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

FORM 10-K

☒ **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 number: 001-37850

ATOMERA INCORPORATED
(Exact name of registrant as specified in its charter)

Delaware	**30-0509586**
(State or Other jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)

750 University Avenue, Suite 280
Los Gatos, California 95032
(Address, including zip code, of registrant's principal executive offices)

(408) 442-5248
(Registrant's telephone number, including area code **)**

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

Title of each class:	**Name of each exchange on which registered**
Common stock: Par value $.001	Nasdaq Capital 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 past 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 if disclosure of delinquent filers in response to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company (as defined in Rule 12b-2 of the Exchange Act):

Large accelerated filer	Accelerated filer ☐
Non-accelerated filer ☐	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 ☒

State the aggregate market value of voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter: $46,985,966. Shares of the registrant's common stock held by each executive officer, director and holder of 10% or more of the outstanding common stock (as determined based on public filings) have been excluded in that such persons may be deemed to be affiliates. This calculation does not reflect a determination that certain persons are affiliates of the registrant for any other purpose.

As of March 2, 2018, there were 12,361,069 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive proxy statement pursuant to Regulation 14A within 120 days after the end of the fiscal year ended December 31, 2017. Portions of such proxy statement are incorporated by reference into Part III of this Form 10-K.

ATOMERA INCORPORATED

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NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that are intended to be covered by the "safe harbor" created by those sections. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning the following:

- our future financial and operating results;
- our intentions, expectations and beliefs regarding anticipated growth, market penetration and trends in our business;
- the timing and success of our plan of commercialization;
- our ability to operate our royalty-based business model;
- the effects of market conditions on our stock price and operating results;
- our ability to maintain our competitive technological advantages against competitors in our industry;
- our ability to have our technology solutions gain market acceptance;
- our ability to maintain, protect and enhance our intellectual property;
- the effects of increased competition in our market and our ability to compete effectively;
- costs associated with initiating and defending intellectual property infringement and other claims;
- our expectations concerning our relationships with potential customers, partners and other third parties;
- the attraction and retention of qualified employees and key personnel;
- future acquisitions of or investments in complementary companies or technologies; and
- our ability to comply with evolving legal standards and regulations, particularly concerning requirements for being a public company.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in "Risk Factors" and elsewhere in this Annual Report and our subsequently filed Quarterly Reports on Form 10-Q. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for us to predict all risks, nor can we assess the impact of all 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 we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Annual Report may not occur and actual results could differ materially and adversely from those anticipated or implied in our forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Annual Report to conform these statements to actual results or to changes in our expectations, except as required by law.

You should read this Annual Report and the documents that we reference in this Annual Report and have filed with the Securities and Exchange Commission as exhibits with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

PART I

Item 1. Business

General

We are engaged in the business of developing, commercializing and licensing proprietary processes and technologies for the $350+ billion semiconductor industry. Our lead technology, named Mears Silicon Technology ™, or MST ®, is a thin-film of reengineered silicon, typically 100 to 300 angstroms (or approximately 20 to 60 silicon atomic unit cells) thick. MST can be applied as a transistor channel enhancement to CMOS-type transistors, the most widely used transistor type in the semiconductor industry. MST is our proprietary and patent-protected performance enhancement technology that we believe addresses a number of key engineering challenges facing the semiconductor industry. We believe that by incorporating MST, transistors can be smaller, with increased speed, reliability and energy efficiency. In addition, since MST is an additive and low-cost technology, we believe it can be deployed on an industrial scale, with machines commonly used in semiconductor manufacturing. We believe that MST can be widely incorporated into the most common types of semiconductor products, including analog, logic, optical and memory integrated circuits.

We do not intend to design or manufacture integrated circuits directly. Instead, we intend to develop and license technologies and processes that will offer the designers and manufacturers of integrated circuits a low-cost solution to the industry's need for greater performance and lower power consumption. Our customers and partners include or are expected to include:

- foundries, which manufacture integrated circuits on behalf of fabless manufacturers;
- integrated device manufacturers, or IDMs, which are the fully integrated designers and manufacturers of integrated circuits;
- fabless semiconductor manufacturers, which are designers of integrated circuits that outsource the manufacture of their chips to foundries;
- original equipment manufacturers, or OEMs, which manufacture the epitaxial, or EPI, deposition machines used to deposit semiconductor layers, such as the MST ® film onto the base silicon wafer; and
- electronic design automation companies, which make tools used throughout the industry to simulate the effects of using different materials, design structures and process technologies on the performance of semiconductor products.

We intend to generate revenue through licensing arrangements whereby foundries and IDMs pay us a license fee for their use of MST technology in the manufacture of silicon wafers as well as a royalty for each silicon wafer or device that incorporates our MST technology. We also intend to enter into licensing arrangements with fabless semiconductor manufacturers pursuant to which we will charge them a royalty for each device they sell that incorporates our MST technology.

We were organized as a Delaware limited liability company under the name Nanovis LLC on November 26, 2001. On March 13, 2007, we converted to a Delaware corporation under the name Mears Technologies, Inc. On January 12, 2016, we changed our name to Atomera Incorporated. Shares of our common stock are listed on the NASDAQ Capital Market under the symbol "ATOM".

Industry Overview

Semiconductors, Generally

Recent years have seen a remarkable proliferation of consumer and commercial products, especially in wireless, automotive and mobile electronic devices. The growth of the Internet and cloud computing has provided people with new ways to create, store and share information. At the same time, the increasing use of electronics in cars, buildings, appliances and other consumer products is creating a broad landscape of "smart" devices and the evolution of wearable technologies and The Internet of Things.

These developments depend, in large part, on integrated circuits, or microchips, which are sets of electronic circuits on a single chip of semiconductor material, normally silicon. It is common for a single semiconductor chip to combine many components (processor, communications, memory, custom logic, input/output) resulting in highly complex chip designs. Transistors are the building blocks of integrated circuits and the most complex semiconductor chips today contain more than a billion transistors, each of which may have features that are much less than 1/1,000 th the diameter of a human hair.

The most widely used transistors in semiconductor chips today are based on the CMOS technology. Among its many attributes, CMOS allows for a higher density of transistors on a chip and lower power usage than non-CMOS technologies.

The Pursuit of Increased Semiconductor Performance

For years, the semiconductor industry was able to almost double the number of transistors it could pack into a single microchip about every two years, a rate of improvement commonly known as "Moore's Law." The semiconductor industry uses the term "node" to describe the minimum line width or geometry on a semiconductor chip, expressed in nanometers, or nm, for today's technologies. Historically, the smaller the node, the smaller the transistors and the more closely they are packed together, producing chips that are denser and thus less costly on a per-transistor basis. Frequently, smaller nodes also correspond to an improvement in chip performance, making them the mile markers of Moore's Law, with each node marking a new generation of chip-manufacturing technology.

Until recently, the industry succeeded at maintaining the rate of improvement predicted by Moore's Law by scaling the key transistor parameters, such as shrinking feature sizes and operating voltages, thereby allowing more transistors to be packed onto a single microchip. This trend was facilitated in large part by the development of the CMOS technologies. However, a discontinuity in the rate of improvement delivered by scaling appeared a few years ago when transistor technology reached feature sizes below 100 nanometers. The industry responded with advanced materials to supplement the ongoing geometry shrinks. Some of those materials advances included strained silicon, Silicon on Insulator and High-K/Metal Gate.

In addition, due to the popularity of mobile devices and other electronic products, there is increasing demand for integrated circuits and systems with greater functionality and performance, reduced size, and much less power consumption as key requirements.

The designers and manufacturers of integrated circuits and systems — our potential customers — are facing intense pressure to deliver innovative products at ever shorter times-to-market, as well as at lower prices. In other words, innovation in chip and system design today often hinges on "better, sooner and cheaper." We believe that the semiconductor industry has accepted that moving forward in the nano-era will require adoption of new innovations that extend the scaling formula, including those based on the use of new engineered materials, a market opportunity our MST ® technology seeks to address. Because shrinking geometries at the smaller nodes incurs higher capital and manufacturing costs, only limited products can take on the increased cost burden and still be economically viable. We believe cost sensitive devices will turn to engineered materials, like MST ® , to solve this problem.

