Ascent Solar Technologies, Inc.
Form 10-K
April 17, 2017
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)
x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2016
or
o TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Transition Period from to
Commission File No. 001-32919

Ascent Solar Technologies, Inc.
(Exact name of registrant as specified in its charter)

Delaware	20-3672603
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
12300 Grant Street, Thornton, CO	80241
(Address of principal executive offices)	(Zip Code)

Registrant’s telephone number including area code: 720-872-5000
Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, $0.0001 par value per share	OTCQB Venture Market

Securities registered pursuant to Section 12(g) of the Act:
None
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No x
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes o No x
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 x No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, 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). x Yes o No

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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:

Large accelerated filer	o	Accelerated filer	o
Non-accelerated filer	o (Do not check if a smaller reporting company)	Smaller reporting company	x
		Emerging growth company	o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.o

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

As of September 30, 2016, the last business day of the registrant’s most recently completed third fiscal quarter, the aggregate market value of the registrant’s common stock held by non-affiliates was approximately $3.3 million based upon the last reported sale price of the registrant’s common stock on that date as reported by OTCQB Venture Market, operated by OTC Markets Group Inc.

As of March 31, 2017, there were 2,561,968,275 shares of our common stock issued and outstanding.

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ASCENT SOLAR TECHNOLOGIES, INC.
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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K includes “forward-looking statements” that involve risks and uncertainties. Forward-looking statements include statements concerning our plans, objectives, goals, strategies, future events, future net sales or performance, capital expenditures, financing needs, plans or intentions relating to acquisitions, business trends and other information that is not historical information and, in particular, appear under headings including “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business.” When used in this Annual Report, the words “estimates,” “expects,” “anticipates,” “projects,” “plans,” “intends,” “believes,” “forecasts,” “foresees,” “likely,” “may,” “should,” “goal,” “target,” and variations of such words or similar expressions are inte to identify forward-looking statements. All forward-looking statements are based upon information available to us on the date of this Annual Report.

These forward-looking statements are subject to risks, uncertainties and other factors, many of which are outside of our control, that could cause actual results to differ materially from the results discussed in the forward-looking statements, including, among other things, the matters discussed in this Annual Report in the sections captioned “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” Factors you should consider that could cause these differences are:

- Our limited operating history and lack of profitability;
- Our ability to develop demand for, and sales of, our products;
- Our ability to attract and retain qualified personnel to implement our business plan and corporate growth strategies;
- Our ability to develop sales, marketing and distribution capabilities;
- Our ability to successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators, distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;
- The accuracy of our estimates and projections;
- Our ability to secure additional financing to fund our short-term and long-term financial needs;
- Our ability to maintain the listing of our common stock on the OTCQB Venture Market;
- The commencement, or outcome, of legal proceedings against us, or by us, including ongoing ligation proceedings;
- Changes in our business plan or corporate strategies;
- The extent to which we are able to manage the growth of our operations effectively, both domestically and abroad, whether directly owned or indirectly through licenses;
- The supply, availability and price of equipment, components and raw materials, including the elements needed to produce our photovoltaic modules;
- Our ability to expand and protect the intellectual property portfolio that relates to our consumer electronics, photovoltaic modules and processes;
- Our ability to implement remediation measures to address material weaknesses in internal control;
- General economic and business conditions, and in particular, conditions specific to consumer electronics and the solar power industry; and
- Other risks and uncertainties discussed in greater detail in the section captioned "Risk Factors."

There may be other factors that could cause our actual results to differ materially from the results referred to in the forward-looking statements. We undertake no obligation to publicly update or revise forward-looking statements to reflect subsequent events or circumstances after the date made, or to reflect the occurrence of unanticipated events, except as required by law.

References to “we,” “us,” “our,” “Ascent,” “Ascent Solar” or the “Company” in this Annual Report mean Ascent Solar Technologies, Inc.

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PART I

Item 1. Business

Business Overview

Ascent Solar was formed in October 2005 as a development stage company to commercialize flexible photovoltaic ("PV") modules using our proprietary thin film technology. The technology was initially developed at ITN Energy Systems, Inc. ("ITN") beginning in 1994 and subsequently assigned and licensed to us. Our proprietary manufacturing process deposits multiple layers of materials, including a thin film of highly efficient copper-indium-gallium-diselenide ("CIGS") semiconductor material, on a flexible, lightweight, high tech plastic substrate using a roll-to-roll manufacturing process and then laser patterns the layers to create interconnected PV cells, or PV modules, in a process known as monolithic integration. We believe that our technology and manufacturing process, which results in a much lighter, flexible yet durable module package, provides us with unique market opportunities relative to both the crystalline silicon ("c-Si") based PV manufacturers that currently lead the PV market, as well as other thin film PV manufacturers that use substrate materials such as glass, stainless steel or other metals that can be heavier and more rigid than plastics.

We believe that the use of CIGS on a flexible, durable, lightweight, high tech plastic substrate will allow for unique and seamless integration of our PV modules into a variety of electronic products, defense, transportation and aerospace applications, as well as other products and applications that may emerge. For markets that place a high premium on weight, such as consumer electronics, defense, space, near space, and aeronautic markets, we believe our materials provide attractive increases in power-to-weight ratio, and that our materials have higher power-to-area ratios and voltage-to-area ratios than competing flexible PV thin film technologies. These metrics will be critical as we position ourselves to compete in challenging high value markets such as aerospace where Ascent Solar products can be integrated into satellites, near earth orbiting vehicles, and fixed-wing unmanned aerial vehicles (UAV).

Product History

In March 2008, we demonstrated initial operating capacity of our first production line by beginning production trials as an end to end integrated process. Initial operating capacity production trials resulted in average thin film device efficiencies of 9.5% and small area monolithically integrated module efficiencies of over 7.0%. During 2008, optimization trials resulted in thin film device efficiencies in the 9.5% to 11.5% range and corresponding module efficiencies in the 7.0% to 9.0% range. The test modules measured approximately 15 centimeters wide by 30 centimeters long. During the first quarter of 2009, we began limited production of monolithically integrated flexible CIGS modules in our initial production line. Our primary business model, at that time, was based upon mass production of solar modules of varying lengths, sizes and configurations. We provided sample modules to potential customers and development partners in various industries to explore integration of our products into new applications.

In July 2009, we obtained independent verification by the U.S. Department of Energy's National Renewable Energy Laboratory ("NREL") that our modules measured 10.4% in conversion efficiency. The modules tested at NREL were approximately 15 centimeters wide by 30 centimeters long. In October 2009, NREL further verified our achievement of a manufacturing milestone of 14.0% cell efficiency as well as a peak efficiency of 11.4% for CIGS modules. Later, in December 2010, we achieved 12.1% module efficiency on the same form factor. In October 2010, we completed internal qualification testing of a flexible packaging solution which successfully passed the rigorous standard of one thousand (1,000) hours of damp heat testing (85% relative humidity and 85° C temperature) guideline set forth by International Electrotechnical Commission ("IEC") 61646 standards for performance and long term reliability of thin film solar modules.

In February 2010, three of our product configurations were certified by an independent laboratory on a variety of U.S. Department of Defense ("DOD") rugged standards known as MIL-STD-810G. In October 2010, we completed full external certification under IEC 61646 at an independent laboratory of a two meter module. Achieving this certification is required for building integrated photovoltaic ("BIPV") and building applied photovoltaic ("BAPV") applications used in commercial, industrial and residential rooftop markets. Certification activities will continue as required as we introduce new products and make changes or improvements to our already certified products.

In 2010, we received an award from R&D Magazine and were included in their list of the 100 Most Innovative Technologies based on our process of monolithic integration on polyimide substrate. In 2011, Time Magazine selected us as one of the 50 Best Inventions of the year. In 2015 Ascent Solar won its second R&D 100 Award. The 2015 award was given for the development of the MilPak platform, a military-grade (MIL-STD-810G tested) and fully integrated solar power generation and storage unit incorporated with a Maximum Peak Power Tracking (MPPT) management system. The MilPak platform is one of the most rugged, yet lightweight, power generation and storage solutions available, both attributes enabled by the use of Ascent's CIGS technology.

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In 2012, we evolved our business model to include B2C, solution based, PV integrated consumer electronics to our off grid high value solar power generation strategy. In June of 2012, we launched our new line of consumer products under the EnerPlex™ brand, and introduced our first product, the Surfr™, a battery and solar case for the Apple® iPhone® 4/4S smart phone, featuring our ultra-light CIGS thin film technology integrated directly into the case. The case incorporates our ultra-light and thin PV module into a sleek, protective iPhone 4/4S case, along with a thin, life extending, lithium-polymer battery. The case adds minimal weight and size to an iPhone smartphone, yet provides supplemental charging when needed. In August of 2012, we announced the launch of the second version of the Surfr for the Samsung® Galaxy S® III, which provides 85% additional battery life.

In December 2012, we launched the EnerPlex Kickr™ and EnerPlex Jumpr™ product series. The Kickr IV is an extremely portable, compact and durable solar charging device, approximately seven inches by seven inches when folded, and weighs less than half a pound. The Kickr IV provides 6.5 watts of regulated power that can help charge phones, digital cameras, and other small USB enabled devices. The Kickr IV is ideal for outdoor activities such as camping, hiking and mountain climbing as well as daily city use. To complement the Kickr IV, we also released the Jumpr series of portable power banks in December of 2012. The Jumpr series provides a compact power storage solution for those who need to recharge their portable electronics while on the go.

During 2013, the EnerPlex brand rapidly expanded with the addition of two new product series as well as over fifteen new products. In 2013, we introduced further additions to the Jumpr line of portable power banks; releasing the Jumpr Mini and Jumpr Stack in August and the Jumpr Max in September. The latest additions to the Kickr line of portable solar chargers, the Kickr I and Kickr II, were introduced in August at the Outdoor Retailer show. Furthermore, in October 2013, we released our first series of solar integrated backpacks, the EnerPlex Packr™. The Packr is a functional backpack ideal for charging mobile electronic devices while on the go. Also in October of 2013, we introduced the Surfr battery and solar case for the Samsung Galaxy S® 4, and in December, we introduced the Surfr battery and solar case for Apple's iPhone® 5. To complement our flagship product lines, we added an assortment of accessories, all of which can be integrated into the EnerPlex ecosystem of products; such as the LED wand which can be easily plugged into a Jumpr power bank to provide hours of light, or the Travel Adaptor, which enables consumers to charge up their Jumpr power banks from a traditional outlet anywhere in the world.

In 2013, we aggressively pursued new distribution channels for the EnerPlex brand; these activities have led to placement in a variety of high-traffic ecommerce venues such as www.amazon.com, www.walmart.com, www.brookstone.com, www.newegg.com as well as many others including our own e-commerce platform at www.goenerplex.com. The April 2013 placement of EnerPlex products at Fry's Electronics, a US West Coast consumer electronics retailer, represented the company's first domestic retail presence. EnerPlex products are carried in all of Fry's 34 superstores across 9 states. In 2015 EnerPlex expanded its relationship with The Cellular Connection ("TCC") to include over 450 Verizon Wireless Premium Retail Stores; in addition to gaining retail placement in Cabela's and The Sports Authority's brick-and-mortar stores, each a flagship retailer in their respective channels. We have also expanded our products placement globally to include over 170 Maplin Electronics stores in the UK as well as over 25 superstores with Anaconda in Australia. As a result of these retail partnerships and others, EnerPlex retail placement had surpassed over 1,000 stores globally by the end of 2015.

Throughout 2014, EnerPlex released multiple additions to the Jumpr line of products: including the Jumpr Stack 3, 6 and 9, innovative batteries equipped with tethered micro-USB and Apple Lightning cables and revolutionary Stack and Charge design, enabling batteries to be charged simultaneously when they are placed on top of one another. Also released in 2014 were the Jumpr Slate series, products which push the boundaries of how thin batteries can be, the Jumpr Slate 10k, at less than 7mm thick was the thinnest lithium polymer battery available when it was released. The Jumpr Slate 5k and 5k Lightning each come with a tethered micro-USB and Lightning cable respectively; freeing consumers from worrying about toting extra cables with them while on the move.

At Outdoor Retailer 2014, EnerPlex debuted the Generatr Series. The Generatr 1200 and Generatr 100 are lithium-ion based large format batteries; lighter and smaller than competitors, the Generatr Series are targeted for consumers who require high-capacity, high-output batteries which remain ultra-portable when compared to the competition. Also debuted at Outdoor Retailer was the Commandr 20, a high output solar charger designed specifically to integrate with and charge the Generatr series, allowing consumers to stay out longer without needing to charge their Generatr batteries from a traditional power source. In August 2014, the Kickr II+ and IV+ were also announced, these products represent another evolution in EnerPlex's line of solar products; integrated with a 500mAh battery the Kickr II+ and IV+ are able to provide a constant flow of power even when there are intermittent disruptions in sunlight.

During the first quarter of 2015 we reached an agreement with EVINE Live, one of the premier home shopping networks with TV programming that reaches over 87 million US homes to begin selling EnerPlex products during their broadcasts. During the second quarter EnerPlex launched the Generatr S100 and select other products exclusively with EVINE, and in the third quarter the Generatr 1200 launched exclusively with EVINE for a limited period.

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During the second quarter of 2015 EnerPlex launched its products into two world recognized retailers; including over 100 The Sports Authority stores nationwide, in addition to launching in select Cabela's, "The World's Foremost Outfitter", stores and via Cabela's online catalog. Internationally, EnerPlex products became available in the United Kingdom via the brand's launch with 172 Maplin's stores throughout the country. During the forth quarter of 2015, EnerPlex launched with GovX, the premier online shopping destination for Military, Law Enforcement and Government agencies.

In the first quarter of 2016, EnerPlex launched the new Emergency sales vertical, partnering with Emergency Preparedness eCommerce leader, Emergency Essentials.

In early 2016 Ascent announced new breakthroughs in the Company's line of high-voltage solar products, designed specifically for high-altitude and space markets, building on the progress previously announced in Q4, 2015. Also during the first quarter of 2016, the Company announced the launch of select products on the GSA Advantage website; which allows Federal employees, including members of all branches of the US Military, to directly purchase Ascent and EnerPlex products including: the MilPak E, Commandr 20, Kickr 4 and WaveSol solar modules.

In February 2017 Ascent announced the discontinuation of our EnerPlex consumer business by disposing of the EnerPlex brand and related intellectual properties and trademarks associated with EnerPlex to our battery product supplier, Sun Pleasure Co. Limited ("SPCL") in an effort to better allocate its resources and to continue to focus on its core strength in the high-value specialty PV market. Following the transfer, Ascent will no longer produce or sell Enerplex-branded consumer products. Ascent will focus on its photovoltaic business and will supply solar PV products to SPCL, supporting the continuous growth of EnerPlex™ with Ascent's proprietary and award-winning thin-film solar technologies and products.

We continue to design and manufacture PV integrated consumer electronics as well as portable power applications for commercial and military users. Due to the high durability enabled by the monolithic integration employed by our technology, the capability to customize modules into different form factors and the industry leading light weight and flexibility provided by our modules, we believe that the potential applications for our products are numerous.

Commercialization and Manufacturing Strategy

We manufacture our products by affixing a thin CIGS layer to a flexible, plastic substrate using a large format, roll-to-roll process that permits us to fabricate our flexible PV modules in an integrated sequential operation. We use proprietary monolithic integration techniques which enable us to form complete PV modules with less or no costly back end assembly of inter cell connections. Traditional PV manufacturers assemble PV modules by bonding or soldering discrete PV cells together. This manufacturing step typically increases manufacturing costs and at times proves detrimental to the overall yield and reliability of the finished product. By reducing or eliminating this added step using our proprietary monolithic integration techniques, we believe we can achieve cost savings in, and increase the reliability of, our PV modules. All tooling necessary for us to meet our near term production requirements is installed in our Thornton, Colorado plant. In 2012, we further revised our strategy to focus on applications for emerging and high-value specialty PV markets, including off grid, aerospace, military and defense and consumer oriented products.

On February 2, 2012, we announced the appointment of Victor Lee as President and Chief Executive Officer. Mr. Lee has served on our Board since November 2011. Mr. Lee is the Managing Director of Tertius Financial Group Pte Ltd, which is currently the largest shareholder of Ascent Solar holding approximately 13% of the total outstanding shares as of March 31, 2017.

We plan to continue the development of our PV technology in order to increase module efficiency, improve our manufacturing tooling and process capabilities and reduce manufacturing costs. We also plan to continue to take advantage of research and development contracts to fund a portion of this development.

Advantages of CIGS on a Flexible Plastic Substrate

Thin film PV solutions differ based on the type of semiconductor material chosen to act as a sunlight absorbing layer, and also on the type of substrate on which the sunlight absorbing layer is affixed. To the best of our knowledge, we believe we are the only company in the world currently focused on commercial scale production of PV modules using CIGS on a flexible, plastic substrate with monolithic integration. We utilize CIGS as a semiconductor material because, at the laboratory level, it has a higher demonstrated cell conversion efficiency than amorphous silicon ("a-Si") and cadmium telluride (“CdTe”). We also believe CIGS offers other compelling advantages over both a-Si and CdTe, including:

- CIGS versus a-Si: Although a-Si, like CIGS, can be deposited on a flexible substrate, its conversion efficiency, which already is generally much lower than that of CIGS, measurably degrades when it is exposed to ultraviolet light, including natural sunlight. To mitigate such degradation, manufacturers of a-Si solar cells are required to implement measures that add cost and complexity to their manufacturing processes.

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- CIGS versus CdTe: Although CdTe modules have achieved conversion efficiencies that are generally comparable to CIGS in production, we believe CdTe has never been successfully applied to a flexible substrate on a commercial scale. We believe the use of CdTe on a rigid, transparent substrate, such as glass, makes CdTe unsuitable for a number of the applications. We also believe CIGS can achieve higher conversion efficiencies than CdTe in production.

Our choice of substrate material further differentiates us from other thin film PV manufacturers. We believe the use of a flexible, lightweight, insulating substrate that is easier to install provides clear advantages for our target markets, especially where rigid substrates are unsuitable. We also believe our use of a flexible, plastic substrate provides us significant cost advantages because it enables us to employ monolithic integration techniques on larger components, which we believe are unavailable to manufacturers who use flexible, metal substrates. Accordingly, we are able to significantly reduce part count, thereby reducing the need for costly back end assembly of inter cell connections. As the only company, to our knowledge, focused on the commercial production of PV modules using CIGS on a flexible, plastic substrate with monolithic integration, we believe we have the opportunity to address the consumer electronics, defense, aerospace, transportation, off grid, portable power and other weight-sensitive markets with transformational high quality, value added product applications. It is these same unique features and our overall manufacturing process that enables us to produce consumer products that enables our consumer products to be extremely robust, light and flexible.

Competitive Strengths

We believe we possess a number of competitive strengths that provide us with an advantage over our competitors.

- We are a pioneer in CIGS technology with a proprietary, flexible, lightweight, high efficiency PV thin film product that positions us to penetrate a wide range of attractive high value added markets such as consumer products, off grid, portable power, transportation, defense, aerial, and other markets. By applying CIGS to a flexible plastic substrate, we have developed a PV module that is efficient, lightweight and flexible; with the highest power-to-weight ratio in at-scale commercially available solar. The market for electronic components, such as electronic packages, casings and accessories, as well as defense portable power systems, transportation integrated applications and space and near-space solar power application solutions represent a significant premium market for the company. Relative to our thin film competitors, we believe our advantage in thin film CIGS on plastic technology provides us with a superior product offering for these strategic market segments.
- We have the ability to manufacture PV modules for different markets and for customized applications without altering our production processes. Our ability to produce PV modules in customized shapes and sizes, or in a variety of shapes and sizes simultaneously, without interrupting production flow, provides us with flexibility in addressing target markets and product applications, and allows us to respond quickly to changing market conditions. Many of our competitors are limited by their technology and/or their manufacturing processes to a more restricted set of product opportunities.
- Our integrated, roll-to-roll manufacturing process and proprietary monolithic integration techniques provide us a potential cost advantage over our competitors. Historically, manufacturers have formed PV modules by manufacturing individual solar cells and then interconnecting them. Our large format, roll-to-roll manufacturing process allows for integrated continuous production. In addition, our proprietary monolithic integration techniques allow us to utilize laser patterning to create interconnects, thereby creating PV modules at the same time we create PV cells. In so doing, we are able to reduce or eliminate an entire back end processing step, saving time as well as labor and manufacturing costs relative to our competitors.
- Our lightweight, powerful, and durable solar panels provide a performance advantage over our competitors. For consumer applications where a premium is placed on the weight and profile of the product such as phone cases, our ability to integrate our PV modules into portable packages and cases that offer the customer a lightweight and durable solution for all their portable electronics.
- Our proven research and development capabilities position us to continue the development of next generation PV modules and technologies. Our ability to produce CIGS based PV modules on a flexible plastic substrate is the result of a concerted research and development effort that began more than twenty years ago. We continue to pursue research and development in an effort to drive efficiency improvements in our current PV modules and to work toward next generation technologies and additional applications.

- Our manufacturing process can be differentiated into two distinct functions; a front end module manufacturing process and a back end packaging process. Our ability to produce finished unpackaged rolls of CIGS material for shipment worldwide to customers for encapsulation and integration into various products enhances our ability to work with partners internationally and domestically.

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Markets and Marketing Strategy

In 2012, we modified our strategic focus away from large scale utility projects and rooftop applications to consumer products and high-value specialty solar markets. This new strategy enables us to fully leverage the unique advantages of our technology including flexibility, durability and attractive power to weight and power to area performance. It furthermore enables us to offer unique, differentiated solutions in large markets with less competition, and more attractive pricing. In the second half of 2012, we launched our EnerPlex line of personal power, portable solar solutions and accessories. This represented a significant paradigm shift for us and moved us into the realm of supplying complete consumer product solutions as opposed to strictly commercial solar modules. We also remain focused on specialty solar applications which can fully leverage the unique properties of our award winning CIGS technology. These include aerospace, defense, emergency management and consumer/OEM applications.

In February 2017 Ascent announced the discontinuation of our EnerPlex consumer business by disposing of the EnerPlex brand and related intellectual properties and trademarks associated with EnerPlex to our battery product supplier, Sun Pleasure Co. Limited ("SPCL") in an effort to better allocate its resources and to continue to focus on its core strength in the high-value specialty PV market. Following the transfer, Ascent will no longer produce or sell Enerplex-branded consumer products. Ascent will focus on its photovoltaic business and will supply solar PV products to SPCL, supporting the continuous growth of EnerPlex™ with Ascent's proprietary and award-winning thin-film solar technologies and products.

Ascent's strategic marketing efforts in 2017 will be focused on commercializing our proprietary solar technology in four high-value PV verticals:

I. Public Sector: Defense and Emergency Management

II. Aerospace: Space and Fixed Wing UAV

III. Commercial Off-grid

IV. Consumer and OEM

Each of these strategic verticals include customer segments that place a high value on lightweight, high performance and durable portable power solutions. The value proposition of Ascent's proprietary solar technology not only aligns with the needs of customers in these verticals, but also overcomes many of the obstacles other solar technologies face in these unique markets. Ascent has the capability to design and develop finished products for end users in these areas as well as collaborate with strategic partners to design and develop custom integrated solutions for products like fixed-wing UAVs. Ascent sees significant overlap of the needs of end users across some of these verticals and can achieve economies of scale in sourcing, development, and production in commercializing products for these customers.

The integration of Ascent's solar modules into space, near space, and aeronautic vehicles with ultra-lightweight and flexible solar modules is an important market opportunity for the Company. Customers in this market have historically required a high level of durability, high voltage and conversion efficiency from solar module suppliers, and we believe our products are well suited to compete in this premium market. In May 2014, together with our partners, Silent Falcon UAS Technologies (SFUAS) and Bye Aerospace, we announced the successful first flight of a production version of the Silent Falcon™ Unmanned Aircraft Systems (UAS) powered by Ascent's ultra-lightweight, flexible PV modules. In July 2014, our ultra-lightweight, flexible PV modules were selected by Vanguard Space Technologies (Vanguard) for their NASA Small Business Innovative Research (SBIR) program. The NASA program is intended to develop an economical, lightweight alternative to existing and emerging high-cost solar arrays for high-power space applications. We expect opportunities in this segment to develop rapidly due to customers' extensive development, testing and evaluation processes.

In March 2016, the Company announced a major breakthrough of our high-voltage superlight modules, achieving a power-to-weight ratio of 1,700 watts per kilogram at AM0 environment. In December 2016, Ascent was selected by the Japan Aerospace Exploration Agency (JAXA) as part of their next round of evaluations for providing solar technology for an upcoming mission to Jupiter, as well as to address additional missions. This decision followed an earlier round of investigation with promising results, during which the Company's flexible, monolithically integrated copper-indium-gallium-selenide (CIGS) solar module was subjected to environmental extremes, and continued to operate well. During the first phase of JAXA's evaluation, Ascent's PV was successfully tested below -146°C (-231°F) and up to +190°C (+374 °F), and to only 4% of the sunlight generally received in earth's orbit. In addition, JAXA has also subjected Ascent's PV to radiation and mechanical testing.

In 2015 Ascent Solar won its second R&D 100 Award, the 2015 award was given for the development of the MilPak platform, a military-grade solar power generation and storage unit. The MilPak platform is one of the most rugged, yet lightweight, power generation and storage solutions available, both attributes enabled by the use of Ascent’s CIGS technology.

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The military market has a unique set of requirements we believe are well suited to our products. When integrated with fabric to form re-deployable arrays, our highly efficient, rugged, lightweight modules may allow soldiers to minimize battery loads, reduce the use of conventional fuels, and increase safety through the streamlining of fuel transport operations. We are also working to expand our foldable line of outdoor solar chargers which are well suited for the individual soldier or for the bigger power needs of a platoon with the ability of several chargers to be strung together. Our modules can also provide a reliable source of renewable power in remote areas, regardless of local infrastructure. We will continue to reach the military market primarily through partnerships with top systems providers and the completion of our product listing on the Government Services Administration (GSA) price schedule. Transportation integrated PV, or integration of our flexible solar modules with vehicles such as commercial trucks, buses, trains and passenger cars, is another market segment that represents a significant opportunity. Due to their flexible form and durable, lightweight properties, our modules can be fitted to the exterior of various vehicles to provide supplemental power without significantly affecting the aerodynamics, weight or aesthetics of the vehicle. We are currently working with multiple integrators and OEMs to develop effective value added solutions for this market.

We continue to supply our strategic partners with PV modules to support their development, testing and certification of new integrated PV products, including product testing by several branches of the U.S. military. We believe that our high power density flexible solar modules enable new applications for solar power. By creating mutually beneficial partnerships and strategically penetrating the markets discussed above, we plan to transform the landscape of solar power generation with truly innovative end products.

Competition

We have shifted our strategic focus away from large scale utility projects of the traditional solar markets. We believe our thin film, monolithically integrated CIGS technology enables us to deliver sleek, lightweight, rugged, high performance solutions to serve these markets as competitors from other thin film and c-Si companies emerge. The landscape of thin film manufacturers encompasses a broad mix of technology platforms at various stages of development, and consists of a number of medium and small companies. From 2011 to 2013, the PV industry landscape changed significantly. According to NPD Solarbuzz, Yingli Green Energy maintained leading module supplier ranking in 2013, with Trina Solar competing strongly for the second position. Seven of the top ten producers, and four of the top five, were crystalline silicon manufacturers based in China. Companies currently developing or selling CIGS-based PV modules include Avancis GmbH & Co. KG, Flisom AG, Nuvosun, Inc., Solibro GmbH, Solarion AG, Solar Frontier and Hanergy Holding Group. A number of manufacturers that traditionally have manufactured and sold c-Si-based modules have entered, or in the future may enter, the market for thin film PV modules, and potentially, CIGS-based PV modules. These efforts have been initiated both through internal development and through acquisition of companies, or the purchase of turnkey solutions offered by PV equipment providers.

The market for traditional, grid connected PV products is dominated by large manufacturers of c-Si technology, although thin film technology on glass has begun to emerge among the major players. We anticipate that while these large manufacturers may continue to dominate the market with their silicon based products, thin film manufacturers will likely capture an increasingly larger share of the market, as is evident from the success of First Solar (CdTe) and Solar Frontier (CIGS), both among the top 20 producers worldwide. In 2012, the five largest PV manufacturers included: Yingli Green Energy Holding Co. Ltd. (China), First Solar (US), Suntech Power Holdings Co., Ltd. (China), Trina Solar (China) and Canadian Solar (Canada). In 2012, crystalline silicon PV technology represented approximately 90% of global market share, a slight increase over 2011 at 88%, with the balance captured by thin film. In 2013, the five largest PV module suppliers included: Yingli Green Energy Holding Co. Ltd. (China), Trina Solar (China), Sharp Solar (Japan), Canadian Solar (Canada), and Jinko Solar (China). According to the Fraunhofer Institute Photovoltaics Report, Si-wafer based PV technology accounted for about 90 % of the total production in 2013. The remainder of the production is captured by thin film, with CdTe production accounting for 54% of the thin film production and CIGS and a-Si splitting the remainder with 23% each.

We believe that our modules offer unique advantages. Their flexibility and high power density enable use on weight-sensitive applications, such as portable power, conformal aircraft surfaces, and space applications that are unsuitable for glass-based modules. Innovative product design and customer focused development both yield modules that could be integrated into virtually any product to create a source of renewable energy. Whether compared to glass based or other flexible modules, our products offer competitive advantages making them unique in comparison to competing products.

