to $1.75 per share with a weighted average exercise price of $1.15 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 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 electro-optic polymer technology 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; and

· 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 which could have a materially adverse affect on our business.

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 and retained research institution rights which could cause us to incur substantial expenses which could have a materially adverse affect on our business.

We may have obligations to government agencies or universities 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. In addition, academic research partners often retain certain rights, including the right to use the technology for noncommercial academic and research use, to publish general scientific findings from research related to the technology, and to make customary scientific and scholarly disclosures of information relating to the technology. It is difficult to monitor whether our partners will limit their use of the technology to these 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 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 intent 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 us, our suppliers and our customers.