UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2017

or

☐ 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	OTCBB 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 ☐ No ☒

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 ☐ No ☒

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 ☒ No ☐

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). ☒ Yes ☐ No

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	☐		Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a smaller reporting company)	Smaller reporting company	☒
			Emerging growth company	☐

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. ☐

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

As of June 30, 2017 , the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's common stock held by non-affiliates was approximately $2.9 million based upon the last reported sale price of the registrant's common stock on that date as reported by OTCBB Market, operated by OTC Markets Group Inc.

As of March 26, 2018 , there were 12,738,084,718 shares of our common stock issued and outstanding.

ASCENT SOLAR TECHNOLOGIES, INC.
Form 10-K Annual Report
for the Fiscal Year ended December 31, 2017
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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 intended 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 OTCBB 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.

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 followed by laser patterning 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.

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. 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 2013, 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; 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.

Beginning in 2013, we aggressively pursued new distribution channels for the EnerPlex brand; these activities 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 were carried in all of Fry's 34 superstores across 9 states.

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 with a 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. 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 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. EnerPlex launched the Generatr S100 and select other products exclusively with EVINE, EnerPlex also launched the Generatr 1200 launched exclusively with EVINE for a limited period. Also during 2015, EnerPlex expanded its relationship with The Cellular Connection to include over 450 Verizon Wireless Premium Retail Stores; launched its products with two world recognized retailers; The Sports Authority and Cabela's; and launched its products with GovX; the premier online shopping destination for Military, Law Enforcement and Government agencies. Internationally, EnerPlex products became available in the United Kingdom via the brand's launch with 172 Maplin's stores throughout the country.

In 2016, EnerPlex launched the new emergency sales vertical, partnering with Emergency Preparedness eCommerce leader, Emergency Essentials, and we announced new breakthroughs in the Company's line of high-voltage solar products, designed specifically for high-altitude and space markets. Also during the first quarter of 2016, the Company announced the launch of select products on the GSA Advantage website; allowing 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 January 2017, Ascent was awarded a contract to supply high-voltage SuperLight thin-film CIGS PV blankets. These 50W, fully laminated, flexible blankets were manufactured using a new process that was optimized for high performance in near-space conditions at elevated temperatures, and are custom designed for easy modular integration into series and parallel configurations to achieve the desired voltage and current required for such application.

In February 2017 Ascent announced the discontinuation of our EnerPlex consumer business by disposing of the EnerPlex brand, and related intellectual properties and trademarks, to our battery product supplier, Sun Pleasure Co. Limited ("SPCL"). This transaction was completed in an effort to better allocate our resources and to continue to focus on our core strength in the high-value specialty PV market. Following the transfer, Ascent will no longer be producing or selling 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.

During the third quarter of 2017, Ascent Solar was selected by Energizer to develop and supply solar panels for their PowerKeep line of solar products, and in November 2017, Ascent introduced the next generation of our USB-based portable power systems with the XD™ series. The first product introduced was the XD-12 which, like previous products, is a folding, lightweight, easily stowable, PV system with USB power regulation. Unique to this generation of PV portable power is more PV power (12 Watts) and a 2.0 Amp smart USB output to enable the XD-12 to charge most smartphones, tablets, and USB-enabled devices as fast as a wall outlet. The enhanced smart USB circuit determines the maximum power the device is able to receive, and ensures the best possible charging performance directly from the sun.

Also in 2017, for a space customer, Ascent manufactured a new micro-module, approximately 12.8mm x 50mm (0.5in x 2.0in) in size that is ideal for both laboratory-scale environmental testing, and for subsequent integration into flight experiments.

In February 2018, the Company introduced the second product in our XD™ series. Delivering up to 48 Watts of solar power, the durable and compact Ascent XD-48 Solar Charger is the ideal solution for charging many portable electronics and off-grid power systems. The XD-48's versatility allows it to charge both military and consumer electronics directly from the sun wherever needed. Like the XD-12, the XD-48 has a compact and portable design, and its rugged, weather-resistant construction withstands shocks, drops, damage and even minor punctures to power through the harshest conditions.

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 little to 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 ("TFG"), which at the time was the largest shareholder of Ascent Solar. TFG held approximately 3% of the total outstanding shares as of December 31, 2017 .

Currently, we are producing OEM and consumer oriented products focusing on charging devices powered 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.

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.
- *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, our ability to integrate our PV modules into portable packages and cases offers 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.

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, to our battery product supplier, in an effort to better allocate its resources and to continue to focus on its core strength in the high-value specialty PV market. Ascent is no longer producing or selling Enerplex-branded consumer products and is focusing on its photovoltaic business. Ascent will continue to supply solar PV products for the EnerPlex™ products, thereby supporting their continued growth with Ascent's proprietary and award-winning thin-film solar technologies and products.

Ascent's strategic marketing efforts in 2018 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 in 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 and Bye Aerospace, we announced the successful first flight of a production version of the Silent Falcon™ Unmanned Aircraft Systems, powered by Ascent’s ultra-lightweight, flexible PV modules. In July 2014, our ultra-lightweight, flexible PV modules were selected by Vanguard Space Technologies for their NASA Small Business Innovative Research 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 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 subjected Ascent's PV to radiation and mechanical testing.

In 2017 we continued to solidify our position in the space and near-space markets; these challenging requirements and environments allow for the full utilization of the unique nature and advantages of our lightweight, flexible monolithically-integrated CIGS PV. Through continued work in the PV-powered drone field, Ascent made significant strides in providing PV power to high-altitude airships and next-generation space applications.

In January 2017, Ascent was awarded a contract to supply high-voltage SuperLight thin-film CIGS PV blankets. These 50W, fully laminated, flexible blankets were manufactured using a new process that was optimized for high performance in near-space conditions at elevated temperatures, and are custom designed for easy modular integration into series and parallel configurations to achieve the desired voltage and current required for such application.

In November 2017, Ascent fulfilled a third order from JAXA for custom PV products designed specifically for their upcoming solar sail deployment demonstration project. This project was comprised of small area test cells and large, 19.5cm x 30cm monolithically-integrated modules, all on a very thin, 25-micron (0.001 inch) plastic substrate which is half the thickness of Ascent’s production substrate for a standard product. In space, near-space, and drone applications, the PV substrate accounts for a significant portion of the product’s overall mass; the PV construction on the new 25-micron substrates represents a major breakthrough for these markets. JAXA placed this order after achieving the desired experimental results from the previous shipments and subsequent electrical, mechanical and environmental testing. The 19.5cm x 30cm module is a custom design to match the anticipated deployment mechanism and PV layout for the final Jovian spacecraft.

Also in 2017, Ascent fulfilled a new order, with another repeat space customer, to manufacture a new micro-module, approximately 12.8mm x 50mm (0.5in x 2.0in) in size that is ideal for both laboratory-scale environmental testing, and for subsequent integration into flight experiments.

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.

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, such as the XD-12 and the XD-48, 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 through partnerships with top systems providers, by providing Government Service Administration Letters of Supply, and through direct sales and other blanket purchase agreements with the government.

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.

During the third quarter of 2017, Ascent Solar demonstrated its breadth of capabilities at the US Special Operations Command ("SOCOM") exclusive Technical Experimentation ("TE") 17-3 Event in Washington, DC. SOCOM is tasked, by the Department of Defense ("DoD"), with providing Special Operations Forces ("SOF") with the latest war fighting technology available; in support of this effort, SOCOM sponsors an annual TE event. In July of 2017 SOCOM requested the participation of companies who have proficiency in the areas of Satellite Communication ("SATCOM") and Unattended Ground Sensors ("UGS") for a TE event. Over 30 companies were selected to participate, and Ascent Solar was one of only 2 companies selected to participate who didn’t actually make SATCOM or UGS products. Ascent Solar was selected on the basis and recognition that one of the primary issues facing the DoD today is the ability to power all of their war fighting technology. Ascent’s diverse line-up of rugged and lightweight portable solar products offers the potential for the DoD to generate unattended ongoing power, which could save lives and increase the efficiency of the war fighting effort. Ascent was honored to be chosen to participate, and the assessed score we received is indicative of a capability that has “high potential for SOF use with few limitations”.

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.

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 2016, crystalline silicon PV technology represented over 90% of global market revenue and 93% of global production, with the balance captured by thin film. Approximately half of thin film production is CdTe production, with the other half being split between CIGS and a-Si.

We believe that our modules offer unique advantages. Their flexibility, low areal density (mass per unit area), and high specific power (power per unit mass) enable use on weight-sensitive applications, such as portable power, conformal aircraft surfaces, high altitude long endurance (HALE) fixed wing and lighter than air (LTA) vehicles, and space applications that are unsuitable for glass-based modules. Innovative product design, customer focused development , and our rapid prototyping capability 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.

We define the consumer and portable power space as comprising solar powered solutions in the sub-single watt range (i.e. solar power for remote sensors) 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 P3 solar, PowerFilm, Trony, and more recently Alta Devices. 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 2017 and 2016 we incurred approximately $4.8 million and $6.6 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. US Patent No. 8,426,725 entitled "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (issued April 23, 2013)
7. 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)
8. US Patent No. D697,502 entitled "Mobile Electronic Device Case" (issued January 14, 2014)
9. 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)
10. US Patent No. 8,716,591 entitled "Array of Monolithically Integrated Thin Film PhotoVoltaic Cells and Associated Methods" (issued May 6, 2014)
11. ECD No. 001429773-0001 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
12. ECD No. 001429773-0002 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
13. ECD No. 001429773-0003 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
14. ECD No. 001429773-0004 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
15. ECD No. 001429773-0005 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
16. ECD No. 001429773-0006 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
17. ECD No. 001429773-0007 entitled "Mobile Handheld Electronic Device Case" (issued February 6, 2015)
18. ECD No. 002732123-0001 entitled "Portable Battery Charging Device" (issued July 7, 2015)
19. ECD No. 002732123-0002 entitled "Portable Battery Charging Device" (issued July 7, 2015)
20. ECD No. 002732123-0003 entitled "Portable Battery Charging Device" (issued July 7, 2015)
21. ECD No. 002735159-0001 entitled "Portable Energy Storage And Distribution Device" (issued July 10, 2015)
22. ECD No. 002735159-0002 entitled "Portable Energy Storage And Distribution Device" (issued July 10, 2015)
23. ECD No. 002735159-0003 entitled "Portable Energy Storage And Distribution Device" (issued July 10, 2015)
24. ECD No. 002735159-0004 entitled "Portable Energy Storage And Distribution Device" (issued July 10, 2015)

25. US Patent 9,147,783 entitled "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (issued September 29, 2015)
26. KR Patent No. 30. 0860220 entitled "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (issued October 13, 2015)
27. KR Patent 10-1561453 entitled "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (issued October 13, 2015)
28. US Patent No. 9,209,322 entitled "Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates" (issued December 8, 2015)
29. US Patent No. 9,219,179 entitled "Multilayer Thin-Film Back Contact System For Flexible Photovoltaic Devices On Polymer Substrates" (issued December 22, 2015)
30. CN Patent No. ZL 201530237203.8 entitled "Photovoltaic-Based Fully Integrated Portable Power System" (issued February 10, 2016)
31. TW Patent No. I526630 entitled "Subtractive Hinge and Associated Methods" (issued March 21, 2016)
32. US Patent No. 9,349,905 entitled "Hybrid Multi-Junction Photovoltaic Cells And Associated Methods" (issued May 24, 2016)
33. TW Patent No. I536592 entitled "Photovoltaic Assembly and Associated Methods" (issued June 1, 2016)
34. KR Patent No. 30-0860220 entitled "Photovoltaic-Based Fully Integrated Portable Equipment For Control of Electric Power" (issued June 16, 2016)
35. CN Patent No. ZL 201180067131.6 entitled "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (issued August 10, 2016)
36. CN Patent No. ZL201380012566.X entitled "Subtractive Hinge And Associated Methods" (issued August 24, 2016)
37. US Patent No. 9538671 entitled System For Housing And Powering A Battery-Operated Device And Associated Methods (issued January 3, 2017)
38. US Patent No. D781,228 entitled Pocket-Sized Photovoltaic-Based Fully Integrated Portable Power System (issued March 14, 2017)
39. US Patent No. 9601650 entitled Machine And Process For Continuous, Sequential, Deposition Of Semiconductor Solar Absorbers Having Variable Semiconductor Composition Deposited In Multiple Sublayers (issued March 21, 2017)
40. US Patent No. 9634175 entitled Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates (issued April 25, 2017)
41. US Patent No. 9640706 entitled Hybrid Multi-Junction Photovoltaic Cells And Associated Methods (issued May 2, 2017)
42. US Patent No. 9640692 entitled Flexible Photovoltaic Array with Integrated Wiring and Control Circuitry, and Associated Methods (issued May 2, 2017)
43. US Patent No. 9653635 entitled Flexible High-Voltage Adaptable Current Photovoltaic Modules and Associated Methods (issued May 16, 2017)
44. Tawian Patent No. I583810 entitled Systems And Methods For Thermally Managing High-Temperature Processes On Temperature Sensitive Substrates (issued May 21, 2017)
45. Switzerland Patent No. 2742535 entitled Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates (issued July 26, 2017)
46. EPC Patent No. 2742535 entitled Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates (issued July 26, 2017)
47. France Patent No. 2742535 entitled Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates (issued July 26, 2017)
48. Great Britain Patent No. 2742535 entitled Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates (issued July 26, 2017)
49. Germany Patent No. 602012035034.2 entitled Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates (issued July 26, 2017)
50. Taiwan Patent No. I595674 entitled Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates (issued August 11, 2017)
51. US Patent No. 9780242 entitled "Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates" (issued October 3, 2017)

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)
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)
41. “Hybrid Multi-Junction Photovoltaic Cells And Associated Methods” (US 15/137,696) (filed April 25, 2016)
42. “Machine And Process For Continuous, Sequential, Deposition Of Semiconductor Solar Absorbers Having Variable Semiconductor Composition Deposited In Multiple Sublayers” (US 15/584,241) (filed May 2, 2017)
43. “Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates” (GB 12759843.1) (Filed August 10, 2012)
44. “Multilayer Thin-Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates” (WO PCT/US16/58933) (Filed October 26, 2016)
45. “Subtractive Hinge and Associated Methods” (US 15/673,283) (Filed August 9, 2017)

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, Transforming Everyday Life, and Solar Power Everywhere.

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.

Employees

As of December 31, 2017 , we had 71 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 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;
- 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 OTCBB 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 $19 million for the year ended December 31, 2017 and reported an accumulated deficit of $402 million as of December 31, 2017 . 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.

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. 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, 2017 , our cash used in operations was $12.6 million . At December 31, 2017 , we had cash and equivalents of $90,000 .

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 2018 overall. The Company will need to raise additional capital in order to continue our current level of operations throughout 2018.

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 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.

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 December 31, 2017 , Tertius Financial Group Pte Ltd ("Tertius") owned approximately 3% 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.

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.

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.

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. At 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.

As of December 31, 2017, we concluded that the above mentioned material weakness had been remedied and our internal control over financial reporting was no longer deficient. However, there can be no assurances 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 OTCBB. 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.

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 OTCBB 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 OTCBB 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, 2017 , our common stock traded below $0.01. 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.

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 and the OTCQB Venture Market. Our inability to maintain our prior listings on NASDAQ and OTCQB 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. On May 20, 2017 our common stock was delisted from the OTCQB Venture Market and began trading on the OTCBB.

Upon such delisting from NASDAQ, 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 OTCBB or any other alternative exchanges or markets.

The delisting of our common stock from the NASDAQ Capital Market and the OTCQB Venture Market 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 the NASDAQ Capital Market and the OTCQB Venture Market 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.

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

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 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 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, 2017 , the settlement had been redeemed in full and there was no remaining accrued litigation settlement recorded as a current liability in the Consolidated Balance Sheet.

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. On May 20, 2017 our common stock was delisted from the OTCQB Venture Market and began trading on the OTCBB. 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.

Price Range of Common Stock

	High	Low
Fiscal 2016		
First Quarter	$ 52.0000	$ 18.4000
Second Quarter	$ 1.3980	$ 0.0520
Third Quarter	$ 0.0850	$ 0.0130
Fourth Quarter	$ 0.0243	$ 0.0025
Fiscal 2017		
First Quarter	$ 0.0078	$ 0.0014
Second Quarter	$ 0.0023	$ 0.0003
Third Quarter	$ 0.0026	$ 0.0004
Fourth Quarter	$ 0.0018	$ 0.0007

Holders

As of December 31, 2017 , the number of record holders of our common stock was 39. 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, 2017 and 2016 , 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, 2017 , we generated $642 thousand of revenue. Our revenue from product sales accounted for 100% of total revenue as there was no revenue generated from government research and development contracts during the year. As of December 31, 2017 , we had an accumulated deficit of $402.5 million .

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.

Beginning 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 were carried in all of Fry's 34 superstores across 9 states.

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 with a 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. 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 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. EnerPlex launched the Generatr S100 and select other products exclusively with EVINE, EnerPlex also launched the Generatr 1200 launched exclusively with EVINE for a limited period. Also during 2015, EnerPlex expanded its relationship with The Cellular Connection to include over 450 Verizon Wireless Premium Retail Stores; launched its products with two world recognized retailers; The Sports Authority and Cabela's; and launched its products with GovX; the premier online shopping destination for Military, Law Enforcement and Government agencies. Internationally, EnerPlex products became available in the United Kingdom via the brand's launch with 172 Maplin's stores throughout the country.

In 2016, EnerPlex launched the new emergency sales vertical, partnering with Emergency Preparedness eCommerce leader, Emergency Essentials, and we announced new breakthroughs in the Company's line of high-voltage solar products, designed specifically for high-altitude and space markets. Also during the first quarter of 2016, the Company announced the launch of select products on the GSA Advantage website; allowing 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 January 2017, Ascent was awarded a contract to supply high-voltage SuperLight thin-film CIGS PV blankets. These 50W, fully laminated, flexible blankets were manufactured using a new process that was optimized for high performance in near-space conditions at elevated temperatures, and are custom designed for easy modular integration into series and parallel configurations to achieve the desired voltage and current required for such application.

In February 2017 Ascent announced the discontinuation of our EnerPlex consumer business by disposing of the EnerPlex brand, and related intellectual properties and trademarks, to our battery product supplier, Sun Pleasure Co. Limited ("SPCL"). This transaction was completed in an effort to better allocate our resources and to continue to focus on our core strength in the high-value specialty PV market. Following the transfer, Ascent will no longer be producing or selling 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.

During the third quarter of 2017, Ascent Solar was selected by Energizer to develop and supply solar panels for their PowerKeep line of solar products, and in November 2017, Ascent introduced the next generation of our USB-based portable power systems with the XD™ series. The first product to be introduced was the XD-12 which, like previous products, is a folding, lightweight, easily stowable, PV system with USB power regulation. Unique to this generation of PV portable power is more PV power (12 Watts) and a 2.0 Amp smart USB output to enable the XD-12 to charge most smartphones, tablets, and USB-enabled devices as fast as a wall outlet. The enhanced smart USB circuit determines the maximum power the device is able to receive, and ensures the best possible charging performance directly from the sun.

Also in 2017, for a space customer, Ascent manufactured a new micro-module, approximately 12.8mm x 50mm (0.5in x 2.0in) in size that is ideal for both laboratory-scale environmental testing, and for subsequent integration into flight experiments.

In February 2018, the Company introduced the second product in our XD™ series. Delivering up to 48 Watts of solar power, the durable and compact Ascent XD-48 Solar Charger is the ideal solution for charging many portable electronics and off-grid power systems. The XD-48's versatility allows it to charge both military and consumer electronics directly from the sun wherever needed. Like the XD-12, the XD-48 has a compact and portable design, and its rugged, weather-resistant construction withstands shocks, drops, damage and even minor punctures to power through the harshest conditions.

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

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 OEM and consumer oriented products focusing on charging devices powered 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.

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 ("TFG").

TFG is a Singapore based entity controlled and 50% owned by Ascent’s President & CEO, Victor Lee, and owns approximately 3% of the Company's outstanding shares at December 31, 2017 .

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 29, 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.

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 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. Following the transaction, the outstanding balance of the new note was $602,000 (including accrued and unpaid interest) with a discount of $60,000 .

On January 19, 2017 , the Company issued 333,333,333 shares of unregistered common stock in a private placement to 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.

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, 2017 and December 31, 2016 , and the results of operations for the years ended December 31, 2017 and 2016 . 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.

Significant Accounting Policies

Related Party Transactions: One of the Company's named shareholders 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. Please refer to Note 11 for further information on transactions with Tertius Financial Group.

Revenue Recognition:

Product revenue - We generated product revenues of $642 thousand for the year ended December 31, 2017 . 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. There was no revenue associated with government contracts recorded in 2017 and approximately $48,000 recorded in 2016.

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. Please refer to Notes 16, 17, 18, 19, 21, 21, and 22 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. Please refer to Notes 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21 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 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. 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.