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We define the consumer and portable power space as comprising solar powered solutions in the sub-single watt range (i.e. smartphone solar chargers) all the way up to the several hundred watts of power range (i.e., outdoor solar chargers for camping, military or outdoor work). Competitors in the consumer products space include companies that design and distribute solar charging solutions but outsource manufacturing. These include Goal Zero, Voltaic, A-Solar, Solio, PowerTraveller, Solar Components and RDK Products. Mono or polycrystalline silicon solar technologies are common in these products. Other competitors in this segment include thin-film solar manufacturers who provide a complete product under their company name or brand. These companies include Global Solar Energy (Sunlinq brand), PowerFilm, Trony and more recently Alta Devices. Competitors in the phone case with supplemental charging market include Mophie, Tylt, MyCharge and Powerskin. Competitors in the power bank market include Mophie, Energizer, MyCharge and Tenergy. We believe our differentiated technology lends itself to delivering competitive solutions in the emerging market for personal and portable solar and non-solar charging solutions.

Research and Development and Intellectual Property

We intend to continue to invest in research and development in order to provide near term improvements to our manufacturing process and products, as well as to identify next generation technologies relevant to both our existing and potential new markets. During 2016 and 2015 we incurred approximately $6.6 million and $6.7 million respectively, in research and development costs, which include research and development incurred in relation to our government contracts, as well as manufacturing costs incurred while developing our product lines and manufacturing process.

Our technology was initially developed at ITN beginning in 1994. In early 2006, ITN assigned to us certain CIGS PV-specific technologies, and granted to us a perpetual, exclusive, royalty free, worldwide license to use these technologies in connection with the manufacture, development, marketing and commercialization of CIGS PV to produce solar power. In addition, certain of ITN’s existing and future proprietary process and control technologies, although nonspecific to CIGS PV, were assigned to us. ITN retained the right to conduct research and development activities in connection with PV materials, and we agreed to grant a license back to ITN for improvements to the licensed technologies and intellectual property outside of the CIGS PV field.

We protect our intellectual property through a combination of trade secrets and patent protections. We own the following patents and published patent applications:

Issued Patents and Registrations

1. US Patent No. 7,271,333 entitled “Apparatus and Method of Production of Thin-Film Photovoltaic Modules” (issued September 18, 2007)
2. US Patent No. 7,812,247 entitled “Flexible Photovoltaic Array With Integrated Wiring And Control Circuitry, And Associated Methods” (issued October 12, 2010; (co-owned with PermaCity Corporation)
3. US Patent No. 8,021,905 entitled “Machine and Process for Sequential Multi-Sublayer Deposition of Copper Indium Gallium Diselenide Compound Semiconductors” (issued September 20, 2011)
4. US Patent No. 8,124,870 entitled “Systems and Processes for Bifacial Collection and Tandem Junctions Using a Thin film Photovoltaic Device” (issued February 28, 2012)
5. US Patent No. 8,207,442 entitled “Reinforcing Structures for Thin film Photovoltaic Device Substrates, and Associated Methods” (issued June 26, 2012)
6. ECD No. 002180353-0001 entitled “Mobile Electronic Device Case” (issued February 12, 2013)
7. ECD No. 002180353-0002 entitled “Mobile Electronic Device Case” (issued February 12, 2013)
8. ECD No. 002180353-0003 entitled “Mobile Electronic Device Case” (issued February 12, 2013)
9. US Patent No. 8,426,725 entitled “Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions” (issued April 23, 2013)
10. US Patent No. 8,465,589 entitled “Machine and Process for Sequential Multi-Sublayer Deposition of Copper Indium Gallium Diselenide Compound Semiconductors” (issued June 18, 2013)
11. CN Patent ZL201330040305.1 entitled “Mobile Electronic Device Case” (issued January 1, 2014)
12. US Patent No. D697,502 entitled "Mobile Electronic Device Case” (issued January 14, 2014)
13. KR Patent No. 30-0727960 entitled “Mobile Electronic Device Case” (issued January 28, 2014)

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14. US Patent No. 8,648,253 entitled “Machine and Process for Continuous, Sequential, Deposition of Semiconductor Solar Absorbers Having Variable Semiconductor Composition Deposited in Multiple Sublayers” (issued February 11, 2014)
15. US Patent No. 8,716,591 entitled “Array of Monolithically Integrated Thin Film PhotoVoltaic Cells and Associated Methods” (issued May 6, 2014)
16. ECD No. 001429773-0001 entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
17. ECD No. 001429773-0002 entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
18. ECD No. 001429773-0003 entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
19. ECD No. 001429773-0004 entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
20. ECD No. 001429773-0005 entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
21. ECD No. 001429773-0006entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
22. ECD No. 001429773-0007 entitled “Mobile Handheld Electronic Device Case” (issued February 6, 2015)
23. ECD No. 002732123-0001 entitled “Portable Battery Charging Device” (issued July 7, 2015)
24. ECD No. 002732123-0002 entitled “Portable Battery Charging Device” (issued July 7, 2015)
25. ECD No. 002732123-0003 entitled “Portable Battery Charging Device” (issued July 7, 2015)
26. ECD No. 002735159-0001 entitled “Portable Energy Storage And Distribution Device” (issued July 10, 2015)
27. ECD No. 002735159-0002 entitled “Portable Energy Storage And Distribution Device” (issued July 10, 2015)
28. ECD No. 002735159-0003 entitled “Portable Energy Storage And Distribution Device” (issued July 10, 2015)
29. ECD No. 002735159-0004 entitled “Portable Energy Storage And Distribution Device” (issued July 10, 2015)
30. US Patent 9,147,783 entitled “Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions” (issued September 29, 2015)
31. CN Patent ZL201390000979.1 entitled “System For Housing And Powering A Battery-Operated Device And Associated Methods” (issued October 7, 2015)
32. KR Patent 10-1561453 entitled “Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions” (issued October 13, 2015)
33. US Patent No. 9,209,322 entitled “Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates” (issued December 8, 2015)
34. US Patent No. 9,219,179 entitled “Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates” (issued December 22, 2015)
35. CN Patent No. ZL 201530237203.8 entitled “Photovoltaic-Based Fully Integrated Portable Power System” (issued February 10, 2016)
36. TW Patent No. I526630 entitled “Subtractive Hinge and Associated Methods” (March 21, 2016)
37. US Patent No. 9,349,905 entitled “Hybrid Multi-Junction Photovoltaic Cells And Associated Methods” (May 24, 2016)
38. TW Patent No. I536592 entitled “Photovoltaic Assembly and Associated Methods” (June 1, 2016)
39. KR Patent No. 30-0860220 entitled “Photovoltaic-Based Fully Integrated Portable Equipment For Control of Electric Power” (June 16, 2016)
40. CN Patent No. ZL 201180067131.6 entitled “Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions” (August 10, 2016)
41. CN Patent No. ZL201380012566.X entitled “Subtractive Hinge And Associated Methods” (August 24, 2016)

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Published Patent Applications

1. "Flexible Photovoltaic Array with Integrated Wiring and Control Circuitry, and Associated Methods" (US 12/901,963) (filed October 11, 2010) (co-owned with PermaCity Corporation)
2. “Cd-Free, Oxide Buffer Layers for Thin Film CIGS Solar Cells By Chemical Solution Deposition Methods” (US 13/227,935) (filed September 8, 2011)
3. “Systems and Processes for Bifacial Collection and Tandem Junctions Using a Thin film Photovoltaic Device” (US 13/406,376) (filed February 27, 2012)
4. “Multilayer Thin Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates” (US 13/572,387) (filed August 10, 2012)
5. “Multilayer Thin Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates” (PCT/US2012/050398) (filed August 10, 2012)
6. “Multilayer Thin Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates” (CN 201280047345.1) (filed August 10, 2012)
7. “Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions” (EP 11804861.0) (filed December 13, 2011)
8. “Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions” (CN 201180067131.6) (filed December 13, 2011)
9. “Subtractive Hinge and Associated Methods (US 13/783,336) (filed March 3, 2013)
10. “Subtractive Hinge and Associated Methods (PCT/US 2013/28,929) (filed March 4, 2013)
11. “Subtractive Hinge and Associated Methods (CN 201380012566.X) (filed March 4, 2013)
12. “Subtractive Hinge and Associated Methods (EP 13758462.9) (filed March 4, 2013)
13. “System For Housing And Powering A Battery-Operated Device And Associated Methods” (US 13/802,713) (filed March 14, 2013)
14. “System For Housing And Powering A Battery-Operated Device And Associated Methods” (US 13/802,719) (filed March 14, 2013)
15. “System For Housing And Powering A Battery-Operated Device And Associated Methods” (PCT/US2013/34988) (filed April 2, 2013)
16. “Photovoltaic Assembly and Associated Methods” (US 14/038096) (filed September 26, 2013)
17. “Photovoltaic Assembly and Associated Methods” (PCT/US2013/62355) (filed September 27, 2013)
18. “Photovoltaic Assembly and Associated Methods” (CN 201380060351.5) (filed September 27, 2013)
19. “Photovoltaic Assembly and Associated Methods” (EP 13840976.8) (filed September 27, 2013)
20. “Flexible High-Voltage Adaptable Current Photovoltaic Modules and Associated Methods” (US 14/041,886) (filed September 30, 2013)
21. “Hybrid Multi-Junction Photovoltaic Cells And Associated Methods” (US 14/100,960) (filed December 9, 2013)
22. “System For Housing And Powering A Battery-Operated Device And Associated Methods” (PCT/US2013/74936) (filed December 13, 2013)
23. “Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates” (US 14/150,376) (filed January 8, 2014)
24. “Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates” (PCT/US2014/10867) (filed January 8, 2014)

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25. “Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates” (CN 201480004408.4) (filed January 8, 2014)
26. “Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates” (EP 14738271.7) (filed January 8, 2014)
27. “Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates” (PCT/US15/20184) (filed March 12, 2015)
28. “Array Of Monolithically Integrated Thin Film Photovoltaic Cells And Associated Methods” (14/252,485) (filed April 14, 2014)
29. “Subtractive Hinge And Associated Methods” (EP 13758462.9) (filed March 4, 2013)
30. “Photovoltaic Assembly and Associated Methods” (EP 13840976.8) (filed September 27, 2013)
31. “Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates” (CN 201480004408.4) (filed January 9, 2014)
32. “Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates” (EP 14738271.7) (filed January 9, 2014)
33. “Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates” (US 14/932,933) (filed November 4, 2015)
34. “Photovoltaic-Based Fully Integrated Portable Power Systems” (PCT/US16/12047) (filed January 4, 2016)
35. “Photovoltaic-Based Fully Integrated Portable Power System” (US 14/987,214) (filed January 4, 2016)
36. “Systems and Processes for Bifacial Collection and Tandem Junctions Using a Thin-Film Photovoltaic Device” (US 15/099,835) (filed April 15, 2016)
37. “Photovoltaic-Based Fully Integrated Portable Power Management And Networking System” (PCT/US16/25647) (filed April 1, 2016)
38. “Photovoltaic-Based Fully Integrated Portable Power Management And Networking System” (US 15/089,028) (filed April 1, 2016)
39. “Photovoltaic Device and Method of Manufacturing Same” (CN 201610416638.2) (filed December 13, 2011)
40. “Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates” (US 15/258,169) (filed September 7, 2016)

In addition, Ascent Solar has fifteen (15) unpublished pending patent applications in related areas, three (3) of which were filed in 2016.

Ascent Solar has trademark applications and registrations in the United States and worldwide for slogans and product family names such as Milpak, Corpak, Life is Limitless and Transforming Everyday Life.

Depending on country laws, the marks listed above may include the ™ or ® symbols.

Suppliers

We rely on several unaffiliated companies to supply certain raw materials used during the fabrication of our PV modules and PV integrated electronics. We acquire these materials on a purchase order basis and do not have long term purchase quantity commitments with the suppliers, although we may enter into such contracts in the future. We currently acquire all of our high temperature plastic from one supplier, although alternative suppliers of similar materials exist. We purchase component molybdenum, copper, indium, gallium, selenium and indium tin oxides from a variety of suppliers. We also currently are in the process of identifying and negotiating arrangements with alternative suppliers of materials in the United States and Asia.

The manufacturing equipment and tools used in our production process have been purchased from various suppliers in Europe, the United States and Asia. Although we have had good relations with our existing equipment and tools suppliers, we monitor and explore opportunities for developing alternative sources to drive our manufacturing costs down.

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Our consumer products are delivered to us as finished goods from a variety of contract manufacturers in Asia. For those products that include PV modules we provide the modules to the contract manufacturers who then return the modules integrated into the finished product.

Employees

As of December 31, 2016, we had 86 full time employees.

Company History

We were formed in October 2005 from the separation by ITN of its Advanced Photovoltaic Division and all of that division's key personnel and core technologies. ITN, a private company incorporated in 1994, is an incubator dedicated to the development of thin film, PV, battery, fuel cell and nano technologies. Through its work on research and development contracts for private and government entities, ITN developed proprietary processing and manufacturing know-how applicable to PV products generally, and to CIGS PV products in particular. Our company was established by ITN to commercialize its investment in CIGS PV technologies. In January 2006, ITN assigned to us all its CIGS PV technologies and trade secrets and granted to us a perpetual, exclusive, royalty free worldwide license to use certain of ITN's proprietary process, control and design technologies in the production of CIGS PV modules. Upon receipt of the necessary government approvals in January 2007, ITN assigned government funded research and development contracts to us and also transferred the key personnel working on the contracts to us.

Corporate Information

We were incorporated under the laws of Delaware in October 2005. Our principal business office is located at 12300 Grant Street, Thornton, Colorado 80241, and our telephone number is (720) 872-5000. Our e-commerce website address is www.goenerplex.com. Our website address is www.ascentsolar.com. Information contained on our website or any other website does not constitute, and should not be considered, part of this Annual Report.

Available Information

We file with the Securities and Exchange Commission ("SEC") our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports, proxy statements and registration statements. You may read and copy any material we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. You may also obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an internet site at http://www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers, including us, that file electronically. We make available free of charge on, or through, our website at www.ascentsolar.com our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended ("Exchange Act") as soon as reasonably practicable after we file these materials with the SEC.

Item 1A. Risk Factors

The risks included here are not exhaustive or exclusive. Other sections of this Annual Report may include additional factors which could adversely affect our business, results of operations and financial performance. We operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time, and it is not possible for management to predict all such risk factors, nor can it assess the impact of all such risk factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Given these risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results.

Risks Relating to Our Business

We have a limited history of operations, have not generated significant revenue from operations and have had limited production of our products.

We have a limited operating history and have generated limited revenue from operations. Currently we are producing products in quantities necessary to meet current demand. Under our current business plan, we expect losses to continue until annual revenues and gross margins reach a high enough level to cover operating expenses. We are utilizing contract manufacturers in Asia for components and for final assembly of finished goods. Our ability to achieve our business, commercialization and expansion objectives will depend on a number of factors, including whether:

- We can generate customer acceptance of and demand for our products;
- We successfully ramp up commercial production on the equipment installed;

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- Our products are successfully and timely certified for use in our target markets;
- We successfully operate production tools to achieve the efficiencies, throughput and yield necessary to reach our cost targets;
- The products we design are saleable at a price sufficient to generate profits;
- We raise sufficient capital to enable us to reach a level of sales sufficient to achieve profitability on terms favorable to us;
- We are able to successfully design, manufacture, market, distribute and sell our products;
- We effectively manage the planned ramp up of our operations;
- We successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators and distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;
- Our ability to maintain the listing of our common stock on the OTCQB Venture Market;
- Our ability to achieve projected operational performance and cost metrics;
- Our ability to enter into commercially viable licensing, joint venture, or other commercial arrangements; and
- The availability of raw materials.

Each of these factors is critical to our success, and accomplishing each of these tasks may take longer or cost more than expected, or may never be accomplished. It also is likely that problems we cannot now anticipate will arise. If we cannot overcome these problems, our business, results of operations and financial condition could be materially and adversely affected.

We have to date incurred net losses and may be unable to generate sufficient sales in the future to become profitable.

We incurred a net loss of $38.9 million for the year ended December 31, 2016 and reported an accumulated deficit of $383.9 million as of December 31, 2016. We expect to incur net losses in the near term. Our ability to achieve profitability depends on a number of factors, including market acceptance of our specialty PV products at competitive prices. If we are unable to raise additional capital and generate sufficient revenue to achieve profitability and positive cash flows, we may be unable to satisfy our commitments and may have to discontinue operations.

Our business is based on a new technology, and if our PV modules or processes fail to achieve the performance and cost metrics that we expect, then we may be unable to develop demand for our PV modules and generate sufficient revenue to support our operations.

Our CIGS on flexible plastic substrate technology is a relatively new technology. Our business plan and strategies assume that we will be able to achieve certain milestones and metrics in terms of throughput, uniformity of cell efficiencies, yield, encapsulation, packaging, cost and other production parameters. We cannot assure you that our technology will prove to be commercially viable in accordance with our plan and strategies. Further, we or our strategic partners and licensees may experience operational problems with such technology after its commercial introduction that could delay or defeat the ability of such technology to generate revenue or operating profits. If we are unable to achieve our targets on time and within our planned budget, then we may not be able to develop adequate demand for our PV modules, and our business, results of operations and financial condition could be materially and adversely affected.

Our failure to further refine our technology and develop and introduce improved PV products could render our PV modules uncompetitive or obsolete and reduce our net sales and market share.

Our success requires us to invest significant financial resources in research and development to keep pace with technological advances in the solar energy industry. However, research and development activities are inherently uncertain, and we could encounter practical difficulties in commercializing our research results. Our expenditures on research and development may not be sufficient to produce the desired technological advances, or they may not produce corresponding benefits. Our PV modules may be rendered obsolete by the technological advances of our competitors, which could harm our results of operations and adversely impact our net sales and market share.

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Failure to expand our manufacturing capability successfully at our facilities would adversely impact our ability to sell our products into our target markets and would materially and adversely affect our business, results of operations and financial condition.

Our growth plan calls for production and operation at our facility and at contract manufacturers in Asia. Successful operations will require substantial engineering and manufacturing resources and are subject to significant risks, including risks of cost overruns, delays and other risks, such as geopolitical unrest that may cause us not to be able to successfully operate in other countries. Furthermore, we may never be able to operate our production processes in high volume or at the volumes projected, make planned process and equipment improvements, attain projected manufacturing yields or desired annual capacity, obtain timely delivery of components, or hire and train the additional employees and management needed to scale our operations. Failure to meet these objectives on time and within our planned budget could materially and adversely affect our business, results of operations and financial condition.

We may be unable to manage the expansion of our operations and strategic alliances effectively.

We will need to significantly expand our operations and form beneficial strategic alliances in order to reduce manufacturing costs through economies of scale and partnerships, secure contracts of commercially material amounts with reputable customers and capture a meaningful share of our target markets. To manage the expansion of our operations and alliances, we will be required to improve our operational and financial systems, oversight, procedures and controls and expand, train and manage our growing employee base. Our management team will also be required to maintain and cultivate our relationships with partners, customers, suppliers and other third parties and attract new partners, customers and suppliers. In addition, our current and planned operations, personnel, facility size and configuration, systems and internal procedures and controls, even when augmented through strategic alliances, might be inadequate or insufficient to support our future growth. If we cannot manage our growth effectively, we may be unable to take advantage of market opportunities, execute our business strategies or respond to competitive pressures, resulting in a material and adverse effect to our business, results of operations and financial condition.

We depend on a limited number of third party suppliers for key raw materials, and their failure to perform could cause manufacturing delays and impair our ability to deliver PV modules to customers in the required quality and quantity and at a price that is profitable to us.

Our failure to obtain raw materials and components that meet our quality, quantity and cost requirements in a timely manner could interrupt or impair our ability to manufacture our products or increase our manufacturing cost. Most of our key raw materials are either sole sourced or sourced by a limited number of third party suppliers. As a result, the failure of any of our suppliers to perform could disrupt our supply chain and impair our operations. Many of our suppliers are small companies that may be unable to supply our increasing demand for raw materials as we implement our planned expansion. We may be unable to identify new suppliers in a timely manner or on commercially reasonable terms. Raw materials from new suppliers may also be less suited for our technology and yield PV modules with lower conversion efficiencies, higher failure rates and higher rates of degradation than PV modules manufactured with the raw materials from our current suppliers.

Our continuing operations will require additional capital which we may not be able to obtain on favorable terms, if at all or without dilution to our stockholders.

Since inception, we have incurred significant losses. We expect to continue to incur net losses in the near term. For the year ended December 31, 2016, our cash used in operations was $16.9 million. At December 31, 2016, we had cash and equivalents of $131,000.

Although we have commenced production at our manufacturing facility, we do not expect that sales revenue and cash flows will be sufficient to support operations and cash requirements until we have fully implemented our new strategy of focusing on high value PV products. Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2017 overall. The Company will need to raise additional capital in order to continue our current level of operations throughout 2017.

To the extent that we may need to raise additional capital in the future there is no assurance that we will be able to raise additional capital on acceptable terms or at all. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our existing stockholders could be significantly diluted, and these newly issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we raise additional funds through debt financing, which may involve restrictive covenants, our ability to operate our business may be restricted. If adequate funds are not available or are not available on acceptable terms, if and when needed, our ability to fund our operations, take advantage of unanticipated opportunities, develop or enhance our products, expand capacity or otherwise respond to competitive pressures

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could be significantly limited, and our business, results of operations and financial condition could be materially and adversely affected.

In addition, the terms of a loan we obtained from the Colorado Housing and Finance Authority ("CHFA") in connection with our purchase and improvement of our Thornton, Colorado facility contain covenants that limit our ability, without the consent of CHFA, to create or incur additional indebtedness (other than obligations created or incurred in the ordinary course of business such as working capital financing); merge or consolidate with any other entity; or make loans or advances to our officers, shareholders, directors or employees. The presence of these covenants gives CHFA the ability to bar us from engaging in certain transactions in the future that we may determine are necessary or advisable to meet our business objectives, including debt offerings and acquisitions of or by other companies. If CHFA were to withhold its written consent under these or other circumstances, we could be forced to prepay such loans at a premium, which could adversely affect our business, results of operations and financial condition.

Our products may never gain sufficient market acceptance, in which case we would be unable to sell our products or achieve profitability.

Demand for our products may never develop sufficiently, and our products may never gain market acceptance, if we fail to produce products that compare favorably against competing products on the basis of cost, quality, weight, efficiency and performance. Demand for our products also will depend on our ability to develop and maintain successful relationships with key partners, including distributors, retailers, OEMs, system integrators and value added resellers. If our products fail to gain market acceptance as quickly as we envision or at all, our business, results of operations and financial condition could be materially and adversely affected.

We are targeting emerging markets for a significant portion of our planned product sales. These markets are new and may not develop as rapidly as we expect, or may not develop at all.

Our target markets include portable power, defense, transportation, space and near space markets. Although certain areas of these markets have started to develop, some of them are in their infancy. We believe these markets have significant long term potential; however, some or all of these markets may not develop and emerge as we expect. If the markets do develop as expected, there may be other products that could provide a superior product or a comparable product at lower prices than our products. If these markets do not develop as we expect, or if competitors are better able to capitalize on these markets our revenues and product margins may be negatively affected.

Failure to consummate strategic relationships with key partners in our various target market segments, such as defense and portable power, transportation, space and near space, and the respective implementations of the right strategic partnerships to enter these various specified markets, could adversely affect our projected sales, growth and revenues.

We intend to sell thin-film PV modules for use in portable power systems, defense and portable power systems, transportation, space and near space solar panel applications. Our marketing and distribution strategy is to form strategic relationships with distributors, value added resellers and e-commerce to provide a foothold in these target markets. If we are unable to successfully establish working relationships with such market participants or if, due to cost, technical or other factors, our products prove unsuitable for use in such applications; our projected revenues and operating results could be adversely affected.

If sufficient demand for our products does not develop or takes longer to develop than we anticipate, we may be unable to grow our business, generate sufficient revenue to attain profitability or continue operations.

The solar energy industry is at a relatively early stage of development, and the extent to which PV modules, including our own, will be widely adopted is uncertain. While pure PV solutions is not our short term primary market, if PV technology proves unsuitable for widespread adoption or if demand for PV modules fails to develop sufficiently, long term we may be unable to grow our business, generate sufficient sales to attain profitability or continue operations. Many factors, of which several are outside of our control, may affect the viability of widespread adoption of PV technology and demand for PV modules.

We face intense competition from other manufacturers of thin-film PV modules and other companies in the solar energy industry.

The solar energy and renewable energy industries are both highly competitive and continually evolving as participants strive to distinguish themselves within their markets and compete with the larger electric power industry. We believe our main sources of competition are other thin film PV manufacturers and companies developing other solar solutions, such as solar thermal and concentrated PV technologies.

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Many of our existing and potential competitors have substantially greater financial, technical, manufacturing and other resources than we do. A competitor's greater size provides them with a competitive advantage because they often can realize economies of scale and purchase certain raw materials at lower prices. Many of our competitors also have greater brand name recognition, established distribution networks and large customer bases. In addition, many of our competitors have well-established relationships with our current and potential partners and distributors and have extensive knowledge of our target markets. As a result of their greater size, these competitors may be able to devote more resources to the research, development, promotion and sale of their products or respond more quickly to evolving industry standards and changes in market conditions than we can. Our failure to adapt to changing market conditions and to compete successfully with existing or future competitors could materially and adversely affect our business, results of operations and financial condition.

Problems with product quality or performance may cause us to incur warranty expenses, damage our market reputation and prevent us from maintaining or increasing our market share.

If our products fail to perform as expected while under warranty, or if we are unable to support the warranties, sales of our products may be adversely affected or our costs may increase, and our business, results of operations and financial condition could be materially and adversely affected.

We may also be subject to warranty or product liability claims against us that are not covered by insurance or are in excess of our available insurance limits. In addition, quality issues can have various other ramifications, including delays in the recognition of revenue, loss of revenue, loss of future sales opportunities, increased costs associated with repairing or replacing products, and a negative impact on our goodwill and reputation. The possibility of future product failures could cause us to incur substantial expenses to repair or replace defective products. Furthermore, widespread product failures may damage our market reputation and reduce our market share causing sales to decline.

The interests of Tertius Financial Group and our CEO Victor Lee may conflict with our interests or your interests now or in the future.

As of March 31, 2017, Tertius Financial Group Pte Ltd ("Tertius") was our largest stockholder, owning approximately 13% of our outstanding common stock. Our CEO Victor Lee is a 50% owner and managing director of Tertius. Tertius is an investment firm based in Singapore. Mr. Lee devotes substantially all of his business time to his positions with the Company and does not devote a material amount of his business time to Tertius.

Tertius may from time to time acquire and hold interests in businesses that compete directly or indirectly with us. Tertius also may pursue opportunities (including by acquisition) that may be adverse to, or be in direct or indirect competition with us. Additionally, our potential customers may be competitors of Tertius and our interests in selling to those customers could be divergent from Tertius's competitive interests. So long as Tertius continues to own a significant amount of the outstanding shares of our common stock and Mr. Lee is President and Chief Executive Officer, Tertius may be able to strongly influence or effectively control our decisions,

Currency translation risk may negatively affect our net sales, cost of equipment, cost of sales, gross margin or profitability and could result in exchange losses.

Although our reporting currency is the U.S. dollar, we may conduct business and incur costs in the local currencies of other countries in which we operate, make sales or buy equipment or materials. As a result, we are subject to currency translation risk. Our future contracts and obligations may be exposed to fluctuations in currency exchange rates, and, as a result, our capital expenditures or other costs may exceed what we have budgeted. Further, changes in exchange rates between foreign currencies and the U.S. dollar could affect our net sales and cost of sales and could result in exchange losses. We cannot accurately predict future exchange rates or the overall impact of future exchange rate fluctuations on our business, results of operations and financial condition.

A significant increase in the price of our raw materials could lead to higher overall costs of production, which would negatively affect our planned product margins, or make our products uncompetitive in the PV market.

Our raw materials include high temperature plastics and various metals. Significant increases in the costs of these raw materials may impact our ability to compete in our target markets at a price sufficient to produce a profit.

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Our intellectual property rights or our means of enforcing those rights may be inadequate to protect our business, which may result in the unauthorized use of our products or reduced sales or otherwise reduce our ability to compete.
Our business and competitive position depends upon our ability to protect our intellectual property rights and proprietary technology, including any PV modules that we develop. We attempt to protect our intellectual property rights, primarily in the United States, through a combination of patent, trade secret and other intellectual property laws, as well as licensing agreements and third party nondisclosure and assignment agreements. Because of the differences in foreign patent and other laws concerning intellectual property rights, our intellectual property rights may not receive the same degree of protection in foreign countries as they would in the United States. Our failure to obtain or maintain adequate protection of our intellectual property rights, for any reason, could have a materially adverse effect on our business, results of operations and financial condition. Further, any patents issued in connection with our efforts to develop new technology for PV modules may not be broad enough to protect all of the potential uses of our technology.
We also rely on unpatented proprietary technology. It is possible others will independently develop the same or similar technology or otherwise obtain access to our unpatented technology. To protect our trade secrets and other proprietary information, we require our employees, consultants and advisors to execute proprietary information and invention assignment agreements when they begin working for us. We cannot assure these agreements will provide meaningful protection of our trade secrets, unauthorized use, misappropriation or disclosure of trade secrets, know how or other proprietary information. Despite our efforts to protect this information, unauthorized parties may attempt to obtain and use information that we regard as proprietary. If we are unable to maintain the proprietary nature of our technologies, we could be materially adversely affected.
In addition, when others control the prosecution, maintenance and enforcement of certain important intellectual property, such as technology licensed to us, the protection and enforcement of the intellectual property rights may be outside of our control. If the entity that controls intellectual property rights that are licensed to us does not adequately protect those rights, our rights may be impaired, which may impact our ability to develop, market and commercialize our products. Further, if we breach the terms of any license agreement pursuant to which a third party licenses us intellectual property rights, our rights under that license may be affected and we may not be able to continue to use the licensed intellectual property rights, which could adversely affect our ability to develop, market and commercialize our products.
If third parties claim we are infringing or misappropriating their intellectual property rights, we could be prohibited from selling our PV products, be required to obtain licenses from third parties or be forced to develop non-infringing alternatives, and we could be subject to substantial monetary damages and injunctive relief.
The PV industry is characterized by the existence of a large number of patents and frequent litigation based on allegations of patent infringement. We are aware of numerous issued patents and pending patent applications owned by third parties that may relate to current and future generations of solar energy. The owners of these patents may assert the manufacture, use or sale of any of our products infringes one or more claims of their patents. Moreover, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, which may later result in issued patents that materially and adversely affect our business. Third parties could also assert claims against us that we have infringed or misappropriated their intellectual property rights. Whether or not such claims are valid, we cannot be certain we have not infringed the intellectual property rights of such third parties. Any infringement or misappropriation claim could result in significant costs or substantial damages to our business or an inability to manufacture, market or sell any of our PV modules found to infringe or misappropriate. Even if we were to prevail in any such action, the litigation could result in substantial cost and diversion of resources that could materially and adversely affect our business. The large number of patents, the rapid rate of new patent issuances, the complexities of the technology involved and uncertainty of litigation increase the risk of business assets and management's attention being diverted to patent litigation. Even if obtaining a license were feasible, it could be costly and time consuming. We might be forced to obtain additional licenses from our existing licensors in the event the scope of the intellectual property we have licensed is too narrow to cover our activities, or in the event the licensor did not have sufficient rights to grant us the license(s) purportedly granted. Also, some of our licenses may restrict or limit our ability to grant sub-licenses and/or assign rights under the licenses to third parties, which may limit our ability to

pursue business opportunities.