Vertical Disaggregation of the Industry

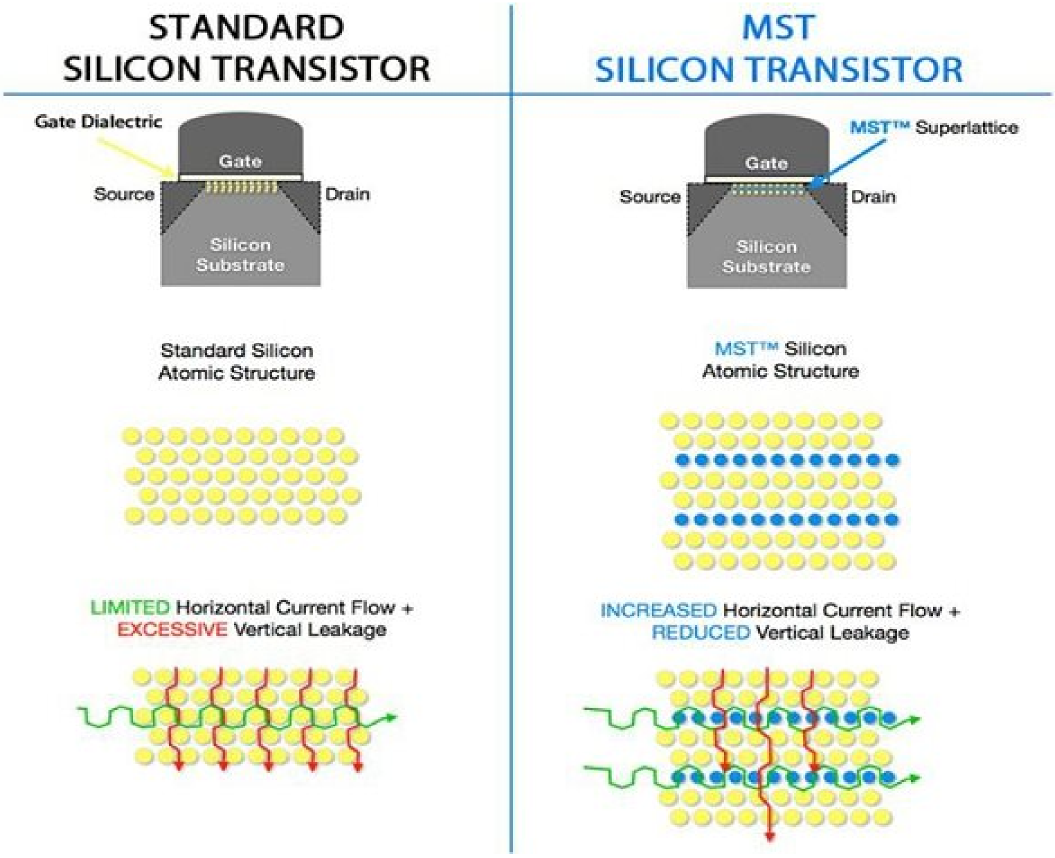
In trying to keep research and development costs manageable, while attempting to satisfy the demand for increasingly complex semiconductors, certain designers and manufacturers of integrated circuits have transitioned to an open innovation model in which competing companies and third-party providers actively collaborate to address performance issues through various alliances, joint ventures, and licensing of externally developed technology.

Historically, most semiconductor companies were vertically integrated. They designed, fabricated, packaged and tested their semiconductors using internally developed software design tools and manufacturing processes and equipment. As the cost and skills required for designing and manufacturing complex semiconductors have increased, the semiconductor industry has become disaggregated, with companies concentrating on one or more individual stages of the semiconductor development and production process. This disaggregation has fueled the growth of fabless semiconductor companies, design tool vendors, semiconductor equipment manufacturers, third-party semiconductor manufacturers (or foundries), semiconductor assembly, package and test companies, and intellectual property companies that develop and license technology to others.

While specialization has enabled greater development and manufacturing efficiency, it has also created an opportunity for IP-based companies, such as Atomera, that develop and license technology to meet fundamental, industry-wide challenges. These intellectual property companies have been able to gain broad adoption of their technology throughout the industry by working with companies within the semiconductor supply chain to evaluate and integrate their technology. Manufacturers and designers of semiconductors increasingly find it more cost-effective to license technologies from IP-based companies than internally developing processes that are not their core competence. Industry participants often will share a portion of the large up-front development cost of these technologies in exchange for a lower licensing fee or royalty rate. We believe this collaboration and integration benefits semiconductor companies by enabling them to bring new technology to market faster and more cost-effectively.

Our Initial Application of Mears Silicon Technology

The initial application of our MST will be for CMOS integrated circuits, the most widely used type of integrated circuits in the semiconductor industry. As applied to CMOS-type transistors, MST is a thin film of reengineered silicon, typically 100 to 300 angstroms (or approximately 20 to 60 silicon atomic cell units) thick, that functions as a transistor channel enhancement. We believe MST has the potential to overcome the key challenges found in the implementation of next generation nano-scale semiconductor devices incorporating CMOS-type transistors, namely enhancing drive current, reducing gate leakage and reducing variability. In addition, we believe that MST has the potential to deliver these benefits through a single technology that requires relatively minor modifications to the industry standard CMOS manufacturing flow. Consequently, we believe that by incorporating MST, designers can make transistors with increased speed, reliability and energy efficiency, without significantly altering the current fabrication process or cost of production.



As illustrated by the accompanying diagram, MST ® is a "silicon-on-silicon" solution that provides multiple benefits through a relatively simple modification to the standard CMOS manufacturing flow. MST improvements are delivered through our proprietary and patent-protected silicon band engineering approach that is based on the quantum mechanics of modern deep sub-micron devices. The MST ® film creates channels that allow electrons to flow more freely in the plane of the transistor, thereby enhancing drive current, while reducing electron flow or "leakage" in the transverse direction. Our MST ® film can also create more controlled doping profiles, which allow dopants to be held in the desired locations, thereby reducing variability and improving production yield.

We believe the enhancements enabled by MST as demonstrated in simulations and on test chips, are approximately equivalent to the enhancements enabled by one-half to a full node of improvement and, therefore, extend the productive life of capital equipment and wafer fabrication facilities. The extent of MST-enabled enhancement depends on the device technology and application. We believe that MST ® CMOS compares favorably to other alternatives for enhancing performance of CMOS-type transistors as follows:

- *Strained Silicon and Silicon-on-Insulator, or SOI* : Unlike strained silicon or SOI, we believe that MST delivers multiple benefits in a single film in a cost-effective manner, including enhanced transistor drive current, reduced leakage, and reduced variability. Also, strained silicon tends to lose much of its effectiveness below 45nm, constraining its scalability, while the MST thin-film approach is expected to be scalable below 22nm. Also, based on our own research and development and third-party evaluations, we believe that MST can deliver improved cost-benefit performance, in most cases in an additive manner, compared to already successful strain technologies, such as dual stress liners and SiGe.

- *High-K/Metal Gate, or HKMG* : Unlike HKMG, MST is silicon-based. As a “silicon-on-silicon” solution, MST does not require new materials or equipment, which in our opinion makes it much easier and less costly to adopt than HKMG for devices not requiring ultra-thin gate dielectrics. For devices with HKMG, we believe MST still benefits transistor performance and variability in a similar manner to that observed in non-HKMG devices.

Because of its physical characteristics in the channel region of the transistor, we believe MST has the further benefit of being complementary and additive to the performance enhancing technologies noted above, making MST broadly applicable across multiple devices and process flows to meet a wide variety of customer design objectives. Given the costs of moving to more advanced technologies, we believe one of the most compelling aspect of MST may be its cost/benefit profile. We believe that MST will provide a lower cost of production due to our technology’s potential to reduce die size while leveraging existing manufacturing tools, thereby providing chip makers with increased performance at all process nodes with significantly fewer disruptions to manufacturing processes and less incremental cost than other advanced technologies.