Due to the sale of the EnerPlex brand and the re-purposing of our work-in-process inventory, we are unable to estimate the recoverability of all of our work-in process inventory values, resulting in a lower-cost-to-market analysis and reserve for impairment. An expense of approximately $363,000 was recorded to inventory impairment costs for the year ended December 31, 2017 , as a result of the lower of cost or market analysis. There were no lower of cost or market adjustments during the year ended December 31, 2016 .

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, 2017 and 2016 , we did not incur impairments of our manufacturing facilities and equipment.

Research, Development and Manufacturing Operations Costs: Research, development and manufacturing operations expenses were $4.8 million and $6.6 million for the years ended December 31, 2017 and 2016 , 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, reduced by 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 has evaluated ASU 2014-09, and does not believe it will have a material effect on the Company's 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 continues to evaluate the impact, 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 implementation of ASU 2016-09 did not have a material effect on the Company's consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, Compensation - Stock Compensation (Topic 718). ASU 2017-09 provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. ASU 2017-09 is effective for interim periods and fiscal years beginning after December 15, 2017, and early application is permitted. The Company continues to evaluate the impact, if any, that the adoption of this guidance will have on its consolidated financial statements, but does not expect the effect, if any, to be material.

In July 2017, the FASB issued ASU No. 2017-11 Part I, Earnings Per Share (Topic 260), Distinguishing Liabilities from *Equity (Topic 480), Derivatives and Hedging (Topic 815)* . ASU 2017-11 Part I changes the classification analysis of certain equity linked financial instruments with down round features. ASU 2017-11 Part I is effective, for public business entities, 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.

Results of Operations

Comparison of the Years Ended December 31, 2017 and 2016

Revenues. Our revenues were $642,000 for the year ended December 31, 2017 compared to $1,747,000 for the year ended December 31, 2016 , a decrease of $1,105,000 . The following factors contributed to this decrease:

1. Net product revenues were $642,000 for the year ended December 31, 2017 compared to $1,700,000 for the year ended December 31, 2016 , a decrease of $1,058,000 . The decrease in product sales is largely the result of our sale of the Enerplex brand of products.

2. The Company did not have any revenues attributable to government research and development contracts during the year ended December 31, 2017 , compared to $48,000 during the year ended December 31, 2016 .

Cost of revenues. Our Cost of revenues for the year ended December 31, 2017 was $2,815,000 compared to $5,844,000 for the year ended December 31, 2016 , a decrease of $3,029,000 . The decrease in cost of revenues is mainly due to the decrease in materials and labor costs as a result of a decrease in production for the year ended December 31, 2017 compared to 2016 . Cost of revenues for the year ended December 31, 2017 is comprised of materials and freight of $883,000 , direct labor of $49,000 , and overhead of $1,883,000 . 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. We are currently pursuing high-value PV markets.

Research, development and manufacturing operations costs. Research, development and manufacturing operations costs were $4,821,000 for the year ended December 31, 2017 compared to $6,627,000 for the year ended December 31, 2016 , a decrease of $1,806,000 . 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, 2017 :

1. Personnel and facility related expenses decreased approximately $1,675,000 as compared to the year ended December 31, 2016 . The decrease in personnel related costs was primarily due to a reduction in headcount.
2. Consulting and contract services decreased approximately $13,000 compared to the year ended December 31, 2016 . The year to year decrease in expense was primarily attributed to the reduced number of contractors during the year ended December 31, 2017 .
3. Materials and equipment related expenses decreased approximately $119,000 compared to the year ended December 31, 2016 . The decrease in expense was primarily due to the reserve against WIP inventory as a result of our transition from the retail consumer electronics market to high-value PV markets.

Inventory impairment costs. Due to the sale of the EnerPlex brand and the re-purposing of our work-in-process inventory, we are unable to estimate the recoverability of all of our work-in process inventory values, resulting in a lower-cost-to-market analysis and reserve for impairment. An expense of approximately $363,000 was recorded to inventory impairment costs for the year ended December 31, 2017 .

Selling, general and administrative. Selling, general and administrative expenses were $5,598,000 for the year ended December 31, 2017 , compared to $10,305,000 for the year ended December 31, 2016 , a decrease of $4,707,000 . The following factors contributed to the decrease in selling, general, and administrative expenses during 2017 :

1. Personnel and facility related costs decreased approximately $1,960,000 during the year ended December 31, 2017 , compared to the year ended December 31, 2016 . The overall decrease in personnel related costs was primarily due a lower headcount for the year ended December 31, 2017 .
2. Marketing and related expenses decreased approximately $1,975,000 during the year ended December 31, 2017 , compared to the year ended December 31, 2016 . The decrease in Marketing and related expenses is due to reduced marketing, advertising, and promotional activities during the year ended December 31, 2017 , which is the direct result of changing our main focus from the retail consumer electronics market to higher-value PV markets.
3. Consulting and contract services decreased approximately $252,000 during the year ended December 31, 2017 , compared to the year ended December 31, 2016 . The decrease was a result of decreased consulting expenses related to our financing efforts.
4. Legal expenses decreased approximately $487,000 during the year ended December 31, 2017 , compared to the year ended December 31, 2016 . The primary reasons for the decrease is due to reductions in both legal expenses related to our patents and general legal expenses related to financing efforts.
5. Bad debt expense decreased approximately $122,000 during the year ended December 31, 2017 , compared to the year ended December 31, 2016 . This decrease is due to payments and settlements against existing reserves which were offset by additional reserves for customers whose accounts were greater than 120 days overdue.
6. Public company expenses decreased approximately $85,000 during the year ended December 31, 2017 , compared to the year ended December 31, 2016 . This decrease is primarily due to a decrease in public relations expense.

7. Settlement expenses for the year ended December 31, 2017 were approximately $174,000 . These expenses consisted of a settlement of $23,000 related to an alleged Proposition 65 violation and aggregate settlements of $151,000 with former EnerPlex customers regarding a return of product.

Depreciation expense. Depreciation expense for the years ended December 31, 2017 and 2016 was $1,194,000 and $3,600,000 , respectively. The decrease of $2,406,000 was mainly the result of property, plant and equipment being fully depreciated during the year ended December 31, 2017 , offset slightly by amortization of new capitalized intellectual property.

Other Income/(Expense), net. Other Income/(Expense) was $4,412,075 net expense for the year ended December 31, 2017 , compared to $14,222,231 net expense for the year ended December 31, 2016 , a decrease of $9,810,156 . The following factors contributed to the increase in other income/(expense), net during 2017 :

1. Interest Expense decreased $1,384,000 compared to 2016 . The decrease is primarily due to an decrease of non-cash interest expense and amortization of debt discounts related to convertible and promissory notes and Preferred Stock. The non-cash portion of interest expense for the year ended December 31, 2017 was $5,147,000 .
2. Warrant expense increased by approximately $346,000 as compared to the year ended December 31, 2016 . This increase is due to the issuance of warrants during the year ended December 31, 2017 , related to redemption agreements, settlement agreements, and the engagement of outside professional services.
3. Other income, net increased $492,000 . This increase is comprised of an increase in gain on sale of assets of $1,128,000 , primarily related to the transfer of the EnerPlex IP, offset by induced conversion costs of $636,000 on several of the financial instruments.
4. Gains and losses on change in fair value of derivatives and on extinguishment of liabilities, net was a gain of $1,878,000 for the year ended December 31, 2017 , an increase of $8,280,000 compared to the net loss of $6,402,000 for the year ended December 31, 2016 . The change in this non-cash item is the result of an increase of $3,487,000 in the gain on change in the fair value of our embedded derivative instruments during 2017 , and a decrease of $4,793,000 in the loss on extinguishment of liabilities related to conversions of certain convertible notes and preferred stock in the same comparative periods.

Net Loss. Our net loss was $18,560,000 for the year ended December 31, 2017 , compared to a Net Loss of $38,851,000 for the year ended December 31, 2016 , a decrease in Net Loss of $20,291,000 . The decrease in Net Loss for the year ended December 31, 2017 can be summarized in variances in significant account activity as follows:

	(Increase) decrease in Net Loss For the Year Ended December 31, 2017 Compared to the Year Ended December 31, 2016
Revenues	$ (1,105,000)
Cost of Revenue	3,029,000
Research, development and manufacturing operations	
Materials and Equipment Related Expenses	119,000
Personnel and Facility Related Expenses	1,675,000
Consulting and Contract Services	13,000
Inventory impairment costs	(363,000)
Selling, general and administrative expenses	
Personnel, Administrative, and Facility Related Expenses	1,960,000
Marketing Related Expenses	1,975,000
Legal Expenses	487,000
Public Company Costs	85,000
Bad Debt Expense	122,000
Consulting and Contract Services	252,000
Settlement Costs	(174,000)
Depreciation and Amortization Expense	2,406,000
Other Income/Expense	
Interest Expense	1,384,000
Other Income/Expense	492,000
Warrant Expense	(346,000)
Non-Cash Change in Fair Value of Derivative Liabilities and Gain/Loss on Extinguishment of Liabilities, net	8,280,000
Decrease to Net Loss	$ 20,291,000

Liquidity and Capital Resources

During the years ended December 31, 2017 and 2016 , the Company entered into multiple financing agreements to fund operations. Further discussion of these transactions can be found in Notes 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22.

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 2017 we used $12.6 million in cash for operations, or an average of $3.1 million per quarter. During the fourth quarter of 2017 we used $1.9 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 $0.7 million , including principal and interest, will come due in 2017.

Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2018 overall. As such, cash liquidity sufficient for the year ending December 31, 2018 will require additional financing. Subsequent to the year ended December 31, 2017 the Company completed certain other financing transactions. Please refer to Note 30 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. Please refer to Note 4 for further discussion.

Statements of Cash Flows Comparison of the Years Ended December 31, 2017 and 2016

For the year ended December 31, 2017 , our cash used in operations was $12.6 million compared to $16.9 million for the year ended December 31, 2016 , a decrease of $4.3 million . The decrease is primarily the result of reduced expenses from operations during the current year. For the year ended December 31, 2017 , investing activities resulted in cash provided of $0.1 million compared to investing activities using $0.2 million in cash during the year ended December 31, 2016 . This improvement was the result of proceeds of $0.2 million on the sale of our Enerplex intellectual property, and reduced spending on capital assets and patents. During the year ended December 31, 2017 , negative operating cash flows of $12.6 million were funded through $5.5 million in new debt issuances and $9.0 million from the issuance of stock, offset by repayments on debt of approximately $2.1 million .

Contractual Obligations

The following table presents our contractual obligations as of December 31, 2017 . Our long-term debt obligation is related to our building loan and 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	$ 7,702	$ 694	$ 2,081	$ 2,081	$ 2,846
Operating lease obligations	87	59	14	14	—
Purchase obligations	443	443	—	—	—
Total	$ 8,232	$ 1,195	$ 2,095	$ 2,095	$ 2,846

Off Balance Sheet Transactions

As of December 31, 2017 , we did not have any off balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

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, 2017 and 2016 .

We hold no significant funds and have no future obligations denominated in foreign currencies as of December 31, 2017 .

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, 2017 , our cash equivalents consisted only of operating accounts held with financial institutions. From time to time, we hold restricted funds, 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

On November 15, 2017, following the completion of the merger with Moss Adams, LLP, Hein & Associates, LLP (“Hein”) informed Ascent Solar Technologies, Inc. (“ASTI” or the “Company”) of its resignation as the Company’s independent registered public accounting firm, effective immediately, which resignation was accepted by the audit committee of ASTI’s board of directors on November 16, 2017.

The reports of Hein on the financial statements of the Company for the past two fiscal years ended December 31, 2016 and 2015 did not contain an adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope or accounting principles, with the exception of providing a qualification as to the Company’s ability to continue as a going concern in the Company's financial statements for the fiscal years ended December 31, 2016 and December 31, 2015.

The decision to accept the resignation of Hein was approved by the Company’s audit committee and board of directors.

Except as described below, during 2015 and 2016, the subsequent interim periods thereto, and through November 15, 2017, the date of Hein’s resignation, (a) the Company and Hein had no disagreements on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of Hein, would have caused Hein to make reference to the matter in their reports, and (b) there were no “reportable events” as described in Item 304(a)(1)(v) of Regulation S-K.

In its quarterly report to the audit committee dated August 15, 2017, Hein noted that the Company’s management and Hein had initially disagreed over the accounting for conversions of the Company’s Series K preferred stock into common stock. Ultimately, the Company’s management agreed with the accounting treatment proposed by Hein with respect to this issue, which was reflected in the Company’s financial statements filed in its Form 10-Q for the period ended June 30, 2017. Accordingly, the Company and Hein consider this matter to be resolved. The Company’s audit committee did discuss the subject matter of this disagreement with Hein.

The Company has authorized Hein to fully respond to the inquiries of any successor accountant concerning the subject matter of any disagreements.

On December 14, 2017, the Company's audit committee and board of directors approved the engagement of Haynie & Company ("Haynie") as our new independent registered public accounting firm to audit and review the Company's financial statements.

During 2015, 2016, and 2017, the subsequent interim periods thereto, and through the filing date of this report neither the Company, nor someone on its behalf, has consulted Haynie regarding either (i) the application of accounting principles to a specified transaction, either completed or proposed, or the type of audit opinion that might be rendered on the Company's financial statements, and no written report or oral advice was provided to the Company that Haynie concluded was an important factor considered by the Company in reaching a decision as to the accounting, auditing or financial reporting issue; or (ii) any matter that was the subject of a disagreement or reportable event (within the meaning of Item304(a) of Regulation S-K and Item304(a)(1)(v) of Regulation S-K, respectively).

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, 2017 . Based on this evaluation, our management concluded the design and operation of our disclosure controls and procedures were effective as of December 31, 2017 .

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 effective as of December 31, 2017 . 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.

Material Weakness Identified in 2016

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 .

During 2017 , the Company executed the following steps to remedy the material weaknesses from 2016 described below:

- 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 is continuously evaluating its personnel needs and other resources to ensure appropriate staffing and enhance its research and technical accounting knowledge base.
- The Company designed and implemented additional procedures in order to assure that the Director of 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.

Based on our assessment and the criteria used, management concluded that our internal control over financial reporting as of December 31, 2017 was effective.

Changes in Internal Control Over Financial Reporting

Except for the identification and mitigation of the material weaknesses noted above, there were no other changes in internal control over financial reporting during the year ended December 31, 2017 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 2018 annual meeting, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2017.

Item 11. Executive Compensation

Incorporated by reference from the definitive proxy statement for our 2018 annual meeting, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2017.

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

Incorporated by reference from the definitive proxy statement for our 2018 annual meeting, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2017.

Securities Authorized for Issuance under Equity Compensation Plans

The following table sets forth information as of December 31, 2017 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

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

Incorporated by reference from the definitive proxy statement for our 2018 annual meeting, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2017.

Item 14. Principal Accounting Fees and Services

Incorporated by reference from the definitive proxy statement for our 2018 annual meeting, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2017.

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.

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)

Exhibit No.	Description
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 3.1 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)
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)

Exhibit No.	Description
4.7	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)
4.8	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	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
10.2	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
10.3	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))
10.4	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
10.5	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))
10.6	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
10.7	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)
10.8	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)
10.9	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)
10.10	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)
10.11†	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) †
10.12	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)
10.13	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)

Exhibit No.	Description
10.14	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)
10.15	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)
10.16	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)
10.17	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)
10.18	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)
10.19	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
10.20	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
10.21	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)
10.22	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)
10.23†	Seventh Amended and Restated 2005 Stock Option Plan (incorporated by reference to Annex C of our definitive proxy statement dated April 22, 2016)†
10.24†	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)†
10.25	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)
10.26	Form of 10% Convertible Note (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 14, 2016)
10.27	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)
10.28	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)

Exhibit No.	Description
10.29	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)
10.30	Note due December 5, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed October 11, 2016)
10.31	Note due January 3, 2017 (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed October 11, 2016)
10.32	Note due February 3, 2017 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed October 11, 2016)
10.33	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)
10.34	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)
10.35	Note dated December 2, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed December 8, 2016)
10.36	Note dated December 6, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed December 8, 2016)
10.37	Note dated December 13, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed December 19, 2016)
10.38	Note dated December 30, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 6, 2017)
10.39	Note dated January 10, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 17, 2017)
10.40	$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)
10.41	$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)
10.42	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)
10.43	Note dated February 7, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 9, 2017)

Exhibit No.	Description
10.44	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)
10.45	Note dated February 13, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 17, 2017)
10.46	$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)
10.47	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)
10.48	Note dated March 13, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed March 17, 2017)
10.49	Note dated March 24, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed March 29, 2017)
10.50	Note dated April 6, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 7, 2017)
10.51	Note dated April 21 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 24, 2017)
10.52	Forbearance and Settlement Agreement dated May 5, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed May 10, 2017)
10.53	Note dated May 8, 2017 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed May 10, 2017)
10.54	Form of Warrant (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed July 27, 2017)
10.55	Form of Warrant (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed August 11, 2017)
10.56	Securities Purchase Agreement dated September 8, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 14, 2017)
10.57	Note dated September 11, 2017 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 14, 2017)
10.58	Promissory Note Exchange Agreement dated September 13, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 20, 2017)

Exhibit No.	Description
10.59	Note dated September 13, 2017 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed September 20, 2017)
10.60	Note dated October 31, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed November 8, 2017)
10.61	Note dated November 16, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed November 22, 2017)
10.62	Note Purchase and Exchange Agreement dated November 30, 2017*
10.63	Form of Secured Convertible Promissory Note - 36 month maturity*
10.64	Form of Secured Convertible Promissory Note - 12 month maturity*
10.65	Security Agreement dated November 30, 2017*
10.66	Series J Securities Exchange Agreement dated December 6, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed December 12, 2017)
10.67	Note dated December 6, 2017 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed December 12, 2017)
10.68	Warrant dated December 15, 2017 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed December 20, 2017)
10.69	Unsecured Promissory Note dated January 31, 2018 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed February 2, 2018)
16.1	Letter from Hein & Associates, LLP dated March 29, 2018*
23.1	Consent of Haynie & Company*
23.2	Consent of Hein & Associates LLP*
31.1	Chief Executive Officer Certification pursuant to section 302 of the Sarbanes-Oxley Act of 2002*

Exhibit No.	Description
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.

Item 16. Form 10-K Summary

None.

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 30th day of March, 2018 .

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)	March 29, 2018
/S/ AMIT KUMAR Amit Kumar, Ph.D.	Chairman of the Board of Directors	March 29, 2018
/S/ TOMAS MARSH G. Thomas Marsh	Director	March 29, 2018
/S/ KIM J. HUNTLEY Kim J. Huntley	Director	March 29, 2018

Ascent Solar Technologies, Inc.

Index to Consolidated Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR 2016

To the Board of Directors
Ascent Solar Technologies, Inc.

We have audited the accompanying consolidated balance sheet of Ascent Solar Technologies, Inc. and subsidiaries as of December 31, 2016, and the related consolidated statements of operations, stockholders' equity (deficit) and cash flows for the year 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 audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit 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 audit 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 audit provides 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 the results of their operations and their cash flows for the year 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 14, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR 2017

To the Board of Directors and

Stockholders of Ascent Solar Technologies, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Ascent Solar Technologies, Inc. (the Company) as of December 31, 2017,and the related consolidated statements of operations, stockholders' deficit, and cash flows for the year ended December 31, 2017, and the related notes (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and , and the results of its operations and its cash flows for the year ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, we are required to obtain an understanding of internal control over financial reporting, 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.

Our audit included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

Consideration of the Company's Ability to Continue as a Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As more fully described in Note 4 to the financial statements, the Company has recurring losses, negative working capital and negative cash flows from operations. These factors raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 4 to the financial statements. The financial statements do not include any adjustments that might result from the outcome of this uncertainty. If the Company is unable to obtain financing or increase sales, there could be a material adverse effect on the Company.

/s/ Haynie & Company

We have served as the Company's auditor since 2017.