Our future success depends on retaining our Chief Executive Officer and existing management team and hiring and assimilating new key employees and our inability to attract or retain key personnel would materially harm our business and results of operations.

Our success depends on the continuing efforts and abilities of our executive officers, including Mr. Victor Lee, our President and Chief Executive Officer, our other executive officers, and key technical personnel. Our future success also will depend on our ability to attract and retain highly skilled employees, including management, technical and sales personnel. The loss of any of our key personnel, the inability to attract, retain or assimilate key personnel in the future, or delays in hiring required personnel could materially harm our business, results of operations and financial condition.

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Our PV modules contain limited amounts of cadmium sulfide, and claims of human exposure or future regulations could have a material adverse effect on our business, results of operations and financial condition.

Our PV modules contain limited amounts of cadmium sulfide, which is regulated as a hazardous material due to the adverse health effects that may arise from human exposure, and is banned in certain countries. We cannot assure you that human or environmental exposure to cadmium sulfide used in our PV modules will not occur. Any such exposure could result in third party claims against us, damage to our reputation and heightened regulatory scrutiny of our PV modules. Future regulation relating to the use of cadmium in various products could force us to seek regulatory exemptions or impact the manufacture and sale of our PV modules and could require us to incur unforeseen environmental related costs. The occurrence of future events such as these could limit our ability to sell and distribute our PV modules, and could have a material adverse effect on our business, results of operations and financial condition.

Environmental obligations and liabilities could have a substantial negative impact on our financial condition, cash flows and profitability.

We are subject to a variety of federal, state, local and foreign laws and regulations relating to the protection of the environment, including those governing the use, handling, generation, processing, storage, transportation and disposal of, or human exposure to, hazardous and toxic materials (such as the cadmium used in our products), the discharge of pollutants into the air and water, and occupational health and safety. We are also subject to environmental laws which allow regulatory authorities to compel, or seek reimbursement for, cleanup of environmental contamination at sites now or formerly owned or operated by us and at facilities where our waste is or has been disposed. We may incur significant costs and capital expenditures in complying with these laws and regulations. In addition, violations of, or liabilities under, environmental laws or permits may result in restrictions being imposed on our operating activities or in our being subjected to substantial fines, penalties, criminal proceedings, third party property damage or personal injury claims, cleanup costs or other costs. Also, future developments such as more aggressive enforcement policies, the implementation of new, more stringent laws and regulations, or the discovery of presently unknown environmental conditions or noncompliance may require expenditures that could have a material adverse effect on our business, results of operations and financial condition. Further, greenhouse gas emissions have increasingly become the subject of international, national, state and local attention. Although future regulations could potentially lead to an increased use of alternative energy, there can be no guarantee that such future regulations will encourage solar technology. Given our limited history of operations, it is difficult to predict future environmental expenses.

We currently anticipate having substantial international operations that will subject us to a number of risks, including potential unfavorable political, regulatory, labor and tax conditions in foreign countries.

We expect to expand our operations abroad in the future and, as a result, we may be subject to the legal, political, social and regulatory requirements and economic conditions of foreign jurisdictions. Risks inherent to international operations, include, but are not limited to, the following:

- Difficulty in procuring supplies and supply contracts abroad;
- Difficulty in enforcing agreements in foreign legal systems;
- Foreign countries imposing additional withholding taxes or otherwise taxing our foreign income, imposing tariffs or adopting other restrictions on foreign trade and investment, including currency exchange controls;
- Inability to obtain, maintain or enforce intellectual property rights;
- Risk of nationalization;
- Changes in general economic and political conditions in the countries in which we may operate, including changes in the government incentives we might rely on;
- Unexpected adverse changes in foreign laws or regulatory requirements, including those with respect to environmental protection, export duties and quotas;
- Difficulty with staffing and managing widespread operations;
- Trade barriers such as export requirements, tariffs, taxes and other restrictions and expenses, which could increase the prices of our products and make us less competitive in some countries; and
- Difficulty of, and costs relating to, compliance with the different commercial and legal requirements of the international markets in which we plan to offer and sell our PV products.

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Our business in foreign markets will require us to respond to rapid changes in market conditions in these countries. Our overall success as an international business depends, in part, on our ability to succeed in differing legal, regulatory, economic, social and political conditions. If we are not able to develop and implement policies and strategies that are effective in each location where we will do business, then our business, results of operations and financial condition could be materially and adversely affected.

Existing regulations and policies and changes to these regulations and policies may present technical, regulatory and economic barriers to the purchase and use of PV products, which may significantly reduce demand for our PV products.

The market for electricity generation products is heavily influenced by foreign, U.S., state and local government regulations and policies concerning the electric utility industry, as well as policies promulgated by electric utilities. These regulations and policies often relate to electricity pricing and technical interconnection of customer owned electricity generation. In the United States and in a number of other countries, these regulations and policies have been modified in the past and may be modified again in the future. These regulations and policies could deter end user purchases of PV products and investment in the research and development of PV technology. For example, without a mandated regulatory exception for PV systems, utility customers are often charged interconnection or standby fees for putting distributed power generation on the electric utility grid. These fees could increase the cost to our end users of using PV systems and make them less desirable, thereby harming our business, prospects, results of operations and financial condition. In addition, electricity generated by PV systems mostly competes with expensive peak hour electricity, rather than the less expensive average price of electricity. Modifications to the peak hour pricing policies of utilities, such as to a flat rate, would require PV systems to achieve lower prices in order to compete with the price of electricity from other sources.

We anticipate that our PV modules and their use in installations will be subject to oversight and regulation in accordance with national and local ordinances relating to building codes, safety, environmental protection, utility interconnection and metering and related matters. It is difficult to track the requirements of individual states and design equipment to comply with the varying standards. Any new government regulations or utility policies pertaining to PV modules may result in significant additional expenses to us, our business partners and their customers and, as a result, could cause a significant reduction in demand for our PV modules.

We have identified material weaknesses in our internal control over financial reporting. If our remedial measures are insufficient to address the material weaknesses, or if additional material weaknesses or significant deficiencies in our internal control over financial reporting are discovered or occur in the future, our consolidated financial statements may contain material misstatements, which could adversely affect our stock price and could negatively impact our results of operations.

As of December 31, 2016, we concluded that there were material weaknesses in our internal control over financial reporting. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. See Item 9A in Part II of this Annual Report on Form 10-K for details.

While we are committed to remediating the control deficiencies that gave rise to the material weaknesses, there can be no assurances that our remediation efforts will be successful or that we will be able to prevent future control deficiencies (including material weaknesses) from happening that could cause us to incur unforeseen costs, negatively impact our results of operations, cause our consolidated financial results to contain material misstatements, cause the market price of our common stock to decline, damage our reputation or have other potential material adverse consequences.

Risks Relating to our Securities and an Investment in our Common Stock

As a public company we are subject to complex legal and accounting requirements that require us to incur substantial expenses, and our financial controls and procedures may not be sufficient to ensure timely and reliable reporting of financial information, which, as a public company, could materially harm our stock price and listing on the OTCQB Venture Market.

As a public company, we are subject to numerous legal and accounting requirements that do not apply to private companies. The cost of compliance with many of these requirements is substantial, not only in absolute terms but, more importantly, in relation to the overall scope of the operations of a small company. Failure to comply with these requirements can have numerous adverse consequences including, but not limited to, our inability to file required periodic reports on a timely basis, loss of market confidence, delisting of our securities and/or governmental or private actions against us. We cannot assure you we will be able to comply with all of these requirements or the cost of such compliance will not prove to be a substantial competitive disadvantage vis-à-vis our privately held and larger public competitors.

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The Sarbanes-Oxley Act of 2002 (“Sarbanes-Oxley”) requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of Sarbanes-Oxley. Our compliance with Section 404 of Sarbanes-Oxley will require we incur substantial accounting expense and expend significant management efforts. The effectiveness of our controls and procedures may, in the future, be limited by a variety of factors, including:

- Faulty human judgment and simple errors, omissions or mistakes;
- Fraudulent action of an individual or collusion of two or more people;
- Inappropriate management override of procedures; and
- The possibility that any enhancements to controls and procedures may still not be adequate to assure timely and accurate financial information.

If we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm, identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, we may be subject to OTCQB delisting, investigations by the SEC and civil or criminal sanctions.

Our ability to successfully implement our business plan and comply with Section 404 requires us to be able to prepare timely and accurate financial statements. We expect we will need to continue to improve existing, and implement new operational, financial and accounting systems, procedures and controls to manage our business effectively.

Any delay in the implementation of, or disruption in the transition to, new or enhanced systems, procedures or controls may cause our operations to suffer, and we may be unable to conclude that our internal control over financial reporting is effective as required under Section 404 of Sarbanes-Oxley. If we are unable to complete the required Section 404 assessment as to the adequacy of our internal control over financial reporting, if we fail to maintain or implement adequate controls, our ability to obtain additional financing could be impaired. In addition, investors could lose confidence in the reliability of our internal control over financial reporting and in the accuracy of our periodic reports filed under the Exchange Act. A lack of investor confidence in the reliability and accuracy of our public reporting could cause our stock price to decline.

The price of our common stock may continue to be volatile.

Our common stock is currently traded on the OTCQB Venture Market. The trading price of our common stock from time to time has fluctuated widely and may be subject to similar volatility in the future. For example, during the calendar year ended December 31, 2016, our common stock traded (as adjusted to reflect a 1-for-10 reverse stock split of our common stock that occurred on August 26, 2014 and a 1-for-20 reverse stock split that occurred on May 26, 2016 (the “Reverse Stock Splits”)) as low as below $0.01 and as high as $56.40. The trading price of our common stock in the future may be affected by a number of factors, including events described in these “Risk Factors.” In recent years, broad stock market indices, in general, and smaller capitalization and PV companies, in particular, have experienced substantial price fluctuations. In a volatile market, we may experience wide fluctuations in the market price of our common stock. These fluctuations may have a negative effect on the market price of our common stock regardless of our operating performance. In the past, following periods of volatility in the market price of a company’s securities, securities class action litigation has often been instituted. A securities class action suit against us could result in substantial costs, potential liabilities and the diversion of management’s attention and resources, and could have a material adverse effect on our financial condition.

Our stockholders may experience significant dilution as a result of shares of our common stock issued pursuant to our currently outstanding securities and existing agreements, and pursuant to new securities that we may issue in the future.

We are likely to issue substantial amounts of additional common stock in connection with most of our outstanding convertible preferred stock and convertible notes. We may also issue additional common stock or securities convertible into or exchangeable or exercisable for common stock, in connection with future capital raising transactions.

Most of our outstanding convertible preferred stock and convertible notes contain variable pricing mechanisms. The number of shares that we will issue pursuant to the aforementioned financial instruments will fluctuate based on the price of our common stock. Depending on market liquidity at the time, sales of such shares into the market may cause the trading price of our common stock to fall.

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The issuance of material amounts of common stock by us would cause our existing stockholders to experience significant dilution in their investment in our Company. Also, if we obtain additional financing involving the issuance of equity securities or securities convertible into equity securities, our existing stockholders' investment would be further diluted. Such dilution could cause the market price of our common stock to decline, which could impair our ability to raise additional financing.

Sales of a significant number of shares of our common stock in the public markets or significant short sales of our stock, or the perception that such sales could occur, could depress the market price of our common stock and impair our ability to raise capital.

Sales of a substantial number of shares of our common stock or other equity-related securities in the public markets could depress the market price of our common stock. If there are significant short sales of our stock, the price decline that could result from this activity may cause the share price to decline more so, which, in turn, may cause long holders of the stock to sell their shares, thereby contributing to sales of stock in the market. Such sales also may impair our ability to raise capital through the sale of additional equity securities in the future at a time and price that our management deems acceptable, if at all. In addition, a large number of our outstanding shares are not registered under the Securities Act. If and when these shares are registered or become eligible for sale to the public market, the market price of our common stock could also decline.

Our common stock has been delisted from the NASDAQ Capital Market. Our inability to maintain our listing on NASDAQ may limit the liquidity of our stock, increase its volatility and hinder our ability to raise capital.

On February 25, 2016, our common stock was delisted from the NASDAQ Capital Market and began trading on the OTCQB Venture Market.

Upon such delisting, our common stock became subject to the regulations of the SEC relating to the market for penny stocks. A penny stock is any equity security not traded on a national securities exchange that has a market price of less than $5.00 per share. The regulations applicable to penny stocks may severely affect the market liquidity for our common stock and could limit the ability of shareholders to sell securities in the secondary market. Accordingly, investors in our common stock may find it more difficult to dispose of or obtain accurate quotations as to the market value of our common stock, and there can be no assurance that our common stock will be continue to be eligible for trading or quotation on the OTCQB Venture Market or any other alternative exchanges or markets.

The delisting of our common stock from NASDAQ may adversely affect our ability to raise additional financing through public or private sales of equity securities, may significantly affect the ability of investors to trade our securities, and may negatively affect the value and liquidity of our common stock. Such delisting from NASDAQ may also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities.

Some provisions of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our Amended and Restated Certificate of Incorporation and Second Amended and Restated Bylaws, each as amended, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us, or for a change in the composition of our Board of Directors (our "Board") or management to occur, even if doing so would benefit our stockholders. These provisions include:

- Authorizing the issuance of "blank check" preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval;
- Dividing our Board into three classes;
- Limiting the removal of directors by the stockholders; and

- Limiting the ability of stockholders to call a special meeting of stockholders.

In addition, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with an interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder, unless such transactions are approved by our Board. This provision could have the effect of delaying or preventing a change of control, whether or not it is desired by, or beneficial to, our stockholders.

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Item 1B. Unresolved Staff Comments
None.
Item 2. Properties
We own an approximately 138,000 square foot manufacturing and office facility in Thornton, Colorado.

Item 3. Legal Proceedings

Investment Banking Settlement

On October 21, 2011, we were notified that a complaint (the “Lawsuit”) was filed by Jefferies & Company, Inc. ("Jefferies") against us in state court located in the County and State of New York.

In December 2010, we and Jefferies entered into an engagement agreement (the “Fee Agreement”) pursuant to which Jefferies was hired to act as our financial advisor in relation to certain potential transactions. In the Lawsuit, Jefferies claims it is entitled to receive an investment banking fee of $3.0 million (plus expense reimbursement of approximately $49,000) under the Fee Agreement in connection with the August 2011 investment and strategic alliance transaction (the “Financing”) between us and TFG Radiant. In addition, should it prevail at trial, Jefferies would be able to claim an award for attorney's fees and prejudgment interest in the approximate amount of $1.2 million.

On April 16, 2014, the parties settled the lawsuit where the Company agreed to pay Jefferies a total of $2.0 million in equal installments over 40 months. The Company has paid $1,650,000 through December 31, 2016.

The Company records a liability in its financial statements for costs related to claims, including settlements and judgments, where the Company has assessed that a loss is probable and an amount can be reasonably estimated. The Company accrued $1.7 million, the net present value of the $2.0 million settlement, as of December 31, 2013. As of December 31, 2016, $339,000 was recorded as a Current Liability in the Consolidated Balance Sheets.

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 stock previously traded on the NASDAQ Capital Market. On February 23, 2016 the Company received notice from NASDAQ stating that NASDAQ had determined to delist the Company's common stock. Beginning February 25, 2016 the Company's common stock has traded on OTCQB Venture Market, operated by OTC Markets Group Inc. Our trading symbol is “ASTI.” The following table sets forth the high and low sales price information per share for our common stock for the last two completed fiscal years, as adjusted for the Reverse Stock Split.

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Price Range of Common Stock

	High	Low
Fiscal 2015		
First Quarter	$41.60	$11.20
Second Quarter	$24.40	$10.40
Third Quarter	$12.80	$2.00
Fourth Quarter	$5.20	$2.20
Fiscal 2016		
First Quarter	$56.40	$21.00
Second Quarter	$1.26	$0.41
Third Quarter	$0.07	$0.01
Fourth Quarter (1)	$0.02	$—

(1) During the Fourth Quarter of Fiscal 2016 the Company's lowest stock price traded below $0.01.

Holders

As of December 31, 2016, the number of record holders of our common stock was 31. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividends

The holders of common stock are entitled to receive such dividends as may be declared by our Board of Directors. During the years ended December 31, 2016 and 2015, we did not pay any common stock dividends, and we do not expect to declare or pay any dividends in the foreseeable future. Payment of future dividends will be within the discretion of our Board of Directors and will depend on, among other factors, our retained earnings, capital requirements, and operating and financial condition.

Item 6. Selected Financial Data

Smaller reporting companies are not required to provide the information required by this Item.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion of our financial condition and results of operations should be read in conjunction with our audited financial statements and the notes to those financial statements appearing elsewhere in this Form 10-K. This discussion and analysis contains statements of a forward-looking nature relating to future events or our future financial performance. As a result of many factors, our actual results may differ materially from those anticipated in these forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements.

Overview

We are a company formed to commercialize flexible PV modules using our proprietary technology. For the year ended December 31, 2016, we generated $1.7 million of revenue. Our revenue from product sales accounted for 97.3% of total revenue while revenue generated from government research and development contracts accounted for 2.7% of total revenue. As of December 31, 2016, we had an accumulated deficit of $383.9 million.

In 2012, we transitioned our business model adding a second business focused on developing PV integrated consumer electronics. In June of 2012, we launched our new line of consumer products under the EnerPlex™ brand, and introduced our first product, the Surfr™ battery and a solar case for the Apple® iPhone® 4/4S smart phone featuring our ultra-light CIGS thin film technology integrated directly into the case. The case incorporates our ultra-light and thin PV module into a sleek, protective iPhone 4/4S case, along with a thin, life extending, battery. The charger adds minimal weight and bulk to the iPhone, yet provides supplemental charging when needed.

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In December 2012, we launched the EnerPlex Kickr™ and EnerPlex Jumpr™ product series. The Kickr IV is an extremely portable, compact and durable solar charging device, approximately seven inches by seven inches when folded, and weighs less than half a pound. The Kickr IV provides 6.5 watts of regulated power that can help charge phones, digital cameras, and other small USB enabled devices. The Kickr IV is ideal for outdoor activities such as camping, hiking and mountain climbing as well as daily city use. To complement the Kickr IV, we also released the Jumpr™ series of portable power banks. The Jumpr™ series provides a compact power storage solution for those who need to take the power of the sun with them on the go. Throughout 2014, EnerPlex released multiple additions to the Jumpr line of products: including the Jumpr Stack 3,6 & 9, innovative batteries equipped with tethered micro-USB and Apple Lightning cables and revolutionary Stack & Charge design, enabling batteries to be charged simultaneously when they are placed on top of one another. Also released in 2014 were the Jumpr Slate series, products which push the boundaries of how thin batteries can be, the Jumpr Slate 10k, at less than 7mm thick was the thinnest lithium polymer battery available when it was released. The Jumpr Slate 5k and 5k Lightning each come with a tethered micro-USB and Lightning cable respectively; freeing consumers from worrying about toting extra cables with them while on the move.

At Outdoor Retailer 2014, EnerPlex debuted the Generatr Series, the Generatr 1200 and Generatr 100 are lithium-ion based large format batteries; lighter and smaller than competitors, the Generatr Series is targeted for consumers who require high-capacity, high-output batteries which remain ultra-portable when compared to the competition. Also debuted at Outdoor Retailer was the Commandr 20, a high output solar charger designed specifically to integrate with and charge the Generatr series, allowing consumers to stay out longer without needing to charge their Generatr batteries from a traditional power source. In August 2014, the Kickr II+ and IV+ were also announced, these products represent another evolution in EnerPlex's line of solar products; integrated with a 500mAh battery the Kickr II+ and IV+ are able to provide a constant flow of power even when there are intermittent disruptions in sunlight.
Throughout 2013, we aggressively pursued new distribution channels for the EnerPlex™ brand; these activities have led to placement in a variety of high-traffic ecommerce venues such as www. walmart.com, www.brookstone.com, www.newegg.com as well as many others including our own e-commerce platform at www.goenerplex.com. The April 2013 placement of EnerPlex products at Fry's Electronics, a US West Coast consumer electronics retailer, represented our first domestic retail presence. EnerPlex products are carried in all of Fry's 34 stores across 9 states. In 2014 EnerPlex products launched in multiple online and brick-and-mortar partners; including BestBuy.com, 300 premium Verizon Wireless stores via partner The Cellular Connection (TCC) and 25 Micro Center stores across 16 states. In the third quarter of 2015, EnerPlex expanded its presence to 456 total TCC Verizon Wireless Premium retailers, adding 156 stores.
During the first quarter of 2015 we reached an agreement with EVINE Live, one of the premier home shopping networks with TV programming that reaches over 87 million US homes to begin selling EnerPlex products during their broadcasts. During the second quarter EnerPlex launched the Generatr S100 and select other products exclusively with EVINE, and in the third quarter the Generatr 1200 launched exclusively with EVINE for a limited period.
During the second quarter of 2015 EnerPlex launched its products into two world recognized retailers; including over 100 The Sports Authority stores nationwide, in addition to launching in select Cabela's, "The World's Foremost Outfitter", stores and via Cabela's online catalog. Internationally, EnerPlex products became available in the United Kingdom via the brand's launch with 172 Maplin's stores throughout the country. During the forth quarter of 2015, EnerPlex launched with GovX, the premier online shopping destination for Military, Law Enforcement and Government agencies.
At the end of the first quarter of 2015, we announced that six EnerPlex products were awarded accolades as Red Dot Design Award winners, recognizing both the aesthetic as well as functional design of the Jumpr Quad, Jumpr Stack 3/6/9, the Generatr 100 and the Generatr 1200. During the third quarter of 2015 the Generatr 100 won a Best of Show Award at the CTIA Super Mobility show in Las Vegas. In 2015 Ascent Solar won its second R&D 100 Award, the 2015 award was given for the development of the MilPak platform, a military-grade solar power generation and storage unit. The MilPak platform is on of the most rugged, yet lightweight, power generation and storage solutions available, both attributes enabled by the use of Ascent's CIGS technology.

In the first quarter of 2016, EnerPlex launched the new Emergency sales vertical, partnering with Emergency Preparedness eCommerce leader, Emergency Essentials.

In early 2016 Ascent announced new breakthroughs in the Company's line of high-voltage solar products, designed specifically for high-altitude and space markets, building on the progress previously announced in Q4, 2015. Also during the first quarter of 2016, the Company announced the launch of select products on the GSA Advantage website; which allows Federal employees, including members of all branches of the US Military, to directly purchase Ascent and EnerPlex products including: the MilPak E, Commandr 20, Kickr 4 and WaveSol solar modules.

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In February 2017 Ascent announced the discontinuation of our EnerPlex consumer business by disposing of the EnerPlex brand and related intellectual properties and trademarks associated with EnerPlex to our battery product supplier, Sun Pleasure Co. Limited ("SPCL") in an effort to better allocate its resources and to continue to focus on its core strength in the high-value specialty PV market. Following the transfer, Ascent will no longer produce or sell Enerplex-branded consumer products. Ascent will focus on its photovoltaic business and will supply solar PV products to SPCL, supporting the continuous growth of EnerPlex™ with Ascent's proprietary and award-winning thin-film solar technologies and products.

We continue to design and manufacture PV integrated consumer electronics, as well as portable power applications for commercial and military users. Due to the durability enabled by the monolithic integration employed in our technology, the capability to customize modules into different form factors and the industry leading light weight and flexibility provided by our modules, we believe the potential applications for our products are numerous. We also remain focused on specialty solar applications which can fully leverage the unique properties of our award winning CIGS technology. These include aerospace, defense, emergency management and consumer/OEM applications.

Commercialization and Manufacturing Strategy

Our proprietary manufacturing process deposits multiple layers of materials, including a thin film of highly efficient Copper-Indium-Gallium-diSelenide ("CIGS") semiconductor material, on a flexible, lightweight, plastic substrate using a roll-to-roll manufacturing process and then laser patterns the layers to create interconnected PV cells, or PV modules, in a process known as monolithic integration. Our monolithic integration techniques enable us to form complete PV modules with less or no costly back end assembly of intercell connections. Traditional PV manufacturers assemble PV modules by bonding or soldering discrete PV cells together. This manufacturing step typically increases manufacturing costs and at times proves detrimental to the overall yield and reliability of the finished product. By reducing or eliminating this added step using our proprietary monolithic integration techniques, we believe we can achieve cost savings in, and increase the reliability of, our PV modules. We believe our technology and manufacturing process, which results in a lighter, flexible module package, provides us with unique market opportunities relative to both the crystalline silicon ("c-Si") based PV manufacturers that currently lead the PV market, as well as other thin-film PV manufacturers that use substrate materials such as glass, stainless steel or other metals that can be heavier and more rigid than plastics.

Currently, we are producing consumer oriented products focusing on charging devices powered by or enhanced by our solar modules. Products in these markets are priced based on the overall value proposition rather than a commodity-style price per watt basis. We continue to develop new consumer products and we have adjusted our utilization of our equipment to meet our near term forecast sales. We plan to continue the development of our current PV technology to increase module efficiency, improve our manufacturing tooling and process capabilities and reduce manufacturing costs. We also plan to continue to take advantage of research and development contracts to fund a portion of this development.

On December 28, 2013, we entered into a definitive agreement for the establishment of a joint venture with the Government of the Municipal City of Suqian in Jiangsu Province, China ("Suqian"). The purpose of the joint venture was to build a factory located in Suqian to manufacture our proprietary photovoltaic modules. The Suqian joint venture project had progressed more slowly than originally anticipated due to a number of factors including short supply of needed technical skills in the Suqian area and other factors affecting the long term viability of the partnership. Accordingly, on August 5, 2015, Suqian and the Company mutually agreed to terminate the joint venture project.

The parties will liquidate the joint venture and distribute any available proceeds to the parties pro rata in accordance with the parties' contributions to the joint venture to date. The Company received approximately $191,000 in cash upon liquidation of the joint venture during the year ended December 31, 2015. The Company's contributions to the joint venture have consisted of (i) $320,000 in cash and (ii) certain technical and engineering consulting services. The Company does not anticipate having any material current or ongoing liabilities relating to the joint venture or its termination.

We plan to continue the development of our PV technology in order to increase module efficiency, improve our manufacturing tooling and process capabilities and reduce manufacturing costs. We also plan to continue to take advantage of research and development contracts to fund a portion of this development.

Related Party Activity

On February 2, 2012, we announced the appointment of Victor Lee as President and Chief Executive Officer. Mr. Lee has served on our Board since November 2011 and is currently the managing director of Tertius Financial Group Pte Ltd, the joint venture partner with Radiant Group, in TFG Radiant. In April 2012, we appointed the Chairmen of TFG Radiant, Mr. Winston Xu (aka Xu Biao, as a member of our Board of Directors. TFG Radiant owned less than 1.0% of our outstanding common stock as of December 31, 2016.

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On August 29, 2016, the Company entered into a note purchase agreement with Tertius Financial Group Pte. Ltd. (“Tertius" or "TFG”) for the private placement of $330,000 of the Company’s original issue discount notes (“Notes”). On August 29, 2016, the Company sold and issued $330,000 principal amount of Notes to Tertius in exchange for $300,000 of gross proceeds.

On December 6, 2016, the Company issued a new $600,000 original issue discount note to Tertius in exchange for (i) $200,000 of gross proceeds and (ii) cancellation of the existing outstanding $330,000 note. The outstanding balance of the note is $602,000 (including accrued and unpaid interest) with a discount of $60,000 as of December 31, 2016.

On January 19, 2017, the Company issued 333,333,333 shares of unregistered common stock in a private placement to Tertius Financial Group ("TFG") pursuant to a Securities Purchase Agreement (the “SPA”).

Pursuant to the SPA, the Company issued the 333,333,333 shares to TFG in exchange for cancellation of its $600,000 promissory note (including accrued interest of approximately $4,340) that was issued by the Company on December 6, 2016. The SPA does not provide any registration rights for the shares issued to TFG.

The new ownership by TFG represents approximately 24% of the outstanding shares of common stock of the Company on a post transaction basis. There are no registration rights.

Tertius is an investment firm located in Singapore. Victor Lee, the Company’s President and CEO, is a managing director and 50% owner of Tertius.