We believe MST can improve transistor performance in a variety of device types including microprocessors; logic products; DRAM, SRAM, and other memory integrated circuits; as well as analog, radio frequency, and mixed-signal devices. We have therefore developed different MST product options that can be applied to the critical industry segments and technology nodes. As of the date of this Annual Report, we have done technology simulation work with universities and leading industry players at nodes from 180nm to 7nm. We have also simulated devices with leading industry research facilities and built and electrically verified test chips using MST ® in customer manufacturing facilities which have produced results that demonstrate many of the benefits described above.

Development Partnerships

TSI Semiconductors. In January 2017, we announced an agreement with TSI Semiconductors America LLC to provide us with engineering services in their semiconductor manufacturing facility in California. By running tests in TSI Semiconductor's facility, which we utilize to run tests on a contract basis, we are able to build and test devices that incorporate MST much more quickly than when we test in our potential customers' facilities. We believe this arrangement will allow for faster product development, test, and integration, and should accelerate our time to market.

Synopsys . In March 2017 we announced our collaboration with Synopsys, Inc., provider of the most broadly used technology computer-aided design, or TCAD, simulation software in the semiconductor industry. Synopsys’ software now supports modeling of MST, which enables semiconductor manufacturers and designers to model the interaction of MST with other process steps. We have begun to use our modeling capabilities to demonstrate to potential customers the likely benefits of MST on the performance of a completed semiconductor device. We believe these capabilities, will help us focus integration efforts for potential customers more quickly on those areas most likely to deliver benefits, thus shortening test cycles and, we believe, accelerating the time to a license decision.

MST ® Commercialization

We do not intend to design or manufacture integrated circuits directly. Instead, we intend to develop and license technologies and processes that will offer the designers and manufacturers of integrated circuits a low-cost solution to the industry need for increased performance. Our customers and partners are expected to include foundries, integrated device manufacturers, or IDMs, fabless semiconductor manufacturers, OEMs, that manufacture epitaxial deposition, or EPI, machines, and electronic design automation software companies, such as Synopsys.

We intend to generate revenue through licensing arrangements whereby foundries and IDMs pay us a license fee for their use of MST technology in the manufacture of silicon wafers as well as a royalty for each silicon wafer or device that incorporates our MST technology. We also intend to enter into licensing arrangements with fabless semiconductor manufacturers pursuant to which we will charge them a royalty for each device they sell that incorporates our MST technology. The IDMs and fabless semiconductor manufacturers are the primary beneficiaries of our commercialization activities, as they are producers and distributors of the integrated circuits onto which we will endeavor to incorporate our MST technology. The foundries and OEMs also play an important role in our commercialization strategy in that these parties have traditionally sought to provide new technologies to their customers, which in the case of the foundries are the fabless semiconductor manufacturers and in the case of the OEMs are the IDMs and foundries that purchase EPI machines.

In the semiconductor industry, new technologies are vetted thoroughly and carefully by early adopters but, once proven, tend to be adopted broadly by the industry and, wherever possible, exploited for several generations until their full potential is reached. Before introducing a new technology into its fabrication process, the customer will conduct a formal and rigorous multi-phase testing process, which can range from 18 to 36 months.

Our engagements with IDMs and fabless semiconductor manufacturers who are potential customers typically consists of the following phases:

1. *Engineering Planning:* In this phase we engage in a technical exchange of information under a non-disclosure agreement to understand the customer’s manufacturing process and to determine how best to integrate the deposition of MST film onto the customer’s semiconductor wafers.

2. *Set-up for MST Integration:* We agree upon the technical evaluation details, including the expected rounds of evaluation testing, the parameters to be tested and allocation of costs. Customers provide us with wafers for our internal processing and testing. Some customers work together with us to develop a TCAD model showing possible results of MST integration with their particular manufacturing process.

3. *Integration.* Typically, this phase includes several rounds of tests that involve building test devices on a semiconductor wafer using our MST technology within the customer’s manufacturing process flow. We have not had any customers move beyond phase three as of the date of this Annual Report. We believe that this phase will continue to be the longest in our customer engagement process due to the fact that integrating MST into a customer’s manufacturing flow frequently requires us to conduct subsequent tests based on the result of earlier test runs.

4. *Process Installation* . Prior to enabling a customer to install and use MST technology on epitaxial deposition machines in their own fab, we intend to require execution of a license for use of our patents and proprietary know-how. Although we have not executed a license with a customer to date, requiring a license at this stage is a customary and accepted practice in the semiconductor industry.

5. *Technology qualification* . After installation of MST in the fab, the customer will conduct additional testing to ensure manufacturing reliability under accelerated test conditions that simulate volume production. Upon successfully completing the qualification phase, products can be built and shipped using this manufacturing process.

6. *Production* . We expect that our license agreements will provide that upon commencement of sales of wafers or devices built using MST, our customer will pay us a royalty that will be a percentage of the selling price of the wafer or device, depending on the type of customer.

While the above steps describe a typical customer engagement, we have engaged with some customers in ways that do not follow this precise order. For example, we may from time to time enter into evaluation license agreements with certain customers under which they may install MST in their fabs to run internal tests only and not for commercial use or distribution. Other potential customers may run tests on MST-treated wafers prior to further engagement with us on integration into their manufacturing process.

We believe that our success is dependent upon the adoption of our MST technology by at least one IDM, foundry, or fabless semiconductor manufacturer. As of the date of this Annual Report, MST was in the integration phase with six potential customers. Subject to process and subsequent product qualifications that demonstrate, in commercial scale production, the enhancements we believe our MST technology offers, including increased speed, reliability and energy efficiency, we expect to license our MST technology to one or more of these companies. We are also engaged at different stages of customer development with other potential customers.

We are also working with OEMs on process development and equipment optimization to ensure that MST can be reliably and predictably deposited using their manufacturing tools. If their tools can successfully deposit MST, we believe they will promote the incorporation of our MST technology in the OEM's EPI machines as an option to their standard offering. By doing so, we believe they will simultaneously stimulate additional sales of their capital equipment and encourage more customers to adopt MST.

Through our collaboration with Synopsys, we enable potential customers of MST to more quickly assess the potential benefits of MST to their semiconductor devices. By creating TCAD software models, we can work with manufacturers to assess which of their product types would most benefit from MST. We believe this modeling capability has shortened the time required for us to engage with new potential customers and should ultimately lead to a faster decision process by the customer regarding licensing MST.

We market our MST technology directly to the semiconductor industry through our significant industry contacts and relationships. We also sponsor academic research and participate in industry conferences and associations. In certain foreign jurisdictions, we engage sales representatives to assist us in establishing relationships with local customers.

Competition

Our lead product, MST, is a proprietary and patent-protected performance enhancement technology that we believe addresses a number of key engineering challenges facing the semiconductor industry. We compete with IDMs, OEMs, foundries, fabless manufacturers of semiconductors and semiconductor IP licensing companies for the development and commercialization of technologies that improve the performance of semiconductors. Historically, when a new fabrication process proves to be a low-cost improvement to the standard fabrication process, and is additive, rather than in place of other performance technologies, it has been successfully adopted industry-wide. Good examples of such advances have been strained silicon, such as SiGe. We believe that MST has the potential to be one of these low-cost additive technologies, in which case MST would not be subject to significant direct competition from other technologies.

Research and Development

We are focused on designing and developing engineered semiconductor material technologies and processes for the semiconductor and other industries. We believe that our success depends in part on our ability to achieve the following in a cost-effective and timely manner:

- develop new technologies that meet the changing needs of the semiconductor industry;
- improve our existing technologies to enable growth into new application areas; and
- expand our intellectual property portfolio.

Our research and development is conducted internally, but we work closely with third parties in the semiconductor industry to evaluate and qualify our technology for incorporation into semiconductor products and fabrication equipment. During the years ended December 31, 2017 and 2016, we incurred research and development expenses of approximately $5.8 million and $4.0 million, respectively.