Littleton, CO

March 29, 2018

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ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED BALANCE SHEETS

	December 31, 2017	December 31, 2016
ASSETS (substantially pledged)		
Current Assets:		
Cash and cash equivalents	$ 89,618	$ 130,946
Trade receivables, net of allowance of $48,201 and $106,205, respectively	6,658	549,204
Inventories	1,037,854	2,569,816
Prepaid expenses and other current assets	494,425	983,796
Total current assets	1,628,555	4,233,762
Property, Plant and Equipment:	36,645,862	36,639,460
Less accumulated depreciation and amortization	(32,013,686)	(30,983,448)
	4,632,176	5,656,012
Other Assets:		
Patents, net of accumulated amortization of $430,071 and $279,143, respectively	1,470,796	1,647,505
Other non-current assets	49,813	77,562
	1,520,609	1,725,067
Total Assets	$ 7,781,340	$ 11,614,841
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current Liabilities:		
Accounts payable	$ 1,600,455	$ 4,902,471
Related party payables	202,827	214,903
Accrued expenses	1,623,748	1,469,684
Notes payable	1,570,231	—
Current portion of long-term debt	343,395	243,113
Current portion of secured promissory notes, net of discount of $1,934,304 and zero, respectively	253,590	1,010,000
Litigation settlement	—	339,481
Promissory notes, net of discount of $20,626 and zero, respectively	948,811	420,000
TFG promissory notes, net of discount of zero and $59,658, respectively	—	542,808
July 2016 convertible notes, net of discount of zero and $1,634,357, respectively	—	1,159,610
October 2016 convertible notes, net of discount of zero and $264,000, respectively	330,000	66,000
St. George convertible note, net of discount and cash payment premium of $673,241 and zero, respectively	1,032,592	—
BayBridge convertible note, net of discount of $565,000 and zero, respectively	—	—
Series E preferred stock, net of discount of zero and $63,640, respectively	—	56,360
Series F preferred stock	—	160,001
Series G preferred stock, net of discount of zero and $699,674, respectively	—	408,326
Series I exchange notes, net of discount of zero and $199,474, respectively	—	26,597
Embedded derivative liabilities	6,406,833	6,578,154
Make-whole dividend liability	—	500,176
Total current liabilities	14,312,482	18,097,684
Long-term debt, net of current portion	5,118,424	5,281,776
Secured promissory notes, net of current portion and discount of $1,684,267 and zero, respectively	685,066	—
Accrued Warranty Liability	57,703	176,457
Redeemable Preferred Stock:		
Series J preferred stock: 1,350 shares authorized; zero and 1,350 issued and outstanding as of December 31, 2017 and December 31, 2016, respectively	—	1,350,000
Series J-1 preferred stock: 1,000 shares authorized; zero and 700 issued and outstanding as of December 31, 2017 and December 31, 2016, respectively	—	700,000
Series K preferred stock: 20,000 and zero shares authorized as of December 31, 2017 and December 2016, respectively; 2,810 and zero issued and outstanding as of December 31, 2017 and December 31, 2016, respectively	2,810,000	—

Commitments and Contingencies	—	—
Stockholders' Deficit:		
Series A preferred stock, $.0001 par value; 750,000 shares authorized and issued; 60,756 and 125,044 shares outstanding as of December 31, 2017 and December 31, 2016, respectively ($761,864 and $1,500,528 Liquidation Preference)	6	13
Common stock, $0.0001 par value, 20,000,000,000 and 2,000,000,000 shares authorized as of December 31, 2017 and December 31, 2016, respectively; 9,606,597,777 and 554,223,320 shares issued and outstanding as of December 31, 2017 and December 31, 2016, respectively	960,660	55,422
Additional paid in capital	386,332,475	369,886,065
Accumulated deficit	(402,495,476)	(383,932,576)
Total stockholders' equity (deficit)	(15,202,335)	(13,991,076)
Total Liabilities and Stockholders' Equity	$ 7,781,340	$ 11,614,841

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

ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	For the Years Ended December 31,	
	2017	**2016**
Revenues	642,179	1,747,356
Costs and Expenses		
Cost of revenues (exclusive of depreciation shown below)	2,814,782	5,843,872
Research, development and manufacturing operations (exclusive of depreciation shown below)	4,820,536	6,627,249
Selling, general and administrative (exclusive of depreciation shown below)	5,598,004	10,304,779
Depreciation and amortization	1,193,535	3,600,007
Inventory impairment loss	363,377	—
Total Costs and Expenses	14,790,234	26,375,907
Loss from Operations	(14,148,055)	(24,628,551)
Other Income/(Expense)		
Other Income/(Expense), net	574,817	82,772
Interest Expense	(6,518,747)	(7,902,926)
Deemed interest expense on warrant liability	(345,774)	—
Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net	1,877,629	(6,402,077)
Total Other Income/(Expense)	(4,412,075)	(14,222,231)
Net Loss	$ (18,560,130)	$ (38,850,782)
Net Loss Per Share (Basic and diluted)	$ 0.003	$ (0.418)
Weighted Average Common Shares Outstanding (Basic and diluted)	5,883,374,222	93,005,062

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

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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 make-whole	42,857,508	4,286	(40,497)	(4)	173,288	—	177,570
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.

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
	Shares	Amount	Shares	Amount			
Balance, December 31, 2016	554,223,320	$ 55,422	125,044	$ 13	$ 369,886,065	$ (383,932,576)	(13,991,076)
Interest and Dividend Expense paid with Common Stock	332,006,907	33,201			213,383		246,584
Issuance of Restricted Stock	40,000	4			(4)		—
Commitment Shares	37,500,000	3,750			60,000		63,750
Conversion of Series A Preferred Stock into Common Shares, plus make-whole	131,088,740	13,109	(64,288)	(7)	244,050		257,152
Conversion of Series E Preferred Stock into Common Shares	247,371,677	24,737			95,263		120,000
Conversion of Series F Preferred Stock into Common Shares	189,780,458	18,978			108,022		127,000
Conversion of Series G Preferred Stock into Common Shares	1,529,316,391	152,932			745,068		898,000
Conversion of Series I Convertible Notes into Common Shares	419,719,614	41,972			184,099		226,071
Conversion of Series J Preferred Stock into Common Shares	365,646,259	36,565			238,435		275,000
Conversion of Series J-1 Preferred Stock into Common Shares	466,666,667	46,667			653,333		700,000
Conversion of Series K Preferred Stock into Common Shares	1,550,000,000	155,000			6,045,000		6,200,000
Conversion of July 2016 Convertible Notes into Common Shares	2,808,248,547	280,825			1,419,142		1,699,967
Conversion of TFG note into Common Shares	333,333,333	33,333			511,348		544,681
Conversion of BayBridge Note into Common Shares	473,404,630	47,340			330,659		377,999
Conversion of Global Ichiban Note into Common Shares	168,251,234	16,825			146,683		163,508
Loss on Extinguishment of Liabilities					4,481,939		4,481,939
Induced Conversion Costs					500,948		500,948
Warrant Expense					345,774		345,774
Stock based compensation					123,268		123,268
Prior period adjustment - subsidiary						(2,770)	(2,770)
Net Loss						(18,560,130)	(18,560,130)
Balance, December 31, 2017	9,606,597,777	$ 960,660	60,756	$ 6	$ 386,332,475	$ (402,495,476)	$ (15,202,335)

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

ASCENT SOLAR TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the Years Ended December 31,	
	2017	2016
Operating Activities:		
Net loss	$ (18,560,130)	$ (38,850,782)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	1,197,285	3,600,007
Stock based compensation	123,268	888,348
Realized loss (gain) on sale of assets	(1,210,331)	(82,772)
Amortization of financing costs	76,351	137,111
Non-cash interest expense	643,263	948,901
Amortization of debt discount	4,427,086	6,214,060
Bad debt expense	514	122,416
Accrued litigation settlement	(339,481)	(541,279)
Warrant expense	345,774	—
Impairment of inventory	363,377	—
Warranty reserve	(118,754)	(87,543)
Change in fair value of derivatives and loss on extinguishment of liabilities, net	(1,877,629)	6,402,077
Induced conversion expense	635,514	—
Changes in operating assets and liabilities:		
Accounts receivable	569,632	1,321,265
Inventories	1,168,585	1,702,564
Prepaid expenses and other current assets	389,910	379,374
Accounts payable	(592,403)	1,492,053
Related party payable	(12,076)	
Accrued expenses	172,316	(501,284)
Net cash used in operating activities	(12,597,929)	(16,855,484)
Investing Activities:		
Purchase of property, plant and equipment	(6,402)	(51,724)
Proceeds from sale of assets	150,000	82,772
Patent activity costs	(62,652)	(189,455)
Net cash used in investing activities	80,946	(158,407)
Financing Activities:		
Proceeds from debt	5,542,500	1,930,000
Repayment of debt	(2,056,845)	(266,027)
Payment of debt financing costs	(20,000)	(81,500)
Proceeds from Committed Equity Line	—	1,056,147
Proceeds from issuance of stock and warrants	9,010,000	14,180,000
Net cash provided by financing activities	12,475,655	16,818,620
Net change in cash and cash equivalents	(41,328)	(195,271)
Cash and cash equivalents at beginning of period	130,946	326,217
Cash and cash equivalents at end of period	$ 89,618	$ 130,946
Supplemental Cash Flow Information:		
Cash paid for interest	$ 1,221,843	$ 417,876
Cash paid for income taxes	$ —	$ —
Non-Cash Transactions:		
Non-cash conversions of preferred stock and convertible notes to equity	$ 11,835,962	$ 10,617,764
Non-cash conversions of preferred stock to notes payable	$ 1,075,000	$ —
Make-whole provision on convertible preferred stock	$ 257,152	$ 161,988
Non-cash financing costs	$ 2,500	$ —
Debt converted to accounts payable	$ 55,067	$ —

Accounts payable converted to notes payable	$ 1,587,760	$ —
Accounts payable forgiven related to sale of EnerPlex	$ 1,031,726	$ —
Interest converted to principal	$ 431,195	$ —
Common shares issued for commitment fee	$ 63,750	$ —
Initial embedded derivative liabilities	$ 5,878,345	$ 5,444,362

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, 2017 and December 31, 2016 , and the results of operations for the years ended December 31, 2017 and 2016 . 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.

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.

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, 2017 and 2016 and were recorded in "Other Income/(Expense)" in the Consolidated Statements of Operations.

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, 2017 and 2016 , the Company had an allowance for doubtful accounts of $48,201 and $106,205 , respectively.

Inventories: All inventories are stated at the lower of cost or net realizable value, 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, 2017 and 2016 , the Company had inventory reserve balances of $562,140 and $736,663 , respectively. If actual demand and market conditions are less favorable than those estimated by management, additional inventory write downs may be required.

Due to the sale of the EnerPlex brand and the re-purposing of our work-in-process inventory, we are unable to estimate the recoverability of all of our work-in process inventory values, resulting in a lower-cost-to-market analysis and reserve for impairment. An expense of $363,377 was recorded to inventory impairment costs for the year ended December 31, 2017 . There were no lower of cost or market adjustments during the year ended December 31, 2016 .

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

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, 2017 and 2016 , the Company had $1,470,796 and $1,647,505 of net patent costs, respectively. Of these amounts $640,167 and $619,241 represents costs net of amortization incurred for awarded patents, and the remaining $830,629 and $1,028,264 represents costs incurred for patent applications to be filed as of December 31, 2017 and 2016 , respectively. During the years ended December 31, 2017 and 2016 , the Company capitalized $62,652 and $189,455 in patent costs, respectively, as it worked to secure design rights and trademarks for newly developed products. Amortization expense was $150,928 and $109,517 for the years ended December 31, 2017 and 2016 , respectively.

As of December 31, 2017 , future amortization of patents is expected as follows:

2018	$	173,439
2019	$	153,717
2020	$	130,885
2021	$	85,760
2022	$	56,099
Thereafter	$	40,267
	$	640,167

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, 2017 and 2016 , the Company did not incur impairments of its manufacturing facilities and equipment.

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.

Convertible Notes : The Company issues, from time to time, convertible notes. Refer to Notes 12, 13, 14, and 15 for further information.

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 12, 16, 17, 18, 19, 20, 21, and 22 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 reporting 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 12, 13, 14, 15, 17, 18, 19, and 20 for further discussion on the embedded derivatives of each instrument.

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.

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.

Revenue Recognition:

Product revenue - The Company generated product revenues of $642,179 and $1,699,802 for the years ended December 31, 2017 and 2016 , 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.

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.

Research, Development and Manufacturing Operations Costs: Research, development and manufacturing operations expenses were approximately $4.8 million and $6.6 million for the years ended December 31, 2017 and 2016 , 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.

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 $189,382 and $2,164,693 for the years ended December 31, 2017 and 2016 , respectively.

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.

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 (2014-2017) 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.

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, 2017 and 2016 of approximately 3.0 billion and 301.1 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, 2017 and 2016 .

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. Secured Promissory Note, Note 12. July 2016 Convertible Notes and Series H Preferred Stock, Note 13. October 2016 Convertible Notes and Exchange of Series A Preferred Stock, Note 13. St. George Convertible Note, Note 15. BayBridge Convertible Note, Note 17. Series E Preferred Stock, Note 18. Series F Preferred Stock, Note 19. Series G Preferred Stock, Note 20. Series I Preferred Stock and Series I Convertible Notes, Note 21. Series J Preferred Stock and Series J-1 Preferred Stock, and Note 23. 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: One of the Company's named shareholders 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. Accounting for transactions under these agreements is consistent with those defined in our Significant Accounting Policies. See Notes 11 and 27 for further information.

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 has evaluated ASU 2014-09, and it will not have a material effect on the Company's 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 continues to evaluate the impact, 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 implementation of ASU 2016-09 did not have a material effect on the Company's consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation - Stock Compensation (Topic 718)* . ASU 2017-09 provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. ASU 2017-09 is effective for interim periods and fiscal years beginning after December 15, 2017, and early application is permitted. The Company continues to evaluate the impact, if any, that the adoption of this guidance will have on its consolidated financial statements, but does not expect the effect, if any, will be material.

In July 2017, the FASB issued ASU No. 2017-11 *Part I, Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815)* . ASU 2017-11 Part I changes the classification analysis of certain equity linked financial instruments with down round features. ASU 2017-11 Part I is effective, for public business entities, 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.

NOTE 4. LIQUIDITY, CONTINUED OPERATIONS, AND GOING CONCERN

During the years ended December 31, 2017 and 2016 , the Company entered into multiple financing agreements to fund operations. Further discussion of these transactions can be found in Notes 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, and 22.

The Company has continued PV production at its manufacturing facility. The Company does not expect that sales revenue and cash flows will be sufficient to support operations and cash requirements until it has fully implemented its product strategy. During the year ended December 31, 2017 the Company used approximately $12.6 million in cash for operations. The Company's primary significant long term cash obligation consists of a note payable of approximately $5.5 million to a financial institution secured by a mortgage on its headquarters and manufacturing building in Thornton, Colorado. Total payments of approximately $0.7 million , including principal and interest, will come due in the remainder of 2017 .

The Company's consolidated financial statements have been prepared assuming that it will continue as a going concern, which contemplates continuity of operations, realization of assets, and liquidation of liabilities in the normal course of business. As of December 31, 2017 , the Company has negative working capital. As such, cash liquidity sufficient for the year ending December 31, 2018 will require additional financing.

The Company continues to accelerate sales and marketing efforts related to its consumer and military solar products and specialty PV application strategies through expansion of its sales and distribution channels. 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.

Management cannot provide any assurances that the Company will be successful in accomplishing any of its plans. These consolidated financial statements do not include any adjustments that might be necessary should the Company be unable to continue as a going concern.

NOTE 5. TRADE RECEIVABLES

Trade receivables, net consist of amounts generated from product sales and government contracts. Accounts receivable totaled $6,658 and $549,204 as of December 31, 2017 and 2016 , respectively.

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, 2017 and December 31, 2016 :

	As of December 31,	
	2017	2016
Building	$ 5,828,960	$ 5,828,960
Furniture, fixtures, computer hardware and computer software	489,421	489,421
Manufacturing machinery and equipment	30,327,481	30,321,079
Depreciable property, plant and equipment	36,645,862	36,639,460
Less: Accumulated depreciation and amortization	(32,013,686)	(30,983,448)
Net property, plant and equipment	$ 4,632,176	$ 5,656,012

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, 2017 and 2016 was $1,030,237 and $3,486,741 , 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, 2017 and December 31, 2016 :

	As of December 31,	
	2017	2016
Raw materials	$ 689,000	$ 833,000
Work in process	12,000	635,000
Finished goods	337,000	1,102,000
Total	$ 1,038,000	$ 2,570,000

NOTE 8. NOTES PAYABLE

On February 24, 2017 , the Company entered into an agreement with a vendor to convert the balance of their account into three notes payable in the aggregate amount of $765,784 . The notes bear interest of 6% per annum and matures on February 24, 2018 ; all outstanding principal and accrued interest is due and payable upon maturity. As of December 31, 2017 , the Company had not made any payments on these notes and the accrued interest was $39,565 . As of the date of this filing, this note has matured and is due and payable on demand.

On February 27, 2017 , the Company entered into an agreement with a vendor to convert the balance of their account into a note payable in the amount of $49,500 . The note bears interest of 6% per annum and matures on September 27, 2017 ; all outstanding principal and accrued interest is due and payable upon maturity. On September 27, 2017 , the Company paid the note, plus $1,725 in accrued interest, in full.

On March 23, 2017 , the Company entered into an agreement with a vendor to convert the balance of their account into a note payable in the amount of $356,742 . The note bears interest of 5% per annum and matures on October 23, 2017 ; all outstanding principal and accrued interest is due and payable upon maturity. On October 23, 2017 , the Company amended its promissory note with this vendor. The amendment extended the note's maturity to November 6, 2017 . Again on December 12, 2017 , the Company amended its promissory note with this vendor. The amendment extended the note's maturity to March 31, 2018 . As of December 31, 2017 , the Company had not made any payments on the note and the accrued interest was $13,830 .

On June 30, 2017 , the Company entered into an agreement with a vendor to convert the balance of their account into a note payable in the amount of $250,000 . The note bears interest of 5% per annum and matures on February 28, 2018 ; all outstanding principal and accrued interest is due and payable upon maturity. As of December 31, 2017 , the Company had not made any payments on these notes and the accrued interest was $6,301 . As of the date of this filing, this note has matured and is due and payable on demand.

On September 30, 2017 , the Company entered into a settlement agreement with a customer to convert the credit balance of their account into a note payable in the amount of $215,234 . The note bears interest of 5% per annum and matures on September 30, 2018 . Per the settlement agreement, monthly payments of $18,426 were to commence on October 30, 2017 . As of December 31, 2017 , one of the monthly payments had been made and the remaining principal and interest balances were $197,705 and $2,540 , respectively.

NOTE 9. 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 was $5,704,932 . Commencing on May 1, 2017, the monthly payments of principal and interest due under the note resumed 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, 2017 , future principal payments on long-term debt are due as follows:

2018	$	343,395
2019		366,757
2020		391,709
2021		418,358
2022		446,821
Thereafter		3,494,779
	$	5,461,819

NOTE 10. SECURED PROMISSORY NOTE

On November 30, 2017 , the Company, entered into a note purchase and exchange agreement (the "Note SPA") with Global Ichiban Ltd ("Investor"), for the private placement of up to $2,000,000 of the Company's Secured Convertible Promissory Notes ("Notes") in exchange for $2,000,000 of gross proceeds in several tranches through June 2018, The closing of each tranche is conditioned upon the Company having an average daily trading volume for its Common Stock of at least $50,000 for the 20 trading day period preceding such future tranche closing dates.

Pursuant to the terms of the Note SPA, the Company and the Investor also agreed to exchange certain outstanding securities held by the Investor for additional Notes. As of November 30, 2017 , the Investor surrendered for cancellation (i) its outstanding promissory note dated September 13, 2017 ($3,359,539 principal and accrued interest), (ii) its outstanding promissory note dated October 31, 2017 ($252,466 principal and accrued interest), and (iii) its 400 shares of outstanding Series J Preferred Stock ($445,222 of capital and accrued dividends). In exchange, the Company issued to the Investor $4,057,227 aggregate principal amount of additional Notes. Please refer to Note 11 for further discussion on the canceled promissory notes and Note 21 on the canceled Series J Preferred Stock shares.

Of the Notes issued on November 30, 2017 , $3,359,539 aggregate principal amount will mature on December 15, 2020 . Principal and interest will be payable in 36 equal monthly installments beginning January 15, 2018 .

Of the Notes issued on November 30, 2017 , $697,688 aggregate principal amount will mature on November 30, 2018 . Principal and interest will be payable upon maturity.

The $2,000,000 aggregate principal amount of Notes to be issued in the future in tranches pursuant to the Note SPA will mature on the first anniversary of the respective issuance date. Principal and interest will be payable upon maturity. As of December 31, 2017 , the closing dates, closing amounts, and maturity dates on completed Note SPA tranches are as follows:

Closing Date	Closing Amount		Maturity Date
11/30/2017	$	250,000	11/30/2018
12/28/2017	$	250,000	12/28/2018

The Notes will be secured by a security interest on substantially all of the Company's assets, bear interest at a rate of 12% per annum and contain standard and customary events of default including but not limited to: (i) failure to make payments when due under the Notes, and (ii) bankruptcy or insolvency of the Company. There are no registration rights applicable to the Notes.

All principal and accrued interest on the Notes are convertible at any time, in whole or in part, at the option of the Investor into shares of Common Stock at a variable conversion price equal to the lowest of (i) 85% of the average VWAP for the shares over the prior 5 trading days, (ii) the closing bid price for the shares on the prior trading day, or (iii) $0.002 per share

The Notes may not be converted and shares of Common Stock may not be issued pursuant to the Notes if, after giving effect to the conversion or issuance, the holder together with its affiliates would beneficially own in excess of 9.99% of the outstanding shares of Common Stock.

As of December 31, 2017 , the principal and interest balance of the Notes were $4,557,227 and $44,134 , respectively

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the 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. 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. The derivative associated with the Notes approximates management's estimate of the fair value of the embedded derivative liability based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions identified below.

Due to the varying terms and varying issue dates, the tranches of this instrument were broken into three separate instruments for valuation purposes.