Significant Trends, Uncertainties and Challenges

We believe the significant trends, uncertainties and challenges that directly or indirectly affect our financial performance and results of operations include:

- Our ability to generate customer acceptance of and demand for our products;
- Successful ramping up of commercial production on the equipment installed;
- Our products are successfully and timely certified for use in our target markets;
- Successful operating of production tools to achieve the efficiencies, throughput and yield necessary to reach our cost targets;
- The products we design are saleable at a price sufficient to generate profits;
- Our ability to raise sufficient capital to enable us to reach a level of sales sufficient to achieve profitability on terms favorable to us;
- Effective management of the planned ramp up of our domestic and international operations;
- Our ability to successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators, distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;
- Our ability to maintain the listing of our common stock on the OTCQB Venture Market;
- Our ability to implement remediation measures to address material weaknesses in internal control;
- Our ability to achieve projected operational performance and cost metrics;
- Our ability to enter into commercially viable licensing, joint venture, or other commercial arrangements; and
- Availability of raw materials.

Basis of Presentation: The accompanying consolidated financial statements have been derived from the accounting records of Ascent Solar Technologies, Inc., Ascent Solar (Asia) Pte. Ltd., and Ascent Solar (Shenzhen) Co., Ltd. (collectively, "the Company") as of December 31, 2016 and December 31, 2015, and the results of operations for the years ended December 31, 2016 and 2015. Ascent Solar (Shenzhen) Co., Ltd. is wholly owned by Ascent Solar (Asia) Pte. Ltd., which is wholly owned by Ascent Solar Technologies, Inc. All significant inter-company balances and transactions have been eliminated in the accompanying consolidated financial statements.

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Significant Accounting Policies

Related Party Transactions: The Company's largest shareholder is Tertius Financial Group Pte Ltd of which Mr. Victor Lee, President and Chief Executive Officer of the Company, is Managing Director and 50% shareholder. TFG is also a joint venture partner with Radiant Group, in TFG Radiant. In April 2012, we appointed the Chairmen of TFG Radiant, Mr. Winston Xu (aka Xu Biao), as a member of our Board of Directors. Accounting for transactions under these agreements is consistent with those defined in our Significant Accounting Policies. Refer to Notes 9, 20, and 23 for further information.

Revenue Recognition:

Product revenue - We generated product revenues of $1,700,000 for the year ended December 31, 2016. Product revenue is generated from commercial sales of flexible PV modules and PV integrated consumer electronics. Products are sold through our own website and through the use of online retailers and distributors. Revenue is recognized as products are shipped or delivered and title has transferred to the customer. In certain instances, we have agreed to refund a portion of the purchase price to customers if we decrease our standard retail price. We estimate the effect of this price protection and record the difference as a reduction of revenue at the time of sale. We also, in certain instances, have provided customers with a right of return provision. In these instances, we defer the recognition of revenues until the provision period has expired. Estimated costs of returns and allowances, other than those specifically pertaining to a right of return provision, and discounts are accrued as a reduction to sales when revenue is recognized.

Some of our distributor relationships allow for discounts to be taken for prompt payment and to fund co-op advertising costs. These discounts are taken as credits against outstanding receivable balances and recorded net of revenue. Large co-op advertising campaigns, funded either by cash payments by us or as credits against outstanding receivables, are recorded as advertising expense included in Selling, general and administrative costs if, and only if, the following criteria are met: 1) we received an identifiable benefit (goods or services) in exchange for the consideration, with the identifiable benefit being sufficiently separable from the distributor's purchase of our products; and 2) we can reasonably estimate the fair value of the identifiable benefit. If the amount of consideration paid by us exceeds the estimated fair value of the benefit received, that excess amount shall be characterized as a reduction of revenue.

Government contracts revenue - Revenue from governmental research and development contracts is generated under terms that are cost plus fee or firm fixed price. Revenue from cost plus fee contracts is recognized as costs are incurred on the basis of direct costs plus allowable indirect costs and an allocable portion of the fixed fee. Revenue from firm fixed price contracts is recognized under the percentage-of-completion method of accounting, with costs and estimated profits included in contract revenue as work is performed. If actual and estimated costs to complete a contract indicate a loss, provision is made currently for the loss anticipated on the contract.

Convertible Preferred Stock: The Company evaluates its preferred stock instruments under FASB ASC 480, "Distinguishing Liabilities from Equity" to determine the classification, and thereby the accounting treatment, of the instruments. Refer to Notes 10, 12, 13, 14, 15, 16, 17, 18, 19, and 20 for further discussion on the classification of each instrument.

Derivatives: The Company evaluates its financial instruments under FASB ASC 815, "Derivatives and Hedging" to determine whether the instruments contain an embedded derivative. When an embedded derivative is present, the instrument is evaluated for a fair value adjustment upon issuance and at the end of every period. Any adjustments to fair value are treated as gains and losses in fair values of derivatives and are recorded on the Statement of Operations. Refer to Notes 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20 for further discussion on the embedded derivatives of each instrument.

Inventories: All inventories are stated at the lower of cost or market, with cost determined using the weighted average method. Inventory balances are frequently evaluated to ensure that they do not exceed net realizable value. The computation for net realizable value takes into account many factors, including expected demand, product lifecycle and development plans, module efficiency, quality issues, obsolescence and others. Management's judgment is required to determine reserves for obsolete or excess inventory. If actual demand and market conditions are less favorable than those estimated by management, additional inventory write downs may be required. The majority of our inventory is raw materials which have a long life cycle; obsolescence is not a significant factor in their valuation. During the years ended December 31, 2016 and December 31, 2015, the Company recognized no lower of cost or market adjustments.

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Impairment of Long-lived assets: We analyze our long-lived assets (property, plant and equipment) and definitive-lived intangible assets (patents) for impairment, both individually and as a group, whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable. Events that might cause impairment would include significant current period operating or cash flow losses associated with the use of a long-lived asset or group of assets combined with a history of such losses, significant changes in the manner of use of assets and significant negative industry or economic trends. An undiscounted cash flow analysis is calculated to determine if an impairment exists. If an impairment is determined to exist, any related loss is calculated using the difference between the fair value and the carrying value of the assets. During the years ended December 31, 2016 and 2015, we incurred impairments of our manufacturing facilities and equipment in the amounts of $0 and $13,000, respectively, based on estimates prepared by management.

Research, Development and Manufacturing Operations Costs: Research, development and manufacturing operations expenses were $6.6 million and $6.7 million for the years ended December 31, 2016 and 2015, respectively. Research, development and manufacturing operations expenses include: 1) technology development costs, which include expenses incurred in researching new technology, improving existing technology and performing federal government research and development contracts, 2) product development costs, which include expenses incurred in developing new products and lowering product design costs, and 3) pre-production and production costs, which include engineering efforts to improve production processes, material yields and equipment utilization, and manufacturing efforts to produce saleable product. Research, development and manufacturing operations costs are expensed as incurred, with the exception of costs related to inventoried raw materials, work-in-process and finished goods, which are expensed as Cost of revenue as products are sold.

Share-Based Compensation: We measure and recognize compensation expense for all share-based payment awards made to employees, officers, directors, and consultants based on estimated fair values. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service period in our statements of operations included herein. Share-based compensation is based on awards ultimately expected to vest and is reduced for estimated forfeitures. Forfeitures are estimated at the time of grant and revised, as necessary, in subsequent periods if actual forfeitures differ from those estimates. For purposes of determining estimated fair value of share-based payment awards on the date of grant, we use the Black-Scholes option-pricing model (“Black-Scholes Model”) for option awards. The Black-Scholes Model requires the input of highly subjective assumptions. Because our employee stock options may have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management’s opinion, the existing models may not provide a reliable single measure of the fair value of our employee stock options. Management will continue to assess the assumptions and methodologies used to calculate estimated fair value of share-based compensation. Circumstances may change and additional data may become available over time, which result in changes to these assumptions and methodologies, which could materially impact our fair value determination. We estimate the fair value of our restricted stock awards at our stock price on the grant date.

The accounting guidance for share-based compensation may be subject to further interpretation and refinement over time. There are significant differences among option valuation models, and this may result in a lack of comparability with other companies that use different models, methods and assumptions. If factors change and we employ different assumptions in the accounting for share-based compensation in future periods, or if we decide to use a different valuation model, the compensation expense we record in the future may differ significantly from what we have recorded in the current period and could materially affect our loss from operations, net loss and net loss per share.

Use of Estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Recently Issued Accounting Standards

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). The update will establish a comprehensive revenue recognition standard for virtually all industries in GAAP. ASU 2014-09 will change the amount and timing of revenue and cost recognition, implementation, disclosures and documentation. In August 2015, the FASB issued ASU No. 2015-14, Revenue from Contracts with Customers (Topic 606): Deferral of Effective Date. The amendments in ASU 2015-14 defer the effective date of ASU 2014-09 for all entities by one year. ASU 2014-09 is now effective for the Company in fiscal year 2018. The Company is researching whether the adoption of ASU 2014-09 will have a material effect on the Company’s consolidated financial statements.

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In August 2014, the FASB issued ASU No. 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. ASU 2014-15 requires management to evaluate, in connection with preparing financial statements for each annual and interim reporting period, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about an entity's ability to continue as a going concern within one year after the date that the financial statements are issued and to provide certain disclosures if it concludes that substantial doubt exists. ASU 2014-15 is effective for all entities for the annual period ending after December 15, 2016, and for annual and interim periods thereafter, with early adoption permitted. The Company has adopted ASU 2014-15.

In July 2015, the FASB issued ASU No. 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory, which states that inventory should be measured at the lower of cost and net realizable value. Net realizable value is defined as estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. This ASU is effective within annual periods beginning on or after December 15, 2016, including interim periods within that reporting period. The Company is currently evaluating the impact, if any, that the adoption of this guidance will have on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). ASU 2016-02 requires lessees to recognize all leases, including operating leases, on the balance sheet as a lease asset or lease liability, unless the lease is a short-term lease. ASU 2016-02 also requires additional disclosures regarding leasing arrangements. ASU 2016-02 is effective for interim periods and fiscal years beginning after December 15, 2018, and early application is permitted. The Company is currently evaluating the impact, if any, that the adoption of this guidance will have on its consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, Improvements to Employee Share-Based Payment Accounting, which simplifies several aspects of the accounting for share-based payment transactions, including 1) accounting for income taxes, 2) classification of excess tax benefits in the statement of cash flows, 3) forfeitures, 4) minimum statutory tax withholding requirements, 5) cash flow classification of employee taxes withheld in the form of shares, 6) the practical expedient for estimating the expected term, and 7) intrinsic value. The guidance is effective for annual reporting periods beginning after December 15, 2016, and interim periods within those annual periods. The Company does not expect the implementation of ASU 2016-09 to have a material effect on its consolidated financial statements.

Results of Operations

Comparison of the Years Ended December 31, 2016 and 2015

Revenues. Our revenues were $1,747,000 for the year ended December 31, 2016 compared to $6,537,000 for the year ended December 31, 2015, a decrease of $4,790,000. This decrease is primarily due to:

1. The Company's exit from brick and mortar retail customers due to a number of factors, including the high cost of doing business especially with those who were overly battery centric, which is no longer in line with the Company's overall strategy;
2. Continuous price erosion witnessed in the portable battery market resulting from a huge influx of low cost products from Asia;
3. Large charged-back & revenue contras from prior commitments resulting from discontinuation of EnerPlex™ sales channels;
4. The bankruptcy filed by one of our large retail customers;
5. An overall negative retail environment (especially for brick and mortar retailers) during 2016;
6. Changes in commercial terms from our largest EnerPlex customer that caused revenue recognition to be delayed to later quarters; and
7. Capital constraints and cost-cutting measures implemented by the Company, necessitated by the more difficult capital raising conditions following its delisting from the Nasdaq Capital Market in February 2016.

Revenues for the years ended December 31, 2016 and December 31, 2015 included product sales of $1,700,000 and $6,205,000, respectively. Revenues earned on our government research and development contracts decreased by

$284,000 for the year ended December 31, 2016 due to completion of certain government contracts.

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Cost of revenues. Our Cost of revenues for the year ended December 31, 2016 was $5,844,000 compared to $9,563,000 for the year ended December 31, 2015. The decrease in cost of revenues is mainly due to the decrease in production for the year ended December 31, 2016 compared to 2015. Management believes our factory is currently significantly under-utilized, and a substantial increase in revenue would result in marginal increases to Direct Labor and Overhead included in the Cost of revenues. As such management's focus going forward is to improve gross margin through increased sales and improved utilization of our factory. Long term we anticipate substantial improvements in gross margins for product sales.

Research, development and manufacturing operations costs. Research, development and manufacturing operations costs were $6,627,000 for the year ended December 31, 2016 compared to $6,712,000 for the year ended December 31, 2015, a decrease of $85,000. Research, development and manufacturing operations costs include costs incurred for product development, pre-production and production activities in our manufacturing facility. Research, development and manufacturing operations costs also include costs related to technology development and governmental contracts. The following factors contributed to the decrease in research, development, and manufacturing operations expenses during the year ended December 31, 2016:

1. Materials and Equipment Related expenses decreased $134,000 for the year ended December 31, 2016 as compared to the year ended December 31, 2015. The decrease is primarily due to the decrease in production and product sales for the year ended December 31, 2016.

2. Personnel related expenses increased $233,000 as compared to 2015. The overall increase in personnel related costs was primarily due to the conversion of contractors from the consulting and contract services category to the personnel related expenses category for the year ended December 31, 2016.

3. Consulting and Contract Services decreased by $321,000 from the prior year. The decrease in expense as compared to the prior year was primarily attributed to a combination of hiring some of the contractors, which moved the expense to personnel and attrition from the decrease in production for the year ended December 31, 2016.

4. Facility Related Expenses increased $173,000 during the twelve months ended December 31, 2016. The increase is due to the fact that a lower percentage of some overhead costs are included in the Cost of Revenue line item for the year ended December 31, 2016 because of reduced production.

5. Other miscellaneous administrative expenses decreased $36,000 during the twelve months ended December 31, 2016 contributing to the overall decrease of research, development and manufacturing operations costs.

Selling, general and administrative. Selling, general and administrative expenses were $10,305,000 for the year ended December 31, 2016 compared to $12,363,000 for the year ended December 31, 2015, a decrease of $2,058,000. The following factors contributed to the decrease in selling, general, and administrative expenses during 2016:

1. Personnel related costs decreased $449,000 during the twelve months ended December 31, 2016. The overall decrease in personnel related costs was primarily due to a reduction in headcount on the corporate level and reduced subsidiary costs of $568,000, offset by an increase in non-cash stock compensation expense of $103,000.

2. Marketing and related expenses decreased $1,291,000 as compared to the prior year. This decrease was primarily due to the reduction in certain customer promotions of $945,000, a reduction of retail kiosk operations of $80,000, a reduction in trade show costs of $151,000 and a reduction in sponsorships of $171,000, offset by an increase in promotions for new customers of $131,000.

3. Legal expenses increased by $237,000 from the prior year. The increase in legal expenses is primarily due to a patent infringement case that occurred and was settled in 2016.

4. Consulting and contract services decreased $575,000 during the twelve months ended December 31, 2016 due to decreased staffing costs associated with our retail kiosks along with decreases in design and customer relations consultants in Asia, offset by increases in investor consulting and fees.

Depreciation expense. Depreciation expense for the years ended December 31, 2016 and 2015 was $3,600,000 and $5,633,000, respectively. The large decrease of $2,033,000 was the mainly the result of a majority of the Company's property, plant and equipment being fully depreciated during the year ended December 31, 2016.

Impairment loss. Impairment losses incurred as a result of write downs of Property, Plant and Equipment were $0 and $13,000 for years ended December 31, 2016 and 2015, respectively. The impairment loss incurred during 2015 was the result of certain manufacturing equipment no longer being utilized for its intended purpose.

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Other Income/(Expense), net. Other Income/(Expense) was $14,222,000 net expense for the year ended December 31, 2016 compared to $18,051,000 net expense for the year ended December 31, 2015, a decrease of $3,829,000. The following factors contributed to the increase in other income/(expense), net during 2016:

1. Interest Expense decreased $18,646,000 as compared to 2015. The decrease is due to non-cash interest expense and amortization of debt discounts related to the Company's termination of certain convertible notes, offset by the non-cash interest and amortization of debt discounts of new preferred stock and convertible notes, The non-cash portion of interest expense for the year ended December 31, 2016 was $7,304,000.

2. Deemed (non-cash) Interest Expense on Warrant Liability decreased $909,000 during the year ended December 31, 2016 due to zero warrants being issued in connection with our financing transactions during 2016 as compared to 2015. See the accompanying footnotes for details on financing transactions.

3. Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net fluctuated $15,869,000 as compared to the year ended December 31, 2015, resulting in a net loss as of December 31, 2016. The fluctuation in this non-cash item primarily relates to our extinguishments and conversions of certain preferred stock and convertible liabilities. See the accompanying footnotes for details on financing transactions.

Net Loss. Our Net Loss was $38,851,000 for the year ended December 31, 2016, compared to a Net Loss of $45,798,000 for the year ended December 31, 2015, a decrease in Net Loss of $6,947,000. The decrease in Net Loss for the year ended December 31, 2016 can be summarized in variances in significant account activity as follows:

	(Increase) decrease in Net Loss For the Year Ended December 31, 2016 Compared to the Year Ended December 31, 2015	
Revenues	$ (4,790,000	)
Cost of Revenue	3,719,000	
Research, development and manufacturing operations		
Materials and Equipment Related Expenses	134,000	
Personnel Related Expenses	(233,000	)
Consulting and Contract Services	321,000	
Facility Related Expenses	(173,000	)
Other Miscellaneous Costs	36,000	
Selling, general and administrative expenses		
Personnel Related Expenses	449,000	
Marketing Related Expenses	1,291,000	
Legal Expenses	(237,000	)
Public Company Costs	172,000	
Consulting and Contract Services	575,000	
Other Miscellaneous Costs	(192,000	)
Depreciation and Amortization Expense	2,033,000	
Impairment loss	13,000	
Other Income/Expense		
Interest Expense	18,646,000	
Other Income/Expense	143,000	
Deemed (non-cash) Interest Expense on Warrant Liability	909,000	
	(15,869,000	)

Non-Cash Change in Fair Value of Derivative Liabilities and Gain/Loss on Extinguishment of Liabilities, net	
Decrease to Net Loss	$ 6,947,000

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Liquidity and Capital Resources

During the years ended December 31, 2016 and 2015, the Company entered into multiple financing agreements to fund operations. Further discussion of these transactions can be found in Notes 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19.

We have continued PV production at our manufacturing facility. We do not expect sales revenue and cash flows will be sufficient to support operations and cash requirements until we have fully implemented our new consumer products strategy. Changes in the level of expected operating losses, the timing of planned capital expenditures or other factors may negatively impact cash flows and reduce current cash and investments faster than anticipated. During 2016 we used $16.9 million in cash for operations, or an average of $4.2 million per quarter. During the fourth quarter of 2016 we used $3.3 million in cash for operations. Our primary significant long term obligation consists of a note payable of $5.5 million to a financial institution secured by a mortgage on our headquarters and manufacturing building in Thornton, Colorado. Total payments of $0.5 million, including principal and interest, will come due in 2017. Additionally, we owe $0.3 million as of December 31, 2016 related to a litigation settlement reached in April 2014, which is being paid in equal installments over 40 month which began April 2014.

Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2017 overall. As such, cash liquidity sufficient for the year ending December 31, 2017 will require additional financing. Subsequent to the year ended December 31, 2016 the Company completed certain other financing transactions. See Note 27. Subsequent Events, for further information on these transactions.

The Company continues to accelerate sales and marketing efforts related to its PV strategy by focusing on the Company's propriety technology. The Company has begun activities related to securing additional financing through strategic or financial investors, but there is no assurance the Company will be able to raise additional capital on acceptable terms or at all. If the Company's revenues do not increase rapidly, and/or additional financing is not obtained, the Company will be required to significantly curtail operations to reduce costs and/or sell assets. Such actions would likely have an adverse impact on the Company's future operations. As a result of the Company’s recurring losses from operations, and the need for additional financing to fund its operating and capital requirements, there is uncertainty regarding the Company’s ability to maintain liquidity sufficient to operate its business effectively, which raises substantial doubt as to the Company’s ability to continue as a going concern. See Note 4 for further discussion.

Statements of Cash Flows Comparison of the Years Ended December 31, 2016 and 2015

For the year ended December 31, 2016, our cash used in operations was $16.9 million compared to $22.1 million for the year ended December 31, 2015, a decrease of $5.2 million. The decrease is primarily the result of reduced expenses from operations during the current year. For the years ended December 31, 2016 and 2015, our cash used in investing activities was unchanged at $0.2 million each period. During the year ended December 31, 2016, negative operating cash flows of $16.9 million were funded through $1.9 million in promissory notes, $1.1 million received from the Committed Equity Line, and $14.2 million from the issuance of stock and warrants.

Contractual Obligations

The following table presents our contractual obligations as of December 31, 2016. Our long-term debt obligation is related to our building loan and includes both principal and interest. Our Litigation Settlement, as further described in Note 24 under Investment Banking Settlement, includes both principal and interest. Our purchase obligations include orders for equipment, inventory and operating expenses.

		Payments Due by Year (in thousands)			
Contractual Obligations	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
Long-term debt obligations	$8,221	$520	$ 2,081	$ 1,387	$ 4,233
Litigation Settlement	$350	350			
Operating lease obligations	14	14	—	—	—
Purchase obligations	684	684	—	—	—
Total	$9,269	$1,568	$ 2,081	$ 1,387	$ 4,233

Off Balance Sheet Transactions

As of December 31, 2016, we did not have any off balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

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Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Exchange Risk

Historically, we have purchased manufacturing equipment internationally, which exposes us to foreign currency risk. From time to time we enter into foreign currency fair value hedges utilizing forward contracts designed to match scheduled contractual payments to equipment suppliers. Our objective is to fix the dollar amount of our foreign currency denominated manufacturing equipment purchases at the time of order. Although our hedging activity is designed to fix the dollar amount to be expended, the asset purchased is recorded at the spot foreign currency rate in effect as of the date of the payment to the supplier. The difference between the spot rate and the forward rate has been reported as gain or loss on forward contract. We cannot accurately predict future exchange rates or the overall impact of future exchange rate fluctuations on our business, results of operations and financial condition. All forward contracts entered into by us have been settled on the contract settlement dates, the last of which was settled in December 2009. We held no forward contracts during the years ended December 31, 2016 and 2015.

We hold no significant funds and have no future obligations denominated in foreign currencies as of December 31, 2016.

Although our reporting currency is the U.S. Dollar, we may conduct business and incur costs in the local currencies of other countries in which we may operate, make sales and buy materials. As a result, we are subject to currency translation risk. Further, changes in exchange rates between foreign currencies and the U.S. Dollar could affect our future net sales and cost of sales and could result in exchange losses.

Interest Rate Risk

Our exposure to market risks for changes in interest rates relates primarily to our cash equivalents and investment portfolio. As of December 31, 2016, our cash equivalents consisted only of operating, restricted, and savings accounts held with financial institutions. From time to time, we hold money market funds, investments in U.S. government securities and high quality corporate securities. The primary objective of our investment activities is to preserve principal and provide liquidity on demand, while at the same time maximizing the income we receive from our investments without significantly increasing risk. The direct risk to us associated with fluctuating interest rates is limited to our investment portfolio, and we do not believe a change in interest rates will have a significant impact on our financial position, results of operations or cash flows.

Credit Risk

From time to time, we hold certain financial and derivative instruments that potentially subject us to credit risk. These consist primarily of cash, cash equivalents, restricted cash, investments, and forward foreign currency option contracts. We are exposed to credit losses in the event of nonperformance by the counter parties to our financial and derivative instruments. We place cash, cash equivalents, investments and forward foreign currency option contracts with various high quality financial institutions, and exposure is limited at any one institution. We continuously evaluate the credit standing of our counter party financial institutions.

Item 8. Financial Statements and Supplementary Data

The Financial Statements and Supplementary Data required by this item are included in Part IV, Item 15(a)(1) and are presented beginning on Page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in our reports filed or submitted under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms. Our disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to management as appropriate to allow timely decisions regarding required disclosures. Our management conducted an evaluation required by Rules 13a-15 and 15d-15 under the Exchange Act of the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15 and 15d-15 under the Exchange Act as of December 31, 2016. Based on this evaluation, our management concluded the design and operation of our disclosure controls and procedures were not effective as of December 31, 2016.

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Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America and includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Under the supervision of the Audit Committee of the Board of Directors and with the participation of our management, including our Chief Executive Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting using the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, our management concluded our internal control over financial reporting was not effective as of December 31, 2016. Our management reviewed the results of its assessment with the Audit Committee.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

Based on our assessment and the criteria used, management concluded that our internal control over financial reporting as of December 31, 2016 was not effective due to the material weaknesses described as follows:

- The Company was understaffed and did not have sufficiently trained resources with the technical expertise to research and account for the Company's complex capitalization and multiple complex capital raising and equity transactions. This deficiency arose primarily from staff turnover including the Company's failure to more quickly replace its Director of Financial Planning and Reporting, who left the Company for a new position in November, 2016.

As a consequence, the Company did not have effective process level control activities over the following:

- Accounting for the Company's convertible debt and preferred stock transactions was lacking for the preparation of the December 31, 2016 financial statements. Many of the special accounting issues specific to debt and equity financing have become increasingly complex and time-consuming, and require extensive expertise to ensure that the accounting and reporting are accurate and in accordance with applicable standards. Given the numerous complex convertible equity financing transactions engaged in by the Company during 2016, the relevant accounting standards require the calculation, monitoring, recalculation and "marking to market" of a wide variety of derivative securities instruments that are deemed to arise from such financing transactions. These complex derivatives calculations are used in order to calculate the intrinsic value of the financial instruments and affect the short term embedded derivative liabilities line item on the Company’s balance sheet and in the change in fair value of derivatives and gain/loss on extinguishment of liabilities line item on the Company’s consolidated statement of operations. As the calculations in question relate to non-cash transactions, there was no impact on the Company's cash, current assets, revenues, operating results, or cash flows.

The control deficiencies described above created a reasonable possibility that a material misstatement to the consolidated financial statements would not be prevented or detected on a timely basis. The control deficiencies described above resulted in material misstatements in the preliminary consolidated financial statements that were corrected prior to the issuance of the consolidated financial statements as of and for the fiscal year ended December 31, 2016.

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Remediation Plan for Material Weaknesses in Internal Control over Financial Reporting

The Company has executed the following steps in 2017 to remediate the aforementioned material weaknesses in its internal control over financial reporting:

- In March 2017, the Company hired a Director of Financial Planning and Reporting with the technical expertise to research and account for the Company's complex capital raising and financial transactions. In addition, the Company will be evaluating its personnel needs and other resources to ensure appropriate staffing and enhance its research and technical accounting knowledge base.

- The Company will design and implement additional procedures in order to assure that the Director, Financial Planning and Reporting and other audit/accounting personnel are more involved with the Company’s financing activities to monitor and earlier identify accounting issues that may be raised by the Company’s ongoing financing activities.

Changes in Internal Control Over Financial Reporting

Except for the identification of the material weaknesses noted above, there were no other changes in internal control over financial reporting during the year ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information
None.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

Incorporated by reference from the definitive proxy statement for our 2017 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2016.

Item 11. Executive Compensation

Incorporated by reference from the definitive proxy statement for our 2017 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2016.

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

Incorporated by reference from the definitive proxy statement for our 2017 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2016.

Securities Authorized for Issuance under Equity Compensation Plans

The following table sets forth information as of December 31, 2016 relating to all of our equity compensation plans:

	Number of securities to be issued upon exercise of outstanding options, warrants and rights (1)	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	67,014	$ 41.98	685,323

(1) This column does not include 164,119 restricted stock awards or units.

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

Incorporated by reference from the definitive proxy statement for our 2017 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2016.

Item 14. Principal Accounting Fees and Services

Incorporated by reference from the definitive proxy statement for our 2017 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2016.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Financial Statements—See Index to Financial Statements at Item 8 of the Annual Report on Form 10-K.

(2) Financial Statement Schedules—Supplemental schedules are not provided because of the absence of conditions under which they are required or because the required information is given in the financial statements or notes thereto.

(3) Exhibits: See Item 15(b) below.

(b) Exhibits: The exhibits listed on the accompanying Index to Exhibits on this Form 10-K are filed or incorporated into this Form 10-K by reference.

Item 16. Form 10-K Summary

None.

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ASCENT SOLAR TECHNOLOGIES, INC.
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 on the 17th day of April, 2017.

ASCENT SOLAR TECHNOLOGIES, INC.

By: /S/ VICTOR LEE
Lee Kong Hian (aka Victor Lee)
President and Chief Executive Officer

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 in the capacities and on the dates indicated.

Signature	Capacities	Date
/S/ VICTOR LEE Lee Kong Hian (aka Victor Lee)	President & Chief Executive Officer and a Director (principal executive officer, and principal financial officer and accounting officer)	April 17, 2017
/S/ AMIT KUMAR Amit Kumar, Ph.D.	Chairman of the Board of Directors	April 17, 2017
Xu Biao (aka Winston Xu)	Director	
/S/ TOMAS MARSH G. Thomas Marsh	Director	April 17, 2017
/S/ KIM J. HUNTLEY Kim J. Huntley	Director	April 17, 2017

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Ascent Solar Technologies, Inc.
Index to Consolidated Financial Statements

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM
To the Board of Directors
Ascent Solar Technologies, Inc.