Intellectual Property Rights

We regard the protection of our technologies and intellectual property rights as an important element of our business operations and crucial to our success. We rely primarily on a combination of patent laws, trade secret laws, confidentiality procedures, and contractual provisions to protect our proprietary technology. We require our employees, consultants, and advisors to enter into confidentiality agreements. These agreements provide that all confidential information developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except under specific circumstances. In the case of our employees and certain consultants, the agreements provide that all of the technology that is conceived by the individual during the course of employment is our exclusive property. The development of our technology and many of our processes are dependent upon the knowledge, experience, and skills of key scientific and technical personnel.

We have been granted more than 60 patents in the U.S. and more than 50 abroad. Our core patents relating to MST cover materials, physical structures and manufacturing processes. Our core patents relating to MST were filed beginning on August 22, 2003 and have grant dates beginning on December 14, 2004. Our MST patent portfolio begins to expire commencing August 22, 2023. While we believe our core patents adequately block competitors from using our MST without our approval, there can be no assurance that one or more of our core patents would survive a legal challenge to their scope, validity, or enforceability, or provide significant protection for us. The failure of our patents, or the failure of trade secret laws, to adequately protect our technology, might make it easier for our competitors to offer similar products or technologies or for our potential customers to build products with methods and materials similar to MST without paying us a license fee. In addition, patents may not issue from any of our current or future applications.

We also hold registered trademarks in the United States for the mark “MST” and in China for the mark “Mears”. We have applied with the U.S. Patent and Trademark Office for the registration of the mark “Atomera” in the United States.

We have entered into a License Agreement dated December 22, 2006 with ASM International, NV, a semiconductor OEM located in Almere, The Netherlands, pursuant to which ASM has granted to us a non-exclusive, worldwide license to make, and sublicense others to make, semiconductor devices using certain ASM patents. The ASM license restricts us and our sublicensees from using the ASM licensed rights in the manufacture of EPI machines or any other machines used to manufacture semiconductors. The ASM license is coterminous with patents licensed by ASM, which expires on January 8, 2019, and requires us to pay ASM a royalty of 5% of net royalty revenue, generally defined as gross royalty revenue less certain customer offsets and credits, from the sale of any product incorporating the ASM licensed patents not manufactured on ASM equipment and a royalty of 2.5% of net revenue from the sale of any product incorporating ASM licensed patents manufactured on ASM equipment. As of the date of this Annual Report, all semiconductor devices incorporating our MST technology manufactured prior to January 8, 2019 will be subject to the ASM license royalty.

Employees

As of the date of this Annual Report, we employ 16 people on a full-time basis.

Available Information

Our website is located at www.atomera.com. The information on or accessible through our website is not part of this Annual Report on Form 10-K. A copy of this Annual Report on Form 10-K is located at the SEC’s Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains an internet site that contains reports and other information regarding our filings at www.sec.gov.

Item 1A. Risk Factors

We are subject to various risks that may harm our business, prospects, financial condition and results of operation or prevent us from achieving our goals. If any of these risks occur, our business, financial condition or results of operation may be materially adversely affected. In such case, the trading price of our common stock could decline and investors could lose all or part of their investment.

Risks Related to Our Business

We have not commenced license and royalty revenue-producing operations and we have a history of operating losses, so it is difficult for potential investors to evaluate our business. To date, our operations have consisted of technology research and development, testing, and joint development work with potential customers and strategic partners. Our business model is to derive our revenue primarily from license fees and royalties, but to date we have only recognized minimal engineering services revenues. Our limited operating history makes it difficult to evaluate the commercial value of our technology or our prospective operations. As an early stage company, we are subject to all the risks inherent in the initial organization, financing, expenditures, complications and delays in a new business. Investors should evaluate an investment in us in light of the uncertainties encountered by developing companies in a competitive environment. There can be no assurance that our efforts will be successful or that we will ultimately be able to attain profitability.

We have a history of significant operating losses and anticipate continued operating losses for at least the near term. For the years ended December 31, 2017 and 2016, we have incurred net losses of approximately $13.1 million and $12.6 million, respectively, and our operations have used approximately $9.3 million and $6.8 million of cash, respectively. As of December 31, 2017 and 2016, we had accumulated deficits of approximately $109.1 million and $96.0 million, respectively. We will continue to experience negative cash flows from operations until at least such time as we are able to secure one or more foundries, IDMs or fabless semiconductor manufacturers to qualify and license MST and start full-scale industrial production of a device that incorporates our MST technology. While management will endeavor to generate positive cash flows from the commercialization of our MST technology, there can be no assurance that we will be successful doing so. If we are unable to generate positive cash flow within a reasonable period of time, we may be unable to further pursue our business plan or continue operations.

We may need additional financing to execute our business plan and fund operations, which additional financing may not be available on reasonable terms or at all. As of December 31, 2017, we had total assets of approximately $17.8 million, cash and cash-equivalents of approximately $17.4 million and working capital of approximately $16.8 million. We believe that we have sufficient capital to fund our current business plans and obligations over, at least, the 12 months following the date of this Annual Report. We also believe that we have sufficient capital to enable one or more customers to license our technology. We expect that our customers will pay us a license fee at the time they execute a commercial license agreement and that they will subsequently pay us royalties on their sales of these MST-enabled products. However, the full qualification of a new technology like MST can take up to a year or more, and we have limited ability to influence our customers' testing and qualification processes. Accordingly, we may require additional capital prior to obtaining a commercial license. In the event we require additional capital over and above the amount of our presently available working capital, we will endeavor to seek additional funds through various financing sources, including the sale of our equity and debt securities, licensing fees for our technology and joint ventures with industry partners. In addition, we will consider alternatives to our current business plan that may enable to us to achieve revenue producing operations and meaningful commercial success with a smaller amount of capital. However, there can be no guarantees that such funds will be available on commercially reasonable terms, if at all. If such financing is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations.

While the preliminary testing of our MST technology has been successful to-date, there can be no assurance that we will be able to replicate the process, along with all of the expected economic advantages, on a large commercial scale . As of the date of this Annual Report, we have performed technology simulation work with universities and potential customers applying our MST at nodes from 180 nanometers (nm) to 7nm. Together with leading industry research facilities and in customer manufacturing facilities, we have also built and tested test element group transistors using MST. The test element group transistors using MST consistently demonstrated increased speed, reliability and energy efficiency over test element group transistors without MST. While we believe that our development and testing to date has proven the effectiveness and benefits of our MST technology, a MST-enabled product has not been qualified and manufactured on a commercial scale. Our principal focus for the next 12 months from the date of this Report will be on securing one or more foundries, IDMs or fabless semiconductor manufacturers as a licensee-customer and to enable that licensee-customer to start full-scale industrial production of a device that incorporates MST technology. However, there can be no assurance that we will be able to deliver the performance improvements sought by our potential licensee customers and secure the adoption of our technology by a potential customer or, if we are successful in doing so, that a MST-enabled product manufactured on a commercial scale will provide the expected performance enhancements at the projected cost.

Qualification of our MST technology requires access to our potential customers' manufacturing tools and facilities, which may not be available on a timely basis or at all. The qualification of a new process technology like MST entails the integration of our MST film into the complex manufacturing processes employed by our potential customers. In order to validate the benefits of MST, our customer engagement process involves fabrication of wafers that incorporate MST using our customers' tools. The semiconductor industry in 2017 surpassed $400 billion in sales for the first time in history, which has resulted in tight capacity among our potential customers. Accordingly, we have experienced delays in completing the processing of evaluation wafers by our customers as those customers prioritize utilization of their equipment for production use. Although we have secured access to epitaxial deposition equipment, we may need to secure additional equipment to support customer evaluations and we cannot guarantee that said equipment and facilities will be available to us in the necessary timeframe. If our customers do not dedicate their equipment and facilities to testing our products in a timely fashion, we may experience delays that will increase our expenses and delay our customers' decisions on entering into a commercial license with us.