1) The first valuation was done on the November 30, 2017 Note with term of three years. Management's analysis, using the following assumptions: annual volatility of 63% present value discount rate of 12% and a dividend yield of 0% , resulted in a fair value of the embedded derivative associated with this Note of $2,756,074 as of November 30, 2017. The value of the embedded derivative associated with the Note was recorded as a debt discount.

2) The second valuation was done on the group of Notes dated November 30, 2017 , that had a term of one year. Management's analysis, using the following assumptions: annual volatility of 67% present value discount rate of 12% and a dividend yield of 0% , resulted in a fair value of the embedded derivative associated with these Notes of $943,735 as of November 30, 2017. The value of the embedded derivative associated with the Note was recorded as a debt discount.

3) The third valuation was done on the Note dated December 28, 2017 , which had a term of one year. Management's analysis, using the following assumptions: annual volatility of 65% present value discount rate of 12% and a dividend yield of 0% , resulted in a fair value of the embedded derivative associated with this Note of $267,008 as of December 28, 2017. Since the value of the derivative was more than the liability, the entire liability of $250,000 was recorded as a debt discount to be amortized with the liability. The remaining balance of $17,008 was charged to interest expense.

The derivative liability associated with the Notes is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2017 , the Company conducted a fair value assessment of the embedded derivative associated with the three valuation groups discussed above.

1) For the November 30, 2017 3yr Note: Management conducted a fair value assessment with the following assumptions: annual volatility of 63% present value discount rate of 12% and a dividend yield of 0% as of December 31, 2017 . As a result of the fair value assessment, the Company recorded a loss of $985,928 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 $3,742,002 as of December 31, 2017 .

2) For the November 30, 2017 1yr Notes: Management conducted a fair value assessment with the following assumptions: annual volatility of 60% present value discount rate of 12% and a dividend yield of 0% as of December 31, 2017 . As a result of the fair value assessment, the Company recorded a gain of $55,567 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 $888,168 as of December 31, 2017 .

3) There were no changes to the December 28, 2017 1yr note, as there was only one trading day for the year following the issuance.

During the fourth quarter of 2017, a net loss of $930,361 had been recorded to reflect the total derivative liability of $4,897,178 as of December 31, 2017 .

NOTE 11. PROMISSORY NOTES

Tertius Financial Group Notes and Exchange

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 29, 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.

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 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. Following the transaction, the outstanding balance of the new note was $602,000 (including accrued and unpaid interest) with a discount of $60,000 .

On January 19, 2017 , the Company issued 333,333,333 shares of unregistered common stock in a private placement to 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 $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.

TFG is a Singapore based entity controlled and 50% owned by Ascent's President & CEO, Victor Lee, and owns approximately 3% of the Company's outstanding shares at December 31, 2017 .

Offering of Unsecured Promissory Notes

Between December 2016 and April 2017, the Company initiated eleven non-convertible, unsecured promissory notes with a private investor with varying principal amounts aggregating to $3,400,000 . The promissory notes bear interest of 12% per annum and mature six months from the respective dates of issuance, ranging from June 2, 2017 to October 21, 2017. Unless paid in advance, the principal and interest of these promissory notes are payable upon maturity. The notes are not convertible into equity shares of the Company and are unsecured.

Between June and August, 2017, eight of the promissory notes described above matured. The Company and the private investor agreed to pay the interest accrued on these notes, as of the maturity dates, and extend the notes another three months without the Company being in default. Through August 30, 2017, $143,148 interest was paid.

On September 13, 2017 , the Company and the investor entered into a Promissory Note Exchange Agreement. Pursuant to the agreement, the Investor exchanged and canceled the eleven outstanding promissory notes (with an aggregate principal and accrued interest of $3,504,199) for one new promissory note having a principal amount of approximately $3,504,199 .

The new note has a term of three years, bears interest at a rate of 12% per annum, and calls for monthly installment payments of $116,390 commencing on October 13, 2017. The Company has the option to pay monthly installment amounts in the form of shares of common stock. Payments in the form of shares would be calculated using a variable conversion price equal to the lowest of (i) 85% of the average VWAP for the shares over the prior five trading days, (ii) the closing bid price for the shares on the prior trading day, or (iii) $0.004 per share. The Company may not make payments in the form of shares of Common Stock if, after giving effect to the issuance, the holder together with its affiliates would beneficially own in excess of 9.99% of the outstanding shares of Common Stock.

On November 30, 2017 , the terms of this note were canceled and the remaining principal and accrued interest balance of $3,359,539 was combined with other instruments into a new Securities Purchase Agreement and secured note with the same investor. Please see Note. 10 for more information.

Offering of Unsecured, Non-Convertible Notes

During October 2016, the Company received $420,000 from a separate private investor. These funds, along with $250,000 of additional funding, were rolled into a promissory note, executed on January 17, 2017 , in the amount of $700,000 issued with a discount of $30,000 which will be charged to interest expense ratably over the term of the note. 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 June 30, 2017 , the Company and the private investor agreed to a twelve month payment plan on the balance of this promissory note. Interest will continue to accrue on this note at 12% per annum and payments of approximately $62,000 will be made monthly beginning in July 2017. Four monthly payments were made between July and October of 2017.

As of December 31, 2017 , $205,563 of principal and $45,414 of interest had been paid on this note. The outstanding principal and accrued interest balances on the note as of December 31, 2017 were $494,437 and $27,126 , respectively.

On April 6, 2017 , the Company initiated a non-convertible, unsecured promissory note with a private investor for $103,000 in exchange for proceeds of $100,000 . The discount of $3,000 will be charged to interest expense ratably over the term of the note. The promissory note bears interest of 10% per annum and matures on October 6, 2017 . On October 6, 2017 , the Company and its investor entered into a Promissory Note Exchange Agreement to convert a promissory note with a principal balance of $103,000 and accrued interest of $5,233 in to common shares. Per the terms of the agreement, the promissory note was canceled and 72,500,000 shares were issued.

On May 8, 2017 , the Company initiated a non-convertible, unsecured promissory note with a private investor for $125,000 . The promissory note bears interest of 12% per annum and matures on September 8, 2017 . On September 8, 2017 , the Company redeemed this note, in full, for cash.

On October 31, 2017 , the Company initiated a non-convertible, unsecured promissory note with a private investor for $250,000 . The promissory note bears interest of 12% per annum and matures on January 31, 2018 . On November 30, 2017 , the terms of this note were canceled and the remaining principal and accrued interest balance of $252,466 was combined with other instruments into a new Securities Purchase Agreement and secured note with the same investor. Please see Note. 10 for more information.

On November 16, 2017 , the Company initiated a non-convertible, unsecured promissory note with a private investor for $275,000 . The promissory note was issued with an original issue discount of $25,000 , resulting in proceeds to the company of $250,000 . The note does not have a stated interest rate and matures on December 18, 2017 . As of December 31, 2017 , no payments had been made on this note and the discount had been recorded as interest expense.

During December 2017, the Company received aggregate proceeds of $177,500 , from a private investor. These proceeds were incorporated into a promissory note on January 31, 2018 . Please refer to Note 30 for further information on this note.

NOTE 12. 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 the private investor in exchange for $830,000 of gross proceeds. Please see the section below for details of the exchange.

July 2016 Convertible Notes

On July 13, 2016 , the Company entered into a securities purchase agreement (the “Note SPA”) with the private investor for the private placement of $2,082,600 of the Company’s 4% Original Issue Discount Senior Secured Convertible Promissory Notes (the “July 2016 Convertible Notes”). On July 13, 2016 , the Company sold and issued $364,000 principal amount of notes to the investor in exchange for $350,000 of gross proceeds. The Company sold and issued the remaining $1,718,600 principal amount of July 2016 Convertible Notes to the investor in exchange for $1,650,000 of gross proceeds in weekly tranches between July and September 2016.

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 Convertible Notes. There were 830 shares of Series H Preferred Stock outstanding as of the date of the Exchange Agreement.

Unless earlier converted or prepaid, all of the July 2016 Convertible Notes will mature July 13, 2017 . The July 2016 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. Principal on the July 2016 Convertible Notes is payable on the Maturity Date. Interest on the July 2016 Convertible Notes is payable quarterly. Principal and interest are payable in cash or, if specified equity conditions are met, shares of Common Stock.

The July 2016 Convertible Notes are secured by a security interest in substantially all of the Company’s assets. The subsidiaries of the Company have guaranteed the Company’s obligations under the July 2016 Convertible Notes.

The July 2016 Convertible Notes contain standard and customary events of default including but not limited to: (i) failure to make payments when due under the July 2016 Convertible Notes; (ii) bankruptcy or insolvency of the Company; and (iii) failure to file a registration statement by October 9, 2016.

On October 10, 2016 the Company had not been successful in filing the registration statement triggering an 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 began accruing interest at the rate of 24% on October 10, 2016.

Forbearance and Settlement Agreement on July 2016 Convertible Notes

On May 5, 2017 , the Company entered into a Forbearance and Settlement Agreement ("Forbearance Agreement") with a holder of certain secured convertible notes that are in default due to various triggering events. The holder and the Company agreed to forbear from taking any action provided for under the secured convertible notes in exchange for the following terms provided in this agreement:

- The Company agreed to redeem for cash all secured convertible notes of the Company held by the holder no later than September 1, 2017 .
- The Company affirmed that the current balance of owed principal and accrued and unpaid interest to the holder is $1,790,214 as of May 2, 2017 .
- The redemption price for such secured convertible notes shall be 120% (if redeemed on or prior to August 15, 2017) or 125% (if redeemed after August 15, 2017) of the then outstanding principal, plus any accrued and unpaid interest.
- During the month of May 2017, the Holder agreed to limit its conversions of outstanding Company secured convertible notes to $50,000 per calendar week of principal/interest.
- During the months of June, July and August 2017, the holder agreed to limit its conversions of outstanding Company secured convertible notes to $75,000 per calendar week of principal/interest.
- During the months of May, June, July and August 2017, the holder agreed that all outstanding Company secured convertible notes shall bear interest at the normal stated rate of 10% , rather than default rate of 24% .
- All conversions during the months of May, June, July and August 2017 will be at the “triggering event” discount conversion price as stated in the secured convertible notes, and will continue at the “triggering event” discount price until, if and when the notes are redeemed.
- Should the Company fail to redeem for cash all secured convertible notes on or before September 1, 2017 , default interest and normal stated interest will accrue from the date of execution of this agreement.

All principal and accrued interest on the July 2016 Convertible 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 (the “Fixed Conversion Price”), (ii) 70% of the lowest volume weighted average price (“VWAP”) 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. If certain defined triggering events occur, 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 Company's common stock for the thirty consecutive trading day period prior to the conversion date or (ii) the lowest VWAP of the the Company's 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 date of the Note SPA, 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 following table summarizes the conversion activity on the principal of the July 2106 Convertible Notes:

Conversion Period	Principal Converted		Common Shares Issued
Q4 2016	$	152,460	64,000,000
Q1 2017		1,017,732	959,704,543
Q2 2017		682,235	1,865,043,998
	$	1,852,427	2,888,748,541

In addition to the $1,852,427 in principal conversions, $3,960 of interest was converted during 2017. As of December 31, 2017 , with $1,096,600 of principal payments, $400,017 of interest payments, and $219,320 of redemption penalty payments, the July 2016 Convertible notes had been redeemed in full. The difference in the accrued interest and the paid interest, due to the terms of the settlement agreement, was $22,661 which was credited to interest expense upon full redemption of the instrument.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the July 2016 Convertible Notes 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 December 31, 2016 the fair value of the derivative liability was $3,733,348 .

Throughout 2017, the Company recorded the fair value changes of the embedded derivative associated with the July 2016 Convertible Notes as a gain or loss in the "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations. The net gain recorded for the year ended December 31, 2017 was $3,733,348 , to properly reflect the elimination of the embedded derivative upon the extinguishment of the liability.

NOTE 13. OCTOBER 2016 CONVERTIBLE NOTES AND EXCHANGE OF SERIES A PREFERRED STOCK

October 2016 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 October 2016 Convertible Notes. At Closing, the Company sold and issued $330,000 principal amount of October 2016 Convertible Notes to Adar Bays in exchange for $300,000 of gross proceeds.

Unless earlier converted or prepaid, the October 2016 Convertible Notes will mature December 31, 2017 (the “Maturity Date”). The October 2016 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). Principal and accrued interest on the October 2016 Convertible Notes is payable on the Maturity Date.

All principal and accrued interest on the October 2016 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 15 consecutive trading day period prior to the conversion date. After the six month anniversary of the issuance of any October 2016 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 15 consecutive trading day period prior to the conversion date.

The October 2016 Convertible Notes contain standard and customary events of default including but not limited to: (i) failure to make payments when due under the October 2016 Convertible Notes; and (ii) bankruptcy or insolvency of the Company.

Outstanding principal and accrued interest on the October 2016 Convertible Notes were $330,000 and $24,860 , respectively as of December 31, 2017 .

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the October 2016 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 $341,114 was charged to interest expense at issuance. The remaining debt discount will be charged to interest expense ratably over the life of the October 2016 Convertible Notes. As of December 31, 2016 , the fair value of the derivative liability was $544,746 .

The derivative liability associated with the October 2016 Convertible Notes is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2017 , the Company conducted a fair value assessment of the embedded derivative associated with the October 2016 Convertible Notes. As a result of the fair value assessment, the Company recorded a $279,442 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 three months ended December 31, 2017 . The net loss recorded for the year ended December 31, 2017 was $27,897 , to properly reflect the fair value of the embedded derivative of $572,643 as of December 31, 2017 .

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. The derivative associated with the October 2016 Convertible Notes approximates management's estimate of the fair value of the embedded derivative liability at December 31, 2017 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 65% 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 .

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 October 2016 Convertible Notes for outstanding shares of Series A Preferred Stock from the Series A Holder.

As of March 31, 2017, Adar Bays had elected to exchange all outstanding October 2016 Convertible Notes, in accordance with the exchange agreement, and the Series A Holder held $330,000 of the October 2016 Convertible Notes.

NOTE 14. ST. GEORGE CONVERTIBLE NOTE

On September 8, 2017 , the Company entered into a securities purchase agreement with St. George Investments, LLC ("Investor"), for the private placement of $1,725,000 principal amount of the Company's Original Issue Discount Convertible Promissory Notes.

On September 11, 2017 , the Company sold and issued $1,725,000 principal amount of the convertible notes to the Investor in exchange for $1,500,000 of gross proceeds, and paid $20,000 in financing costs. The original issue discount of $225,000 , and the financing fee, will be charged to interest expense, ratably, over the life of the note.

Unless earlier converted or prepaid, the convertible notes will mature on March 11, 2019 . The notes do not bear interest in the absence of an event of default.

For the first six months after the issuance of the notes, the Company will make a monthly cash repayment on the notes of approximately $96,000 . Thereafter, the Investor may request that the Company make monthly partial redemptions of the note up to $150,000 per month. If the Investor does not request the full $150,000 redemption amount in any one month, the unused portion of such monthly redemption amount can be added to future monthly redemption amounts. But in no event can the amount requested by the Investor for any one month exceed $275,000 .

Redemption amounts are payable by the Company in cash. Beginning ten months after the issuance of the convertible notes, cash redemption payments by the Company will be subject to a 15% redemption premium.

Beginning six months after the issuance of the convertible notes, the Company also has the option (subject to customary equity conditions) to pay redemption amounts in the form of shares of common stock. Payments in the form of shares would be calculated using a variable conversion price equal to the lower of (i) 85% of the average VWAP for the shares over the prior 5 trading days or (ii) the closing bid price for the shares on the prior trading day.

All principal and accrued interest on the Notes are convertible at any time, in whole or in part, at the option of the Investor into shares of Common Stock at a fixed conversion price of $0.004 per share.

The Notes contain standard and customary events of default including but not limited to: (i) failure to make payments when due under the Notes; and (ii) bankruptcy or insolvency of the Company. Upon the occurrence of an event of default, the Notes will begin to bear interest at the rate of 22% per annum. In addition, upon the occurrence of an event of default, the Investor has the option to increase the outstanding balance of the Notes by 25% .

In connection with the closing under the Note SPA, the Company issued $37,500,000 unregistered shares of common stock to the Investor as an origination fee. The closing stock price on the date of close was $0.0017 resulting in an interest expense of $63,750 being recorded as of the date of close.

The Notes may not be converted and shares of Common Stock may not be issued pursuant to the Notes if, after giving effect to the conversion or issuance, the holder together with its affiliates would beneficially own in excess of 4.99% of the outstanding shares of Common Stock. Per the conditions of the SPA, a reserve of 1.88 billion shares was set up out of our authorized and unissued shares.

During the fourth quarter of 2017, we made cash payments of $191,667 on this note, and as of December 31, 2017 , the principal balance on this note was $1,705,833 . In lieu of making the December 2017 payment, the share reserve was increased by 3 billion shares.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the 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 $468,095 was recorded.

The derivative liability associated with the Notes is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2017 , the Company conducted a fair value assessment of the embedded derivative associated with the Notes. As a result of the fair value assessment, the Company recorded a $151,504 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 three months ended December 31, 2017 . The net gain recorded for the year ended December 31, 2017 was $73,815 , to properly reflect the fair value of the embedded derivative of $394,280 as of December 31, 2017 .

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. The derivative associated with the Notes approximates management's estimate of the fair value of the embedded derivative liability at December 31, 2017 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 62% present value discount rate of 12% and dividend yield of 0% .

NOTE 15. BAYBRIDGE CONVERTIBLE NOTE

On December 6, 2017 , the Company entered into a securities exchange agreement (the "Exchange Agreement") with BayBridge Capital Fund LP ("BayBridge").

Pursuant to the terms of the Exchange Agreement, the Investor agreed to surrender and exchange 675 shares of outstanding Series J Preferred Stock ($755,417 of capital and accrued dividends). In exchange, the Company issued to the Investor an unsecured promissory note with an aggregate principal amount of $840,000 (the "Exchange Note"), with an original issue discount of $84,583 . Please refer to Note 21 for further discussion on the Series J Preferred Stock.

The Exchange Note is unsecured, has no applicable registration rights, bears interest at a rate of 12% per annum, matures on December 6, 2018 , and contains standard and customary events of default including but not limited to: (i) failure to make payments when due under the Exchange Note, and (ii) bankruptcy or insolvency of the Company. Principal and interest are payable upon maturity.

Payments of principal and accrued interest on the Exchange Note are payable in cash or, at the option of the Company, in shares of Common Stock at a variable conversion price equal to the lowest of (i) 85% of the average VWAP for the shares over the prior 5 trading days, (ii) the closing bid price for the shares on the prior trading day, or (iii) $0.003 per share. Payments in shares of Common Stock may not be issued pursuant to the Exchange Note if, after giving effect to the conversion or issuance, the holder together with its affiliates would beneficially own in excess of 9.99% of the outstanding shares of Common Stock.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the Exchange Note 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. December 6, 2017 , the derivative liability associated with the promissory note was $1,048,311 . Since the value of the derivative was more than the liability and the original issue discount, the entire undiscounted liability of $755,417 was recorded as a debt discount to be amortized over the life of the liability. The remaining $292,894 was charged to interest expense.

The derivative liability associated with the Exchange Note is subject to revaluation on a quarterly basis to reflect the market value change of the embedded conversion option. At December 31, 2017 , the Company conducted a fair value assessment of the embedded derivative associated with the Exchange Note. As a result of the fair value assessment, the Company recorded a $505,578 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, 2017 , to properly reflect the fair value of the embedded derivative of $542,733 as of December 31, 2017 .

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. The derivative associated with the Exchange Note approximates management’s estimate of the fair value of the embedded derivative liability at December 31, 2017 based on using a Monte Carlo simulation following a Geometric Brownian Motion with the following assumptions: annual volatility of 61% , present value discount rate of 12% and dividend yield of 0% .

As of December 31, 2017 , principal of $275,000 had been converted into 404,411,765 shares of common stock and no cash payments of principal or interest had been made. The principal and accrued interest balances as of December 31, 2017 were $565,000 and $4,825 , respectively.

NOTE 16. 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 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 2,187 shares of common stock for $1,000,000 . The final closings took place in August 2013, with the transfer of 625,000 shares of Series A Preferred Stock and a warrant to purchase 10,938 shares of common stock for $5,000,000 .

Holders of Series A Preferred Stock are entitled to cumulative dividends at a rate of 8% 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). This make-whole provision expired in June 2017 and future conversions and redemptions will be paid out with accrued dividends per the holding period of the shares of Series A Preferred stock. Please see Note 23 for more information.

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 , 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 per share, plus any accrued and unpaid dividends, plus the make-whole amount (if applicable). At December 31, 2017 , 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 (subject to standard ratable anti-dilution 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.

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 October 2016 Convertible Notes (see Note 13) for outstanding shares of Series A Preferred Stock from the Series A Holder.

As of December 31, 2017 , Adar Bays had elected to exchange all outstanding October 2016 Convertible Notes, in accordance with the exchange agreement, resulting in the exchange of 104,785 shares of Series A Preferred Stock. As of December 31, 2017 , Adar Bays had also converted their 104,785 shares of Series A Preferred Stock, and the related make whole dividend, which resulted in the issuance of 173,946,250 shares of common stock.

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 per share of Series A Preferred Stock plus any accrued and unpaid dividends.