We have audited the accompanying consolidated balance sheets of Ascent Solar Technologies, Inc. and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of operations, stockholders' equity (deficit) and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. 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 of 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 also 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of Ascent Solar Technologies, Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 4 to the financial statements, the Company has suffered recurring losses from operations and requires additional financing to fund operations through December 31, 2017. This raises substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters also are described in Note 4. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ HEIN & ASSOCIATES LLP

Denver, Colorado
April 17, 2017

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ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED BALANCE SHEETS

	December 31, 2016	December 31, 2015
ASSETS		
Current Assets:		
Cash and cash equivalents	$130,946	$326,217
Trade receivables, net	549,204	1,992,885
Inventories	2,569,816	4,272,380
Prepaid expenses and other current assets	983,796	1,394,780
Total current assets	4,233,762	7,986,262
Property, Plant and Equipment:	36,639,460	37,575,736
Less accumulated depreciation and amortization	(30,983,448)	(28,484,708)
	5,656,012	9,091,028
Other Assets:		
Patents, net of accumulated amortization of $279,143 and $169,626, respectively	1,647,505	1,567,567
Other non-current assets	77,562	105,313
	1,725,067	1,672,880
Total Assets	$11,614,841	$18,750,170
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$4,902,471	$3,625,322
Related party payables	214,903	—
Accrued expenses	1,469,684	1,713,935
Current portion of long-term debt	243,113	348,722
Current portion of convertible note payable, net of discount of $0 and $22,484, respectively	—	30,036
Promissory Notes	1,430,000	500,493
September 2015 fixed rate convertible notes, net of discount of $0 and $1,237,500, respectively	—	811,773
Current portion of litigation settlement	339,481	541,255
Series E preferred stock, net of discount of $63,640 and $1,231,737, respectively	56,360	1,090,847
Series F preferred stock	160,001	—
Series G preferred stock, net of discount of $699,674 and $0, respectively	408,326	—
July 2016 (Series H) convertible notes, net of discount of $1,634,357 and $0, respectively	1,159,610	—
Series I exchange notes, net of discount of $199,474 and $0, respectively	26,597	—
October 2016 convertible notes, net of discount of $264,000 and $0, respectively	66,000	—
TFG promissory notes, net of discount of $59,658 and $0, respectively	542,808	—
Short term embedded derivative liabilities	6,578,154	613,834
Make-whole dividend liability	500,176	849,560
Total current liabilities	18,097,684	10,125,777
Accrued Litigation Settlement, net of current portion	—	339,505
Long-Term Debt	5,281,776	5,442,194
Accrued Warranty Liability	176,457	264,000
Commitments and Contingencies (Notes 4 & 24)		

Redeemable Preferred Stock:		
Series J preferred stock: 1,350 shares authorized; 1,350 and 0 issued and outstanding as of December 31, 2016 and December 31, 2015, respectively	1,350,000	—
Series J-1 preferred stock: 700 shares authorized; 700 and 0 issued and outstanding as of December 31, 2016 and December 31, 2015, respectively	700,000	—
Stockholders' Equity:		
Series A preferred stock, $.0001 par value; 750,000 shares authorized and issued; 125,044 and 212,390 shares outstanding as of December 31, 2016 and December 31, 2015, respectively ($1,500,528 and $2,548,680 Liquidation Preference)	13	21
Common stock, $0.0001 par value, 2,000,000,000 shares authorized; 554,223,320 and 7,759,844 shares issued and outstanding as of December 31, 2016 and December 31, 2015, respectively	55,422	15,520
Additional paid in capital	369,886,065	347,644,947
Accumulated deficit	(383,932,576)	(345,081,794)
Total stockholders' equity (deficit)	(13,991,076)	2,578,694
Total Liabilities and Stockholders' Equity	$11,614,841	$18,750,170

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

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ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	For the Years Ended December 31,	
	2016	2015
Revenues	1,747,356	6,536,992
Costs and Expenses		
Cost of revenues (exclusive of depreciation shown below)	5,843,872	9,562,528
Research, development and manufacturing operations (exclusive of depreciation shown below)	6,627,249	6,711,813
Selling, general and administrative (exclusive of depreciation shown below)	10,304,779	12,363,037
Depreciation and amortization	3,600,007	5,633,428
Impairment loss	—	12,570
Total Costs and Expenses	26,375,907	34,283,376
Loss from Operations	(24,628,551)	(27,746,384)
Other Income/(Expense)		
Other Income/(Expense), net	82,772	(60,294)
Interest Expense	(7,902,926)	(26,549,098)
Deemed interest expense on warrant liability	—	(909,092)
Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net	(6,402,077)	9,467,070
Total Other Income/(Expense)	(14,222,231)	(18,051,414)
Net Loss	$(38,850,782)	$(45,797,798)
Net Loss Per Share (Basic and diluted)	$(0.42)	$(0.86)
Weighted Average Common Shares Outstanding (Basic and diluted)	93,005,062	53,475,729

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

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ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

	Common Stock		Series A Preferred Stock		Additional Paid-In	Accumulated Deficit	Total Stockholders'
	Shares	Amount	Shares	Amount	Capital		Equity
Balance, December 31, 2014	910,555	$ 91	212,390	$ 21.24	$ 306,948,874	$ (299,283,996)	7,664,990
Proceeds from private placement: Common stock	100,000	10	—	—	1,999,990	—	2,000,000
Conversion of Series D Preferred Stock into Common Shares	73,299	7	—	—	813,985	—	813,992
Conversion of Series D-1 Preferred Stock into Common Shares	115,291	12	—	—	3,169,337	—	3,169,349
Conversion of Convertible Notes into Common Shares	4,775,862	478	—	—	25,557,442	—	25,557,920
Conversion of Series E Preferred Stock into Common Shares	247,879	25	—	—	745,891	—	745,916
Common Shares sold pursuant to the Committed Equity Line	842,546	84	—	—	1,999,916	—	2,000,000
Conversion of Right Shares into Common Shares	415,000	42	—	—	2,904,958	—	2,905,000
Interest and Dividends paid with Common Stock	191,190	19	—	—	1,034,516	—	1,034,535
Issuance of Restricted Stock	12,918	1	—	—	(1)	—	—
Common Stock Issued to Placement Agent	6,610	1	—	—	108,979	—	108,980
Commitment Shares	43,000	4	—	—	53,996	—	54,000
Common shares issued in payment of consulting expenses	25,694	3	—	—	89,996	—	89,999
Stock based compensation	—	—	—	—	856,811	—	856,811
Beneficial Conversion Feature related to the September 2015 Convertible Notes	—	—	—	—	1,375,000	—	1,375,000
Net Loss	—	—	—	—	—	(45,797,798)	(45,797,798)
Balance, December 31, 2015	7,759,844	$ 777	212,390	$ 21.24	$ 347,659,690	$ (345,081,794)	$ 2,578,694

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

ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

	Common Stock		Series A Preferred Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
Balance, December 31, 2015	7,759,844	$777	212,390	$ 21	$347,659,690	$(345,081,794)	$2,578,694
Conversion of Convertible Notes into Common Shares	48,993	5			$58,818	—	58,823
Common Shares sold pursuant to the Committed Equity Line	525,454	52			1,056,095	—	1,056,147
Conversion of Right Shares into Common Shares	2,052,865	205			1,346,795	—	1,347,000
Interest and Dividend Expense paid with Common Stock	18,575,710	1,858			254,922	—	256,780
Issuance of Restricted Stock	183,230	18			(18)	—	—
Commitment Shares	107,000	11			(11)	—	—
Conversion of Series A Preferred Stock into Common Shares, plus make-whole	6,942,936	694	(46,849)	(4)	222,099	—	222,789
Conversion of Series E Preferred Stock into Common Shares	41,895,161	4,189			3,414,032	—	3,418,221
Conversion of Series F Preferred Stock into Common Shares	113,059,991	11,306			9,920,148	—	9,931,454
Conversion of Series G Preferred Stock into Common Shares	234,409,413	23,441			1,472,955	—	1,496,396
Conversion of Series I Preferred Stock into Common Shares	6,988,353	699			2,532,718	—	2,533,417
Conversion of Series I Convertible Notes into Common Shares	14,816,862	1,481			159,345	—	160,826
Conversion of July 2016 Convertible Notes into Common Shares	64,000,000	6,400			245,280	—	251,680
Conversion of October 2016 Convertible Notes into Common Shares, plus	42,857,508	4,286	(40,497)	(4)	173,288	—	177,570

make-whole							
Stock based compensation					888,348		888,348
Beneficial Conversion Feature related to Series G and Series I Preferred Stock					481,561		481,561
Net Loss						(38,850,782)	(38,850,782)
Balance, December 31, 2016	554,223,320	$55,422	125,044	$ 13	$369,886,065	$(383,932,576)	$(13,991,076)

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

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ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the Years Ended December 31, 2016	2015
Operating Activities:		
Net loss	$(38,850,782)	$(45,797,798)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,600,007	5,633,428
Stock based compensation	888,348	856,811
Common stock issued for services	—	89,999
Realized loss (gain) on sale of assets	(82,772)	—
Amortization of financing costs	137,111	362,996
Impairment loss	—	12,570
Non-cash interest expense	948,901	1,439,425
Amortization of debt discount	6,214,060	23,968,539
Loss on Note Receivable	—	99,000
Loss on Joint Venture	—	128,709
Bad debt expense	122,416	77,524
Accrued litigation settlement	(541,279)	(493,732)
Deemed interest expense on warrant liability	—	909,092
Change in fair value of derivatives and loss on extinguishment of liabilities, net	6,402,077	(9,467,070)
Changes in operating assets and liabilities:		
Accounts receivable	1,321,265	711,696
Inventories	1,702,564	(1,845,168)
Prepaid expenses and other current assets	379,374	248,781
Accounts payable	1,492,053	2,055,575
Accrued expenses	(501,284)	(1,220,311)
Warranty reserve	(87,543)	128,000
Net cash used in operating activities	(16,855,484)	(22,101,934)
Investing Activities:		
Purchase of property, plant and equipment	(51,724)	(29,194)
Proceeds from sale of assets	82,772	—
Investment in Joint Venture	—	191,291
Interest income on restricted cash	—	(49,446)
Patent activity costs	(189,455)	(308,567)
Net cash used in investing activities	(158,407)	(195,916)
Financing Activities:		
Payment of debt financing costs	(81,500)	(466,250)
Proceeds from Promissory Note	1,930,000	500,000
Repayment of debt	(266,027)	(276,259)
Repayment of convertible notes	—	(1,000,000)
Proceeds from convertible notes	—	2,000,000
Restricted cash	—	9,250,000
Proceeds from Committed Equity Line	1,056,147	2,000,000
Proceeds from issuance of stock and warrants	14,180,000	7,300,000
Net cash provided by financing activities	16,818,620	19,307,491

Net change in cash and cash equivalents	(195,271)	(2,990,359)
Cash and cash equivalents at beginning of period	326,217	3,316,576
Cash and cash equivalents at end of period	$130,946	$326,217
Supplemental Cash Flow Information:		
Cash paid for interest	$417,876	$477,354
Non-Cash Transactions:		
Non-cash conversions of preferred stock and convertible notes to equity	$10,617,764	$19,988,994

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

ASCENT SOLAR TECHNOLOGIES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1. ORGANIZATION

Ascent Solar Technologies, Inc. (“Ascent”) was incorporated on October 18, 2005 from the separation by ITN Energy Systems, Inc. (“ITN”) of its Advanced Photovoltaic Division and all of that division’s key personnel and core technologies. ITN, a private company incorporated in 1994, is an incubator dedicated to the development of thin film, photovoltaic (“PV”), battery, fuel cell and nano technologies. Through its work on research and development contracts for private and governmental entities, ITN developed proprietary processing and manufacturing know how applicable to PV products generally, and to Copper-Indium-Gallium-diSelenide (“CIGS”) PV products in particular. ITN formed Ascent to commercialize its investment in CIGS PV technologies. In January 2006, in exchange for 102,800 shares of common stock of Ascent, ITN assigned to Ascent certain CIGS PV technologies and trade secrets and granted to Ascent a perpetual, exclusive, royalty free worldwide license to use, in connection with the manufacture, development, marketing and commercialization of CIGS PV to produce solar power, certain of ITN’s existing and future proprietary and control technologies that, although non-specific to CIGS PV, Ascent believes will be useful in its production of PV modules for its target markets. Upon receipt of the necessary government approvals and pursuant to novation in early 2007, ITN assigned government funded research and development contracts to Ascent and also transferred the key personnel working on the contracts to Ascent.

Currently, the Company is focusing on integrating its PV products into high value markets such as aerospace, satellites, near earth orbiting vehicles, and fixed-wing unmanned aerial vehicles (UAV). The value proposition of Ascent’s proprietary solar technology not only aligns with the needs of customers in these industries, but also overcomes many of the obstacles other solar technologies face in these unique markets. Ascent has the capability to design and develop finished products for end users in these areas as well as collaborate with strategic partners to design and develop custom integrated solutions for products like fixed-wing UAVs. Ascent sees significant overlap of the needs of end users across some of these industries and can achieve economies of scale in sourcing, development, and production in commercializing products for these customers.

Reverse Stock Split

On May 26, 2016, the Company, a Delaware corporation, filed a Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company (the “Certificate of Amendment”) with the Secretary of State of the State of Delaware to effect a reverse stock split of the Company’s common stock, par value $0.0001 per share, at a ratio of one-for-twenty (the “Reverse Stock Split”). The Certificate of Amendment did not change the number of authorized shares, or the par value, of the Company’s common stock. The Certificate of Amendment provides that every twenty shares of the Company’s issued and outstanding common stock were automatically combined into one issued and outstanding share of the Company’s common stock. All shares and per share amounts in the consolidated financial statements and accompanying notes have been retroactively adjusted to give effect to the Reverse Stock Split.

NOTE 2. BASIS OF PRESENTATION

The accompanying consolidated financial statements have been derived from the accounting records of Ascent Solar Technologies, Inc., Ascent Solar (Asia) Pte. Ltd., and Ascent Solar (Shenzhen) Co., Ltd. (collectively, "the Company") as of December 31, 2016 and December 31, 2015, and the results of operations for the years ended December 31, 2016 and 2015. Ascent Solar (Shenzhen) Co., Ltd. is wholly owned by Ascent Solar (Asia) Pte. Ltd., which is wholly owned by Ascent Solar Technologies, Inc. All significant inter-company balances and transactions have been eliminated in the accompanying consolidated financial statements.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period.

Actual results could differ from those estimates.

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NOTE 3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash Equivalents: The Company classifies all short-term investments in interest bearing bank accounts and highly liquid debt securities purchased with an original maturity of three months or less to be cash equivalents. The Company maintains cash balances which may exceed federally insured limits. The Company does not believe this results in significant credit risk.

Fair Value Estimates: Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The Company uses fair value hierarchy based on three levels of inputs, of which, the first two are considered observable and the last unobservable, to measure fair value:

- Level 1 - Quoted prices in active markets for identical assets or liabilities.
- Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities

Certain long-lived assets and current liabilities have been measured at fair value on a recurring and non-recurring basis. See Note 6. Property, Plant and Equipment, Note 10. Convertible Note, Series D Preferred Stock and Series D-1 Preferred Stock, Note 12. Series E Preferred Stock, Note 13. Series F Preferred Stock, Note 14. Series G Preferred Stock, Note 15. Series H Preferred Stock and July 2016 Convertible Notes, Note 16. Series I Preferred Stock and Series I Convertible Notes, Note 17. Series J Preferred Stock and Series J-1 Preferred Stock, Note 18. Adar Bays Convertible Notes and Exchange of Series A Preferred Stock and Note 19. Make-whole Dividend Liability. The carrying amount of our long term debt outstanding approximates fair value because our current borrowing rate does not materially differ from market rates for similar bank borrowings. The carrying value for cash and cash equivalents, restricted cash, accounts receivable, accounts payable, accrued expenses and other assets and liabilities approximate their fair values due to their short maturities.

Related Party Transactions: The Company's largest shareholder is Tertius Financial Group Pte Ltd of which Mr. Victor Lee, President and Chief Executive Officer of the Company, is Managing Director and 50% shareholder. TFG is also a joint venture partner with Radiant Group, in TFG Radiant. In April 2012, we appointed the Chairmen of TFG Radiant, Mr. Winston Xu (aka Xu Biao), as a member of our Board of Directors. Accounting for transactions under these agreements is consistent with those defined in our Significant Accounting Policies. See Notes 9, 20, and 23 for further information.

Foreign Currencies: Bank account balances held in foreign currencies are translated to U.S. dollars utilizing the period end exchange rate. Gains or losses incurred in connection with the Company’s accounts held in foreign currency were not material for the years ended December 31, 2016 and 2015 and were recorded in “Other Income/(Expense)” in the Consolidated Statements of Operations.

Revenue Recognition:

Product revenue - The Company generated product revenues of $1,700,000 and $6,205,000 for the year ended December 31, 2016 and 2015, respectively. Product revenue is generated from commercial sales of flexible PV modules and PV integrated consumer electronics, non-PV integrated power banks and associated accessories. Products are sold through the Company's own e-commerce website, online retailers, direct to retailers and indirectly to retailers through distributors. Revenue is recognized as products are shipped or delivered and title has transferred to the customer. In certain instances, the Company has agreed to refund a portion of the purchase price to customers if the Company decreases its standard retail price. The Company estimates the effect of this price protection and records the difference as a reduction of revenue at the time of sale. We also, in certain instances have provided customers with a right of return provision. In these instances, we defer the recognition of revenues until the provision period has expired. Estimated costs of returns and allowances, other than those specifically pertaining to a right of return provision, and discounts are accrued as a reduction to sales when revenue is recognized. See Marketing and

Advertising Costs below for accounting treatment related to cooperative advertising programs.

Government contracts revenue - Revenue from governmental research and development contracts is generated under terms that are cost plus fee or firm fixed price. Revenue from cost plus fee contracts is recognized as costs are incurred on the basis of direct costs plus allowable indirect costs and an allocable portion of the fixed fee. Revenue from firm fixed price contracts is recognized under the percentage-of-completion method of accounting, with costs and estimated profits included in contract revenue as work is performed. If actual and estimated costs to complete a contract indicate a loss, provision is made currently for the loss anticipated on the contract.

Marketing and Advertising Costs: The Company advertises in print, television, online and through social media. The Company will also authorize customers to run advertising campaigns on its behalf through various media outlets. Marketing and advertising costs are expensed as incurred. Marketing and advertising expenses were $2,078,000 and $3,369,000 for the years ended December 31, 2016 and 2015, respectively.

Some of the Company's distributor relationships allow for discounts to be taken to fund cooperative advertising programs. These discounts are applied as credits against outstanding receivable balances and recorded net of revenue. Large cooperating advertising campaigns, funded either by cash payments by the Company, or as credits against outstanding receivables, are expensed as incurred and included in Selling, general and administrative costs if, and only if, the following criteria are met: 1) the Company receives an identifiable benefit (goods or services) in exchange for the consideration, with the identifiable benefit being sufficiently separable from the distributor's purchase of the Company's products; and 2) the Company can reasonably estimate the fair value of the identifiable benefit. If the amount of consideration paid by the Company exceeds the estimated fair value of the benefit received, that excess amount shall be characterized as a reduction of revenue.

Shipping and Handling Costs: The Company classifies shipping and handling costs for products shipped to customers as a component of "Cost of revenues" on the Company's Consolidated Statements of Operations. Customer payments of shipping and handling costs are recorded as a component of Revenues.

Receivables and Allowance for Doubtful Accounts: Trade accounts receivable are recorded at the invoiced amount as the result of transactions with customers. The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. The Company estimates the collectability of accounts receivable using analysis of historical bad debts, customer credit-worthiness and current economic trends. Reserves are established on an account-by-account basis. Account balances are written off against the allowance in the period in which the Company determines that is it probable that the receivable will not be recovered. As of December 31, 2016 and 2015, the Company had an allowance for doubtful accounts of $106,000 and $60,000, respectively.

Product Warranties: The Company provides a limited warranty to the original purchaser of products against defective materials and workmanship. The Company also guarantees that standalone modules and PV integrated consumer electronics will achieve and maintain the stated conversion efficiency rating for certain products. Warranty accruals are recorded at the time of sale and are estimated based upon product warranty terms, historical experience and analysis of peer company product returns. The Company assesses the adequacy of its liabilities and makes adjustments as necessary based on known or anticipated warranty claims, or as new information becomes available.

Convertible Preferred Stock: The Company evaluates its preferred stock instruments under FASB ASC 480, "Distinguishing Liabilities from Equity" to determine the classification, and thereby the accounting treatment, of the instruments. Refer to Notes 10, 12, 13, 14, 15, 16, 17, 18, 19, and 20 for further discussion on the classification of each instrument.

Derivatives: The Company evaluates its financial instruments under FASB ASC 815, "Derivatives and Hedging" to determine whether the instruments contain an embedded derivative. When an embedded derivative is present, the instrument is evaluated for a fair value adjustment upon issuance and at the end of every period. Any adjustments to fair value are treated as gains and losses in fair values of derivatives and are recorded in the Consolidated Statements of Operations. Refer to Notes 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20 for further discussion on the embedded derivatives of each instrument.

Warrant Liability: Warrants to purchase the Company's common stock with nonstandard anti-dilution provisions, regardless of the probability or likelihood that may conditionally obligate the issuer to ultimately transfer assets, are classified as liabilities and are recorded at their estimated fair value at each reporting period. Any change in fair value

of these warrants is recorded at each reporting period in Other income/(expense) on the Company's statement of operations.
Convertible Notes: The Company issues, from time to time, convertible notes. Refer to Notes 10, 11, 15, 16 and 18 for further information.

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Patents: At such time as the Company is awarded patents, patent costs are amortized on a straight-line basis over the legal life on the patents, or over their estimated useful lives, whichever is shorter. As of December 31, 2016 and 2015, the Company had $1,648,000 and $1,568,000 of net patent costs, respectively. Of these amounts $619,000 and $50,000 represents costs net of amortization incurred for awarded patents, and the remaining $1,028,000 and $1,518,000 represents costs incurred for patent applications to be filed as of December 31, 2016 and 2015, respectively. During the year ended December 31, 2016 and 2015, the Company capitalized $189,000 and $309,000 in patent costs, respectively, as it worked to secure design rights and trademarks for newly developed products. Amortization expense was $110,000 and $47,000 for the years ended December 31, 2016 and 2015, respectively. Amortization expense is expected to remain consistent or increase slightly in future periods.

Inventories: All inventories are stated at the lower of cost or market, with cost determined using the weighted average method. Inventory balances are frequently evaluated to ensure they do not exceed net realizable value. The computation for net realizable value takes into account many factors, including expected demand, product life cycle and development plans, module efficiency, quality issues, obsolescence and others. Management's judgment is required to determine reserves for obsolete or excess inventory. As of December 31, 2016 and 2015, the Company had inventory reserve balances of $737,000 and $653,000, respectively. If actual demand and market conditions are less favorable than those estimated by management, additional inventory write downs may be required. During the years ended December 31, 2016 and December 31, 2015, the Company recognized no lower of cost or market adjustments.

Property, Plant and Equipment: Property, plant and equipment are recorded at the original cost to the Company. Assets are being depreciated over estimated useful lives of three to forty years using the straight-line method, as presented in the table below, commencing when the asset is placed in service. Leasehold improvements are depreciated over the shorter of the remainder of the lease term or the life of the improvements. Upon retirement or disposal, the cost of the asset disposed of and the related accumulated depreciation are removed from the accounts and any gain or loss is reflected in income. Expenditures for repairs and maintenance are expensed as incurred.

	Useful Lives in Years
Buildings	40
Manufacturing machinery and equipment	5 - 10
Furniture, fixtures, computer hardware/software	3 - 7
Leasehold improvements	life of lease

Interest Capitalization: Historically the Company has capitalized interest cost as part of the cost of acquiring or constructing certain assets during the period of time required to get the asset ready for its intended use. The Company capitalized interest to the extent that expenditures to acquire or construct an asset have occurred and interest cost has been incurred.

Impairment of Long-lived Assets: The Company analyzes its long-lived assets (property, plant and equipment) and definitive-lived intangible assets (patents) for impairment, both individually and as a group, whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable. Events that might cause impairment would include significant current period operating or cash flow losses associated with the use of a long-lived asset or group of assets combined with a history of such losses, significant changes in the manner of use of assets and significant negative industry or economic trends. An undiscounted cash flow analysis is calculated to determine if impairment exists. If impairment is determined to exist, any related loss is calculated using the difference between the fair value and the carrying value of the assets. During the years ended December 31, 2016 and 2015, the Company incurred impairments of its manufacturing facilities and equipment in the amounts of $0 and $13,000, respectively. The impairments incurred for the years ended December 31, 2016 and 2015 were based on estimates prepared by management.

Net Loss per Common Share: Basic loss per share does not include dilution and is computed by dividing income available to common stockholders by the weighted average number of shares outstanding during the period. Diluted earnings per share reflect the potential securities that could share in the earnings of the Company, similar to fully diluted earnings per share. Common stock equivalents outstanding as of December 31, 2016 and 2015 of approximately 301.1 million and 48.8 million shares have been omitted from loss per share because they are anti-dilutive. Common stock equivalents consist of stock options, unvested restricted stock, warrants, preferred stock, preferred stock make-whole dividend liability amounts (assuming the make-whole dividend liability is paid in common stock in lieu of cash), and convertible notes (assuming the amortization payments are paid in common stock in lieu of cash). Net loss per common share was the same for both basic and diluted methods for the periods ended December 31, 2016 and 2015.

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Research, Development and Manufacturing Operations Costs: Research, development and manufacturing operations expenses were $6.6 million and $6.7 million for the years ended December 31, 2016 and 2015, respectively. Research, development and manufacturing operations expenses include: 1) technology development costs, which include expenses incurred in researching new technology, improving existing technology and performing federal government research and development contracts, 2) product development costs, which include expenses incurred in developing new products and lowering product design costs, and 3) pre-production and production costs, which include engineering efforts to improve production processes, material yields and equipment utilization, and manufacturing efforts to produce saleable product. Research, development and manufacturing operations costs are expensed as incurred, with the exception of costs related to inventoried raw materials, work-in-process and finished goods, which are expensed as Cost of revenue as products are sold.

Income Taxes: Deferred income taxes are provided using the liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of the changes in tax laws and rates as of the date of enactment. Interest and penalties, if applicable, would be recorded in operations.

The Company has analyzed filing positions in all of the federal and state jurisdictions where it is required to file income tax returns, as well as all open tax years (2012-2016) in these jurisdictions. The Company believes its income tax filing positions and deductions will be sustained on audit and does not anticipate any adjustments that will result in a material adverse effect on the Company’s financial condition, results of operations, or cash flows. Therefore, no reserves for uncertain income tax positions have been recorded.

Share-Based Compensation: The Company measures and recognizes compensation expense for all share-based payment awards made to employees, officers, directors, and consultants based on estimated fair values. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service period in the Company’s Statements of Operations. Share-based compensation is based on awards ultimately expected to vest and is reduced for estimated forfeitures. Forfeitures are estimated at the time of grant and revised, as necessary, in subsequent periods if actual forfeitures differ from those estimates. For purposes of determining estimated fair value of share-based payment awards on the date of grant the Company uses the Black-Scholes option-pricing model (“Black-Scholes Model”) for option awards. The Black-Scholes Model requires the input of highly subjective assumptions. Because the Company’s employee stock options may have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management’s opinion, the existing models may not provide a reliable single measure of the fair value of the Company’s employee stock options. Management will continue to assess the assumptions and methodologies used to calculate estimated fair value of share-based compensation. Circumstances may change and additional data may become available over time, which result in changes to these assumptions and methodologies, which could materially impact the Company’s fair value determination. The Company estimates the fair value of its restricted stock awards as its stock price on the grant date.

The accounting guidance for share-based compensation may be subject to further interpretation and refinement over time. There are significant differences among option valuation models, and this may result in a lack of comparability with other companies that use different models, methods and assumptions. If factors change and the Company employs different assumptions in the accounting for share-based compensation in future periods, or if the Company decides to use a different valuation model, the compensation expense the Company records in the future may differ significantly from the amount recorded in the current period and could materially affect its loss from operations, net loss and net loss per share.

Reclassifications: Certain reclassifications have been made to the 2015 financial information to conform to the 2016 presentation. Such reclassifications had no effect on the net loss.

Use of Estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

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Recently Issued Accounting Standards

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). The update will establish a comprehensive revenue recognition standard for virtually all industries in GAAP. ASU 2014-09 will change the amount and timing of revenue and cost recognition, implementation, disclosures and documentation. In August 2015, the FASB issued ASU No. 2015-14, Revenue from Contracts with Customers (Topic 606): Deferral of Effective Date. The amendments in ASU 2015-14 defer the effective date of ASU 2014-09 for all entities by one year. ASU 2014-09 is now effective for the Company in fiscal year 2018. The Company is researching whether the adoption of ASU 2014-09 will have a material effect on the Company's consolidated financial statements.

In August 2014, the FASB issued ASU No. 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. ASU 2014-15 requires management to evaluate, in connection with preparing financial statements for each annual and interim reporting period, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about an entity's ability to continue as a going concern within one year after the date that the financial statements are issued and to provide certain disclosures if it concludes that substantial doubt exists. ASU 2014-15 is effective for all entities for the annual period ending after December 15, 2016, and for annual and interim periods thereafter, with early adoption permitted. The Company has adopted ASU 2014-15.