The long-term success of our business is dependent on a royalty-based business model, which is inherently risky. The long-term success of our business is dependent on future royalties paid to us by licensee-customers. Royalty payments under our licenses may be based, among other things, upon the number of wafers onto which our MST is deposited or a percentage of the net sales of MST-enabled products. We will depend upon our ability to structure, negotiate and enforce agreements for the determination and payment of royalties, as well as upon our licensees' compliance with their agreements. We face risks inherent in a royalty-based business model, many of which are outside of our control, such as the following:

- the rate of adoption and incorporation of our technology by semiconductor designers and manufacturers and the manufacturers of semiconductor fabrication equipment;

- the length of the design cycle and the ability to successfully integrate our MST ® technology into integrated circuits;
- the demand for products incorporating semiconductors that use our licensed technology;
- the cyclicality of supply and demand for products using our licensed technology;
- the impact of economic downturns; and
- the timing of receipt of royalty reports, which may not meet our revenue recognition criteria resulting in fluctuation in our results of operations.

Our revenues may be concentrated in a few customers and if we lose any of these customers, or these customers do not pay us, our revenues could be materially adversely affected. If we are able to secure the adoption of our MST by one or more foundries, IDMs or fabless semiconductor manufacturers and commence revenue producing operations, we expect that for at least the first few years we will earn a significant amount of our revenues from a limited number of customers. Due to the concentration and ongoing consolidation within the semiconductor industry, we may also find that over the longer term our revenues are dependent on a relatively few customers. If we lose any of these customers, or these customers do not pay us, our revenues could be materially adversely affected.

It may be difficult for us to verify royalty amounts owed to us under our licensing agreements, and this may cause us to lose revenues. We will endeavor to provide that the terms of our license agreements require our licensees to document their use of our technology and report related data to us on a regular basis. We will endeavor to provide that the terms of our license agreements give us the right to audit books and records of our licensees to verify this information, however audits can be expensive, time consuming, and may not be cost justified based on our understanding of our licensees' businesses. We will endeavor to audit certain licensees to review the accuracy of the information contained in their royalty reports in an effort to decrease the likelihood that we will not receive the royalty revenues to which we are entitled under the terms of our license agreements, but we cannot give assurances that such audits will be effective to that end.

We expect that our product qualification and licensing cycle will be lengthy and costly, and our marketing, engineering and sales efforts may be unsuccessful. We expect to incur significant engineering, marketing and sales expenses prior to entering into any license agreements, generating a license fee and establishing a royalty stream from each licensee. The introduction of any new process technology into semiconductor manufacturing is a lengthy process. Since we have not yet signed a license agreement with any customer, we cannot forecast the length of time it takes to establish a new licensing relationship. Based on our engagements with potential customers to date, we believe the time from initial engagement until our customers execute a license and subsequently incorporate our technologies in their integrated circuits, can take 18 to 36 months or longer. As such, we will incur significant expenses in any particular customer engagement before any associated revenue stream begins. If our engineering, marketing and sales efforts are unsuccessful, then the expenses incurred could have an adverse effect on our financial condition, results of operations and cash flows.

Our business operations could suffer in the event of information technology systems' failures or security breaches . While we believe that we have implemented adequate security measures within our internal information technology and networking systems, our information technology systems may be subject to security breaches, damages from computer viruses, natural disasters, terrorism, and telecommunication failures. Any system failure or security breach could cause interruptions in our operations, including but not limited to our TCAD modeling using Synopsys software, in addition to the possibility of losing proprietary information and trade secrets. To the extent that any disruption or security breach results in inappropriate disclosure of our confidential information, our competitive position may be adversely affected, and we may incur liability or additional costs to remedy the damages caused by these disruptions or security breaches.

If we fail to protect and enforce our intellectual property rights and our confidential information, our business will suffer. We rely primarily on a combination of nondisclosure agreements and other contractual provisions and patent, trade secret and copyright laws to protect our technology and intellectual property. If we fail to protect our technology and intellectual property, our licensees and others may seek to use our technology and intellectual property without the payment of license fees and royalties, which could weaken our competitive position, reduce our operating results and increase the likelihood of costly litigation. The growth of our business depends in large part on our ability to secure intellectual property rights in a timely manner, our ability to convince third parties of the applicability of our intellectual property rights to their products, and our ability to enforce our intellectual property rights. In certain instances, we attempt to obtain patent protection for portions of our technology, and our license agreements typically include both issued patents and pending patent applications. If we fail to obtain patents in a timely manner or if the patents issued to us do not cover all of the inventions disclosed in our patent applications, others could use portions of our technology and intellectual property without the payment of license fees and royalties.

We also rely on trade secret laws rather than patent laws to protect other portions of our proprietary technology. However, trade secrets can be difficult to protect. The misappropriation of our trade secrets or other proprietary information could seriously harm our business. We protect our proprietary technology and processes, in part, through confidentiality agreements with our employees, consultants, suppliers and customers. We cannot be certain that these contracts have not been and will not be breached, that we will be able to timely detect unauthorized use or transfer of our technology and intellectual property, that we will have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors. If we fail to use these mechanisms to protect our technology and intellectual property, or if a court fails to enforce our intellectual property rights, our business will suffer. We cannot be certain that these protection mechanisms can be successfully asserted in the future or will not be invalidated or challenged.

Further, the laws and enforcement regimes of certain countries do not protect our technology and intellectual property to the same extent as do the laws and enforcement regimes of the U.S. In certain jurisdictions, we may be unable to protect our technology and intellectual property adequately against unauthorized use, which could adversely affect our business.

A court invalidation or limitation of our key patents could significantly harm our business . Our patent portfolio contains some patents that are particularly significant to our MST technology and other business prospects. If any of these key patents are invalidated, or if a court limits the scope of the claims in any of these key patents, the likelihood that companies will take new licenses and that any current licensees will continue to agree to pay under their existing licenses could be significantly reduced. The resulting loss in license fees and royalties could significantly harm our business. Moreover, our stock price may fluctuate based on developments in the course of ongoing litigation.

We may become involved in material legal proceedings in the future to enforce or protect our intellectual property rights, which could harm our business. From time to time, we may identify products that we believe infringe our patents. In that event, we initially seek to license the manufacturer of the infringing products, however if the manufacturer is unwilling to enter into a license agreement, we may have to initiate litigation to enforce our patent rights against those products. Litigation stemming from such disputes could harm our ability to gain new customers, who may postpone licensing decisions pending the outcome of the litigation or who may, as a result of such litigation, choose not to adopt our technologies. Such litigation may also harm our relationships with existing licensees, who may, as a result of such litigation, cease making royalty or other payments to us or challenge the validity and enforceability of our patents or the scope of our license agreements.

In addition, the costs associated with legal proceedings are typically high, relatively unpredictable and not completely within our control. These costs may be materially higher than expected, which could adversely affect our operating results and lead to volatility in the price of our common stock. Whether or not determined in our favor or ultimately settled, litigation diverts our managerial, technical, legal and financial resources from our business operations. Furthermore, an adverse decision in any of these legal actions could result in a loss of our proprietary rights, subject us to significant liabilities, require us to seek licenses from others, limit the value of our licensed technology or otherwise negatively impact our stock price or our business and financial position, results of operations and cash flows.

Even if we prevail in our legal actions, significant contingencies may exist to their settlement and final resolution, including the scope of the liability of each party, our ability to enforce judgments against the parties, the ability and willingness of the parties to make any payments owed or agreed upon and the dismissal of the legal action by the relevant court, none of which are completely within our control. Parties that may be obligated to pay us royalties could be insolvent or decide to alter their business activities or corporate structure, which could affect our ability to collect royalties from such parties.

Our technologies may infringe on the intellectual property rights of others, which could lead to costly disputes or disruptions . The semiconductor industry is characterized by frequent allegations of intellectual property infringement. Any allegation of infringement could be time consuming and expensive to defend or resolve, result in substantial diversion of management resources, cause suspension of operations or force us to enter into royalty, license, or other agreements rather than dispute the merits of such allegation. Furthermore, third parties making such claims may be able to obtain injunctive or other equitable relief that could block our ability to further develop or commercialize some or all of our technologies, and the ability of our customers to develop or commercialize their products incorporating our technologies, in the U.S. and abroad. If patent holders or other holders of intellectual property initiate legal proceedings, we may be forced into protracted and costly litigation. We may not be successful in defending such litigation and may not be able to procure any required royalty or license agreements on acceptable terms or at all.