As of December 31, 2017 , there were 60,756 shares of Series A Preferred Stock outstanding and accrued and unpaid dividends of $279,815 .

NOTE 17. 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 in exchange for $2,800,000 .

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 two lowest VWAPs of the Company's common stock for the ten consecutive trading day period prior to the conversion date. If certain defined default events occur, the conversion price would thereafter be reduced (and only reduced), to equal 70% of the average of the two lowest VWAPs of the Company's common stock for the twenty consecutive trading day period prior to the conversion date.

The private investor had available to them a new conversion price beginning on June 9, 2016 as a result of the Series H Preferred Stock transaction further described in Note 12. Shares of the Series E Preferred Stock are now convertible, at the option of the private investor, into common stock at a variable conversion price equal to 70% of (i) the lowest VWAP of our common stock for the ten consecutive trading day period prior to the conversion date or (ii) the lowest closing bid price of our common stock for the ten consecutive trading day period prior to the conversion date. The following table summarizes the conversion activity of the Series E Preferred Stock:

Conversion Period	Preferred Series E Shares Converted	Value of Series E Preferred Shares (inclusive of accrued dividends)	Common Shares Issued
Q4 2015	478	$ 481,500	250,000
Q1 2016	1,220	1,239,436	1,132,000
Q2 2016	365	381,414	7,979,568
Q3 2016	523	548,896	21,973,747
Q4 2016	94	101,018	13,089,675
Q1 2017	15	16,248	8,289,962
Q2 2017	35	38,886	134,927,207
Q3 2017	70	76,814	129,314,677
	2,800	$ 2,884,212	316,956,836

Holders of the Series E Preferred Stock will be entitled to dividends in the amount of 7% per annum. During the year ended December 31, 2017 , the holder converted dividends in the amount of $11,948 on the Series E Preferred Stock, resulting in the issuance of 25,160,171 shares of common stock. On September 30, 2017, the Company paid $2,013 in cash for the remaining accrued dividends.

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 Condensed 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.

As of December 31, 2017 , all outstanding shares of Series E Preferred Stock, along with all accrued dividends, had either been converted or redeemed.

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.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the Series E 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 December 31, 2016 the fair value of the derivative liability was $140,748 .

At September 30, 2017, the Company recorded the reduction of the remaining embedded derivative associated with the Series E Preferred Stock of $121,390 as a gain in the "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations. The net gain recorded for the year ended December 31, 2017 was $140,748 , to properly reflect the elimination of the embedded derivative as of December 31, 2017 .

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. In total, the Company directed the private investor to purchase $3,056,147 of common stock which resulted in the issuance of 1,368,000 shares of common stock.

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 agreed to issue to the private investor 132,000 shares of common stock (the "Commitment Shares"). The Commitment Shares were issued to the private investor commencing upon the date that the registration statement was declared effective by the SEC.

While not officially terminated, the CEL is no longer active and the Company does not consider this a viable source of capital.

NOTE 18. SERIES F PREFERRED STOCK

On January 19, 2016 , the Company entered into a securities purchase agreement with a private investor for the sale of $7,000,000 of the Company's newly designated Series F Preferred Stock.

On January 20, 2016 , the Company sold and issued 7,000 shares of Series F Preferred Stock to the private investor. The aggregate purchase price of the Series F Preferred shares was $7,000,000 . On January 20, 2016 , the private investor paid $500,000 to the Company. The remaining $6,500,000 was paid by the private investor to the Company in 14 weekly increments of $500,000 or $250,000 beginning January 25, 2016 and ending April 28, 2016 .

Shares of the Series F 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 equal to $5 per share. If certain defined default events occur, the conversion price would thereafter be reduced (and only reduced), to equal 70% of the average of the two lowest VWAPs of our common stock for the twenty consecutive trading day period prior to the conversion date.

If requested by the private investor, the Company will make weekly redemptions of shares of Series F Preferred Stock (including any accrued and unpaid dividends thereon). If the redemption price is paid by the Company in cash, the number of shares to be redeemed in each weekly increment is 250 shares of Series F Preferred Stock, and the redemption price is a price per share equal to $1,250 plus any accrued but unpaid dividends thereon.

The Company has 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 of common stock 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 redeem either (i) 250 shares of Series F Preferred Stock or (ii) such greater number of shares of Series F Preferred Stock (and also including any accrued and unpaid dividends) that would result upon redemption in the issuance of a number of shares of common stock equal to 12% of the aggregate composite trading volume for the Company’s common stock during the preceding calendar week.

The private investor had available to them a new conversion price beginning on June 9, 2016 as a result of the Series H Preferred Stock transaction further described in Note 12. Shares of the Series F Preferred Stock are now convertible, at the option of the private investor, into common stock at a variable conversion price equal to 70% of (i) the lowest VWAP of our common stock for the ten consecutive trading day period prior to the conversion date or (ii) the lowest closing bid price of our common stock for the ten consecutive trading day period prior to the conversion date.

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 .

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 ten consecutive trading day period prior to the conversion date or (ii) 50% of the lowest closing bid price of our common stock for the ten 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.

The following table summarizes the conversion activity of the Series F Preferred Stock:

Conversion Period	Principal Converted	Dividends Converted	Common Shares Issued
Q1 2016	$ 2,168,402	$ 19,896	2,183,991
Q2 2016	$ 3,234,000	$ 66,931	6,649,741
Q3 2016	$ 1,261,648	$ 54,096	81,917,367
Q4 2016	$ 175,949	$ 9,168	27,276,006
Q3 2017	$ 20,000	$ —	18,181,818
Q4 2017	$ 107,000	$ 467	172,552,354
	$ 6,966,999	$ 150,558	308,761,277

Holders of the Series F Preferred Stock are entitled to dividends in the amount of 7% per annum. As of December 31, 2017 , all shares and accrued dividends had been converted and no balance remained.

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.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the Series F 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 $1,666,000 were recorded. The debt discount will be charged to interest expense ratably over the life of the Series F Preferred Stock. The derivative balance was $255,324 , as of December 31, 2016 .

At December 31, 2017 , the Company recorded the reduction of the remaining embedded derivative associated with the Series F Preferred Stock of $42,347 as a gain in the "Change in fair value of derivatives and gain/(loss) on extinguishment of liabilities, net" in the Condensed Consolidated Statements of Operations. The net gain recorded for the year ended December 31, 2017 was $255,324 , to properly reflect the elimination of the embedded derivative as of December 31, 2017 .

NOTE 19. 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 . The Company issued 2,000 shares of Series G Preferred Stock to the private investors, in various tranches between April and June 2016, resulting in gross proceeds to the Company of $2,000,000 .

Holders of the Series G 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 G Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends thereon.

Assignment of Series G Preferred Stock

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 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 2016 and 2017, the Series G Sellers had sold 1,795 shares of Series G Preferred Stock, representing a value of $1,795,000 , to the Series G Purchasers.

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 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 following table summarizes the conversion activity of the Series G Preferred Stock:

Conversion Period	Principal Converted	Dividends Converted	Common Shares Issued
Q4 2016	$ 892,000	$ 37,895	245,726,283
Q1 2017	$ 372,000	$ 25,970	327,718,386
Q2 2017	$ 526,000	$ 49,096	1,337,776,821
	$ 1,790,000	$ 112,961	1,911,221,490

On June 29, and June 30, 2017, the Company redeemed the remaining 210 outstanding shares, and the related accrued dividends for cash payments in the amount of $232,440 . As of December 31, 2017 , all Series G Preferred Stock Shares, and the related accrued dividends, had either been converted or redeemed.

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.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the Series G 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 December 31, 2016 , the fair value of the derivative liability was $361,831 .

The net gain recorded for the year ended December 31, 2017 was $361,831 , to properly reflect the elimination of the embedded derivative as of December 31, 2017 .

Conversion Inducement and Disposal Price Guarantee

On January 17, 2017 , one of the Series G Preferred Stock holders (“Holder A”) requested a conversion of 100 shares of Series G Preferred Stock, $100,000 face value, including accrued dividends of $6,147 , into common stock of the Company at a conversion price of $0.00112 which would have resulted in the issuance of 95,014,884 shares of common stock. At the date of the request the Company did not have enough authorized shares to execute the conversion request and therefore entered into an agreement with Holder A to honor the conversion price of $0.00112 and issue the 95,014,884 shares of common stock upon the increase of the authorized common shares of the Company. The actual conversion occurred on March 17, 2017 which would have been a conversion price of $0.00168 . In conjunction with the conversion price agreement the Company agreed to provide a minimum disposal price guarantee to the Holder A of $0.003 on the tranche of 95,014,884 shares. If Holder A fails to dispose of these shares at $0.003 or above the Company will issue additional shares of common stock to make up the difference between the minimum disposal price of $0.003 and the price that Holder A disposed of the shares.

During the year ended December 31, 2017 , in accordance with ASC 470-20-40-16, the Company recorded expense of $79,179 related to the conversion inducement and expense of $134,566 related to the disposal price guarantee.

On June 29, 2017 , the Company and Holder A agreed to settle the disposal price guarantee liability in cash instead of shares of the Company's common stock. The liability was paid in three equal monthly installments commencing on June 30, 2017. As of December 31, 2017 , the Company had repaid the liability in full.

NOTE 20. 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 1,000 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.

On September 13, 2016 , the private investor (the “Series I Seller”) entered into an assignment agreement with an accredited investor (the “Series I Purchaser”). Under the terms of the assignment agreements, the Series I Seller may sell all 326 outstanding shares of Series I Preferred Stock to the Series I Purchaser for a purchase price of $1,000 per share of Series I Preferred Stock (plus the amount of any accrued and unpaid dividends thereon). In September and October 2016, the Series I Seller sold all 326 shares of Series I Preferred Stock, representing a value of $332,633 , to the Series I Purchaser.

On September 13, 2016 , the Company agreed to exchange outstanding Series I Preferred Stock for convertible notes (“Exchange Convertible Notes”) and as of December 31, 2016 the Series I Purchaser had exchanged all 326 shares of Series I Preferred Stock and no shares were outstanding. Refer to the section below for details of the exchange.

Series I Exchange Convertible Notes

On September 13, 2016 , the Company and the investor entered into an Exchange Agreement (the "Exchange Agreement"). Under the terms of the Exchange Agreement, 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 Exchange Convertible Notes. The principal amount of Exchange 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. 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 , and accrued dividends of $6,633 , resulting in the creation of $332,633 of Exchange Convertible Notes.

Unless earlier converted or prepaid, all of the Exchange Convertible Notes will mature one year after issuance. The Exchange 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 Exchange 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.

All principal and accrued interest on the Exchange Convertible Notes are convertible at any time, in whole or in part, at the option of the investor, into shares of common stock at a variable conversion price equal to the lowest of (i) the lowest closing bid price of our common stock for the ten consecutive trading day period prior to the conversion date or (ii) 70% of the lowest VWAP of our common stock for the ten consecutive trading day period prior to the conversion date. The following table summarizes the conversion activity of the Exchange Convertible Notes, which were converted in full as of December 31, 2017 :

Conversion Period	Principal Converted	Interest Converted	Common Shares Issued
Q3 2016	$ 15,000	$ —	1,470,588
Q4 2016	$ 91,563	$ —	13,346,274
Q1 2017	$ 70,000	$ —	50,503,662
Q2 2017	$ 37,535	$ —	86,987,428
Q3 2017	$ 118,535	$ 10,268	306,675,548
	$ 332,633	$ 10,268	458,983,500

On July 31, 2017 , the remaining interest balance of $5,255 was paid in cash.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the Exchange Convertible Notes 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 December 31, 2016 the fair value of the derivative liability was $196,617 .

The net gain recorded for the year ended December 31, 2017 was $196,617 , to properly reflect the elimination of the embedded derivative as of July 31, 2017.

NOTE 21. SERIES J PREFERRED STOCK AND SERIES J-1 PREFERRED STOCK

Series J Preferred Stock

On September 19, 2016 , the Company entered into a securities purchase agreement with one accredited investor for the private placement of $1,350,000 of the Company's newly designated Series J Convertible Preferred Stock ("Series J Preferred Stock"). During September and October 2016, the Company issued 1,350 shares of Series J Preferred Stock in exchange for proceeds of $1,350,000 .

On March 29, 2017 , the accredited investor (the “Series J Seller”) entered into an assignment agreement with a private investor (the “Series J Purchaser”). Under the terms of the assignment agreement, the Series J Seller may sell 250 outstanding shares of Series J Preferred Stock to the Series J Purchaser for a purchase price of $1,000 per share of Series J Preferred Stock, plus the amount of any accrued and unpaid dividends. Again on April 4, 2017 , the Series J Seller entered into an assignment agreement with the same Series J Purchaser to sell an additional 600 shares of the Series J Preferred Stock at a purchase price of $1,000 per share, plus the amount of any accrued and unpaid dividends. During the year ended December 31, 2017 , the Series J Seller sold an aggregate of 850 shares to the Series J Seller for an aggregate proceeds of $850,000 .

Holders of the Series J Preferred Stock are entitled to dividends in the amount of 10% per annum. Shares of the Series J 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 $0.015 per share. During 2017, no shares of the Series J Preferred Stock had been converted at the fixed conversion price; 275 shares of Series J Preferred Stock were converted under conversion inducement offers (see Conversion Inducement Offers discussion below). 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.

There are no registration rights applicable to the Series J Preferred Stock. Accordingly, any shares of Common Stock issued upon conversion of the Series J Preferred Stock are restricted and can only be sold in compliance with Rule 144 or in accordance with another exemption from registration.

Conversion Inducement Offers

On March 24, 2017 , the Company offered to lower the conversion price, applicable to 100 shares of Series J Preferred Stock. The reduced conversion rate was $0.00147 calculated by giving a 30% discount on the day’s closing bid price resulting in the issuance of 71,636,432 shares of common stock. In accordance with ASC 470-20, the Company recorded a conversion expense of $142,155 related to the inducement offer.

On March 29, 2017 , the Company offered to lower the conversion price, applicable to 125 shares of Series J Preferred Stock. The reduced conversion rate was $0.00105 calculated by giving a 30% discount to the lowest closing bid price in a ten day look back period resulting in the issuance of 125,429,895 shares of common stock. In accordance with ASC 470-20, the Company recorded a conversion expense of $186,640 related to the inducement offer.

On May 8, 2017 , the Company offered to lower the conversion price, applicable to 50 shares of Series J Preferred Stock. The reduced conversion rate was $0.00028 calculated by giving a 30% discount to the lowest closing bid price in a ten day look back period resulting in the issuance of 189,484,143 . In accordance with ASC 470-20, the Company recorded a conversion expense of $92,974 related to the inducement offer.

As a result of these inducement offers, the Company re-evaluated the embedded conversion feature of the Series J Preferred Stock. Upon original issuance, the embedded conversion feature was determined to not require bifurcation, in accordance with ASC 815-10. Due to the inducement offers described above, the Company no longer believes the embedded conversion feature should remain unbifurcated.

Pursuant to a number of factors outlined in ASC Topic 815, *Derivatives and Hedging* , the conversion option in the Series J Preferred Stock, post inducement offers, 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 March 24, 2017 , the fair value of the derivative liability was $705,024 .

The net gain recorded for the year ended December 31, 2017 was $705,024 , to properly reflect the elimination of the embedded derivative as of December 31, 2017 .

Exchange Agreements

On November 30, 2017 , the Company entered into an exchange agreement with one of the Series J holders. Under the terms of the agreement, the Series J Holder agreed to surrender their 400 outstanding shares of Series J Preferred Stock, with a value of $400,000 , and $45,222 in accrued dividends, in return for a secured promissory note. Please see Note 10 for further discussion on the secured promissory note.

On December 6, 2017 , the the Company entered into an exchange agreement with one of the Series J holders. Under the terms of the agreement, the Series J Holder agreed to surrender their 675 outstanding shares of Series J Preferred Stock, with a value of $675,000 , and $80,417 in accrued dividends, in return for a promissory note. Please see Note 15 for further discussion on the promissory note.

As of December 31, 2017 , there were no outstanding shares of Series J Preferred Stock and no accrued and unpaid interest.

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 . The Company issued a total of 700 shares of Series J-1 Preferred Stock to the private investor in exchange for gross proceeds of $700,000 .

Shares of the Series J-1 Preferred Stock (including the amount of any accrued and unpaid dividends thereon) may be converted, 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 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 Series J-1 Preferred Stock at a price per share equal to $1,000 plus any accrued but unpaid dividends thereon.

On August 10, 2017 , the Company and the investor entered into a redemption agreement whereby the Company agreed to redeem $700,000 face value of Series J-1 Preferred Stock plus accrued dividends of $55,305 by issuing 500 million shares of common stock and a warrant to purchase 250 million shares of common stock.

The warrant is exerciseable, at a fixed exercise price of $0.003 , on the issuance date through the first anniversary of the issuance date. The Warrant may not be exercised if, after giving effect to the exercise, the holder of the Warrant, together with its affiliates, would beneficially own in excess of 9.99% of the outstanding shares of common stock.

NOTE 22. SERIES K 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 million of the Company’s newly designated Series K Convertible Preferred Stock (“Series K Preferred Stock”).

Per the terms of the Series K SPA, the Company was scheduled to 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 was also scheduled to sell 15,000 shares of Series K Preferred Stock to the Investor in exchange for $15,000,000 of gross proceeds on or before July 27, 2017. As of December 31, 2017 , the Company had sold 9,010 shares of Series K Preferred Stock in exchange for $9,010,000 in cash proceeds from the private investor. The Company does not expect to receive any more funding from this investor as of December 31, 2017 . The following summarizes the closings and proceeds received as of December 31, 2017 :

Closing Period	Preferred Series K Shares Purchased	Closing Amount
Q1 2017	150	$ 150,000
Q2 2017	4,100	$ 4,100,000
Q3 2017	4,760	$ 4,760,000
	9,010	$ 9,010,000

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 following table summarizes the conversion activity of Series K Preferred Stock:

Conversion Period	Preferred Series K Shares Converted	Value of Series K Preferred Shares	Common Shares Issued
Q2 2017	3,200	$ 3,200,000	800,000,000
Q3 2017	3,000	$ 3,000,000	750,000,000
	6,200	$ 6,200,000	1,550,000,000

As of December 31, 2017 , the investor owned approximately 16% of the Company's outstanding common stock and there are 2,810 shares of Series K Preferred Stock Outstanding, representing a value of $2,810,000 .

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.

NOTE 23. 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% 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 four 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 dividends should be characterized as embedded derivatives under ASC 815. The make-whole dividends were expensed at the time of issuance and recorded as "Make-whole dividend liability" in the Condensed 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. The fair value determination required forecasting stock price volatility, expected average annual return and conversion date.

Between December 2016 and March 2017, a Preferred Series A holder converted 104,785 shares of Series A Preferred Stock, and the related make whole dividend of $419,140 , which resulted in the issuance of 173,946,250 shares of common stock.

On June 17, 2017 , the make-whole dividend reached maturity. As such, the Company eliminated the Make-Whole derivative liability, moving the remaining balance of $274,583 to accrued interest and dividends, and began accruing additional dividends on the Series A Preferred Stock as they occur. Please refer to Note 16 for further information on the Series A Preferred Stock and the associated accrued and unpaid dividends.

NOTE 24. STOCKHOLDERS' EQUITY (DEFICIT)

Common Stock

At December 31, 2017 , the Company had 20 billion 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, 2017 , the Company had 9,606,597,777 shares of common stock outstanding. The Company has not declared or paid any dividends related to the common stock through December 31, 2017 .

Preferred Stock

At December 31, 2017 , 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. The following table summarizes the designations, shares authorized, and shares outstanding for the Company's Preferred Stock:

Preferred Stock Series Designation	Shares Authorized	Shares Outstanding
Series A	750,000	60,756
Series B-1	2,000	—
Series B-2	1,000	—
Series C	1,000	—
Series D	3,000	—
Series D-1	2,500	—
Series E	2,800	—
Series F	7,000	—
Series G	2,000	—
Series H	2,500	—
Series I	1,000	—
Series J	1,350	—
Series J-1	1,000	—
Series K	20,000	2,810

Series A Preferred Stock

Refer to Note 16 descriptions of Series A Preferred Stock.

Series B-1, B-2, C, D, and D-1 Preferred Stock

There were no transactions involving the Series B-1, B-2, C, D, or D-1 during the years ended December 31, 2016 and December 31, 2017 .

Series E Preferred Stock

Refer to Note 17 descriptions of Series E Preferred Stock.

Series F Preferred Stock

Refer to Note 18 descriptions of Series F Preferred Stock.

Series G Preferred Stock

Refer to Note 19 descriptions of Series G Preferred Stock.

Series H Preferred Stock

Refer to Note 12 descriptions of Series H Preferred Stock.

Series I Preferred Stock

Refer to Note 20 descriptions of Series I Preferred Stock.

Series J Preferred Stock

Refer to Note 21 descriptions of Series J Preferred Stock.

Series J-1 Preferred Stock

Refer to Note 21 descriptions of Series J-1 Preferred Stock.

Series K Preferred Stock

Refer to Note 22 descriptions of Series K Preferred Stock.