In July 2015, the FASB issued ASU No. 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory, which states that inventory should be measured at the lower of cost and net realizable value. Net realizable value is defined as estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. This ASU is effective within annual periods beginning on or after December 15, 2016, including interim periods within that reporting period. The Company is currently evaluating the impact, if any, that the adoption of this guidance will have on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). ASU 2016-02 requires lessees to recognize all leases, including operating leases, on the balance sheet as a lease asset or lease liability, unless the lease is a short-term lease. ASU 2016-02 also requires additional disclosures regarding leasing arrangements. ASU 2016-02 is effective for interim periods and fiscal years beginning after December 15, 2018, and early application is permitted. The Company is currently evaluating the impact, if any, that the adoption of this guidance will have on its consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, Improvements to Employee Share-Based Payment Accounting, which simplifies several aspects of the accounting for share-based payment transactions, including 1) accounting for income taxes, 2) classification of excess tax benefits in the statement of cash flows, 3) forfeitures, 4) minimum statutory tax withholding requirements, 5) cash flow classification of employee taxes withheld in the form of shares, 6) the practical expedient for estimating the expected term, and 7) intrinsic value. The guidance is effective for annual reporting periods beginning after December 15, 2016, and interim periods within those annual periods. The Company does not expect the implementation of ASU 2016-09 to have a material effect on its consolidated financial statements.

NOTE 4. LIQUIDITY AND CONTINUED OPERATIONS

During the years ended December 31, 2016 and 2015, the Company entered into multiple financing agreements to fund operations. Further discussion of these transactions can be found in Notes 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19.

We have continued PV production at our manufacturing facility. We do not expect sales revenue and cash flows will be sufficient to support operations and cash requirements until we have fully implemented our new strategy focusing on high value PV products. Changes in the level of expected operating losses, the timing of planned capital expenditures or other factors may negatively impact cash flows and reduce current cash and investments faster than anticipated. During 2016 we used $16.9 million in cash for operations, or an average of $4.2 million per quarter. During the fourth quarter of 2016 we used $3.3 million in cash for operations. Our primary significant long term obligation consists of a note payable of $5.5 million to a financial institution secured by a mortgage on our headquarters and manufacturing building in Thornton, Colorado. Total payments of $0.5 million, including principal and interest, will come due in 2017. Additionally, we owe $0.3 million as of December 31, 2016 related to a litigation settlement reached in April 2014, which is being paid in equal installments over 40 month which began April 2014. Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2017 overall. As such, cash liquidity sufficient for the year ending December 31, 2017 will require additional financing. Subsequent to the year ended December 31, 2016 the Company completed certain other financing transactions. See Note 27. Subsequent Events, for further information on these transactions.

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The Company continues to accelerate sales and marketing efforts related to its PV strategy by focusing on the Company's propriety technology. The Company has begun activities related to securing additional financing through strategic or financial investors, but there is no assurance the Company will be able to raise additional capital on acceptable terms or at all. If the Company's revenues do not increase rapidly, and/or additional financing is not obtained, the Company will be required to significantly curtail operations to reduce costs and/or sell assets. Such actions would likely have an adverse impact on the Company's future operations. As a result of the Company's recurring losses from operations, and the need for additional financing to fund its operating and capital requirements, there is uncertainty regarding the Company's ability to maintain liquidity sufficient to operate its business effectively, which raises substantial doubt as to the Company's ability to continue as a going concern.

NOTE 5. TRADE RECEIVABLES

Trade receivables consist of amounts generated from product sales and government contracts. Accounts receivable totaled $0.55 million and $1.99 million as of December 31, 2016 and 2015, respectively. Product revenue for the year ended December 31, 2016 includes $0.87 million of sales to one major customer ("Customer A"), representing 51% of total product revenue. Product revenue for a different major customer ("Customer B") was $2.73 million, representing 44% of total product revenue, for the year ended December 31, 2015. Receivables from Customer A were negative at December 31, 2016 due to the customer's right of return provision outlined below. Receivables from Customer B were $1.13 million at December 31, 2015 representing 57% of total receivables. Customer A has a right of return provision in the purchase contract allowing return of up to 100% of the product within a 90 day period. There have been no returns for the year ended December 31, 2016.

Provisional Indirect Cost Rates - The Company bills the government under cost-based research and development contracts at provisional billing rates which permit the recovery of indirect costs. These rates are subject to audit on an annual basis by the government agencies' cognizant audit agency. The cost audit may result in the negotiation and determination of the final indirect cost rates. In the opinion of management, re-determination of any cost-based contracts will not have a material effect on the Company's financial position or results of operations.

NOTE 6. PROPERTY, PLANT AND EQUIPMENT

The following table summarizes property, plant and equipment as of December 31, 2016 and December 31, 2015:

	As of December 31,	
	2016	2015
Building	$5,828,960	$5,828,960
Furniture, fixtures, computer hardware and computer software	489,421	480,976
Manufacturing machinery and equipment	30,321,079	31,265,800
Depreciable property, plant and equipment	36,639,460	37,575,736
Manufacturing machinery and equipment in progress	—	—
Property, plant and equipment	36,639,460	37,575,736
Less: Accumulated depreciation and amortization	(30,983,448)	(28,484,708)
Net property, plant and equipment	$5,656,012	$9,091,028

The Company analyzes its long-lived assets for impairment, both individually and as a group, whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable.

Depreciation expense for the years ended December 31, 2016 and 2015 was $3,487,000 and $5,583,000, respectively. Depreciation expense is recorded under "Depreciation and amortization expense" in the Consolidated Statements of Operations.

NOTE 7. INVENTORIES

Inventories consisted of the following at December 31, 2016 and December 31, 2015:

As of December 31,

	2016	2015
Raw materials	$832,806	$925,064
Work in process	635,130	671,746
Finished goods	1,101,880	2,675,570
Total	$2,569,816	$4,272,380

NOTE 8. DEBT

On February 8, 2008, the Company acquired a manufacturing and office facility in Thornton, Colorado, for approximately $5.5 million. The purchase was financed by a promissory note, deed of trust and construction loan agreement (the “Construction Loan”) with the Colorado Housing and Finance Authority (“CHFA”), which provided the Company borrowing availability of up to $7.5 million for the building and building improvements. In 2009, the Construction Loan was converted to a permanent loan pursuant to a Loan Modification Agreement between the Company and CHFA (the “Permanent Loan”). The Permanent Loan, collateralized by the building, has an interest rate of 6.6% and the principal will be amortized through its term to January 2028. Further, pursuant to certain covenants in the Permanent Loan, the Company may not, among other things, without CHFA’s prior written consent (which by the terms of the deed of trust is subject to a reasonableness requirement): create or incur additional indebtedness (other than obligations created or incurred in the ordinary course of business); merge or consolidate with any other entity; or make loans or advances to the Company’s officers, shareholders, directors or employees.

On November 1, 2016, the Company and the CFHA agreed to modify the original agreement described above with the addition of a forbearance period. Per the modification agreement, no payments of principal and interest shall be due under the note during the forbearance period commencing on November 1, 2016 and continuing through April 1, 2017. The amount of interest that should have been paid by the Company during the forbearance period in the total amount of $180,043 shall be added to the outstanding principal balance of the note. As a result, on May 1, 2017, the principal balance of the note will be $5,704,932. Commencing on May 1, 2017, the monthly payments of principal and interest due under the note shall resume at $57,801, and the Company shall continue to make such monthly payments over the remaining term of the note ending on February 1, 2028.

As of December 31, 2016, future principal payments on long-term debt are due as follows:

2017	$243,113
2018	343,395
2019	366,757
2020	391,709
2021	418,358
Thereafter	3,941,600
	$5,704,932

NOTE 9. PROMISSORY NOTES

On August 29, 2016, the Company entered into a note purchase agreement with Tertius Financial Group Pte. Ltd. ("TFG”) for the private placement of $330,000 of the Company’s original issue discount notes with an original maturity date of November 26, 2016. The notes bear interest of 6% per annum and principal and interest on the notes are payable upon maturity. The notes are unsecured and not convertible into equity shares of the Company.

During October 2016, the Company received $420,000 from a private investor. These funds were rolled into a promissory note executed in January 2017. The aggregate funds of this promissory note was $700,000. Refer to Note 27 for further information on this transaction.

On December 6, 2016, the Company issued a new $600,000 original issue discount note to TFG in exchange for (i) $200,000 of additional gross proceeds and (ii) cancellation of the existing outstanding $330,000 note. The outstanding balance of the new note is $602,000 (including accrued and unpaid interest) with a discount of $60,000 as of December 31, 2016.

The new TFG note bears interest at a rate of 6% per annum and matures on December 31, 2017. Principal and interest on the new TFG note is payable at maturity. The new TFG note is unsecured and is not convertible into equity shares of the Company.

During December 2016, the Company initiated three non-convertible, unsecured promissory notes with a private investor. The promissory notes bear interest of 12% per annum and mature six months from the date of issuance and the interest is computed on the basis of 365 days in a year. Unless paid in advance, the principal and interest of these promissory notes are payable upon maturity.

On December 1, 2016, the Company received $380,000 in exchange for a promissory note with a maturity date of June 1, 2017.

On December 13, 2016, the Company received $380,000 in exchange for a promissory note with a maturity date of June 13, 2017.

On December 30, 2016, the Company received $250,000 in exchange for a promissory note with a maturity date of June 30, 2017.

As of December 31, 2016, the outstanding principal balance on these promissory notes is $1,010,000.

NOTE 10. CONVERTIBLE NOTE, SERIES D PREFERRED STOCK, AND SERIES D-1 PREFERRED STOCK

Convertible Note and Series D Preferred Stock

On November 14, 2014, the Company entered into a securities purchase agreement (the "November 2014 Purchase Agreement") with one institutional and accredited investor (the "Investor"). Pursuant to the terms of the November 2014 Purchase Agreement, the Company sold to the Investor (i) $3,000,000 (3,000 shares) of Series D Convertible Preferred Stock (the "Series D Preferred Stock"), and (ii) $32,000,000 original principal amount of senior secured convertible notes (the "Notes"). The Series D Preferred Stock was fully converted as of December 31, 2016. On September 4, 2015, the Company entered into a Cancellation and Waiver Agreement (the “Cancellation Agreement”), between the Company and the Investor to retire the Notes. The Cancellation Agreement was amended on October 8, 2015 and November 22, 2015. As of December 31, 2016 and 2015 the total Notes outstanding balance was $0 and $53,000. The value of the corresponding embedded derivative liability was $0 and $61,000 as of December 31, 2016 and 2015.

The Investor had available to them a new conversion price beginning on November 4, 2015 as a result of the Series E Preferred Stock transaction further described in Note 12. The Investor could elect to convert a portion of the Notes into shares of common stock using a conversion price equal to 80% of the average of the two lowest volume weighted average prices ("VWAP") of our common stock for the ten consecutive trading day period prior to each specific conversion date (the "Variable Price"). During the year ended December 31, 2016, the Investor elected to convert the remaining Notes outstanding balance of $53,000 using the Variable Price, resulting in the issuance of 48,993 shares of common stock. The Company paid interest in the amount of $300 on the Notes, resulting in the issuance of 248 shares of common stock during the year ended December 31, 2016.

A net gain on extinguishment of $55,000 was recorded to "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations for the year ended December 31, 2016 as a result of the final conversion of the Notes.

Series D-1 Preferred Stock

On February 19, 2015, the Company entered into a securities purchase agreement to issue 2,500 shares of Series D-1 Preferred Stock to an investor in exchange for $2,500,000. All 2,500 shares were converted into shares of the Company’s common stock during the first quarter of 2015.

NOTE 11. SEPTEMBER 2015 CONVERTIBLE NOTES

On September 4, 2015, the Company entered into a note purchase agreement between the Company and accredited investors. Pursuant to the new loan agreement, the Company issued to the accredited investors $1.5 million original principal amount of secured subordinated convertible notes on September 4, 2015, and an additional $0.5 million original principal amount of secured subordinated convertible notes on September 28, 2015 (collectively, the "September 2015 Convertible Notes").

All amounts due under the September 2015 Convertible Notes are convertible at any time, in whole or in part, at the option of the accredited investors into shares of Common Stock at a fixed conversion price, which is subject to adjustment for stock splits, stock dividends, combinations or similar events, of $2.40 per share (the "Conversion Price"). The Company, however, was prohibited from issuing shares of Common Stock pursuant to the September 2015 Convertible Notes unless stockholder approval of such issuance of securities is obtained as required by applicable NASDAQ listing rules. The Company received stockholder approval of such share issuances at a special stockholders meeting held on December 18, 2015. This provision resulted in a contingent beneficial conversion feature that was recognized once the contingency was resolved based on its intrinsic value at the commitment date. Accordingly, a beneficial conversion feature in the amount of $1.38 million was recorded as a debt discount on December 18, 2015. The debt discount will be recognized as additional interest expense over the life of the September 2015 Convertible Notes.

Unless earlier converted or redeemed, the September 2015 Convertible Notes will mature on September 4, 2016 (the "Maturity Date"). The September 2015 Convertible Notes bear interest at a rate of 8% per annum. Principal and interest on the September 2015 Convertible Notes is payable on the Maturity Date. The Company had accrued $100,000 and $49,000 of interest as of December 31, 2016 and 2015, respectively.

There are no registration rights applicable to the September 2015 Convertible Notes. Accordingly, any shares of Common Stock issued upon conversion of the September 2015 Convertible Notes will be restricted and may only be sold in compliance with Rule 144 or in accordance with another exemption from registration.

On April 29, 2016, the Company entered into Exchange Agreements (the "Exchange Agreements") with the accredited investors. Under the terms of the Exchange Agreements, the September 2015 Convertible Notes (approximately $2.1 million of outstanding principal and accrued interest) were canceled. In exchange, the Company has issued to the accredited investors rights to receive a fixed number of shares of common stock of the Company in accordance with the terms of Rights to Receive Common Stock dated April 29, 2016 (the "April 2016 Rights"). The April 2016 Rights obligate the Company to issue to the holders (without the payment of any additional consideration) an aggregate of approximately 2.1 million shares of common stock (the "April 2016 Rights Shares"). The number of April 2016 Rights Shares is fixed, and is only subject to customary non-price based ratable adjustments. The April 2016 Rights are immediately exercisable and expire on April 29, 2021.

A net loss on extinguishment of $0.89 million was recorded to "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Consolidated Statements of Operations for the year ended December 31, 2016 as a result of the cancellation of the September 2015 Convertible Notes and issuance of the April 2016 Rights. During year ended December 31, 2016, the accredited investors exercised their April 2016 Rights to receive and the Company has delivered 2,052,865 shares of common stock.

NOTE 12. SERIES E PREFERRED STOCK AND THE COMMITTED EQUITY LINE

Series E Preferred Stock

On November 4, 2015, the Company entered into a securities purchase agreement with a private investor to issue 2,800 shares of Series E Preferred Stock to an investor in exchange for $2,800,000. The proceeds were fully received upon effectiveness of the Company's registration statement covering the re-sale of the common stock underlying the Series E Preferred Stock in December of 2015.

Shares of the Series E Preferred Stock (including the amount of any accrued and unpaid dividends thereon) are convertible at the option of the holder into common stock at a variable conversion price equal to 80% of the average of the 2 lowest volume weighted average prices of the Company's common stock for the ten consecutive trading day period prior to the conversion date. If certain defined default events occur, then the conversion price would thereafter be reduced (and only reduced), to equal 70% of the average of the 2 lowest VWAPs of the Company's common stock for the twenty consecutive trading day period prior to the conversion date. During the years ended December 31, 2016 and 2015, the private investor exercised their option to convert 2,203 and 477 Series E Preferred Shares, representing a value of $2,203,000 and $477,000, resulting in the issuance of 41,895,161 and 247,879 shares of common stock, respectively.

Holders of the Series E Preferred Stock will be entitled to dividends in the amount of 7% per annum, payable when, as and if declared by the Board of Directors in its discretion. During the years ended December 31, 2016 and 2015, the

Company paid dividends in the amount of $68,000 and $4,000 on the Series E Preferred Stock, resulting in the issuance of 2,279,830 and 2,121 shares of common stock, respectively.

The Company has issued 18,000 shares of common stock to the private investor as a commitment fee relating to the Series E Preferred Stock. Costs associated with the Series E Preferred Stock, such as legal fees and commitment shares are capitalized and reported as deferred financing costs on the Consolidated Balance Sheets. The total gross debt issuance cost incurred by the Company related to the Series E Preferred Stock was $104,000. These debt issuance costs will be recognized as additional interest expense over the life of the Series E Preferred Stock.

At any time after March 31, 2016, the private investor will have the option to redeem for cash all or any portion of the outstanding shares of the Series E Preferred Stock at a price per share equal to $1,250 plus any accrued but unpaid dividends thereon.

At any time after the third anniversary of the date of the initial issuance of Series E Preferred Stock, the Company will have the option to redeem for cash all outstanding shares of the Series E Preferred Stock at a price per share equal to $1,250 plus any accrued but unpaid dividends thereon.

The Company classified the Series E Preferred Stock as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception. There are 120 and 2,323 shares of Series E Preferred Stock outstanding as of December 31, 2016 and 2015.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the Series E Preferred Stock were deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $1,485,000 was recorded. The debt discount will be charged to interest expense ratably over the life of the Series E Preferred Stock.

The derivative liability associated with the Series E Preferred Stock is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2016 and 2015, the Company conducted a fair value assessment of the embedded derivative associated with the Series E Preferred Stock. As a result of the fair value assessment, the Company recorded a $412,000 and $932,000 gain as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Consolidated Statements of Operations to properly reflect the fair value of the embedded derivative of $141,000 and $553,000 as of December 31, 2016 and 2015 respectively.

The derivative associated with the Series E Preferred Stock approximates management’s estimate of the fair value of the embedded derivative liability at December 31, 2016 and 2015 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 59% and 54%, present value discount rate of 12% and 12% and dividend yield of 0% and 0%, respectively.

The Committed Equity Line

On November 10, 2015, the Company and the private investor entered into a committed equity line purchase agreement (the "CEL"). Under the terms and subject to the conditions of the CEL purchase agreement, at its option the Company has the right to sell to the private investor, and the private investor is obligated to purchase from the Company, up to $32.2 million of the Company’s common stock, subject to certain limitations, from time to time, over the 36-month period commencing on December 18, 2015, the date that the registration statement was declared effective by the SEC.

From time to time, the Company may direct the private investor, at its sole discretion and subject to certain conditions, to purchase an amount of shares of common stock up to the lesser of (i) $1,000,000 or (ii) 300% of the average daily trading volume of the Company’s common stock over the preceding ten trading day period. The per share purchase price for shares of common stock to be sold by the Company under the CEL purchase agreement shall be equal to 80% of the average of the two lowest VWAPs of the common stock for the ten consecutive trading day period prior to the purchase date. During the years ended December 31, 2016 and 2015, the Company directed the private investor to purchase $1,056,000 and $2,000,000 of common stock which resulted in the issuance of 525,454 and 842,546 shares of common stock, respectively.

The Company may not direct the private investor to purchase shares of common stock more frequently than once each ten business days. The Company’s sales of shares of common stock to the private investor under the CEL purchase agreement are limited to no more than the number of shares that would result in the beneficial ownership by the private investor and its affiliates, at any single point in time, of more than 9.99% of the Company’s then outstanding shares of common stock.

As consideration for entering into the CEL purchase agreement, the Company has agreed to issue to the private investor 132,000 shares of common stock (the “Commitment Shares”). The Commitment Shares will be issued to the private investor in four increments which commenced upon the date that the registration statement was declared effective by the SEC. During the year ended December 31, 2016 and 2015, the Company issued 107,000 and 25,000 Commitment Shares to the private investor, respectively.

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NOTE 13. SERIES F PREFERRED STOCK

Series F Preferred Stock

On January 19, 2016, the Company entered into a securities purchase agreement with a private investor to issue 7,000 shares of Series F Preferred Stock in exchange for $7,000,000. The Company received gross proceeds of $500,000 at Closing. The remaining $6,500,000 of the proceeds was received through 14 weekly increments of $250,000 or $500,000 beginning on January 25, 2016 and ending on April 25, 2016. The net proceeds received by the Company from the sale of the Series F Preferred Stock has been used for general corporate purposes and working capital requirements.

Shares of the Series F Preferred Stock (including the amount of any accrued and unpaid dividends thereon) will be convertible at the option of the holder into common stock at a fixed conversion price equal to $5 per share. If certain defined default events occur, then the conversion price would thereafter be reduced (and only reduced), to equal 70% of the average of the two lowest weighted average prices (“VWAPs”) of our common stock for the twenty consecutive trading day period prior to the conversion date. During the year ended December 31, 2016, the private investor exercised their option to convert 6,840 Series F Preferred Stock, representing a value of $6,840,000, resulting in the issuance of 113,059,991 shares of common stock.

Holders of the Series F Preferred Stock will be entitled to dividends in the amount of 7% per annum, payable when, as and if declared by the Board of Directors in its discretion. During the year ended December 31, 2016, the Company paid dividends in the amount of $150,000 on the Series F Preferred Stock, resulting in the issuance of 4,967,115 shares of common stock.

The Company started making weekly redemptions of 250 shares of Series F Preferred Stock (including any accrued and unpaid dividends thereon) beginning February 15, 2016. The redemption price shall be payable in cash at a price per share equal to $1,250 plus any accrued but unpaid dividends thereon.

The Company shall have the option to make such redemption payments in shares of common stock provided certain specified equity conditions are satisfied at the time of payment. The number of shares to be issued would be calculated using a per share price equal to 80% of the one lowest VWAP of our common stock for the ten consecutive trading day period prior to the payment date.

For redemption payments made in shares of common stock, the Company will have the option to increase the number of shares of Series F Preferred Stock to be redeemed in each weekly installment so long as the number of shares of common stock to be issued does not exceed 12% of the aggregate composite trading volume for the Company’s common stock during the preceding calendar week.

The Company classified the Series F Preferred Stock as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception. There were 160 shares of Series F Preferred Stock outstanding as of December 31, 2016.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the Series F Preferred Stock were deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $1,666,000 was recorded. The debt discount will be charged to interest expense ratably over the life of the Series F Preferred Stock.

The derivative associated with the Series F Preferred Stock approximates management's estimate of the fair value of the embedded derivative liability at close of the stock sale and purchase based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 60%, present value discount rate of 12% and dividend yield of 0%.

Amendment of Outstanding Series F Preferred Stock Conversion Price

On October 5, 2016, the Company filed a Certificate of Amendment to the Certificate of Designations of Preferences, Rights and Limitations of Series F Preferred Stock with the Secretary of State of the State of Delaware. The Certificate of Amendment amends the conversion price at which the Series F Preferred Stock can be converted into shares of common stock. The Company had approximately $336,000 of Series F Preferred Stock remaining outstanding as of October 5, 2016.

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As amended, the conversion price will now be equal to the lowest of (i) 50% of the lowest weighted average price (“VWAP”) of our common stock for the 10 consecutive trading day period prior to the conversion date or (ii) 50% of the lowest closing bid price of our common stock for the 10 consecutive trading day period prior to the conversion date. If certain “Triggering Events” specified in the terms of the Series F Preferred Stock occur, then the conversion price of the Series F Preferred Stock shall be thereafter reduced, and only reduced, to equal 50% of the average of the lowest traded price of the common stock for the twenty consecutive trading day period prior to the conversion date.

At December 31, 2016, the Company performed a fair value assessment of the embedded derivative associated with the Series F Preferred Stock. As a result of the fair value assessment, the Company recorded a $1,411,000 gain as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Consolidated Statements of Operations to properly reflect the fair value of the embedded derivative of $255,000 as of December 31, 2016.

The derivative associated with the Series F Preferred Stock approximates management’s estimate of the fair value of the embedded derivative liability at close of the stock sale and purchase based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 57%, present value discount rate of 12% and dividend yield of 0%.

NOTE 14. SERIES G PREFERRED STOCK

Series G Preferred Stock

On April 29, 2016, the Company entered into a securities purchase agreement with private investors to issue 2,000 shares of Series G Preferred Stock for $2,000,000. At Closing, the Company issued a total of 500 shares of Series G Preferred Stock to the private investors in exchange for $500,000. The Company issued an additional 1,500 shares of Series G Preferred Stock to the private investors during the months of May and June 2016, which resulted in additional gross proceeds to the Company of $1,500,000.

Holders of the Series G Preferred Stock will be entitled to dividends in the amount of 10% per annum. One year after issuance, the Company is required to redeem for cash all or any portion of the outstanding shares of the Series G Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends thereon.

Beginning September 19, 2016, the two private investors (the “Series G Sellers”) entered into Assignment Agreements with accredited investors (the “Series G Purchasers”). Under the terms of the Assignment Agreements, the Series G Sellers may sell all 2,000 outstanding shares of Series G Preferred Stock to the Series G Purchasers in a series of installments occurring during September through December 2016 for a purchase price of $1,000 per share of Series G Preferred Stock (plus the amount of any accrued and unpaid dividends thereon). During the year ended December 31, 2016, the Series G Sellers had sold 1,096 shares of Series G Preferred Stock to the Series G Purchasers.

The Series G Purchasers exercised their options to convert 852 of Series G Preferred Stock, representing a value of $852,000, resulting in the issuance of 224,019,803 shares of common stock during the year ended December 31, 2016. The Series G Purchasers also exercised $36,000 of accrued dividends related to the 852 shares exercised, resulting in the issuance of 10,731,010 shares of common stock during the year ended December 31, 2016. One of the Series G Sellers exercised its option to convert 40 shares of Series G Preferred Stock, representing $40,000, resulting in the issuance of 10,389,610 shares of common stock during the year ended December 31, 2016. The Series G Seller also exercised $2,000 of accrued dividends related to the 40 shares resulting in the issuance of 585,860 shares of common stock for the year ended December 31, 2016.

On September 21, 2016, the Company filed a Certificate of Amendment to the Certificate of Designations of Preferences, Rights and Limitations of Series G Preferred Stock with the Secretary of State of the State of Delaware. The Certificate of Amendment amends the conversion price at which the Series G Preferred Stock can be converted into shares of common stock. Shares of the Series G Preferred Stock (including the amount of any accrued and unpaid dividends thereon) were previously convertible at the option of the private investors into common stock at a fixed conversion price of $1.00 per share. As amended, the conversion price is equal to the lowest of (i) $0.045, (ii) 70% of the lowest volume weighted average price of the Company’s common stock for the ten consecutive trading day period prior to the conversion date or (iii) 70% of the lowest closing bid price of the Company’s common stock for the ten consecutive trading day period prior to the conversion date.

The Company classified the Series G Preferred Stock as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception. There were 1,108 shares of Series G Preferred Stock outstanding as of December 31, 2016.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the Series G Preferred Stock were deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $1,263,000 was recorded. The debt discount will be charged to interest expense ratably over the life of the Series G Preferred Stock.

The derivative liability associated with the Series G Preferred Stock is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2016, the Company conducted a fair value assessment of the embedded derivative associated with the Series G Preferred Stock. As a result of the fair value assessment, the Company recorded a $901,000 gain as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations for the year ended December 31, 2016 to properly reflect the fair value of the embedded derivative of $362,000 as of December 31, 2016.

The derivative associated with the Series G Preferred Stock approximates management’s estimate of the fair value of the embedded derivative liability at December 31, 2016 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 47% , present value discount rate of 12% and dividend yield of 0%.

NOTE 15. SERIES H PREFERRED STOCK AND JULY 2016 CONVERTIBLE NOTES

Series H Preferred Stock

On June 9, 2016, the Company entered into a securities purchase agreement with a private investor to issue 2,500 shares of Series H Preferred Stock for $2,500,000. The Company received gross proceeds of $250,000 at Closing. Additional gross proceeds of $580,000 were received by the Company through July 7, 2016. The Company agreed to exchange outstanding Series H Preferred Stock for Senior Secured Convertible Notes (“July 2016 Notes”) on July 13, 2016. At the date of the exchange, the Company had sold and issued 830 shares of Series H Preferred Stock to private investor in exchange for $830,000 of gross proceeds. Refer to the section below for details of the exchange.

Holders of the Series H Preferred Stock will be entitled to dividends in the amount of 7% per annum. If a Triggering Event occurs, the dividend rate shall automatically increase to 20% per annum.

The conversion price for the Series H Preferred Stock shall equal the lower of (i) 70% of the lowest VWAP of the common stock for the 10 consecutive trading day period prior to the conversion date of (ii) 70% of the lowest closing bid price of the common stock for the 10 consecutive trading day period prior to the conversion date, subject to adjustment herein; provided, however, if a Triggering Event occurs the conversion price shall be thereafter reduced, and only reduced, to equal 60% of the average of the two lowest VWAPs of the common stock for the twenty consecutive trading day period prior to the conversion date, subject to adjustment herein. In no event, however, shall the conversion price be less than $0.005 per share.

At any time after the occurrence of certain defined Trigger Events, the Series H Preferred Stock holder will have the option to redeem for cash all or any portion of the outstanding shares of the Series H Preferred Stock at a price per share equal to $1,250 plus any accrued but unpaid dividends thereon.

At any time after the third anniversary date of the initial issuance of Series H Preferred Stock, the Company will have the option to redeem for cash all outstanding shares of the Series H preferred Stock at a price per share equal to $1,250 plus any accrued but unpaid dividends thereon.

The Company classified the Series H Preferred Stock as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the Series H Preferred Stock was deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $146,000 were recorded. The debt discount will be charged to interest expense ratably over the life of the Series H Preferred Stock.

July 2016 Convertible Notes

On July 13, 2016, the Company entered into a securities purchase agreement with a private investor for the placement of up to $2,080,000 of the Company's 4% Original Issue Discount Senior Secured Convertible Promissory Notes ("July 2016 Notes"). The Company sold and issued $364,000 principal amount of July 2016 Notes to private investor in exchange for $350,000 of gross proceeds.

The Company sold and issued the remaining $1,716,000 principal amount of July 2016 Notes to private investor in exchange for $1,650,000 of gross proceeds in six additional weekly tranches between July and August 2016.