If we are unable to manage future expansion effectively, our business, operations and financial condition may suffer significantly, resulting in decreased productivity. If our MST proves to be commercially valuable, it is likely that we will experience a rapid growth phase that could place a significant strain on our managerial, administrative, technical, operational and financial resources. Our organization, procedures and management may not be adequate to fully support the expansion of our operations or the efficient execution of our business strategy. If we are unable to manage future expansion effectively, our business, operations and financial condition may suffer significantly, resulting in decreased productivity.

If integrated circuits incorporating our technologies are used in defective products, we may be subject to product liability or other claims. If our MST technology is used in defective or malfunctioning products, we could be sued for damages, especially if the defect or malfunction causes physical harm to people. While we will endeavor to carry product liability insurance, contractually limit our liability and obtain indemnities from our customers, there can be no assurance that we will be able to obtain insurance at satisfactory rates or in adequate amounts or that any insurance and customer indemnities will be adequate to defend against or satisfy any claims made against us. The costs associated with legal proceedings are typically high, relatively unpredictable and not completely within our control. Even if we consider any such claim to be without merit, significant contingencies may exist, similar to those summarized in the above risk factor concerning intellectual property litigation, which could lead us to settle the claim rather than incur the cost of defense and the possibility of an adverse judgment. Product liability claims in the future, regardless of their ultimate outcome, could have a material adverse effect on our business, financial condition and reputation, and on our ability to attract and retain licensees and customers.

Risks Related to Owning Our Common Stock

Our stock price has been volatile and thinly traded. Our common stock has traded on the Nasdaq Capital Market since August 5, 2016. Our common stock has been relatively thinly traded, with an average daily trading volume of approximately 25,600 shares and prices ranging from a low of $2.45 to a high of $10.25 in the period from August 5, 2016 through February 23, 2018. There can be no assurance that the market for our common shares will become more liquid. The stock market in general, and early stage public companies in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of such companies. If we are unable to increase the trading volume for our common shares, you may not be able to sell your common shares at prices you consider to be fair or at times that are convenient for you, or at all.

We are an "emerging growth company" under the JOBS Act of 2012 and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors . We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012 ("JOBS Act"), and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies" including, but not limited to:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act;
- reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements;
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments; and
- extended transition periods available for complying with new or revised accounting standards.

We have chosen to "opt out" of the extended transition periods available for complying with new or revised accounting standards, but we intend to take advantage of all of the other benefits available under the JOBS Act, including the exemptions discussed above. If some investors find our common stock less attractive as a result of our reliance on these exemptions, there may be a less active trading market for our common stock and our stock price may be more volatile.

We will remain an "emerging growth company" until December 31, 2021, although we will lose that status sooner if our revenues exceed $1 billion, if we issue more than $1 billion in non-convertible debt in a three-year period, or if the market value of our common stock that is held by non-affiliates exceeds $700 million as of any June 30.

Our status as an "emerging growth company" under the JOBS Act may make it more difficult to raise capital as and when we need it. Because of the exemptions from various reporting requirements provided to us as an "emerging growth company," we may be less attractive to investors and it may be difficult for us to raise additional capital when we need it or on favorable terms. Investors may be unable to compare our business with other companies in our industry if they believe that our reporting is not as transparent as other companies in our industry. If we are unable to raise additional capital as and when we need it, our financial condition and results of operations may be materially and adversely affected.

We have not paid dividends in the past and have no immediate plans to pay dividends. We plan to reinvest all of our earnings, to the extent we have earnings, to cover operating costs and otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock.

We expect to continue to incur significant increased costs as a result of being a public company that reports to the Securities and Exchange Commission and our management will be required to devote substantial time to meet compliance obligations . As a public company reporting to the Securities and Exchange Commission, we incur significant legal, accounting and other expenses that we did not incur as a private company. We are subject to reporting requirements of the Securities Exchange Act of 1934 and the Sarbanes-Oxley Act of 2002, as well as rules subsequently implemented by the Securities and Exchange Commission that impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. In addition, on July 21, 2010, the Dodd-Frank Wall Street Reform and Protection Act was enacted. There are significant corporate governance and executive compensation-related provisions in the Dodd-Frank Act that increased our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and may also place undue strain on our personnel, systems and resources. Our management and other personnel devote a substantial amount of time to these compliance initiatives. In addition, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers.

Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable. Provisions of our Certificate of Incorporation, or "Certificate, and bylaws and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our Certificate and bylaws:

- limit who may call stockholder meetings;
- do not permit stockholders to act by written consent;
- do not provide for cumulative voting rights; and
- provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

In addition, Section 203 of the Delaware General Corporation Law may limit our ability to engage in any business combination with a person who beneficially owns 15% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock.

Our bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with the Company. Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim against us or any our directors, officers or other employees arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us or any our directors, officers or other employees governed by the internal affairs doctrine. This forum selection provision in our bylaws may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or any our directors, officers or other employees.

Our board of directors may issue blank check preferred stock, which may affect the voting rights of our holders and could deter or delay an attempt to obtain control of us. Our board of directors is authorized, without stockholder approval, to issue preferred stock in series and to fix and state the voting rights and powers, designation, preferences and relative, participating, optional or other special rights of the shares of each such series and the qualifications, limitations and restrictions thereof. Preferred stock may rank prior to our common stock with respect to dividends rights, liquidation preferences, or both, and may have full or limited voting rights. If issued, such preferred stock would increase the number of outstanding shares of our capital stock, adversely affect the voting power of holders of our common stock, and could have the effect of deterring or delaying an attempt to obtain control of us.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Our executive offices are presently located in a 3,396 square foot facility in Los Gatos, California pursuant to a three-year lease, expiring on January 31, 2021, at the rate of $12,735 per month effective February 1, 2018.

We lease shared office space in Cambridge Massachusetts from which we conduct certain research activities. The Cambridge facilities are occupied pursuant to a month-to-month lease at a rate of $2,330 per month.

Item 3. Legal Proceedings

To our knowledge, as of the date of this Annual Report, there are no pending legal proceedings to which we or our properties are subject.

Item 4. Mine Safety Disclosures

Inapplicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities Market Information

Our common stock has traded on the NASDAQ Capital Market under the symbol "ATOM," since November 14, 2016. Between our IPO on August 5, 2016 and November 11, 2016, our common stock traded on the NASDAQ Capital Market under the symbol "ATMR". Since our IPO, our common stock has been relatively thinly traded and has experienced, and is expected to experience in the future, significant price and volume volatility. The following table shows the reported high and low prices per share for our common stock based on information provided by the NASDAQ Capital Market for the periods indicated.

Fiscal Year Ended December 31, 2017	High	Low
Fourth Quarter	$ 4.85	$ 2.45
Third Quarter	$ 6.27	$ 3.73
Second Quarter	$ 6.99	$ 3.97
First Quarter	$ 7.64	$ 5.50

Fiscal Year Ended December 31, 2016	High	Low
Fourth Quarter	$ 8.30	$ 6.00
Third Quarter (commencing on August 5, 2016)	$ 10.25	$ 7.78

Holders of Record

As of February 23, 2018, there were 373 holders of record of our common stock.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We presently intend to retain earnings, if any, to finance the operation and expansion of our business.

Item 6. Selected Financial Data

As a "smaller reporting company" under Item 10 of Regulation S-K, we are not required to provide the information under this item.

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

The following discussion and analysis of our results of operations and financial condition should be read in conjunction with our financial statements and the notes to those financial statements that are included elsewhere in this Annual Report. Our discussion includes forward-looking statements based upon current expectations that involve risks and uncertainties, such as our plans, objectives, expectations and intentions. Actual results and the timing of events could differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including those set forth under the "Business" and "Risk Factors" section and elsewhere in this Annual Report. We use words such as "anticipate," "estimate," "plan," "project," "continuing," "ongoing," "expect," "believe," "intend," "may," "will," "should," "could," and similar expressions to identify forward-looking statements. All forward-looking statements included in this report are based on information available to us on the date hereof and, except as required by law, we assume no obligation to update any such forward-looking statements.