Warrants

On July 24, 2017 , the Company issued a warrant for 250 million shares of common stock, in connection with a settlement agreement with a consultant. The warrant is exerciseable at a fixed exercise price of $0.004 , on the issuance date through the first anniversary of the issuance date. The warrant may not be exercised if, after giving effect to the exercise, the holder, together with its affiliates, would beneficially own in excess of 9.99% of the Company's outstanding shares of common stock.

The Company conducted a fair value assessment of the warrant upon issuance using a Black Scholes model with the following inputs: stock price on the date of issuance of $0.0007 , stock volatility of 234% , and a risk free rate of 1.23% . Using these parameters, the Company calculated a fair value of $88,937 and recorded a corresponding expense on the Company's consolidated and condensed statement of operations.

On August 10, 2017 , the Company issued a warrant for 250 million shares of common stock in connection with a preferred stock redemption agreement. The warrant is exerciseable, at a fixed exercise price of $0.003 , on the issuance date through the first anniversary of the issuance date. The Warrant may not be exercised if, after giving effect to the exercise, the holder, together with its affiliates, would beneficially own in excess of 9.99% of the Company's outstanding shares of common stock.

The Company conducted a fair value assessment of the warrant upon issuance using a Black Scholes model with the following inputs: stock price on the date of issuance of $0.0015 , stock volatility of 230% , and a risk free rate of 1.22% . Using these parameters, the Company calculated a fair value of $246,803 and recorded a corresponding expense on the Company's consolidated and condensed statement of operations.

On December 15, 2017 , the Company issued a warrant for 200 million shares of common stock in connection with a consulting agreement. The warrant is exerciseable, at a fixed exercise price of $0.0018 , on the issuance date through the June 30, 2018 . The Warrant may not be exercised if, after giving effect to the exercise, the holder, together with its affiliates, would beneficially own in excess of 9.99% of the Company's outstanding shares of common stock.

The Company conducted a fair value assessment of the warrant upon issuance using a Black Scholes model with the following inputs: stock price on the date of issuance of $0.0008 , stock volatility of 99% , and a risk free rate of 1.48% . Using these parameters, the Company calculated a fair value of $10,035 and recorded a corresponding expense on the Company's consolidated and condensed statement of operations.

The following table summarizes warrant activity:

	Warrant Shares	Warrant Weighted Average Exercise Price
Outstanding at December 31, 2016	—	$ —
Granted	700,000,000	$ 0.003
Exercised	—	$ —
Canceled	—	$ —
Outstanding at December 31, 2017	700,000,000	$ 0.003
Exercisable at December 31, 2017	700,000,000	$ 0.003

NOTE 25. 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. The stock Option Plan initially reserved 170,000 shares (as adjusted for the Reverse Stock Split) of the Company's common stock for option awards to eligible employees. 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 during 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 125,000 and 750,000 shares during 2015 and 2016, respectively. There were no changes to the plan in 2017.

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 five 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.

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,	
	2017	2016
Share-based compensation cost included in:		
Research and development	$ 18,231	$ 181,985
Selling, general and administrative	105,037	706,363
Total share-based compensation cost	$ 123,268	$ 888,348

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

	For the years ended December 31,	
	2017	2016
Type of Award:		
Stock Options	$ 96,939	$ 377,653
Restricted Stock Units and Awards	26,329	510,695
Total share-based compensation cost	$ 123,268	$ 888,348

Stock Options: The Company recognized share-based compensation expense for stock options of $97,000 to officers, directors and employees for the year ended December 31, 2017 related to stock option awards, reduced for estimated forfeitures. There were no option grants during the year ended December 31, 2017 , and the weighted average estimated fair value of employee stock options granted for the years ended December 31, 2016 was $1.35 per share. Fair value was calculated using the Black-Scholes Option Pricing Model with the following assumptions:

	For the years ended December 31,	
	2017	2016
Expected volatility	—%	114.6%
Risk free interest rate	—%	1.5%
Expected dividends	—	—
Expected life (in years)	0	5.8 years

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, 2017 , total compensation cost related to non-vested stock options not yet recognized was $36,000 which is expected to be recognized over a weighted average period of approximately 1.2 years . As of December 31, 2017 , 67,000 shares were vested or expected to vest in the future at a weighted average exercise price of $30.71 . As of December 31, 2017 , 189,475 shares remained available for future grants under the Option Plan.

The following table summarizes stock option activity 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, 2015	73,870	$ 56.43	8.84	
Granted	33,250	$ 1.35		$ 1,540
Exercised	—	—		
Canceled	(30,206)	41.15		
Outstanding at December 31, 2016	76,914	$ 37.67	8.28	
Granted	—	$ —		$ —
Exercised	—	—		
Canceled	(6,283)	31.23		
Outstanding at December 31, 2017	70,631	$ 29.61	7.32	
Exercisable at December 31, 2017	52,364	$ 37.75		

Restricted Stock: The Company recognized share-based compensation expense related to restricted stock grants of approximately $26,000 for the year ended December 31, 2017 . There were no restricted stock grants during the year ended December 31, 2017 , and the weighted average estimated fair value of restricted stock grants for the year ended December 31, 2016 was $1.97 .

There are no unvested shares of restricted stock as of December 31, 2017 , and there is no unrecognized share-based compensation expense from restricted stock. As of December 31, 2017 , approximately 496,000 shares remained available for future grants under the Restricted Stock Plan.

The following table summarizes stock option activity within the Restricted Stock Plan:

	Shares	Weighted Average Grant Date Fair Value
Non-vested at December 31, 2015	20,487	5.59
Granted	245,414	1.97
Vested	(176,693)	
Forfeited	(28,618)	
Non-vested at December 31, 2016	60,590	1.84
Granted	—	—
Vested	(59,390)	
Forfeited	(1,200)	
Non-vested at December 31, 2017	—	—

NOTE 26. 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, 2017 , the Company had $321,066,413 of cumulative net operating loss carryforwards for federal income tax purposes that were available to offset future taxable income through the year 2037 . 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 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 $234,024,680 for the year ended December 31, 2017 . 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, 2017 and 2016 , the components of these temporary differences and the deferred tax asset were as follows:

	As of December 31	
	2017	2016
Deferred Tax Asset		
Current:		
Accrued Expenses	$ —	$ 192,000
Inventory Allowance	141,000	234,000
Other	13,000	43,000
Total Current	154,000	469,000
Non-current:		
Stock Based Compensation-Stock Options and Restricted Stock	1,058,000	1,919,000
Tax effect of NOL carryforward	67,852,000	79,384,000
Depreciation	8,748,000	17,406,000
Amortization	(368,000)	(637,000)
Warranty reserve	14,000	68,000
Total Non-current	77,304,000	98,140,000
Net deferred tax asset	77,458,000	98,609,000
Less valuation allowance	(77,458,000)	(98,609,000)
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, 2017 . The Company's deferred tax valuation allowance of $77,458,000 reflected above is a decrease of $21,151,000 from the valuation allowance reflected as of December 31, 2016 of $98,609,000 .

As of December 31, 2017 , 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, 2017 .

The Company's effective tax rate for the years ended December 31, 2017 and 2016 differs from the statutory rate due to the following (expressed as a percentage of pre-tax income):

	2017	2016
Federal statutory rate	35.0 %	35.0 %
State statutory rate	2.8 %	2.6 %
Change in rate	— %	(0.4)%
Permanent tax differences	(2.3)%	(0.1)%
Change in fair value of derivatives	8.4 %	0.9 %
Deemed interest expense on debt discount	(5.5)%	(5.1)%
Loss on extinguishment of liabilities	(4.9)%	(5.9)%
Other	(0.9)%	(1.8)%
Increase in valuation allowance	(32.6)%	(25.6)%
	— %	— %

NOTE 27. RELATED PARTY TRANSACTIONS

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 29, 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.

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 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. Following the transaction, the outstanding balance of the new note was $602,000 (including accrued and unpaid interest) with a discount of $60,000 .

On January 19, 2017 , the Company issued 333,333,333 shares of unregistered common stock in a private placement to 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.

TFG is a Singapore based entity controlled and 50% owned by Ascent's President & CEO, Victor Lee, and owns approximately 3% of the Company's outstanding shares at December 31, 2017 .

All related party transactions were approved by our independent board of directors.

NOTE 28. COMMITMENTS AND CONTINGENCIES

The Company is subject to various legal proceedings, both asserted and unasserted, that arise in the ordinary course of business. The Company cannot predict the ultimate outcome of such legal proceedings or in certain instances provide reasonable ranges of potential losses. However, as of the date of this report, the Company believes that none of these claims will have a material adverse effect on its consolidated financial position or results of operations. In the event of unexpected subsequent developments and given the inherent unpredictability of these legal proceedings, there can be no assurance that the Company's assessment of any claim will reflect the ultimate outcome, and an adverse outcome in certain matters could, from time to time, have a material adverse effect on the Company's consolidated financial position or results of operations in particular quarterly or annual periods.

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, Ascent 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 paid $339,481 during the year ended December 31, 2017 .

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, 2017 , the settlement had been redeemed in full and there was no remaining accrued litigation settlement, recorded as a current liability on the Consolidated Balance Sheets.

NOTE 29. 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 $199,669 and $338,230 for the years ended December 31, 2017 and 2016 , 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 30. SUBSEQUENT EVENTS

Secured Promissory Notes

Between January 11, 2018 and March 21, 2018 , the Company received the remaining $1,500,000 in proceeds per the Securities Purchase Agreement dated November 30, 2017 (Note 10). The funding occurred in six tranches as follows:

Date Received	Amount Received	Maturity Date
1/11/2018	$ 250,000	1/11/2019
1/25/2018	$ 250,000	1/25/2019
2/8/2018	$ 250,000	2/8/2019
2/22/2018	$ 250,000	2/22/2019
3/7/2018	$ 250,000	3/7/2019
3/21/2018	$ 250,000	3/21/2019

Between January 4, 2018 and March 26, 2018 , the Company made five payments of $250,000 in stock. The aggregate payments of $1,250,000 resulted in the issuance of 2,450,980,392 shares of the Company's common stock.

As of the date of this report, the total principal balance of the notes under the aforementioned Securities Purchase Agreement was $4,665,675 .

Promissory Notes

On January 31, 2018 , the Company and a private investor entered into a promissory note agreement for the $177,500 of aggregate proceeds received in December 2017 (Note11). This $200,000 original issue discount note is unsecured, was issued with a discount of $22,500 , bears interest at 12% per annum, and matures on December 29, 2018 . As of the date of this filing, the principal balance on this note is $200,000 .

On February 16, 2018 , the Company received $30,000 in proceeds from a private investor. As of the date of this filing, the Company is expecting more funding from this investor and has not yet finalized the note.

St. George Convertible Note

In lieu of the cash payments for January and February 2018, we increased the reserve for the St. George Convertible Note by 2 billion shares, to a total of 6.88 billion shares.

On March 12, 2018 , the investor, pursuant to the terms of the Convertible Promissory Note dated September 11, 2017 (Note 14), elected to redeem a portion of the note in conversion shares. On this date, the investor redeemed $75,000 of the note, resulting n the issuance of 187,500,000 shares of the Company's common stock. These shares were drawn out of the reserve created for this note the remaining reserves are 6.69 billion . As of the date of this report, the remaining principal balance on the St. George Convertible Note is $1,630,833 .

BayBridge Convertible Note

On March 26, 2018, pursuant to the terms of the Convertible Promissory Note dated November 30, 2017, the investor converted $105,000 in principal and $20,717 in interest into shares of the Company's common stock, resulting in the issuance of 493,006,549 shares. As of the date of this report, the remaining principal balance on the BayBridge Convertible Note is $460,000 .

EXHIBIT 10.62

ASCENT SOLAR TECHNOLOGIES, INC.

NOTE PURCHASE AND EXCHANGE AGREEMENT

THIS NOTE PURCHASE AND EXCHANGE AGREEMENT (the " ***Agreement*** ") is made as of the 30th day of November, 2017 (the " ***Effective Date*** ") by and among **ASCENT SOLAR TECHNOLOGIES, INC.** , a Delaware corporation (the " ***Company*** "), and the entity named on the Schedule of Purchasers attached hereto as *Exhibit A* (the " ***Purchaser*** ").

RECITALS:

The Purchaser currently owns and holds certain outstanding securities of the Company as listed on *Exhibit B* hereto (the " ***Exchange Securities*** "). The Purchaser desires to exchange the Exchange Securities for certain secured convertible promissory notes (the " ***Notes*** ") to be newly issued by the Company pursuant to this Agreement. The parties to this Agreement intend that the transactions contemplated by this Agreement are such that the offer and exchange of securities by the Company under this Agreement will be exempt from registration under applicable United States securities laws as a result of this exchange offer being undertaken pursuant to Sections 3(a)(9) and 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act").

To provide the Company with additional resources to conduct its business, the Purchaser is willing to purchase up to an aggregate amount of $2,000,000 of Notes for cash, subject to the conditions specified herein.

AGREEMENT:

NOW, THEREFORE , in consideration of the foregoing, and the representations, warranties, covenants and conditions set forth below, the Company and Purchasers, intending to be legally bound, hereby agree as follows:

1. ISSUE OF NOTES PURSUANT TO EXCHANGE AND PURCHASE

1.1 The Exchange of Notes . On the Closing Date, the Company will issue and deliver (or cause to be issued and delivered) Notes to the Purchaser in the amounts and maturity date specified on Exhibit B hereto. In exchange, the Purchaser will surrender to the Company the Exchange Securities listed on Exhibit B hereto. The Notes issued in exchange for the Exchange Securities shall generally be in the form attached hereto as Exhibit C or D (as appropriate) and otherwise shall be in a form mutually acceptable to the parties. Assuming the accuracy of the representations and warranties of the parties set forth in this Agreement, the parties acknowledge and agree that the purpose of such representations and warranties is, among other things, to ensure that such exchange qualifies as an exchange of securities under Sections 3(a)(9) and 4(a)(2) of the Securities Act.

1.2 The Purchase of Notes. Subject to the terms of this Agreement, the Purchaser agrees to purchase up to an aggregate amount of $2,000,000 of Notes for cash, subject to the conditions specified herein. The purchase and sale of Notes to the Purchaser will occur over time in tranches. The Schedule of Purchasers attached as *Exhibit A* sets forth the timing and amounts for the purchase and sale of Notes to the Purchaser in such tranches. The Notes issued to the Purchaser for cash shall generally be in the form attached hereto as Exhibit D and otherwise shall be in a form mutually acceptable to the parties.

1.3 Collateral. The Company agrees to grant the Purchasers a security interest in certain of the Company's assets to secure the Company's performance under all of the Notes.

1.4 Conversion . The principal and all accrued and unpaid interest under each Note may, solely at the election of each Purchaser, be converted into shares of the Company's Common Stock as provided in the applicable Note.

2. THE CLOSING

2.1 Closing Date(s). The closing of the exchange and also the initial sale and purchase of the Notes (the " ***Initial Closing*** ", and collectively with any Subsequent Closing (as defined below), the " ***Closing*** ") shall be held as of the date hereof (the " ***Initial Closing Date*** ").

2.2 Delivery. At the Closing (i) the Purchaser shall deliver to the Company a check or wire transfer funds in the amount of $250,000, (ii) the Purchaser shall surrender the Exchange Securities, and (iii) the Company shall issue and deliver Notes to the Purchaser in the forms and amounts as required by this Agreement to be issued and delivered as of the Initial Closing Date.

2.3 Subsequent Sales of Notes . Following the Initial Closing Date and subject to the terms of this Agreement, the Company shall issue and sell additional Notes to the Purchaser in the amounts and at the times set forth on Exhibit A hereto. The Initial Closing and the other subsequent closings in accordance with this Section 2.3 (a " ***Subsequent Closing*** ") are referred to herein as a " ***Closing*** ." The Initial Closing Date and the date of any Subsequent Closing are referred to herein as a " ***Closing Date*** ."

3. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY

As of the Initial Closing and each Subsequent Closing, except as set forth on any Schedule of Exceptions attached hereto, the Company hereby represents and warrants to each Purchaser as follows:

3.1 Organization, Good Standing and Qualification . The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware. The Company has the requisite corporate power to own, lease and operate its properties and assets and to carry on its business as now conducted and as proposed to be conducted. The Company is duly qualified and is authorized to do business and is in good standing as a foreign corporation in all jurisdictions in which the nature of its activities and of its properties (both owned and leased) makes such qualification necessary, except for those jurisdictions in which failure to do so would not have a material adverse effect on the Company or its business.

3.2 Corporate Power . The Company has and will have at the Initial Closing and each Subsequent Closing all requisite corporate power to execute and deliver this Agreement, the Notes and the Security Agreement relating thereto (collectively, the " ***Transaction Agreements*** "), and to carry out and perform its obligations under the terms of this Agreement and under the terms of the other Transaction Agreements.

3.3 Authorization. All corporate action on the part of the Company, its directors and its shareholders necessary for the authorization, execution, delivery by the Company of the Transaction Agreements and the performance of the Company's obligations hereunder and thereunder, including the issuance and delivery of the Notes and the reservation of the capital stock issuable upon conversion of the Notes. This Agreement and the other Transaction Agreements, when executed and delivered by the Company, shall constitute valid and binding obligations of the Company enforceable in accordance with their terms, (a) subject to laws of general application relating to bankruptcy, insolvency, the relief of debtors; (b) with respect to rights to indemnity, subject to federal and state securities laws, and (c) subject to general principles of equity that restrict the availability of equitable remedies. The capital stock of the Company issuable upon conversion of the Notes (such capital stock, collectively with the Notes, the " ***Securities*** "), when issued in compliance with the provisions of this Agreement and the Notes, will be validly issued, fully paid and nonassessable and free of any liens or encumbrances and issued in compliance with all applicable federal and securities laws.

3.4 Governmental Consents . All consents, approvals, orders, or authorizations of, or registrations, qualifications, designations, declarations, or filings with, any governmental authority, required on the part of the Company in connection with the valid execution and delivery of this Agreement, the offer, sale or issuance of the Securities, or the consummation of any other transaction contemplated hereby, shall have been obtained and will be effective at the Closing.

3.5 Offering. Assuming the accuracy of the representations and warranties of the Purchaser contained in Section 4 hereof, the offer, issue, and sale of the Notes will be exempt from the registration and prospectus delivery requirements of the Securities Act, and have been registered or qualified (or are exempt from registration and qualification) under the registration, permit, or qualification requirements of all applicable state securities laws.

3.6 Disclosure . The Company has provided Purchaser with all the information regarding the Company reasonably available to it that Purchaser has requested for deciding whether to purchase the Securities.

4. REPRESENTATIONS AND WARRANTIES OF THE PURCHASER

As of the Closing, the Purchaser hereby represents and warrants to the Company as follows:

4.1 Purchase for Own Account . Purchaser represents that it is acquiring the Securities solely for its own account and beneficial interest for investment and not for sale or with a view to distribution of the Securities or any part thereof, has no present intention of selling (in connection with a distribution or otherwise), granting any participation in, or otherwise distributing the same, and does not presently have reason to anticipate a change in such intention.

4.2 Information and Sophistication . Without lessening or obviating the representations and warranties of the Company set forth in Section 3, Purchaser hereby: (i) acknowledges that it has received all the information it has requested from the Company and it considers necessary or appropriate for deciding whether to acquire the Securities, (ii) represents that it has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of the Securities and to obtain any additional information necessary to verify the accuracy of the information given the Purchaser and (iii) further represents that it has such knowledge and experience in financial and business matters that it is capable of evaluating the merits and risk of this investment.

4.3 Ability to Bear Economic Risk . Purchaser acknowledges that investment in the Securities involves a high degree of risk, and represents that it is able, without materially impairing its financial condition, to hold the Securities for an indefinite period of time and to suffer a complete loss of its investment.

4.4 Further Limitations on Disposition . Without in any way limiting the representations set forth above, Purchaser further agrees not to make any disposition of all or any portion of the Securities unless and until:

(a) There is then in effect a registration statement under the Act covering such proposed disposition and such disposition is made in accordance with such registration statement; or

(b) The Purchaser shall have notified the Company of the proposed disposition and shall have furnished the Company with a detailed statement of the circumstances surrounding the proposed disposition, and if reasonably requested by the Company, Purchaser shall have furnished the Company with an opinion of counsel (which may be counsel to the Company), reasonably satisfactory to the Company, that such disposition will not require registration under the Act or any applicable state securities laws, provided that no such opinion shall be required for dispositions in compliance with Rule 144, except in extraordinary circumstances.

(c) Notwithstanding the provisions of paragraphs (a) and (b) above, no such registration statement or opinion of counsel shall be necessary for any transfer by Purchaser to the partners, members, retired partners, retired members, stockholders, and affiliates of Purchaser or the estates and immediate family members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing persons, if all transferees agree in writing to be subject to the terms hereof to the same extent as if they were the Purchaser hereunder.

4.5 Accredited Investor Status. Purchaser is an “accredited investor” as such term is defined in Rule 501 under the Act.

5. CONDITIONS TO CLOSING OF THE PURCHASER

Purchaser's obligations at the Closing are subject to the fulfillment, on or prior to the Closing, of all of the following conditions, any of which may be waived in whole or in part by the Purchaser:

5.1 Representations and Warranties . The representations and warranties made by the Company in Section 3 hereof shall have been true and correct when made, and shall be true and correct on the Closing.