In connection with the offering of the July 2016 Notes, the Company and the private investor also entered into an Exchange Agreement dated July 13, 2016 (the "Exchange Agreement"). Under the terms of the Exchange Agreement, the outstanding shares of Series H Preferred Stock (approximately $833,000 of capital and accrued dividends) were canceled. In exchange, the Company issued to the private investor approximately $866,000 of July 2016 Notes. A net gain on extinguishment of the Series H Preferred Stock and related embedded derivative of $126,000 was recorded to "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Consolidated Statements of Operations for the year ended December 31, 2016.

Accordingly, the Company had (i) an aggregate of $2,946,000 principal amount of July 2016 Notes outstanding and (ii) 0 shares of Series H Preferred Stock outstanding as of July 13, 2016. The Company and the private investor have agreed to cancel any remaining obligations under the Series H securities purchase agreement to issue and purchase any additional shares of Series H Preferred Stock.

Unless earlier converted or prepaid, all of the July 2016 Notes will mature on July 13, 2017 (the "Maturity Date"). The July 2016 Notes bear interest at a rate of 10% per annum, subject to increase to 24% per annum upon the occurrence and continuance of an event of default (as described below). Principal on the July 2016 Notes is payable on the Maturity Date. Interest on the July 2016 Notes is payable quarterly. Principal and interest are payable in cash or, if specified equity conditions are met, shares of common stock. During the year ended December 31, 2016, the private investor converted a principal amount $152,000 of convertible notes in exchange for 64,000,000 common shares. There was $2,794,000 of July 2016 Notes outstanding as of December 31, 2016.

At December 9, 2016 the July 2016 Notes were in default due to the Company's insufficient amount of authorized and unissued shares not meeting the minimum amount of reserve share requirement outlined in the July 2016 Note Agreement. Further, on December 14, 2016 the Company's stock price fell below $0.005 per share triggering another event of default per the July 2016 Note Agreement. Upon default the interest rate increases to 24% per annum and the holder of the July 2016 Notes has the option to accelerate the Note and demand cash payment of the Mandatory Default Amount consisting of a 25% premium of the principal balance plus any accrued and unpaid interest. The Company has accrued interest at the 24% starting on December 9, 2016 through December 31, 2016. At December 31, 2016 all amounts related to the July 2016 Notes have been included in short term liabilities.

All principal and accrued interest on the July 2016 Notes are convertible at any time, in whole or in part, at the option of the private investor into shares of common stock at a variable conversion price equal to the lowest of (i) $0.045, (ii) 70% of the lowest volume weighted average price ("VWAP") of our common stock for the 10 consecutive trading day period prior to the conversion date or (iii) 70% of the lowest closing bid price of our common stock for the 10 consecutive trading day period prior to the conversion date. If certain defined triggering events occur, then the conversion price would thereafter be reduced (and only reduced), to equal 60% of the lower of (i) the lowest closing bid price of the common stock for the 30 consecutive trading day period prior to the conversion date or (ii) the lowest VWAP of the common stock for the thirty consecutive trading day period prior to the conversion date. In addition, on the 90th day and also on the 180th day from the day of the July 2016 Notes securities purchase agreement, the private investor may reset the Fixed Conversion Price to thereafter be equal to the VWAP of the common stock for such day or if such 90th or 180th day is not a trading day, then the VWAP for the immediately preceding trading day.

The Company classified the July 2016 Notes as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the July 2016 Notes were deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $3,155,000 was recorded. The debt discount will be charged to interest expense ratably over the life of the July 2016 Notes.

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The derivative liability associated with the July 2016 Notes is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2016, the Company conducted a fair value assessment of the embedded derivative associated with the July 2016 Notes. As a result of the fair value assessment, the Company recorded a $1,923,000 loss as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations for the year ended December 31, 2016 to properly reflect the fair value of the embedded derivative of $5,079,000 as of December 31, 2016.

The derivative associated with the July 2016 Notes approximates management’s estimate of the fair value of the embedded derivative liability at December 31, 2016 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 59%, present value discount rate of 12% and dividend yield of 0%.

NOTE 16. SERIES I PREFERRED STOCK AND SERIES I CONVERTIBLE NOTES

Series I Preferred Stock

On July 26, 2016, the Company entered into a securities purchase agreement with a private investor for the placement of approximately $536,000 of the Company’s Series I Preferred Stock. At Closing, the Company issued a total of 536 shares of Series I Preferred Stock to the private investor in exchange for the cancellation of an outstanding $536,000 promissory note (including accrued interest) of the Company held by the private investor.

Shares of the Series I Preferred Stock (including the amount of any accrued and unpaid dividends thereon) are convertible at the option of the holder into common stock at a fixed conversion price of $0.03 per share. Holders of the Series I Preferred Stock are entitled to dividends in the amount of 10% per annum. One year after issuance, the Company is required to redeem for cash all or any portion of the outstanding shares of the Series I Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends thereon.

The Series I Preferred Stock is classified outside of permanent equity, in mezzanine equity, on the Company’s Consolidated Balance Sheets as a result of this redemption feature in accordance with ASC Topic 480, Distinguishing liabilities from equity, as well as other applicable guidance. As of December 31, 2016, there were 0 shares of Series I Preferred Stock outstanding. See Series I Convertible Notes section below for more on the exchange of Series I Preferred Shares for Series I Convertible Notes.

A beneficial conversion feature in the amount of $286,000 was recorded as a discount upon issuance of the shares. The unamortized discount was written off upon the exchange of the Preferred Shares for the Series I Convertible Notes for the period ended December 31, 2016.

Series I Convertible Notes

On September 13, 2016, the Series I Holder entered into an assignment agreement with another investor. Pursuant to the assignment agreement, the investor has the option to purchase, from time to time, all or any portion of the outstanding shares of Series I Preferred Stock from the Series I Holder for cash. The Company had 326 shares of Series I Preferred Stock that remained outstanding as of September 13, 2016.

On September 13, 2016, the Company and the investor also entered into an exchange agreement, whereby the investor has the right, from time to time, to surrender to the Company for cancellation and exchange any shares of Series I Preferred Stock it acquires pursuant to the assignment agreement. Any surrendered shares of Series I Preferred Stock would be exchanged for newly issued Series I Convertible Notes. The principal amount of the Series I Convertible Notes to be issued in exchange shall be equal to (i) $1,000 for each share of Series I Preferred Stock surrendered for exchange plus (ii) the amount of any dividends accrued and unpaid on such Series I Preferred Stock surrendered for exchange.

Unless earlier converted or prepaid, all of the Series I Convertible Notes will mature one year after issuance. The Series I Convertible Notes bear interest at a rate of 10% per annum, subject to increase to 24% per annum upon the occurrence and continuance of an event of default (as described below). Principal and interest on the Series I Convertible Notes is payable on the maturity date or upon any earlier conversion. Principal and interest are payable in cash or, if specified equity conditions are met, shares of common stock. During the year ended December 31, 2016, the investor exercised their option to exchange 326 Series I Preferred Shares, representing a value of $326,000, resulting in the creation of $333,000 of Series I Convertible Notes.

During the year ended December 31, 2016, the investor exercised their option to convert $107,000 of Series I Convertible Notes, resulting in the issuance of 14,816,862 shares of common stock. A principal balance of $226,000 of the Series I Convertible Notes was outstanding at December 31, 2016.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the Series I Convertible Notes were deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $275,000 was recorded. The debt discount will be charged to interest expense ratably over the life of the Series I Convertible Notes.

The derivative liability associated with the Series I Convertible Notes is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2016, the Company conducted a fair value assessment of the embedded derivative associated with the Series G Preferred Stock. As a result of the fair value assessment, the Company recorded a $78,000 gain as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations for the year ended December 31, 2016 to properly reflect the fair value of the embedded derivative of $197,000 as of December 31, 2016.

The derivative associated with the Series I Convertible Notes approximates management's estimate of the fair value of the embedded derivative liability at December 31, 2016 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 64% present value discount rate of 12% and dividend yield of 0%.

NOTE 17. SERIES J PREFERRED STOCK AND SERIES J-1 PREFERRED STOCK

Series J Preferred Stock

On September 13, 2016, the Company entered into a securities purchase agreement with a private investor to issue 1,350 shares of Series J Preferred Stock for $1,350,000. At closing, the Company issued a total of 225 shares of Series J Preferred Stock to the private investor in exchange for gross proceeds of $225,000. The Company issued an additional 1,125 shares of Series J Preferred Stock in exchange for gross proceeds of $1,125,000 in five subsequent closings occurring in October and November 2016.

Shares of the Series J Preferred Stock (including the amount of any accrued and unpaid dividends thereon) will be convertible at the option of the holder into common stock at a fixed conversion price of $0.015 per share. Holders of the Series J Preferred Stock will be entitled to dividends in the amount of 10% per annum. One year after issuance, the Company is required to redeem for cash all or any portion of the outstanding shares of the Series J Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends thereon. During the year ended December 31, 2016, the investor did not exercise their option to exchange any Series J Preferred Shares for common stock. There were 1,350 shares of Series J Preferred Stock outstanding at December 31, 2016.

The Company classified the Series J Preferred Stock as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception.

Series J-1 Preferred Stock

On October 14, 2016, the Company entered into a securities purchase agreement with a private investor to issue 1,000 shares of Series J-1 Preferred Stock for $1,000,000. At Closing, the Company issued a total of 100 shares of Series J-1 Preferred Stock to the private investor in exchange for gross proceeds of $100,000. The Company has issued an additional 900 shares of Series J Preferred Stock in exchange for gross proceeds of $900,000 in six subsequent closings occurring between November 2016 and February 2017. The Company had 700 shares of Series J-1 Preferred Stock issued and outstanding as of December 31, 2016.

Shares of the Series J-1 Preferred Stock (including the amount of any accrued and unpaid dividends thereon) will be convertible at the option of the holder into common stock at a fixed conversion price of $0.0125 per share. Holders of the Series J-1 Preferred Stock will be entitled to dividends in the amount of 10% per annum. One year after issuance, the Company is required to redeem for cash all or any portion of the outstanding shares of Series J-1 Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends thereon.

The Company classified the Series J-1 Preferred Stock as a liability pursuant to ASC 480 on the closing date due to the structure of the financing agreement, whereby the Company has an unconditional obligation that the Company may settle by issuing a variable number of common shares with a monetary value that is fixed and known at inception.

NOTE 18. ADAR BAYS CONVERTIBLE NOTES AND EXCHANGE OF SERIES A PREFERRED STOCK

Adar Bays Convertible Notes

On October 5, 2016, the Company entered into a securities purchase agreement with a private investor (“Adar Bays”) for the private placement of $330,000 principal amount of Adar Bays Convertible Notes. At Closing, the Company sold and issued $330,000 principal amount of Adar Bays Convertible Notes to Adar Bays in exchange for $300,000 of gross proceeds.

Unless earlier converted or prepaid, (i) $110,000 principal amount of the Adar Bays Convertible Notes will mature on December 5, 2016, (ii) $110,000 principal amount of the Adar Bays Convertible Notes will mature on January 3, 2017, and (iii) $110,000 principal amount of the Adar Bays Convertible Notes will mature on February 3, 2017. The maturity dates of these notes were subsequently extended to December 31, 2017. The Adar Bays Convertible Notes bear interest at a rate of 6% per annum, subject to increase to 24% per annum upon the occurrence and continuance of an event of default (as described below). During the year ended December 31, 2016 the holder redeemed $128,000 of the Adar Bays Convertible Notes along with accrued interest of $2,000 resulting in the issuance of 42,857,508 shares of common stock including the 50% Make-Whole Dividend discussed in Note 19. After conversions the remaining balance was $202,000 of the Adar Bays Convertible Notes as of December 31, 2016.

All principal and accrued interest on the Adar Bays Convertible Notes are convertible at any time, in whole or in part, at the option of Adar Bays into shares of common stock at a variable conversion price equal to 80% of the lowest closing bid price of the Company’s common stock for the fifteen consecutive trading day period prior to the conversion date. After the six month anniversary of the issuance of any Adar Bays Convertible Note, the conversion price for such note shall thereafter be equal to 50% of the lowest closing bid price of the Company’s common stock for the fifteen consecutive trading day period prior to the conversion date.

Principal on the Adar Bays Convertible Notes is payable on the maturity date. Principal on the Adar Bays Convertible Notes is payable in cash. Interest on the Adar Bays Convertible Notes is payable from time to time in the form of shares of common stock using the conversion price formula described above.

The Adar Bays Convertible Notes contain standard and customary events of default including but not limited to: (i) failure to make payments when due under the Adar Bays Convertible Notes; and (ii) bankruptcy or insolvency of the Company.

Pursuant to a number of factors outlined in ASC Topic 815, Derivatives and Hedging, the conversion option in the Adar Bays Convertible Notes were deemed to include an embedded derivative that required bifurcation and separate accounting. As such, the Company ascertained the value of the conversion option as if separate from the convertible issuance and appropriately recorded that value as a derivative liability. At closing, a derivative liability and a corresponding debt discount in the amount of $330,000 was recorded. The fair value of the derivative was greater than the face value at issuance and the difference of $341,000 was charged to interest expense at issuance. The remaining debt discount will be charged to interest expense ratably over the life of the Adar Bays Convertible Notes.

The derivative liability associated with the Adar Bays Convertible Notes is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2016, the Company conducted a fair value assessment of the embedded derivative associated with the Adar Bays Convertible Notes. As a result of the fair value assessment, the Company recorded a $126,000 gain as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations for the year ended December 31, 2016 to properly reflect the fair value of the embedded derivative of $545,000 as of December 31, 2016.

The derivative associated with the Adar Bays Convertible Notes approximates management's estimate of the fair value of the embedded derivative liability at December 31, 2016 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 67%, present value discount rate of 12% and dividend yield of 0%.

Exchange of Outstanding Series A Preferred Stock for Convertible Notes

In 2013, the Company completed private placement to one accredited investor (the "Series A Holder") of its Series A Convertible Preferred Stock. Prior to the exchange agreement described below the Company had 165,541 shares of Series A Preferred Stock that remained outstanding as of October 6, 2016.

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On October 6, 2016, the Series A Holder entered into an exchange agreement (the “Exchange Agreement”) with Adar Bays. Pursuant to the exchange agreement, beginning December 5, 2016, Adar Bays has the option to exchange, from time to time, all or any portion of the Adar Bays Convertible Notes for outstanding shares of Series A Preferred Stock from the Series A Holder. As of December 31, 2016, the Series A Holder held $202,000 of the Adar Bays Convertible Notes.

The parties will first calculate the number of shares of common stock that the principal and accrued but unpaid interest of the Adar Bays Convertible Notes to be exchanged are convertible into using the formula set described below (the “As-Converted Common Share Number”). The parties shall next calculate that number of shares of Series A Preferred Stock to be exchanged (including accrued and unpaid dividends and make-whole amounts) that, upon conversion in accordance with the terms of the Series A Preferred Stock, would result in the issuance, as of the effective date of the exchange, of the As-Converted Common Share Number.

The principal and accrued but unpaid interest on the exchanged portion of the Adar Bays Convertible Notes shall be calculated into the As-Converted Common Share Number by using the following formula. The As-Converted Common Share Number shall be equal to 80% of the lowest closing bid price of the Company common stock for the fifteen trading days immediately preceding the date on which a notice of exchange is delivered. Subsequent to any exchange, the parties shall have the rights to convert the securities received (Adar Bays Convertible Notes or Series A Preferred Stock, as applicable) upon the exchange in accordance with the terms of such securities.

NOTE 19. MAKE-WHOLE DIVIDEND LIABILITY

In June 2013, the Company entered into a Series A Preferred Stock purchase agreement. Holders of Series A Preferred Stock are entitled to cumulative dividends at a rate of 8.0% per annum, with the dividend rate being indexed to the Company's stock price and subject to adjustment. Conversion or redemption of the Series A Preferred Stock within 4 years of issuance requires the Company pay a make-whole dividend to the holders, whereby dividends for the full four year period are to be paid in cash or common stock (valued at 10% below market price).

The Company concluded the make-whole payments should be characterized as embedded derivatives under ASC 815. See Note 3. Summary of Significant Accounting Policies and Note 20. Stockholders' Equity. Make-whole dividends are expensed at the time of issuance and recorded as "Deemed dividends on Preferred Stock and accretion of warrants" in the Consolidated Statements of Operations and "Make-whole dividend liability" in the Consolidated Balance Sheets. The fair value of these dividend liabilities, which are indexed to the Company's common stock, must be evaluated at each period end. The fair value measurements rely primarily on Company-specific inputs and the Company’s own assumptions. With the absence of observable inputs, the Company determined these recurring fair value measurements reside primarily within Level 3 of the fair value hierarchy. Fair value determination required forecasting stock price volatility, expected average annual return and conversion date. As a result of this analysis, during the year ended December 31, 2015, the Company recorded a net increase in fair value of the liability in the amount of $3.5 million, recorded as "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in Other Income/(Expense) in the Consolidated Statements of Operations and in the Statement of Cash Flows. During the year ended December 31, 2016, there was no change in the fair value of the make-whole liability from the fair value at December 31, 2015.

At December 31, 2016, there were 125,044 shares of Series A Preferred Shares outstanding. At December 31, 2016, the Company was entitled to redeem the outstanding Series A preferred shares for $1.7 million, plus a make-whole amount of $0.5 million, payable in cash or common shares. The fair value of the make-whole dividend liability for the Series A Preferred Shares, which approximates cash value, was $0.5 million as of December 31, 2016.

NOTE 20. STOCKHOLDERS’ EQUITY (DEFICIT)

Common Stock

At December 31, 2016, the Company had 2,000,000,000 shares of common stock, $0.0001 par value, authorized for issuance. Each share of common stock has the right to one vote. As of December 31, 2016, the Company had 554,223,320 shares of common stock outstanding. The Company has not declared or paid any dividends related to its common stock through December 31, 2016.

On August 26, 2014, the Company, a Delaware corporation, filed a Certificate of Amendment with the Secretary of State of the State of Delaware to effect a reverse stock split of the Company's common stock, par value $0.0001 per share at a ratio of one-for-ten . The Certificate of Amendment did not change the number of authorized shares, or the par value, of the Company’s common stock. The Certificate of Amendment provides that every ten shares of the Company’s issued and outstanding common stock were automatically combined into one issued and outstanding share of the Company’s common stock. All shares and per share amounts in the financial statements and accompanying notes have been retroactively adjusted to give effect to the reverse stock split.

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On May 26, 2016, the Company, a Delaware corporation, filed a Certificate of Amendment with the Secretary of State of the State of Delaware to effect a reverse stock split of the Company's common stock, par value $0.0001 per share at a ratio of one-for-twenty. The Certificate of Amendment did not change the number of authorized shares, or the par value, of the Company's common stock. The Certificate of Amendment provides that every twenty shares of the Company's issued and outstanding common stock were automatically combined into one issued and outstanding share of the Company's common stock. All shares and per share amounts in the consolidated financial statements and accompanying notes have been retroactively adjusted to give effect to the reverse stock split.

TFG Radiant Purchases of Common Stock

In April and June 2015, the Company entered into securities purchase agreements with TFG Radiant for private placements of totaling of 100,000 shares of the Company's common stock which resulted in gross proceeds of approximately $2 million to the Company.

As of December 31, 2016, TFG Radiant's ownership was less than 1% of the Company's outstanding Common Stock.

Shelf Registration

In October 2014, the Company filed a "shelf" Registration Statement on Form S-3 with the SEC. With the shelf registration, the Company may from time to time sell common stock, preferred stock, warrants or some combination in one or more offerings for up to $25.0 million. The registration became effective October 16, 2014. This shelf registration replaces the Company's prior shelf registration statement. As of December 31, 2016, approximately $22.0 million was unused on the shelf registration.

Preferred Stock

At December 31, 2016, the Company had 25,000,000 shares of preferred stock, $0.0001 par value, authorized for issuance. Preferred stock may be issued in classes or series. Designations, powers, preferences, rights, qualifications, limitations and restrictions are determined by the Company's Board of Directors. 750,000 shares have been designated as Series A preferred stock, 3,000 shares have been designated as Series D preferred stock, 2,500 shares have been designated as Series D-1 preferred stock, and 2,800 shares have been designated as Series E preferred stock, 7,000 shares have been designated as Series F preferred stock, 2,000 shares have been designated as Series G preferred stock, 1,350 shares have been designated as Series J preferred stock, and 1,000 shares have been designated as Series J-1 preferred stock. As of December 31, 2016, the Company had 125,044 shares of Series A preferred stock, 0 shares of Series D preferred stock, 0 shares of Series D-1 preferred stock, and 120 shares of Series E preferred stock, 160 shares of Series F preferred stock, 1,108 shares of Series G preferred stock, 1,350 shares of Series J preferred stock, and 700 shares of Series J-1 preferred stock, outstanding. The Company has no declared unpaid dividends related to the preferred stock as of December 31, 2016.

Series A preferred stock: In June 2013, the Company entered into a securities purchase agreement with an investor to sell an aggregate of 750,000 shares of Series A Preferred Stock at a price of $8.00 per share, resulting in gross proceeds of $6,000,000. This purchase agreement included warrants to purchase up to 13,125 shares of common stock of the Company. The transfer of cash and securities took place incrementally, the first closing occurring on June 17, 2013 with the transfer of 125,000 shares of Series A preferred stock and a warrant to purchase 2,188 shares of common stock for $1,000,000. The final closing took place in August 2013, with the transfer of 625,000 shares of Series A preferred stock and a warrant to purchase 10,937 shares of common stock for $5,000,000.

Holders of Series A preferred stock are entitled to cumulative dividends at a rate of 8.0% per annum when and if declared by the Board of Directors in its sole discretion. The dividends may be paid in cash or in the form of common stock (valued at 10% below market price, but not to exceed the lowest closing price during the applicable measurement period), at the discretion of the Board of Directors. The dividend rate on the Series A preferred stock is indexed to the Company's stock price and subject to adjustment. In addition, the Series A preferred stock contains a make-whole provision whereby, conversion or redemption of the preferred stock within 4 years of issuance will require dividends for the full four year period to be paid by the Company in cash or common stock (valued at 10% below market price, but not to exceed the lowest closing price during the applicable measurement period). The Series A preferred stock may be converted into shares of common stock at the option of the Company if the closing price of the common stock exceeds $232.00, as adjusted, for 20 consecutive trading days, or by the holder at any time. The Company has the right to redeem the Series A preferred stock at a price of $8.00 per share, plus any accrued and unpaid dividends, plus the make-whole amount (if applicable). At December 31, 2016, the preferred shares were not eligible for conversion to common shares, at the option of the Company. The holder of the preferred shares may convert to common shares at any time, at no cost, at a ratio of 1 preferred share into 1 common share (as adjusted for the Reverse Stock Split, subject to standard ratable anti-dilution

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adjustments). Upon any conversion (whether at the option of the Company or the holder), the holder is entitled to receive any accrued but unpaid dividends and also any make-whole amount (if applicable). See Note 18. Make-whole dividend liability.

During the twelve months ended December 31, 2016 the holders of the Series A preferred stock converted 87,346 preferred shares into 4,367 shares of common stock. As a result of these conversions, the Company paid make-whole dividends in the amount of 49,796,077 shares of common stock in lieu of a cash payment of $349,000.

Except as otherwise required by law (or with respect to approval of certain actions), the Series A preferred stock shall have no voting rights. Upon any liquidation, dissolution or winding up of the Company, after payment or provision for payment of debts and other liabilities of the Company, the holders of Series A preferred stock shall be entitled to receive, pari passu with any distribution to the holders of common stock of the Company, an amount equal to $8.00 per share of Series A preferred stock plus any accrued and unpaid dividends.

The warrants offered as part of the securities purchase agreement have a three year term and require payment of an exercise price of $9.00 per common share to the Company. As of December 31, 2016 these warrants had expired.

Series D and D-1 preferred stock: Refer to Note 9 for descriptions of the Convertible Notes, Series D Preferred Stock, Series D-1 Preferred Stock, and Right Shares.

Series E preferred stock: Refer to Note 11 for descriptions of the Series E Preferred Stock and the Committed Equity Line.

Series F preferred stock: Refer to Note 12 for descriptions of the Series F Preferred Stock.

Series G preferred stock: Refer to Note 13 for descriptions of the Series G Preferred Stock.

Series H preferred stock: Refer to Note 14 for descriptions of the Series H Preferred Stock and July 2016 Convertible Notes.

Series I preferred stock: Refer to Note 15 for descriptions of the Series I Preferred Stock and the Series I Convertible Notes.

Series J and J-1 preferred stock: Refer to Note 16 for descriptions of the Series J Preferred Stock and the Series J-1 Preferred Stock.

NOTE 21. EQUITY PLANS AND SHARE-BASED COMPENSATION

Stock Option Plan: The Company’s 2005 Stock Option Plan, as amended (the “Stock Option Plan”) provides for the grant of incentive or non-statutory stock options to the Company’s employees, directors and consultants. Upon recommendation of the Board of Directors, the stockholders approved an increase in the total shares of common stock reserved for issuance under the Stock Option Plan to 270,000 as of December 31, 2016 and 2015.

Restricted Stock Plan: The Company’s 2008 Restricted Stock Plan, as amended (the “Restricted Stock Plan”) was adopted by the Board of Directors and was approved by the stockholders on July 1, 2008. The Restricted Stock Plan initially reserved up to 75,000 shares (as adjusted for the Reverse Stock Split) of the Company’s common stock for restricted stock awards and restricted stock units to eligible employees, directors and consultants of the Company. Upon recommendation of the Board of Directors, the stockholders approved an increase in the total shares of common stock reserved for issuance under the Restricted Stock Plan to 750,000 and 125,000 shares as of December 31, 2016 and 2015, respectively.

The Stock Option Plan and the Restricted Stock Plan are administered by the Compensation Committee of the Board of Directors, which determines the terms of the option and share awards, including the exercise price, expiration date, vesting schedule and number of shares. The term of any incentive stock option granted under the Stock Option Plan may not exceed ten years, or 5 years for options granted to an optionee owning more than 10% of the Company’s voting stock. The exercise price of an incentive stock option granted under the Option Plan must be equal to or greater than the fair market value of the shares of the Company’s common stock on the date the option is granted. An incentive stock option granted to an optionee owning more than 10% of the Company’s voting stock must have an exercise price equal to or greater than 110% of the fair market value of the Company’s common stock on the date the option is granted. The exercise price of a non-statutory option granted under the Option Plan must be equal to or greater than 85% of the fair market value of the shares of the Company’s common stock on the date the option is granted.

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Share-Based Compensation: The Company measures share-based compensation cost at the grant date based on the fair value of the award and recognizes this cost as an expense over the grant recipients' requisite service periods for all awards made to employees, officers, directors and consultants.
The share-based compensation expense recognized in the Consolidated Statements of Operations was as follows:

	For the years ended December 31,	
	2016	2015
Share-based compensation cost included in:		
Research, development and manufacturing operations	$181,985	$253,298
Selling, general and administrative	706,363	603,516
Total share-based compensation cost	$888,348	$856,814

The following table presents share-based compensation expense by type:

	For the years ended December 31,	
	2016	2015
Type of Award:		
Stock Options	$377,653	$550,787
Restricted Stock Units and Awards	510,695	306,027
Total share-based compensation cost	$888,348	$856,814

Stock Options: The Company recognized share-based compensation expense for stock options of $378,000 to officers, directors and employees for the year ended December 31, 2016 related to stock option awards, reduced for estimated forfeitures. The weighted average estimated fair value of employee stock options granted for the years ended December 31, 2016 and 2015 was $1.14 and $0.72 per share, respectively. Fair value was calculated using the Black-Scholes Option Pricing Model with the following assumptions:

	For the years ended December 31,			
	2016		2015	
Expected volatility	114.6	%	92.6	%
Risk free interest rate	1.5	%	1.7	%
Expected dividends	—		—	
Expected life (in years)	5.8		5.9	

Expected volatility is based on the historical volatility of the Company's stock. The risk-free rate of return is based on the yield of U.S. Treasury bonds with a maturity equal to the expected term of the award. Historical data is used to estimate forfeitures within the Company's valuation model. The Company's expected life of stock option awards is derived from historical experience and represents the period of time that awards are expected to be outstanding.
As of December 31, 2016, total compensation cost related to non-vested stock options not yet recognized was $97,000 which is expected to be recognized over a weighted average period of approximately 1.48 years. As of December 31, 2016, 67,015 shares were vested or expected to vest in the future at a weighted average exercise price of $41.98. As of December 31, 2016, 189,475 shares remained available for future grants under the Option Plan.

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The following table summarizes stock option activity for grants made within the Stock Option Plan:

	Stock Option Shares	Stock Options Weighted Average Exercise Price	Weighted Average Remaining Contractual Life in Years	Aggregate Intrinsic Value
Outstanding at December 31, 2014	12,212	$ 256.40	7.84	$ 96
Granted	74,852	$ 19.20		
Exercised	—	$ —		$ —
Forfeited	(13,194)	$ 31.00		
Outstanding at December 31, 2015	73,870	$ 56.43	8.84	$ —
Granted	33,250	$ 1.35		
Exercised	—	$ —		$ —
Forfeited	(30,206)	41.15		
Outstanding at December 31, 2016	76,914	$ 37.67	8.28	$ —
Exercisable at December 31, 2016	24,654	$ 94.46		

Restricted Stock: The Company recognized share-based compensation expense related to restricted stock grants of $511,000 for the year ended December 31, 2016. The weighted average estimated fair value of restricted stock grants for the years ended December 31, 2016 and 2015 was $1.97 and $0.57, respectively.

Total unrecognized share-based compensation expense from unvested restricted stock as of December 31, 2016 was $27,000 which is expected to be recognized over a weighted average period of approximately 0.17 years. As of December 31, 2016, 164,119 shares were expected to vest in the future. As of December 31, 2016, 495,848 shares remained available for future grants under the Restricted Stock Plan.