Overview

We are engaged in the business of developing, commercializing and licensing proprietary processes and technologies for the $400+ billion semiconductor industry. Our lead technology, named Mears Silicon Technology ™ , or MST ® , is a thin-film of reengineered silicon, typically 100 to 300 angstroms (or approximately 20 to 60 silicon atomic unit cells) thick. MST can be applied as a transistor channel enhancement to CMOS-type transistors, the most widely used transistor type in the semiconductor industry. MST is our proprietary and patent-protected performance enhancement technology that we believe addresses a number of key engineering challenges facing the semiconductor industry. We believe that by incorporating MST, transistors can be smaller, with increased speed, reliability and energy efficiency. In addition, since MST is an additive and low cost technology, we believe it can be deployed on an industrial scale, with machines commonly used in semiconductor manufacturing. We believe that MST can be widely incorporated into the most common types of semiconductor products, including analog, logic, optical and memory integrated circuits.

We do not intend to design or manufacture integrated circuits directly. Instead, we intend to develop and license technologies and processes that we believe will offer the designers and manufacturers of integrated circuits a low-cost solution to the industry need for greater performance and lower power consumption. Our customers and partners are expected to include:

- foundries, which manufacture integrated circuits on behalf of fabless manufacturers;
- integrated device manufacturers, or IDMs, which are the fully integrated designers and manufacturers of integrated circuits;
- fabless semiconductor manufacturers, which are designers of integrated circuits who outsource the manufacture of their chips to foundries;
- original equipment manufacturers, or OEMs, that manufacture the epitaxial, or EPI, machines used to deposit semiconductor layers, such as the MST, onto the base silicon wafer; and
- electronic design automation companies, which make tools used throughout the industry to simulate performance of semiconductor products using different materials, design structures and process technologies.

We intend to generate revenue through licensing arrangements whereby foundries and IDMs pay us a license fee for their use of MST technology in the manufacture of silicon wafers as well as a royalty for each silicon wafer or device that incorporates our MST technology. We also intend to enter into licensing arrangements with fabless semiconductor manufacturers pursuant to which we will charge them a royalty for each device they sell that incorporates our MST technology.

We were organized as a Delaware limited liability company under the name Nanovis LLC on November 26, 2001. On March 13, 2007, we converted to a Delaware corporation under the name Mears Technologies, Inc. On January 12, 2016, we changed our name to Atomera Incorporated.

On March 17, 2015, we completed the private placement of $14.75 million in senior secured convertible promissory notes, which we issued for cash consideration of $7.40 million and the exchange for previously issued promissory notes that at the time of exchange had principal and accrued interest in the aggregate amount of $7.35 million. On April 1, 2016 we completed the private placement of an additional $5.96 million in senior secured convertible notes on the same terms as the promissory notes placed in March 2015. We refer to these promissory notes in this Annual Report as our “Secured Notes.”

On August 10, 2016, we closed our initial public offering of 3,680,000 share of common stock at a public offering price of $7.50 per share. The common stock included 480,000 shares sold as a result of the underwriter’s exercise in full of its overallotment option. Gross proceeds to us from this offering were $27,600,000 before deducting underwriting discounts, commissions and other offering expenses. In accordance with the terms of the Secured Notes, all principal plus accrued interest (totaling approximately $23.5 million) converted automatically upon consummation of the IPO into 6,264,659 million shares of common stock.

Results of Operations for the Years Ended December 31, 2017 and 2016

Revenues. Revenue for the year ended December 31, 2017 and 2016 was approximately $110,000 and $0, respectively. Our revenue in 2017 was generated from delivery of engineering services.

Cost of Revenue: Cost of revenues consists of the cost of materials as well as direct compensation and expenses incurred to provide engineering services. Cost of revenues were approximately $39,000 and $0 for the years ended December 31, 2017 and 2016, respectively. Since providing engineering services is not our core strategy, we anticipate that our costs of revenue will vary substantially among customer engagements and from period to period.

Operating Expenses. Operating expenses consist of research and development, general and administrative, and selling and marketing expenses. For the years ended December 31, 2017 and 2016 our operating expenses totaled approximately $13.3 million and $10.0 million, respectively.

Research and development expense. To date, our operations have focused on the research, development, patent protection, and commercialization of our processes and technologies, including our proprietary and patent-protected MST performance enhancement technology. Our research and development costs primarily consist of payroll and benefit costs for our engineering staff and costs of outsourced fabrication and metrology of semiconductor wafers incorporating our MST technology.

The timing and amount of our outsourced fabrication and metrology is highly dependent on evaluations by our prospective customers and partners. As a result, the level of our research and development costs can vary significantly among accounting periods.

For the years ended December 31, 2017 and 2016, we incurred approximately $5.8 million and $4.0 million, respectively, of research and development expense, an increase of approximately $1.8 million or 46%. The increase in research and development expense is primarily due to an increase of approximately $1.0 million in spending on outsourced fabrication and metrology to support increased engagements with potential customers evaluating our MST, an increase of approximately $388,000 in payroll expense reflecting an increase in engineering headcount and an increase of approximately $277,000 in stock compensation expenses. Additional increases over the year ended December 31, 2016 include approximately $89,000 in professional fees for technical consulting related to the development of simulation software and product development. We expect that engineering headcount and related expenses in 2018 will remain at or above the level of 2017.

General and administrative expense. General and administrative expenses consist primarily of payroll and benefit costs for administrative personnel, office-related costs and professional fees. General and administrative costs for the years ended December 2017 and 2016 were approximately $5.8 million and $5.1 million, respectively, representing an increase of approximately $691,000 or 14%. The increase in costs was primarily due to an increase of approximately $931,000 in stock compensation expense reflecting grants made in connection with and subsequent to the IPO and new grants issued in the fourth quarter of 2016 and the first quarter of 2017. This cost was offset by an approximate $539,000 decrease in payroll and payroll related expenses due to severance costs of approximately $208,000 associated with the departure of former executives in 2016 as well as the payment of a bonus of $250,000 to our Chief Executive Officer in September 2016 resulting from the completion of our IPO. We anticipate that general and administrative expense in 2018 will increase from 2017 levels.

Selling and marketing expense. Selling and marketing expenses consist primarily of salary and benefits for our sales and marketing personnel and business development consulting services. Selling and marketing expenses for the years ended December 31, 2017 and 2016 were approximately $1.7 million and $901,000, respectively, representing an increase of approximately $758,000, or 84%. Approximately $342,000 of the increase is due to stock-based compensation. The remaining increase is due to an increase in payroll and related by approximately $329,000 due to an increase in head count and approximately $79,000 increase in consulting expense for assistance with prospective customer engagements.

Interest income and expense. Interest income and interest expense for the periods indicated, consisted of the following (in thousands):

	Year Ended December,	
	2017	**2016**
Interest income	$ 148	$ 29
Interest expense	–	(2,640)
	$ 148	$ (2,611)

Interest income for the years ended December 31, 2017 and 2016 related to interest earned on our cash and cash equivalents. Interest expense for the years ended December 31, 2017 and 2016 relate to accrued interest in our Secured Notes. The principal amount and accrued interest on these notes converted to shares of common stock upon the completion of our IPO in August 2016. Accordingly, we did not recognize any interest expense in 2017.

Liquidity and Capital Resources

As of December 31, 2017, we had cash and cash equivalents of approximately $17.4 million and a working capital of approximately $16.8 million. For the year ended December 31, 2017, we had a net loss of approximately $13.1 million and used approximately $9.3 million of cash in operations. Since inception, we have incurred recurring operating losses. At December 31, 2017, we had an accumulated deficit of approximately $109.1 million

We believe that our available working capital is sufficient to fund our presently forecasted working capital requirements for, at least, the next 12 months following the date of the filing of this report. However, the semiconductor industry is generally slow to adopt new manufacturing process technologies and conducts long testing and qualification processes which we have limited ability to control. Accordingly, we may require additional capital in order to get to full-scale industrial production of a device that incorporates our MST. In the event we require additional capital, we will endeavor to acquire additional funds through various financing sources, including follow-on equity offerings, debt financing and joint ventures with industry partners. In addition, we will consider alternatives to our current business plan that may enable to us to achieve revenue-producing operations and meaningful commercial success with a smaller amount of capital. However, there can be no guarantees that additional capital will be available on commercially reasonable terms, if at all. If such financing is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations.