5.2 Governmental Approvals and Filings . Except for any notices required or permitted to be filed after the Closing with certain federal and state securities commissions, the Company shall have obtained all governmental approvals required in connection with the lawful sale and issuance of the Notes.

5.3 Legal Requirements . At the Closing, the sale and issuance by the Company, and the purchase by the Purchaser, of the Notes shall be legally permitted by all laws and regulations to which the Purchaser or the Company are subject.

5.4 Proceedings and Documents . All corporate and other proceedings in connection with the transactions contemplated at the Closing and all documents and instruments incident to such transactions shall be reasonably satisfactory in substance and form to the Purchaser.

5.5 Transaction Documents . The Company shall have duly executed and delivered to the Purchaser the following documents:

(a) This Agreement;

(b) Each Note issued hereunder; and

(c) The Security Agreement relating to the the collateral securing the obligations under the Notes.

5.6 Equity Condition . The issuance of Notes at any Subsequent Closing shall be conditioned upon the Company having an average daily trading volume for the 20 trading days immediately preceding the Subsequent Closing Date of at least $50,000.

6. CONDITIONS TO OBLIGATIONS OF THE COMPANY

The Company's obligation to issue and sell the Notes at the Closing is subject to the fulfillment, on or prior to the date of the Closing, of the following conditions, any of which may be waived in whole or in part by the Company:

6.1 Representations and Warranties . The representations and warranties made by the Purchaser in Section 4 hereof shall be true and correct when made, and shall be true and correct on the Closing.

6.2 Governmental Approvals and Filings . Except for any notices required or permitted to be filed after the Closing with certain federal and state securities commissions, the Company shall have obtained all governmental approvals required in connection with the lawful sale and issuance of the Notes.

6.3 Legal Requirements . At the Closing, the sale and issuance by the Company, and the purchase by the Purchaser, of the Notes shall be legally permitted by all laws and regulations to which the Purchaser or the Company are subject.

6.4 Purchase Price and Exchange Securities . Purchaser shall have delivered to the Company the Exchange Securities and/or dollar amount in respect of the Notes being purchased by Purchaser referenced in Section 1 hereof as required as of such Closing Date.

7. MISCELLANEOUS

7.1 Binding Agreement . The terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties. Nothing in this Agreement, expressed or implied, is intended to confer upon any third party any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

7.2 Registration, Transfer and Replacement of the Notes . The Notes issuable under this Agreement shall be registered notes. The Company will keep, at its principal executive office, books for the registration and registration of transfer of the Notes. Prior to presentation of any Note for registration of transfer, the Company shall treat the person in whose name such Note is registered as the owner and holder of such Note for all purposes whatsoever, whether or not such Note shall be overdue, and the Company shall not be affected by notice to the contrary. The holder of any Note, at its option, may in person or by duly authorized attorney surrender the same for exchange at the Company’s chief executive office, and promptly thereafter and at the Company’s expense, except as provided below, receive in exchange therefor one or more new Note(s), each in the principal amount requested by such holder, dated the date of the Note so surrendered and registered in the name of such person or persons as shall have been designated in writing by such holder or its attorney for the same principal amount as the then unpaid principal amount of the Note so surrendered. Upon receipt by the Company of evidence reasonably satisfactory to it of the ownership of and the loss, theft, destruction or mutilation of any Note and (a) in the case of loss, theft or destruction, of indemnity reasonably satisfactory to it; or (b) in the case of mutilation, upon surrender thereof, the Company, at its expense, will execute and deliver in lieu thereof a new Note executed in the same manner as the Note being replaced, in the same principal amount as the unpaid principal amount of such Note and dated the date of such Note.

7.3 Successors and Assigns . The rights and obligations of the Company and the Purchaser shall be binding upon and benefit the successors, assigns, heirs, administrators and transferees of the parties.

7.4 Assignment by the Company . The rights, interests or obligations hereunder may not be assigned, by operation of law or otherwise, in whole or in part, by the Company without the prior written consent of Purchaser.

7.5 Separability of Agreements; Severability of this Agreement . If any provision of this Agreement shall be judicially determined to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

7.6 Governing Law. This Agreement shall be governed by and construed under the laws of the State of Colorado as applied to agreements among Colorado residents, made and to be performed entirely within the State of Colorado, without giving effect to conflicts of laws principles.

7.7 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

7.8 Titles and Subtitles . The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

7.9 Notices. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed telex, electronic mail or facsimile if sent during normal business hours of the recipient to the address on file in the books and records of the Company, and if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, within the United States, (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt, within the United States, or (e) upon actual delivery if mailed or otherwise delivered in hard copy outside the Unites States. All communications shall be sent to the Company at 12300 Grant Street, Thornton, CO 80241 , and to Purchaser at the address(es) set forth on the signature page hereto or at such other address(es) as the Company or Purchaser may designate by ten (10) days advance written notice to the other parties hereto.

7.10 Modification; Waiver . No modification or waiver of any provision of this Agreement or consent to departure therefrom shall be effective unless in writing and approved by the Company and the Purchasers then-holding at least a majority in interest of the outstanding principal amount of Notes (the " ***Majority Holders*** "). Any provision of the Notes may be amended or waived by the written consent of the Majority Holders; provided, however, that no amendment or waiver shall materially and adversely affect the rights of any Purchaser or group of Purchasers in a manner different from all Purchasers without the written consent of the Purchaser or group of Purchasers so materially and adversely affected.

7.11 Fees and Expenses. The Company and each Purchaser shall each bear its respective expenses and legal fees incurred with respect to this Agreement and the transactions contemplated herein.

7.12 Delays or Omissions. It is agreed that no delay or omission to exercise any right, power, or remedy accruing to each Purchaser, upon any breach or default of the Company under this Agreement or any Note shall impair any such right, power, or remedy, nor shall it be construed to be a waiver of any such breach or default, or any acquiescence therein, or of or in any similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. It is further agreed that any waiver, permit, consent, or approval of any kind or character by a Purchaser of any breach or default under this Agreement, or any waiver by any Purchaser of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in writing and that all remedies, either under this Agreement, or by law or otherwise afforded to the Purchasers, shall be cumulative and not alternative

7.13 Entire Agreement . This Agreement together with the other Transaction Agreements constitute and contain the entire agreement among the Company and Purchasers and supersede any and all prior agreements, negotiations, correspondence, understandings and communications among the parties, whether written or oral, respecting the subject matter hereof.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this **NOTE PURCHASE AND EXCHANGE AGREEMENT** as of the date first written above.

COMPANY:

ASCENT SOLAR TECHNOLOGIES, INC.

By : /s/ Victor Lee
Name: Victor Lee
Title: Chief Executive Officer

PURCHASER:

GLOBAL ICHIBAN LIMITED

By : /s/ Ashley Ong
Name: Ashley Ong
Title: Director

SCHEDULES AND EXHIBITS

Exhibit A

Schedule of Purchasers

PURCHASER :	NOTE AMOUNT :	Closing Date:
Global Ichiban Limited	$250,000	November 30, 2017
Global Ichiban Limited	$250,000	December 31, 2017
Global Ichiban Limited	$250,000	January 31, 2018
Global Ichiban Limited	$250,000	February 28, 2018
Global Ichiban Limited	$250,000	March 31, 2018
Global Ichiban Limited	$250,000	April 30, 2018
Global Ichiban Limited	$250,000	May 31, 2018
Global Ichiban Limited	$250,000	June 30, 2018

Exhibit B

Listing of Exchange Securities

	PRINCIPAL :	Accrued Interest/Dividend:	Total Amount for New Issue Note	Maturity
Promissory Note 9/19/17	3,340,690.92	18,847.65	3,359,538.57	36 months
Promissory Note 11/16/17	250,000.00	2,465.75	252,465.75	12 months
Series J Preferred Stock 400 shares	400,000.00	45,222.19	445,222.19	12 months

Exhibit C

Form of Secured Convertible Promissory Note – 36 month maturity

Exhibit D

Form of Secured Convertible Promissory Note – 12 month maturity

EXHIBIT 10.63

THIS SECURED PROMISSORY NOTE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED. NO SALE OR DISPOSITION MAY BE EFFECTED EXCEPT IN COMPLIANCE WITH RULE 144 UNDER SAID ACT OR AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL FOR THE HOLDER SATISFACTORY TO THE PAYOR THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT OR RECEIPT OF A NO-ACTION LETTER FROM THE SECURITIES AND EXCHANGE COMMISSION.

SECURED PROMISSORY NOTE

$________________________ November 30, 2017

Thornton, Colorado

For value received, Ascent Solar Technologies, Inc., a Delaware corporation (" ***Payor*** "), promises to pay to Global Ichiban Ltd or its assigns (" ***Holder*** ") the principal sum of **$____________________** with interest on the outstanding principal amount at the rate of twelve percent (12%) per annum. Interest shall commence from the effective date and shall be computed on the basis of a year of 365 days for the actual number of days elapsed. The principal and accrued interest on this note (the " ***Note*** ") shall be due and payable over Thirty Six (36) equal monthly instalments commencing on January 15, 2018 (the " ***Instalment*** ") and ending on December 15, 2020 (the " ***Maturity Date*** "), provided that the Instalment and Maturity Date of all Notes (as defined below) may be extended with the written consent of Holder.

1. This Note is issued pursuant to that certain Note Purchase and Exchange Agreement dated November 30, 2017, as the same may be amended from time to time, by and between Borrower and Holder (the "Exchange Agreement").

2. This Note is one of several similar notes issued or issuable to the Holder pursuant to the Exchange Agreement (collectively, the "Notes"). The obligations under all of the Notes will be secured by a lien on substantially all of the Company's assets.

3. All instalments shall be in lawful money of the United States of America and shall be made pro rata among all Holders. All payments shall be applied first to accrued expenses due under this Note, next to interest and thereafter to principal.

4. At the option of the Payor, payments on this Note may be made (a) in cash, or (b) in Common Stock of the Payor at Market Price ("Payment Shares"). The Market Price of the Payment Shares shall be 85% of the average VWAP for the 5 consecutive trading days prior to the date on which the Payment Shares are issued, but in no event greater than the latest Closing Bid on the day the instalment is made or $0.002 per share, whichever is lower. Payor may not make any payments in the form of Payment Shares if the issuance of such Payment Shares would cause the Holder to be deemed to "beneficially own" (as such term is defined under applicable SEC rules and regulations) more than 9.9% of the Payor's outstanding shares of common stock.

5. Payor shall deliver to Holder, or its designee or agent the Payment Shares and delivery shall be made via Delivery by Deposit/Withdrawal at Custodian (DWAC) as follows:

DTC Participant:
DTC Number:
Account Number:

6. Promptly upon the occurrence thereof, Payor shall furnish to Holder written notice of the occurrence of any Event of Default (as defined below) hereunder.

7. If action is instituted to collect this Note, the Payor promises to pay all costs and expenses, including, without limitation, reasonable attorneys' fees and costs, incurred in connection with such action.

8. Payor may prepay this Note prior to the Maturity Date.

9. If there shall be any Event of Default hereunder, at the option of, and upon the declaration of the Holder of this Note and upon written notice to the Payor (which election and notice shall not be required in the case of an Event of Default under Section 9(b) or 9(c)), this Note shall accelerate and all principal and unpaid accrued interest shall become due and payable. The occurrence of any one or more of the following shall constitute an " ***Event of Default*** ":

(a) Payor fails to pay timely any of the principal amount due under any of the Notes on the date the same becomes due and payable or any accrued interest or other amounts due under any of the Notes on the date the same becomes due and payable;

(b) Payor (i) files any petition or action for relief under any bankruptcy, reorganization, insolvency or moratorium law or any other law for the relief of, or relating to, debtors, now or hereafter in effect; (ii) makes any assignment for the benefit of creditors or takes any corporate action in furtherance of any of the foregoing; (iii) applies for or consents to the appointment of a receiver, trustee, liquidator or custodian of itself or of all or a substantial part of its property; (iv) is unable, or admits in writing its inability, to pay its debts generally as they mature, (v) is dissolved or liquidated; (vi) becomes insolvent (as such term may be defined or interpreted under any applicable statute); or (vii) takes any action for the purpose of effecting any of the foregoing; or

(c) An involuntary petition is filed against Payor (unless such petition is dismissed or discharged within thirty (30) days under any bankruptcy statute now or hereafter in effect) or a custodian, receiver, trustee, assignee for the benefit of creditors (or other similar official) is appointed to take possession, custody or control of any property of Payor.

10. Upon the occurrence or existence of any Event of Default (other than an Event of Default described in Section 9(b) or 9(c)) and at any time thereafter during the continuance of such Event of Default, Holder may, by written notice to the Payor, declare all outstanding principal and accrued interest on this Note immediately due and payable without presentment, demand, protest or any other notice of any kind, all of which are hereby expressly waived. Upon the occurrence or

existence of any Event of Default described in Section 9(b) or 9(c), immediately and without notice, all outstanding principal and interest on this Note shall automatically become immediately due and payable, without presentment, demand, protest or any other notice of any kind, all of which are hereby expressly waived.

11. The Payor hereby waives notice of default, presentment or demand for payment, protest or notice of nonpayment or dishonor and all other notices or demands relative to this Note.

12. This Note shall be governed by and construed under the laws of the State of Colorado, as applied to agreements among Colorado residents, made and to be performed entirely within the State of Colorado, without giving effect to conflicts of laws principles.

13. Any term of this Note (excluding the principal amount of the Note and the interest rate of the Note) may be amended or waived with the written consent of Payor and Holder. Upon the effectuation of such waiver or amendment in conformance with this Section 13, the Payor shall promptly give written notice thereof to the record holders of the Notes who have not previously consented thereto in writing.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, Payor and Holder have caused this Note to be executed as of the date first written above.

PAYOR:

ASCENT SOLAR TECHNOLOGIES, INC.

By: ______________________
Name: Victor Lee
Title: Chief Executive Officer

HOLDER:

GLOBAL ICHIBAN LTD

By: ______________________
Name:
Title:

EXHIBIT 10.64

THIS SECURED PROMISSORY NOTE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED. NO SALE OR DISPOSITION MAY BE EFFECTED EXCEPT IN COMPLIANCE WITH RULE 144 UNDER SAID ACT OR AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL FOR THE HOLDER SATISFACTORY TO THE PAYOR THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT OR RECEIPT OF A NO-ACTION LETTER FROM THE SECURITIES AND EXCHANGE COMMISSION.

SECURED PROMISSORY NOTE

$__________________ ___________________,_____

Thornton, Colorado

For value received, Ascent Solar Technologies, Inc., a Delaware corporation (“ ***Payor*** ”), promises to pay to Global Ichiban Ltd or its assigns (“ ***Holder*** ”) the principal sum of **$______________** with interest on the outstanding principal amount at the rate of twelve percent (12%) per annum. Interest shall commence from the effective date and shall be computed on the basis of a year of 365 days for the actual number of days elapsed. The principal and accrued interest on this note (the “ ***Note*** ”) shall be due and payable on _________________,_____ (the “ ***Maturity Date*** ”), provided that the Instalment and Maturity Date of all Notes (as defined below) may be extended with the written consent of Holder.

1. This Note is issued pursuant to that certain Note Purchase and Exchange Agreement dated November 30, 2017, as the same may be amended from time to time, by and between Borrower and Holder (the “Exchange Agreement”).

2. This Note is one of several similar notes issued or issuable to the Holder pursuant to the Exchange Agreement (collectively, the “Notes”). The obligations under all of the Notes will be secured by a lien on substantially all of the Company’s assets.

3. All installments shall be in lawful money of the United States of America and shall be made pro rata among all Holders. All payments shall be applied first to accrued expenses due under this Note, next to interest and thereafter to principal.

4. At the option of the Payor, payments on this Note may be made (a) in cash, or (b) in Common Stock of the Payor at Market Price (“Payment Shares”). The Market Price of the Payment Shares shall be 85% of the average VWAP for the 5 consecutive trading days prior to the date on which the Payment Shares are issued, but in no event greater than the latest Closing Bid on the day the instalment is made or $0.002 per share, whichever is lower. Payor may not make any payments in the form of Payment Shares if the issuance of such Payment Shares would cause the Holder to be deemed to “beneficially own” (as such term is defined under applicable SEC rules and regulations) more than 9.9% of the Payor’s outstanding shares of common stock.

5. Payor shall deliver to Holder, or its designee or agent the Payment Shares and delivery shall be made via Delivery by Deposit/Withdrawal at Custodian (DWAC) as follows:

DTC Participant:
DTC Number:
Account Number:

6. Promptly upon the occurrence thereof, Payor shall furnish to Holder written notice of the occurrence of any Event of Default (as defined below) hereunder.

7. If action is instituted to collect this Note, the Payor promises to pay all costs and expenses, including, without limitation, reasonable attorneys' fees and costs, incurred in connection with such action.

8. Payor may prepay this Note prior to the Maturity Date.

9. If there shall be any Event of Default hereunder, at the option of, and upon the declaration of the Holder of this Note and upon written notice to the Payor (which election and notice shall not be required in the case of an Event of Default under Section 9(b) or 9(c)), this Note shall accelerate and all principal and unpaid accrued interest shall become due and payable. The occurrence of any one or more of the following shall constitute an " ***Event of Default*** ":

(a) Payor fails to pay timely any of the principal amount due under any of the Notes on the date the same becomes due and payable or any accrued interest or other amounts due under any of the Notes on the date the same becomes due and payable;

(b) Payor (i) files any petition or action for relief under any bankruptcy, reorganization, insolvency or moratorium law or any other law for the relief of, or relating to, debtors, now or hereafter in effect; (ii) makes any assignment for the benefit of creditors or takes any corporate action in furtherance of any of the foregoing; (iii) applies for or consents to the appointment of a receiver, trustee, liquidator or custodian of itself or of all or a substantial part of its property; (iv) is unable, or admits in writing its inability, to pay its debts generally as they mature, (v) is dissolved or liquidated; (vi) becomes insolvent (as such term may be defined or interpreted under any applicable statute); or (vii) takes any action for the purpose of effecting any of the foregoing; or

(c) An involuntary petition is filed against Payor (unless such petition is dismissed or discharged within thirty (30) days under any bankruptcy statute now or hereafter in effect) or a custodian, receiver, trustee, assignee for the benefit of creditors (or other similar official) is appointed to take possession, custody or control of any property of Payor.

10. Upon the occurrence or existence of any Event of Default (other than an Event of Default described in Section 9(b) or 9(c)) and at any time thereafter during the continuance of such Event of Default, Holder may, by written notice to the Payor, declare all outstanding principal and accrued interest on this Note immediately due and payable without presentment, demand, protest or any other notice of any kind, all of which are hereby expressly waived. Upon the occurrence or

existence of any Event of Default described in Section 9(b) or 9(c), immediately and without notice, all outstanding principal and interest on this Note shall automatically become immediately due and payable, without presentment, demand, protest or any other notice of any kind, all of which are hereby expressly waived.

11. The Payor hereby waives notice of default, presentment or demand for payment, protest or notice of nonpayment or dishonor and all other notices or demands relative to this Note.

12. This Note shall be governed by and construed under the laws of the State of Colorado, as applied to agreements among Colorado residents, made and to be performed entirely within the State of Colorado, without giving effect to conflicts of laws principles.

13. Any term of this Note (excluding the principal amount of the Note and the interest rate of the Note) may be amended or waived with the written consent of Payor and Holder. Upon the effectuation of such waiver or amendment in conformance with this Section 13, the Payor shall promptly give written notice thereof to the record holders of the Notes who have not previously consented thereto in writing.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, Payor and Holder have caused this Note to be executed as of the date first written above.

PAYOR:

ASCENT SOLAR TECHNOLOGIES, INC.

By: ______________________
Name: Victor Lee
Title: Chief Executive Officer

HOLDER:

GLOBAL ICHIBAN LTD

By: ______________________
Name:
Title:

EXHIBIT 10.65

SECURITY AGREEMENT

This Security Agreement (the " ***Agreement*** ") is hereby entered into by and among Ascent Solar Technologies, Inc., a Delaware corporation (" ***Debtor*** ") and each of the persons identified on the signature pages hereto as a "Secured Party" (each, a " ***Secured Party*** " and collectively, the " ***Secured Parties*** "), as of the 30th day of November, 2017.

RECITALS:

A. This Agreement is entered into in connection with that certain Note Purchase and Exchange Agreement dated as of even date herewith by and among Debtor and certain of the Secured Parties (the " ***Purchase Agreement*** "), pursuant to which Debtor is issuing secured convertible promissory notes (the " ***Notes*** "). This Agreement, the Purchase Agreement, the Notes, and all other documents necessary to effect the transactions contemplated thereby are collectively referred to as the " ***Transaction Agreements*** ".

B. In order to induce the Secured Parties to extend the credit evidenced by the Notes, Debtor has agreed to enter into this Agreement and to grant the Secured Parties a security interest in certain of Debtor's assets to secure the performance and timely payment of the Notes and its other obligations arising under the Transaction Agreements.