The following table summarizes non-vested restricted stock and the related activity as of and for the years ended December 31, 2016 and 2015:

	Shares	Weighted Average Grant-Date Fair-Value
Non-vested at December 31, 2014	557	$ 140.00
Granted	33,569	$ 11.40
Vested	(13,624)	
Forfeited	—	
Non-vested at December 31, 2015	20,502	$ 5.59
Granted	245,414	1.97
Vested	(63,787)	
Forfeited	(36,768)	
Non-vested at December 31, 2016	165,361	$ 1.84

NOTE 22. INCOME TAXES

The Company records income taxes using the liability method. Under this method, deferred tax assets and liabilities are computed for the expected future impact of temporary differences between the financial statement and income tax bases of assets and liabilities using current income tax rates and for the expected future tax benefit to be derived from tax loss and tax credit carryforwards. ASC 740 provides detailed guidance for the financial statement recognition, measurement and disclosure of uncertain tax positions recognized in the financial statements. Tax positions must meet a “more-likely-than-not” recognition threshold before a benefit is recognized in the financial statements.

At December 31, 2016, the Company had $294,689,000 of cumulative net operating loss carryforwards for federal income tax purposes that were available to offset future taxable income through the year 2036. Under the Internal

Revenue Code, the future utilization of net operating losses may be limited in certain circumstances where there is a significant ownership change. The Company prepared an analysis for the year ended December 31, 2012 and determined that a significant change in ownership

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has occurred as a result of the cumulative effect of the sales of common stock through its offerings. Such change limited the Company's utilizable net operating loss carryforwards to $207,647,000 for the year ended December 31, 2016. Available net operating loss carryforwards may be further limited in the event of another significant ownership change.

Deferred income taxes reflect an estimate of the cumulative temporary differences recognized for financial reporting purposes from that recognized for income tax reporting purposes. At December 31, 2016 and 2015, the components of these temporary differences and the deferred tax asset were as follows:

	As of December 31	
	2016	2015
Deferred Tax Asset		
Current:		
Accrued Expenses	$192,000	$412,000
Inventory Allowance	234,000	253,000
Other	43,000	26,000
Total Current	469,000	691,000
Non-current:		
Stock Based Compensation-Stock Options and Restricted Stock	1,919,000	1,730,000
Tax effect of NOL carryforward	79,384,000	65,935,000
Depreciation	17,406,000	20,859,000
Amortization	(637,000)	(607,000)
Warranty reserve	68,000	102,000
Total Non-current	98,140,000	88,019,000
Net deferred tax asset	98,609,000	88,710,000
Less valuation allowance	(98,609,000)	(88,710,000)
Net deferred tax asset	$—	$—

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. Based upon the level of historical losses and projections of future taxable income over the periods in which the deferred tax assets are deductible, management believes it is not "more-likely-than-not" that the Company will realize the benefits of these deductible differences at December 31, 2016. The Company’s deferred tax valuation allowance of $98,609,000 reflected above is an increase of $9,899,000 from the valuation allowance reflected as of December 31, 2015 of $88,710,000, resulting from the decrease in net loss.

As of December 31, 2016, the Company has not recorded a liability for uncertain tax positions. The Company recognizes interest and penalties related to uncertain tax positions in income tax (benefit)/expense. No interest and penalties related to uncertain tax positions were accrued at December 31, 2016.

The Company’s effective tax rate for the years ended December 31, 2016 and 2015 differs from the statutory rate due to the following (expressed as a percentage of pre-tax income):

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	2016	2015
Federal statutory rate	35.0 %	35.0 %
State statutory rate	2.6 %	3.5 %
Change in rate	— %	(0.9)%
Permanent tax differences	(0.1)%	(0.3)%
Change in fair value of derivatives	0.9 %	(44.3)%
Deemed interest expense on debt discount	(5.1)%	(0.9)%
Loss on extinguishment of liabilities	(5.9)%	43.7 %
Other	(1.8)%	(0.3)%
Increase in valuation allowance	(25.6)%	(35.6)%
	— %	— %

NOTE 23. RELATED PARTY TRANSACTIONS

TFG Radiant owns less than 1% of the Company's outstanding common stock as of December 31, 2016.

On August 29, 2016, the Company entered into a note purchase agreement with Tertius Financial Group Pte. Ltd. (“Tertius" or "TFG”) for the private placement of $330,000 of the Company’s original issue discount notes (“Notes”). On August 29, 2016, the Company sold and issued $330,000 principal amount of Notes to Tertius in exchange for $300,000 of gross proceeds.

Tertius is an investment firm located in Singapore. Victor Lee, the Company’s President and CEO, is a managing director and 50% owner of Tertius. As of December 31, 2016, Tertius owned 13% of the Company's outstanding common stock.

The Notes will mature November 29, 2016. The Notes bear interest at a rate of 6% per annum. Principal and interest on the Notes are payable on November 29, 2016. The Notes are unsecured and not convertible into equity shares of the Company.

On December 6, 2016, the Company issued a new $600,000 original issue discount note to Tertius in exchange for (i) $200,000 of gross proceeds and (ii) cancellation of the existing outstanding $330,000 note. The outstanding balance of the note is $602,000 (including accrued and unpaid interest) with a discount of $60,000 as of December 31, 2016.

The new Tertius note (i) will mature on December 31, 2017 and (ii) will bear interest at a rate of 6% per annum. Principal and interest on the new Tertius note is payable at maturity. The new Tertius note is unsecured and is not convertible into equity shares of the Company.

NOTE 24. COMMITMENTS AND CONTINGENCIES

Investment Banking Settlement

On October 21, 2011, the Company was notified that a complaint claiming $3.0 million for an investment banking fee (the “Lawsuit”) was filed by Jefferies & Company, Inc. (“Jefferies”) against the Company in New York State Supreme Court in the County of New York. In December 2010, the Company and Jefferies entered into an engagement agreement (the “Fee Agreement”) pursuant to which Jefferies was hired to act as the Company's financial advisor in relation to certain potential transactions. In addition, Jefferies claimed an award for attorney's fees and prejudgment interest in the approximate amount of $1.2 million.

On April 16, 2014, the parties settled the lawsuit where the Company agreed to pay Jefferies a total of $2.0 million in equal installments over 40 months. The Company has paid $1,650,000 through December 31, 2016.

The Company records a liability in its financial statements for costs related to claims, including settlements and judgments, where the Company has assessed that a loss is probable and an amount can be reasonably estimated. The Company accrued $1.7 million, the net present value of the $2.0 million settlement, as of December 31, 2013. As of December 31, 2016, $0 was accrued for the long-term portion of this settlement and $339,000 was recorded as Accrued litigation settlement, current portion, in the Consolidated Balance Sheets.

Patent Infringement Settlement

On March 30, 2016, the Company was notified that iPowerUp, Inc. ("IP") had filed a complaint against the Company alleging that certain products infringed on two patents held by IP.

On November 3, 2016, the Company and IP entered into a settlement agreement whereas the Company will pay IP $20,000 and transfer 8,000 units of certain products to IP. The $20,000 is payable in 12 installments over a period of January 1, 2017 through October 15, 2017. The first two installments will in the amount of $5,000 followed by 10 installments in the amount of $1,000. The transfer 8,000 units will consist of 3 different product lines named in the complaint and are to be transfered in saleable retail condition to IP on or before December 5, 2016. Further, the Company will cease to offer the products mentioned in the compliant for sale in the United States. Upon completion of the aforementioned settlement terms both companies release all liability in regards to the complaint.
The Company records a liability in its financial statements for costs related to claims, including settlements and judgments, where the Company has assessed that a loss is probable and an amount can be reasonably estimated. As of December 31, 2016 the Company has recorded a short term liability in the amount of $20,000 in the Consolidated Balance Sheets for the costs related to the settlement. The Company has also recognized $133,000, the cost basis for the 8,000 units of inventory to be sent to IP, as an expense for the year ended December 31, 2016.

NOTE 25. RETIREMENT PLAN

On July 1, 2006, the Company adopted a qualified 401(k) plan which provides retirement benefits for all of its eligible employees. Under the plan, employees become eligible to participate at the first entry date, provided they are at least 21 years of age. The participants may elect through salary reduction to contribute up to ceilings established in the Internal Revenue Code. The Company will match 100% of the first six percent of employee contributions. In addition, the Company may make discretionary contributions to the Plan as determined by the Board of Directors. Employees are immediately vested in all salary reduction contributions. Rights to benefits provided by the Company's discretionary and matching contributions vest 100% after the first year of service for all employees hired before January 1, 2010. For employees hired after December 31, 2009, matching contributions vest over a three-year period, one-third per year. Payments for 401(k) matching totaled $338,230 and $333,636 for the years ended December 31, 2016 and 2015, respectively. Payments for 401(k) matching are recorded under "Research, development and manufacturing operations" expense and "Selling, general and administrative" expense in the Consolidated Statements of Operations.

NOTE 26. JOINT VENTURE

On December 28, 2013, the Company entered into a definitive agreement for the establishment of a joint venture with the Government of the Municipal City of Suqian in Jiangsu Province, China ("Suqian"). The purpose of the joint venture was to build a factory located in Suqian to manufacture our proprietary photovoltaic modules. The Suqian joint venture project had progressed more slowly than originally anticipated due to a number of factors including short supply of needed technical skills in the Suqian area and other factors affecting the long term viability of the partnership. Accordingly, on August 5, 2015, Suqian and the Company mutually agreed to terminate the joint venture project.
The parties liquidated the joint venture and distributed any available proceeds to the parties pro rata in accordance with the parties' contributions to the joint venture to date. The Company received approximately $191,000 in cash upon liquidation of the joint venture during the year ended December 31, 2015. The Company's contributions to the joint venture have consisted of (i) $320,000 in cash and (ii) certain technical and engineering consulting services. The Company does not anticipate having any material current or ongoing liabilities relating to the joint venture or its termination.

NOTE 27. SUBSEQUENT EVENTS

Offering of Unsecured Non-Convertible Notes

On January 10, 2017, the Company entered into a note agreement in the amount of $250,000 with one accredited investor. The note bears interest at 12% per annum and matures on July 10, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On January 16, 2017, the Company entered into a note agreement in the amount of $300,000 with one accredited investor. The note bears interest at 12% per annum and matures on July 16, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On January 17, 2017, the Company entered into a note agreement in the amount of $700,000 with one accredited investor. The note bears interest at 12% per annum and matures on July 17, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On February 7, 2017, the Company entered into a note agreement in the amount of $300,000 with one accredited investor. The note bears interest at 12% per annum and matures on August 7, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On February 13, 2017, the Company entered into a note agreement in the amount of $140,000 with one accredited investor. The note bears interest at 12% per annum and matures on August 13, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On February 27, 2017, the Company entered into a note agreement in the amount of $400,000 with one accredited investor. The note bears interest at 12% per annum and matures on August 27, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On March 13, 2017, the Company entered into a note agreement in the amount of $300,000 with one accredited investor. The note bears interest at 12% per annum and matures on September 13, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On March 24, 2017, the Company entered into a note agreement in the amount of $400,000 with one accredited investor. The note bears interest at 12% per annum and matures on September 24, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

On April 6, 2017, the Company entered into a note agreement in the amount of $103,000 with one accredited investor. The note bears interest at 10% per annum and matures on October 6, 2017. Principal and interest on this note are payable at maturity. This note is not convertible into equity shares of the Company and is unsecured.

Offering of Restricted Common Stock

On January 19, 2017, the Company issued 333,333,333 shares of unregistered common stock in a private placement to Tertius Financial Group ("TFG") pursuant to a Securities Purchase Agreement (the “SPA”).

Pursuant to the SPA, the Company issued the 333,333,333 shares to TFG in exchange for cancellation of its $600,000 promissory note (including accrued interest of approximately $4,340) that was issued by the Company on December 6, 2016. The SPA does not provide any registration rights for the shares issued to TFG.

The new ownership by TFG represents approximately 24% of the outstanding shares of common stock of the Company on a post transaction basis. There are no registration rights.

TFG is a Singapore based entity controlled and 50% owned by Ascent’s President & CEO, Victor Lee.

See Notes 9 and 23 for further information.

Offering of Series K Convertible Preferred Stock

On February 8, 2017, the Company, entered into a securities purchase agreement (“Series K SPA”) with a private investor (“Investor”), for the private placement of up to $20,000,000 of the Company’s newly designated Series K Convertible Preferred Stock (“Series K Preferred Stock”).

The Company will sell 1,000 shares of Series K Preferred Stock to Investor in exchange for $1,000,000 of gross proceeds on or before each of (i) February 24, 2017, (ii) March 27, 2017, (iii) April 27, 2017, (iv) May 27, 2017 and (v) June 27, 2017. The Company will sell 15,000 shares of Series K Preferred Stock to Investor in exchange for $15,000,000 of gross proceeds on or before July 27, 2017. The closing of this tranche is conditioned upon the Company and Investor agreeing to mutually satisfactory restrictions providing that Company's use of such $15,000,000 proceeds shall be limited to $1,000,000 per month. As of the issuance date, $450,000 in cash proceeds have been received from the private investor. The Company expects to receive the full funding amount outlined above during 2017 in various tranches.

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The Series K Preferred Stock ranks senior to the Company's common stock in respect to dividends and rights upon liquidation. The Series K Preferred Stock will not have voting rights and the holders of the Series K Preferred Stock will not be entitled to any fixed rate of dividends.

The shares of the Series K Preferred Stock will be convertible at the option of the holder into common stock at a fixed conversion price equal to $0.004. At no time may the Series K Preferred Stock be converted if the number of shares of common stock to be received by Investor pursuant to such conversion, when aggregated with all other shares of common stock then beneficially (or deemed beneficially) owned by Investor, would result in Investor beneficially owning more than 19.99% of all common stock then outstanding.

The Company is required to redeem for cash any outstanding shares of the Series K Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends (if any) thereon on the fifth anniversary of the date of the original issue of such shares.

If Investor defaults in closing on any tranche of the Series K Preferred Stock, the Company shall thereafter be entitled to redeem 50% of the then outstanding shares of Series K Preferred Stock at a price per preferred share equal to the $0.01.

Upon our liquidation, dissolution or winding up, holders of Series K Preferred Stock will be entitled to be paid out of our assets, prior to the holders of our common stock, an amount equal to $1,000 per share plus any accrued but unpaid dividends (if any) thereon.

Sale of Enerplex Intellectual Property Assets

Effective as of February 23, 2017, the Company sold substantially all of its intellectual property (consisting primarily of trademark rights) of its EnerPlex™ consumer brand name to Sun Pleasure Co. Ltd ("SPCL"). SPCL is a Hong Kong based privately held company which has been a primary supplier to, and contract manufacturer for, the Company in its EnerPlex consumer products business. The Company received consideration for the EnerPlex intellectual property assets of (i) a cash payment of $150,000, (ii) settlement of existing amounts due from the Company to SPCL of approximately $1.1 million, and (iii) $100,000 credit to the Company towards the purchase of SPCL products.

As a result of the transfer of the intellectual property related to the EnerPlex brand, the Company will no longer produce or sell EnerPlex-branded consumer products beyond the sell through of the Company's existing EnerPlex product inventories. The Company retains all intellectual property related to its solar photovoltaic ("PV") products and business. Following the EnerPlex transfer, the Company will focus on its PV products and business. The Company has agreed to supply PV products to SPCL for incorporation into EnerPlex branded products that may be designed, manufactured and marketed by SPCL in the future.

Increase of Authorized Common Stock

On March 16, 2017, the Company filed a Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company (the "Certificate of Amendment") with the Secretary of State of the State of Delaware to increase the number of authorized shares of Common Stock from 2,000,000,000 to 20,000,000,000 at a par value of $0.0001. The Certificate of Amendment was approved at the Company's Special Meeting of Stockholders March 16, 2017.

Exchange of Series J Preferred Stock for Common Stock

On March 24, 2017, the Company agreed to issue 71,636,432 shares of Common Stock to one accredited investor in exchange for the cancellation of 100 shares of outstanding Series J Preferred Stock (including accrued dividends) held by such investor. The canceled shares of the Series J Preferred Stock had an original issue price of $100,000.

On March 31, 2017, the Company agreed to issue 125,429,895 shares of Common Stock to one accredited investor in exchange for the cancellation of 125 shares of outstanding Series J Preferred Stock (including accrued dividends) held by such investor. The canceled shares of the Series J Preferred Stock had an original issue price of $125,000.

See Note 17 for further information on Series J Preferred Stock.

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INDEX TO EXHIBITS

Set forth below is a list of exhibits that are being filed or incorporated by reference into this Annual Report on Form 10-K:

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011)
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed February 11, 2014)
3.4	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated August 26, 2014. (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed September 2, 2014)
3.5	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated October 27, 2014 (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K dated October 28, 2014)
3.6	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated December 22, 2014. (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K dated December 23, 2014)
3.7	Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on February 17, 2009)
3.8	First Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.3 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009)
3.9	Second Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed January 25, 2013)
3.10	Third Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed December 18, 2015)
3.11	Certificate of Designations of Preferences, Rights and Limitations of Series F 7% Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed January 20, 2016)
3.12	Certificate of Designations of Preferences, Rights and Limitations of Series G 10% Preferred Stock (incorporated by reference to Exhibit 2 to Exhibits 10.5 and 10.6 to our Current Report on Form 8-K filed May 2, 2016).
3.13	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated May 26, 2016 (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed June 2, 2016)

3.14	Certificate of Designations of Preferences, Rights and Limitations of Series H 7% Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed June 9, 2016)
3.15	Certificate of Designations of Preferences, Rights and Limitations of Series I Preferred Stock (incorporated by reference to Exhibit 2 to Exhibit 10.1 to our Current Report on Form 8-K filed July 28, 2016)
3.16	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated September 15, 2016 (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed September 16, 2016)
3.17	Certificate of Designations of Preferences, Rights and Limitations of Series J Preferred Stock (incorporated by reference to Exhibit 2 to Exhibit 10.1 to our Current Report on Form 8-K filed September 23, 2016)

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Exhibit No.	Description
3.18	Certificate of Amendment to Series G Certificate of Designations (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed September 23, 2016)
3.19	Certificate of Amendment to Series F Certificate of Designations (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 11, 2016)
3.20	Certificate of Designations of Preferences, Rights and Limitations of Series J-1 Preferred Stock (incorporated by reference to Exhibit 2 to Exhibit 10.1 to our Current Report on Form 8-K filed October 20, 2016)
3.21	Certificate of Designations of Preferences, Rights and Limitations of Series K Preferred Stock (incorporated by reference to Exhibit 2 to Exhibit 10.1 to our Current Report on Form 8-K filed February 14, 2017)
3.22	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated March 16, 2017 (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed March 17, 2017)
4.1	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
4.2	Certificate of Designations of Series A Preferred Stock (filed as Exhibit 4.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739))
4.3	Form of Warrant (filed as Exhibit 4.3 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739))
4.4	Certificate of Designations of Series B-1 and B-2 Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 30, 2013)
4.5	Certificate of Designations of Series C Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed April 2, 2014)
4.6	Certificate of Designations of Preferences, Rights and Limitations of Series D Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed November 17, 2014)
4.7	Form of Warrant (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed February 20, 2015)
4.8	Certificate of Designations of Preferences, Rights and Limitations of Series D-1 Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed February 20, 2015)
4.9	Form of Warrant (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed February 20, 2015)
4.10	Certificate of Designations, Preferences and Rights of the Series E Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed on November 10, 2015)

10.1†	Fifth Amended and Restated 2005 Stock Option Plan (incorporated by reference to Annex A of our definitive proxy statement dated October 22, 2014).†
10.2†	Fifth Amended and Restated 2008 Restricted Stock Plan Stock Option Plan Plan (incorporated by reference to Annex B of our definitive proxy statement dated October 22, 2014).†
10.3	Securities Purchase Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.1 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))CTR
10.4	Invention and Trade Secret Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.2 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))CTR

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Exhibit No.	Description
10.5	Patent Application Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.3 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
10.6	License Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.4 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))CTR
10.7	Letter Agreement, dated November 23, 2005, among the Company, ITN Energy Systems, Inc. and the University of Delaware (incorporated by reference to Exhibit 10.16 to our Registration Statement on Form SB-2/A filed on May 26, 2006 (Reg. No. 333-131216))
10.8	License Agreement, dated November 21, 2006, between the Company and UD Technology Corporation (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on November 29, 2006)CTR
10.9	Novation Agreement, dated January 1, 2007, among the Company, ITN Energy Systems, Inc. and the United States Government (incorporated by reference to Exhibit 10.23 to our Annual Report on Form 10-KSB for the year ended December 31, 2006)
10.10	Construction Loan Agreement, dated February 8, 2008, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.37 to our Annual Report on Form 10-K for the year ended December 31, 2007)
10.11	Promissory Note, dated February 8, 2008, issued to the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.38 to our Annual Report on Form 10-K for the year ended December 31, 2007)
10.12	Loan Modification Agreement, dated January 29, 2009, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.52 to our Annual Report on Form 10-K for the year ended December 31, 2008)
10.13	Securities Purchase Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on August 15, 2011)
10.14	Stock Purchase Agreement, dated April 26, 2013, between the Company and Foo Joo Loong (filed as Exhibit 10.1 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739))
10.15	Securities Purchase Agreement, dated June 17, 2013, between the Company and Seng Wei Seow (filed as Exhibit 10.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739))
10.16	Registration Rights Agreement dated June 17, 2013 between the Company and Seng Wei Seow (filed as exhibit 10.2 to our Current Report on Form 8-K filed June 21, 2013)
10.17	First Amendment dated August 7, 2013 to Securities Purchase Agreement and Registration Rights Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 7,

	2013)
10.18	Second Amendment dated August 13, 2013 to Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 15, 2013)
10.19†	Executive Employment Agreement, dated April 4, 2014, between the Company and Victor Lee (filed as Exhibit 10.1 to our Current Report on Form 8-K filed on April 9, 2014) †
10.20	Settlement Agreement and Release dated April 15, 2014 between the Company and Jefferies LLC (filed as Exhibit 10.1 to our Current Report on Form 8-K filed on April 22, 2014)
10.21	Stock Purchase Agreement, dated July 29, 2014, between the Company and SHTARD Enterprise Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K July 31, 2014)
10.22	Securities Purchase Agreement, dated August 29, 2014, among the Company, Seng Wei Seow and TFG Radiant Investment Group Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 4, 2014)

Exhibit No.	Description
10.23	Securities Purchase Agreement, dated February 19, 2015, between the Company and the Investor named therein(incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 20, 2015)
10.24	Securities Purchase Agreement, dated April 6, 2015, between the Company and TFG Radiant Investment Group Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 7, 2015)
10.25	Securities Purchase Agreement, dated June 10, 2015, between the Company and TFG Radiant Investment Group Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed June 15, 2015)
10.26	Amendment and Exchange Agreement, dated July 22, 2015 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed July 23, 2015)
10.27	Right to Receive Common Stock dated July 22, 2015 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed July 23, 2015)
10.28	Confidential Settlement Agreement and General Release, dated as of May 13, 2015, between the Company and William M. Gregorak (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q filed August 14, 2015)
10.29	Cancellation and Waiver Agreement dated September 4, 2015 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 8, 2015)
10.30	Note Purchase Agreement dated September 4, 2015 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 8, 2015)
10.31	Security Agreement dated September 4, 2015 (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed September 8, 2015)
10.32	Secured Convertible Promissory Note for $1,000,000 dated September 4, 2015 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed September 8, 2015)
10.33	Secured Convertible Promissory Note for $500,000 dated September 4, 2015 (incorporated by reference to Exhibit 10.5 to our Current Report on Form 8-K filed September 8, 2015)
10.34	Joinder to Note Purchase Agreement dated September 28, 2015 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 28, 2015)
10.35	Secured Convertible Promissory Note for $500,000 dated September 28, 2015 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 28, 2015)
10.36	Amendment No. 1 dated October 8, 2015 to Cancellation and Waiver Agreement dated September 4, 2015 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed October 9, 2015)
10.37	

	Series E Securities Purchase Agreement, dated November 4, 2015, between the Company and Redwood Management, LLC Ltd (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed November 10, 2015)
10.38	Series E Registration Rights Agreement, dated November 4, 2015, between the Company and Redwood Management, LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed November 10, 2015)
10.39	Equity Line Purchase Agreement dated November 10, 2015 (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed November 10, 2015)
10.40	Equity Line Registration Rights Agreement dated November 10, 2015 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed November 10, 2015)
10.41	Amendment No. 2 dated November 22, 2015 to Cancellation and Waiver Agreement dated September 4, 2015 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed November 23, 2015)
10.42†	Sixth Amended and Restated 2005 Stock Option Plan (incorporated by reference to Annex C of our definitive proxy statement dated May 1, 2015).†

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Exhibit No.	Description
10.43†	Sixth Amended and Restated 2008 Restricted Stock Plan Stock Option Plan Plan (incorporated by reference to Annex B of our definitive proxy statement dated May 1, 2015).†
10.44	Series F Securities Purchase Agreement, dated January 19, 2016, between the Company and Redwood Management, LLC Ltd (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 20, 2016)
10.45	Exchange Agreement dated April 29, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed May 2, 2016)
10.46	Exchange Agreement dated April 29, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed May 2, 2016).
10.47	Exchange Agreement dated April 29, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed May 2, 2016)
10.48	Right to Receive Common Stock dated April 29, 2016 (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed May 2, 2016)
10.49	Right to Receive Common Stock dated April 29, 2016 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed May 2, 2016)
10.50	Series G Securities Purchase Agreement dated April 29, 2016 (incorporated by reference to Exhibit 10.5 to our Current Report on Form 8-K filed May 2, 2016
10.51	Series G Securities Purchase Agreement dated April 29, 2016 (incorporated by reference to Exhibit 10.6 to our Current Report on Form 8-K filed May 2, 2016
10.52	Series H Securities Purchase Agreement dated June 9, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed June 9, 2016)
10.53	Series H Registration Rights Agreement dated June 9, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed June 9, 2016)
10.54	Secured Note Securities Purchase Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.9 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.55	Form of Secured Note dated July 13, 2016 (incorporated by reference to Exhibit 10.10 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.56	Security Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.11 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.57	Exchange Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.12 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.58	

	Registration Rights Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.13 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.59†	Seventh Amended and Restated 2005 Stock Option Plan (incorporated by reference to Annex C of our definitive proxy statement dated April 22, 2016)†
10.60†	Seventh Amended and Restated 2008 Restricted Stock Plan Stock Option Plan Plan (incorporated by reference to Annex B of our definitive proxy statement dated April 22, 2016)†
10.61	Secured Note Securities Purchase Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.9 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.62	Form of Secured Note dated July 13, 2016 (incorporated by reference to Exhibit 10.10 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.63	Security Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.11 to our Quarterly Report on Form 10-Q filed August 15, 2016)

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Exhibit No.	Description
10.64	Exchange Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.12 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.65	Registration Rights Agreement dated July 13, 2016 (incorporated by reference to Exhibit 10.13 to our Quarterly Report on Form 10-Q filed August 15, 2016)
10.66	Series I Securities Purchase Agreement dated July 26, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed July 28, 2016)
10.67	Note Purchase Agreement dated August 29, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 1, 2016)
10.68	Note dated August 29, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 1, 2016)
10.69	Form of 10% Convertible Note (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 14, 2016)
10.70	Exchange Agreement dated September 13, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 14, 2016)
10.71	Series J Securities Purchase Agreement dated September 19, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 23, 2016)
10.72	Securities Purchase Agreement for Notes dated October 5, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed October 11, 2016)
10.73	Note due December 5, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed October 11, 2016)
10.74	Note due January 3, 2017 (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed October 11, 2016)
10.75	Note due February 3, 2017 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed October 11, 2016)
10.76	Exchange Agreement dated October 5, 2016 (incorporated by reference to Exhibit 10.5 to our Current Report on Form 8-K filed October 11, 2016)
10.77	Series J-1 Securities Purchase Agreement dated October 14, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed October 20, 2016)
10.78	Note dated December 2, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed December 8, 2016)
10.79	Note dated December 6, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed December 8, 2016)

10.80	Note dated December 13, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed December 19, 2016)
10.81	Note dated December 30, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 6, 2017)
10.82	Note dated January 10, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 17, 2017)
10.83	$300,000 Note dated January 16, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 20, 2017)
10.84	$700,000 Note dated January 17, 2017 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed January 20, 2017)
10.85	Securities Purchase Agreement dated January 19, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 24, 2017)
10.86	Note dated February 7, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 9, 2017)

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Exhibit No.	Description
10.87	Series K Securities Purchase Agreement dated February 8, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 14, 2017)
10.88	Note dated February 13, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 17, 2017)
10.89	$400,000 Note dated February 27, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed March1, 2017)
10.90	Intellectual Property Disposal Agreement dated as of January 25, 2017 and effective February 23, 2017 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed March 1, 2017)
10.91	Note dated March 13, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed March 17, 2017)
10.92	Note dated March 24, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed March 29, 2017)
10.93	Note dated April 6, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 7, 2017)
23.1	Consent of Hein & Associates LLP*
31.1	Chief Executive Officer Certification pursuant to section 302 of the Sarbanes-Oxley Act of 2002*
31.2	Chief Financial Officer Certification pursuant to section 302 of the Sarbanes-Oxley Act of 2002*
32.1	Chief Executive Officer Certification pursuant to section 906 of the Sarbanes-Oxley Act of 2002*
32.2	Chief Financial Officer Certification pursuant to section 906 of the Sarbanes-Oxley Act of 2002*
101.INS	XBRL Instance Document*
101.SCH	XBRL Taxonomy Extension Schema Document*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document*
101.LAB	XBRL Taxonomy Extension Label Linkbase Document*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document*

*	Filed herewith
CTR	Portions of this exhibit have been omitted pursuant to a request for confidential treatment.

† Denotes management contract or compensatory plan or arrangement.