AGREEMENT:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Grant of Security Interest . As security for the Obligations (as defined below), Debtor hereby grants to the Secured Parties, a security interest in Debtor's right, title and interest in and to the following property of Debtor wherever located and whether now existing or hereafter arising or coming into existence (collectively, the " ***Collateral*** "):

All assets of Debtor, wherever located, whether now owned or hereafter acquired or arising, and all Proceeds, products, accessions, additions, substitutions, rents, profits and replacements thereof, including, without limitation, all Inventory, Equipment, real estate, fixtures, Goods, Accounts, account receivables, contract rights, Commercial Tort Claims, Chattel Paper (tangible and electronic), Deposit Accounts, Documents, General Intangibles, payment intangibles, software, Instruments, Investment Property, intellectual property, Letter-of-Credit Rights and letters-of-credit. The Collateral shall specifically include all real estate and related property (including all fixtures and appetences thereto) owned by Debtor, including Debtor's property located at 12300 North Grant Street, Thornton, CO 80241.

All capitalized terms used in this Section 1 and not otherwise defined, shall have the meanings given to such terms in the Uniform Commercial Code of the State of Colorado as in effect from time to time. The term "Obligations" means all loans, advances, debts, liabilities and obligations, howsoever arising, owed by Debtor to Collateral Agent (as defined below), if any, and the Secured Parties of every kind and description (whether or not evidenced by any note or instrument and whether or not for the payment of money), now existing or hereafter arising under or pursuant to the terms of the Notes and the other Transaction Agreements, including, all interest, fees, charges, expenses, attorneys' fees and costs and accountants' fees and costs chargeable to and payable by Debtor hereunder and thereunder, in each case, whether direct or indirect, absolute or contingent, due or to become due, and whether or not arising after the commencement of a proceeding under Title 11 of the United States Code (11 U.S.C. Section 101 et seq.), as amended from time to time (including post-petition interest) and whether or not allowed or allowable as a claim in any such proceeding.

2. Liabilities Secured . The security interests granted herein shall be security for the performance of and timely payment of the Obligations.

3. Debtor's Representations and Warranties . Debtor represents and warrants to the Secured Parties that:

(a) *Ownership.* Debtor is the owner of the Collateral (or, in the case of after-acquired Collateral, at the time Debtor acquires rights in the Collateral, will be the owner thereof) and that no other person or entity has (or, in the case of after-acquired Collateral, at the time Debtor acquires rights therein, will have) any right, title, claim or interest (by way of Lien or otherwise) in, against or to the Collateral, other than Permitted Liens.

(b) *Perfection.* Upon the filing of a UCC-1 financing statement and a real estate deed of trust in the appropriate filing offices, the Secured Parties will have a perfected security interest in the Collateral to the extent that a security interest in the Collateral can be perfected by such filings. Such security interest shall be subject to any prior security interests securing any Permitted Liens.

4. Debtor's Covenants . Until such time as the Obligations described herein are satisfied in full and this Agreement has been irrevocably terminated, and unless the Secured Parties holding a majority in interest of the outstanding principal amount of the Notes ("***Majority of Secured Parties***") otherwise consent in writing **,** Debtor hereby agrees that:

(a) *Security.* Debtor shall perform all acts that may be necessary to maintain, preserve, protect and perfect the Collateral, the lien granted to the Secured Parties therein and the perfection and priority of such lien including: (i) to procure, execute and deliver from time to time any endorsements, assignments, financing statements, account control agreements, consents, landlord waivers and other writings reasonably deemed necessary or appropriate by the Collateral Agent (or the Majority of Secured Parties if no Collateral Agent exists) to perfect, maintain and protect its lien hereunder and the priority thereof; (ii) to appear in and defend any action or proceeding which may affect its title to or the Secured Parties' interest in the Collateral; (iii) to permit Collateral Agent and its representatives the right, at any time during normal business hours, upon reasonable prior notice, to visit and inspect the properties of Debtor and its corporate, financial and operating records, and make abstracts therefrom, and to discuss Debtor's affairs, finances and accounts with its directors, officers and independent public accountants; and (iv) to promptly notify Collateral Agent (or the Secured Parties if no Collateral Agent exists) in writing if Debtor acquires a Commercial Tort Claim, and to provide a summary description of such claim, and grant to Collateral Agent (or the Secured Parties if no Collateral Agent exists) in writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Collateral Agent (or the Majority of Secured Parties if no Collateral Agent exists).

(b) *Sale of Collateral* . Debtor shall not assign, sell, convey, lease, transfer, or dispose of the Collateral (other than the sale of inventory and the non-exclusive licensing of intellectual property in the ordinary course of business) to any third party without the prior written consent of the Majority of Secured Parties.

(c) *Insurance* . Debtor will at its own expense at all times keep the Collateral insured against loss by damage, fire, theft and other extended coverage hazards.

(d) *Liens* . Debtor will at all times keep the Collateral free from any adverse claims, liens, security interests, or encumbrances (other than Permitted Liens), and in good order and repair and will not waste, destroy or do anything that may impair or destroy the value of all or any part of the Collateral. The term "Permitted Liens" means (i) liens for taxes not yet delinquent or liens for taxes being contested in good faith and by appropriate proceedings for which adequate reserves have been established; (ii) liens in respect of property or assets imposed by law which were incurred in the ordinary course of business, such as carriers', warehousemen's, materialmen's and mechanics' liens and other similar liens arising in the ordinary course of business which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings; (iii) liens incurred or deposits made in the ordinary course of business in connection with workers' compensation, unemployment insurance and other types of social security, and other liens to secure the performance of tenders, statutory obligations, contract bids, government contracts, performance and return of money bonds and other similar obligations, incurred in the ordinary course of business, whether pursuant to statutory requirements, common law or consensual arrangements; (iv) liens in favor of the Secured Parties; and (v) any security interests or liens attaching to the Debtor's Thornton, Colorado headquarters building securing Debtor's outstanding mortgage loan with the Colorado Housing Finance Authority ("CHFA").

(e) *Taxes.* Debtor will pay promptly when due all taxes, assessments and other charges upon the Collateral.

(f) *Maintenance* . Debtor will provide for all maintenance, repairs and replacements to the Collateral in accordance with standard maintenance and repair procedures and upon request will promptly make available copies of all repairs, maintenance and test reports to the Collateral Agent (or the Secured Parties if no Collateral Agent exists).

(g) *Location of Collateral.* Debtor shall not without prior written consent of the Majority of Secured Parties, (i) change Debtor's legal name or legal structure, (ii) change Debtor's state of incorporation.

(h) *Intellectual Property* .

(i) Debtor will perform all acts and execute all documents, including notices of security interest for each relevant type of intellectual property in forms suitable for filing with the United States Patent and Trademark Office or the United States Copyright Office, that may be necessary or desirable to record, maintain, preserve, protect and perfect the Secured Parties' security interest in such intellectual property.

(ii) Debtor will promptly (and in any event within 5 days) notify Collateral Agent (or the Secured Parties if no Collateral Agent exists) upon the filing, either by Debtor or through any agent, employee, licensee or designee, of (1) an application for the registration, or the registration, of any patent or trademark, with the United States Patent and Trademark Office or any similar office or agency in any other country or any political subdivision thereof, (2) any assignment of any patent or trademark application or registration, which Debtor may acquire from a third party, with the United States Patent and Trademark Office or any similar office or agency in any other country or any political subdivision thereof, or (3) any assignment of any registered copyright or mask work, which Debtor may acquire from a third party, with the United States Copyright Office or any similar office or agency in any other country or any political subdivision thereof. Upon the request of the Majority of Secured Parties, Debtor shall execute and deliver any and all agreements, instruments, documents and papers as the Majority of Secured Parties may request to evidence the Secured Parties 's security interest in such patent, trademark (and the goodwill and general intangibles of Debtor relating thereto or represented thereby), copyright or mask work.

(iii) While any Obligations remain outstanding, Debtor shall not register or cause to be registered with the United States Copyright Office any copyright registrations with respect to any proprietary software of Debtor or any other property that is subject to registration with the United States Copyright Office.

(iv) Debtor will take all necessary steps in any proceeding before the United States Patent and Trademark Office, the United States Copyright Office or any similar office or agency in any other country or any political subdivision thereof, to diligently prosecute or maintain, as applicable, each material application and registration of the patents, trademarks, copyrights and mask works, including filing of renewals, affidavits of use, affidavits of incontestability and opposition, interference and cancellation proceedings.

5. Financing Statement; Deed of Trust .

(a) Debtor authorizes the Secured Parties to file, in jurisdictions where this authorization will be given effect, a UCC-1 Financing Statement and a real estate deed of trust describing the Collateral in the same manner as it is described herein (or as all property and assets of Debtor) in order to perfect and maintain the Secured Parties' security interest in the Collateral;

and, from time to time at the request of the Majority of Secured Parties, Debtor shall execute one or more Financing Statements and such other documents (and pay the cost of filing or recording the same) in all public offices deemed necessary or desirable by the Majority of Secured Parties to establish and maintain a valid security interest in the Collateral (free of all other liens and claims whatsoever, except for Permitted Liens) to secure the payment of the Obligations.

(b) The Secured Parties agree that they will not file any real estate deed of trust until after the consent to such filing is obtained from CHFA. Debtor and the Secured Parties both agree to use commercially reasonable best efforts to obtain such CHFA consent as soon as is reasonably practicable.

6. Collateral Agent's Rights .

(a) If a Majority of Secured Parties reasonably determines that the value of the Collateral has diminished to such an extent as to be unsatisfactory in character or quality, the Collateral Agent may demand Debtor provide additional collateral, or the Collateral Agent may exercise its rights in the event of default described herein. At its option, the Collateral Agent may discharge taxes, liens or security interests or other encumbrances at any time levied or placed on the Collateral, may pay for insurance on the Collateral, and may pay for the maintenance and preservation of the Collateral.

(b) Debtor agrees to irrevocably appoint the Collateral Agent (when appointed by the Majority of Secured Parties) as its attorney-in-fact (which appointment is coupled with an interest) and agrees that Collateral Agent may perform (but Collateral Agent shall not be obligated to and shall incur no liability to Debtor or any third party for failure so to do) any act which Debtor is obligated by this Agreement to perform, and to exercise such rights and powers as Debtor might exercise with respect to the Collateral, including the right to (a) collect by legal proceedings or otherwise and endorse, receive and receipt for all dividends, interest, payments, proceeds and other sums and property now or hereafter payable on or on account of the Collateral; (b) enter into any extension, deposit, or other agreement pertaining to, or deposit, surrender, accept, hold or apply other property in exchange for the Collateral; (c) make any compromise or settlement, and take any action it deems advisable, with respect to the Collateral; (d) insure, process and preserve the Collateral; (e) pay any indebtedness of Debtor relating to the Collateral; and (f) execute other documents, instruments and agreements required hereunder; provided , however , that Collateral Agent shall not exercise any such powers granted pursuant to subsections (a) through (c) prior to the occurrence of an Event of Default and shall only exercise such powers during the continuance of an Event of Default. Debtor agrees to reimburse Collateral Agent upon demand for any reasonable costs and expenses, including attorneys' fees, Collateral Agent may incur while acting as Debtor's attorney-in-fact hereunder, all of which costs and expenses are included in the Obligations. It is further agreed and understood between the parties hereto that such care as Collateral Agent gives to the safekeeping of its own property of like kind shall constitute reasonable care of the Collateral when in Collateral Agent 's possession; provided , however , that Collateral Agent shall not be required to make any presentment, demand or protest, or give any notice and need not take any action to preserve any rights against any prior party or any other person in connection with the Obligations or with respect to the Collateral.

7. Events of Default . Debtor shall be in default under this Agreement upon the occurrence of an Event of Default (as such term is defined in the Notes).

8. Secured Parties' Remedies Upon Default . Upon the occurrence of any Event of Default and at any time thereafter, the Secured Parties may, at their option, by the action of the Majority of Secured Parties, declare any and all liabilities secured hereby immediately due and payable without demand or notice of any kind and the same thereupon shall immediately become and be due and payable without demand or notice, in which event (subject to the further provisions of this Agreement) the Collateral Agent, on behalf of the Secured Parties, shall have and may exercise from time to time any and all rights and remedies of a secured party under the Uniform Commercial Code of the State of Colorado, as amended from time to time, and any and all rights and remedies available to it under any other applicable law. Notwithstanding anything herein to the contrary, the Secured Parties hereby grant the shareholders of the Debtor a right of first refusal to purchase any property of the Debtor that the Secured Parties intend to dispose of. The terms of such right of first refusal will be no less favorable to the Secured Parties than an arms length transaction. Any proceeds of any disposition of all or any part of the Collateral may be applied by the Collateral Agent toward payment of such of the Obligations, and in such order of application, as the Collateral Agent may from time to time elect.

9. Collateral Agent .

(a) *Appointment* . The Secured Parties, by the written consent of the Majority of Secured Parties, may appoint a collateral agent for the Secured Parties under this Agreement (in such capacity, the " ***Collateral Agent*** ") to serve until the termination of this Agreement.

(b) *Powers and Duties of Collateral Agent, Indemnity by Secured Parties* .

(i) Each Secured Party hereby irrevocably authorizes Collateral Agent, once appointed, to take such action and to exercise such powers hereunder as provided herein or as requested in writing by a Majority of Secured Parties in accordance with the terms hereof, together with such powers as are reasonably incidental thereto. Notwithstanding anything herein to the contrary, in the event Collateral Agent does not hold a majority in interest of the outstanding principal amount of the Notes, any action taken by Collateral Agent hereunder must be first approved in writing by a Majority of Secured Parties. Collateral Agent may execute any of its duties hereunder by or through agents or employees and shall be entitled to request and act in reliance upon the advice of counsel concerning all matters pertaining to its duties hereunder and shall not be liable for any action taken or omitted to be taken by it in good faith in accordance therewith.

(ii) Neither Collateral Agent nor any of its directors, officers or employees shall be liable or responsible to any Secured Party or to Debtor for any action taken or omitted to be taken by Collateral Agent or any other such person hereunder or under any related agreement, instrument or document, except in the case of gross negligence or willful misconduct on the part of Collateral Agent, nor shall Collateral Agent or any of its directors, officers or employees be liable or responsible for (i) the validity, effectiveness, sufficiency, enforceability or enforcement of the Notes, this Agreement or any instrument or document delivered hereunder or relating hereto; (ii) the title of Debtor to any of the Collateral or the freedom of any of the Collateral from any prior or other liens or security interests; (iii) the determination, verification or enforcement of Debtor's compliance with any of the terms and conditions of this Agreement; (iv) the failure by Debtor to deliver any instrument or document required to be delivered pursuant to the terms hereof; or (v) the receipt, disbursement, waiver, extension or other handling of payments or proceeds made or received with respect to the Collateral, the servicing of the Collateral or the enforcement or the collection of any amounts owing with respect to the Collateral.

(iii) In the case of this Agreement and the transactions contemplated hereby and any related document relating to any of the Collateral, each of the Secured Parties agrees to pay to Collateral Agent, once appointed, on demand, its pro rata share of all fees and all expenses incurred in connection with the operation and enforcement of this Agreement, the Notes or any related agreement to the extent that such fees or expenses have not been paid by Debtor. In the case of this Agreement and each instrument and document relating to any of the Collateral, each of the Secured Parties hereby agrees to hold Collateral Agent harmless, and to indemnify Collateral Agent from and against any and all loss, damage, expense or liability which may be incurred by Collateral Agent in connection with its exercise of its duties as the collateral agent under this Agreement and the transactions contemplated hereby and any related agreement or other instrument or document, as the case may be, unless such liability shall be caused by the willful misconduct or gross negligence of the Collateral Agent.

10. Termination . Upon payment in full of all Obligations, the Collateral Agent, on behalf of the Secured Parties, shall release the lien granted hereby upon the Collateral.

11. Additional Secured Parties . If the Debtor shall issue additional Note(s) pursuant to the Purchase Agreement, any holder of such Note(s) shall become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement and shall be deemed a "Secured Party" and a party hereunder.

12. Priority . The Secured Parties agree and acknowledge that the security interests granted hereunder shall be *pari passu* with respect to all the Notes.

13. Miscellaneous . No waiver by a Secured Party of any default shall operate as a waiver of any other default or of the same default on a future occasion. No delay or omission on the part of a Secured Party in exercising any right or remedy shall operate as a waiver thereof, and no single or partial exercise by a Secured Party of any right or remedy shall preclude any other or further exercise thereof or the exercise of any other right or remedy. Time is of the essence of this Agreement. The provisions of this Agreement are cumulative and the Secured Parties shall have all the benefits, rights and remedies of and under the Notes. The singular pronoun, when used herein, shall include the plural and the neuter shall include the masculine and feminine. All rights of each Secured Party hereunder shall inure to the benefit of its heirs, legal representatives, successors and permitted assigns; and all liabilities of Debtor shall bind the heirs, legal representatives, successors and assigns of Debtor. The Transaction Agreements constitute the full and complete agreement of the Debtor and the Secured Parties with regard to the transactions set forth herein, and supersede or replace any other previous or contemporaneous oral or written agreements. This Agreement may not be amended except by a writing signed by the Debtor and a Majority of Secured Parties. Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and all of which shall constitute one instrument.

14. Collection Costs . If Collateral Agent hires an attorney to assist in collecting any amount due or in enforcing any right or remedy under this Agreement or the Notes, Debtor agrees to pay such Secured Party such attorneys' fees and collection costs.

15. Colorado Law. This Agreement has been delivered in the State of Colorado and shall be construed in accordance with the laws of Colorado without regard to the choice of law rules therein.

(Signature Page Follows)

IN WITNESS WHEREOF, this Security Agreement has been duly executed as of the date first written above.

DEBTOR:

ASCENT SOLAR TECHNOLOGIES, INC.

By: /s/ Victor Lee
Name: Victor Lee
Title: Chief Executive Officer

SECURED PARTIES:

GLOBAL ICHIBAN LIMITED

By: /s/ Ashley Ong
Name: Ashley Ong
Title: Director

EXHIBIT 16.1

March 29, 2018

Securities and Exchange Commission
450 Fifth Street, N.W.
Washington, DC 20549

Commissioners:

We have read Item 9 of the Form 10-K dated March 29, 2018 of Ascent Solar Technologies, Inc. and are in agreement with the statements concerning our Firm contained therein.

/s/ Hein & Associates LLP

Hein & Associates LLP
Denver, Colorado

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements of Ascent Solar Technologies, Inc. on Forms S-8 (Nos. 333-142768, 333-152642, 333-152643, 333-161794, 333-171355, 333-171356, 333-182410 and 333-205516), of our report dated April 14, 2017 relating to our audit of the consolidated financial statements, which appears in this Annual Report on Form 10-K for the year ended December 31, 2017.

/s/ Hein & Associates LLP

Denver, Colorado
March 29, 2018

EXHIBIT 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements of Ascent Solar Technologies, Inc. on Forms S-8 (Nos. 333-142768, 333-152642, 333-152643, 333-161794, 333-171355, 333-171356, 333-182410 and 333-205516), of our report dated March 29, 2018 relating to our audit of the consolidated financial statements, which appears in this Annual Report on Form 10-K for the year ended December 31, 2017.

/s/ Haynie & Company

Denver, Colorado
March 29, 2018

Exhibit 31.1

ASCENT SOLAR TECHNOLOGIES, INC.

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Victor Lee, certify that:

1. I have reviewed this Annual Report on Form 10-K of Ascent Solar Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

March 29, 2018

/s/ VICTOR LEE

Victor Lee
President and Chief Executive Officer
(Principal Executive Officer, Principal Financial Officer, Chief Accounting Officer, and Authorized Signatory)

Exhibit 31.2

ASCENT SOLAR TECHNOLOGIES, INC.

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Victor Lee, certify that:

1. I have reviewed this Annual Report on Form 10-K of Ascent Solar Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

March 29, 2018

/s/ VICTOR LEE

Victor Lee
President and Chief Executive Officer
(Principal Executive Officer, Principal Financial Officer, Chief Accounting Officer, and Authorized Signatory)

Exhibit 32.1

ASCENT SOLAR TECHNOLOGIES, INC.

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350 AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Ascent Solar Technologies, Inc. (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission on the date therein specified (the "Report"), I, Victor Lee, President, Chief Executive Officer and acting Principal Financial Officer of the Company, certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1 The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2 The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 29, 2018

/s/ VICTOR LEE

Victor Lee
President and Chief Executive Officer
(Principal Executive Officer, Principal Financial Officer, Chief Accounting Officer, and Authorized Signatory)

Exhibit 32.2

ASCENT SOLAR TECHNOLOGIES, INC.

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350 AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Ascent Solar Technologies, Inc. (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission on the date therein specified (the "Report"), I, Victor Lee, President, Chief Executive Officer and acting Principal Financial Officer of the Company, certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1 The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2 The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 29, 2018

/s/ VICTOR LEE

Victor Lee
President and Chief Executive Officer
(Principal Executive Officer, Principal Financial Officer, Chief Accounting Officer, and Authorized Signatory)