Cash Flows from Operating, Investing and Financing Activities:

Net cash used in operating activities of approximately $9.3 million for year ended December 31, 2017 resulted primarily from our net loss of approximately $13.1 million adjusted by approximately $4.1 million for stock-based compensation expense and an increase of approximately $152,000 in prepaids and other assets and decrease of approximately $155,000 in accounts payable.

Net cash used in operating activities of approximately $6.8 million for year ended December 31, 2016 resulted primarily from our net loss of approximately $12.6 million adjusted by approximately $2.5 million for stock-based compensation expense, approximately $1.1 million for non-cash interest expense of approximately $1.5 million for the amortization of debt issuance costs.

Net cash used in investing activities of approximately $60,000 for the year ended December 31, 2017 consisted of the purchase of property and equipment. Net cash used in investing activities of approximately $13,000 for year ended December 31, 2016 consisted of approximately $28,000 for the purchase of property and equipment offset by $15,000 release of a restricted investment.

No cash was used in or provided by financing activities for the year ended December 31, 2017. Net cash provided by financing activities of approximately $30.3 million for the year ended December 31, 2016 related primarily to the net proceeds of approximately $24.8 million from our initial public offering in August 2016 along with our Secured Notes issued in April 2016 with proceeds of approximately $5.5 million.

Off-Balance Sheet Arrangements

We have not entered into off-balance sheet arrangements or issued guarantees to third parties.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable.

Item 8. Financial Statements and Supplementary Data

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of
Atomera Incorporated

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Atomera Incorporated (the "Company") as of December 31, 2017 and 2016, the related statements of operations, stockholders' equity (deficit) and cash flows for each of the two years in the period 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 2016, and the results of its operations and its cash flows for each of the two years in the period 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 audits. 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 audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits 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 audits 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 audits 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 audits 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 audits provide a reasonable basis for our opinion.

Marcum LLP
/s/ Marcum LLP
We have served as the Company's auditor since 2015 .
New York, NY
March 6, 2018

Atomera Incorporated
Balance Sheets
(in thousands, except per share data)

	December 31, 2017	December 31, 2016
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 17,369	$ 26,718
Accounts receivable	110	–
Prepaid expenses and other current assets	248	96
Total current assets	17,727	26,814
Property and equipment, net	67	28
Security deposit	13	37
Total assets	$ 17,807	$ 26,879
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 198	$ 353
Accrued expenses	239	168
Accrued payroll related expenses	512	510
Total liabilities	949	1,031
Commitments and contingencies (see Note 6)		
Stockholders' equity:		
Preferred stock, $0.001 par value, authorized 2,500 shares; none issued and outstanding at December 31, 2017 and 2016	–	–
Common stock, $0.001 par value, authorized 47,500 shares; 12,161 shares issued and outstanding at December 31, 2017 and 12,025 issued and outstanding as of December 31, 2016	12	12
Additional paid-in capital	125,911	121,833
Accumulated deficit	(109,065)	(95,997)
Total stockholders' equity	16,858	25,848
Total liabilities and stockholders' equity	$ 17,807	$ 26,879

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

Atomera Incorporated
Statements of Operations
(in thousands, except per share data)

	Years Ended December 31, 2017	Years Ended December 31, 2016
Revenue:	$ 110	$ –
Cost of revenue	39	–
Gross margin	71	–
Operating Expenses:		
Research and development	5,826	3,993
General and administrative	5,796	5,105
Selling and marketing	1,659	901
Total operating expenses	13,281	9,999
Loss from operations	(13,210)	(9,999)
Other income/(expense):		
Interest income	148	29
Interest expense	–	(2,640)
Other expense	(6)	–
Total other expense, net	142	(2,611)
Net loss	$ (13,068)	$ (12,610)
Net loss per common share, basic and diluted	$ (1.08)	$ (2.22)
Weighted average number of common shares outstanding, basic and diluted	12,124	5,682

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

Atomera Incorporated
Statement of Stockholders' Equity (Deficit)
(in thousands)

	Common Stock				Additional Paid-in Capital		Subscription Receivable		Accumulated Deficit		Total Stockholders' Equity (Deficit)
	Shares		Amount								
Balance January 1, 2016	1,617	$	2	$	70,452	$	(188)	$	(83,387)	$	(13,121)
Sale of stock	3,680		4		27,596		–		–		27,600
Conversion of secured notes	6,265		6		23,486		–		–		23,492
Compensation in exchange for forgiveness of subscription receivable	–		–		–		188		–		188
Stock-based compensation	462		–		2,468		–		–		2,468
Stock option exercises	1		–		4		–		–		4
Issuance of common stock warrants	–		–		1,249		–		–		1,249
Debt offering costs	–		–		(3,422)		–		–		(3,422)
Net loss	–		–		–		–		(12,610)		(12,610)
Balance December 31, 2016	12,025		12		121,833		–		(95,997)		25,848
Stock-based compensation	126		–		4,018		–		–		4,018
Common stock issued for services	10		–		60		–		–		60
Net loss	–		–		–		–		(13,068)		(13,068)
Balance December 31, 2017	12,161	$	12	$	125,911	$	–	$	(109,065)	$	16,858

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

Atomera Incorporated
Statements of Cash Flows
(in thousands)

	Years Ended December 31,	
	2017	**2016**
CASH FLOWS FROM OPERATING ACTIVITIES		
Net Loss	$ (13,068)	$ (12,610)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	19	15
Debt issuance cost amortization	–	1,526
Stock-based compensation	4,018	2,468
Non-cash interest expense	–	1,114
Compensation in exchange for settlement of subscription receivable	–	188
Commons stock issued for services	60	–
Loss on disposal of assets	2	–
Changes in operating assets and liabilities:		
Accounts receivable	(110)	–
Prepaid expenses and other current assets	(152)	(48)
Security deposit	24	(37)
Accounts payable	(155)	52
Accrued expenses	71	37
Accrued payroll expenses	2	496
Net cash used in operating activities	(9,289)	(6,799)
NET CASH FROM INVESTING ACTIVITIES		
Acquisition of property and equipment	(60)	(28)
Release of restricted investment	–	15
Net cash used in investing activities	(60)	(13)
CASH FLOWS FROM FINANCING ACTIVITIES		
Net proceeds from senior secured convertible promissory notes payable	–	5,467
Proceeds from initial public offering	–	27,600
Payment of offering costs	–	(2,738)
Proceeds from exercise of stock options	–	4
Net cash provided by financing activities	–	30,333
Net (decrease)/increase in cash and cash equivalents	(9,349)	23,521
Cash and cash equivalents at beginning of year	26,718	3,197
Cash and cash equivalents at end of year	$ 17,369	$ 26,718
Non-cash financing activities:		
Warrant issued as debt discount on secured notes	$ –	$ 710
Warrant issued for underwriting of initial public offering	$ –	$ 539
Conversion of secured notes into equity	$ –	$ 23,492

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

1. NATURE OF OPERATIONS

Atomera Incorporated ("Atomera" or the "Company") was incorporated in the state of Delaware in March 2007 under the name MEARS Technologies, Inc. and is engaged in the development, commercialization and licensing of proprietary processes and technologies for the semiconductor industry. On January 12, 2016, the Company changed its name to Atomera Incorporated.

The Company is in the development stage, having not yet started planned principal operations, and is devoting substantially all of its efforts toward technology research and development. The Company has primarily financed operations through private placements of equity and debt securities and the Company's Initial Public Offering (the "IPO") which was consummated on August 10, 2016 (see Note 9).

2. LIQUIDITY AND MANAGEMENT PLANS

At December 31, 2017, the Company had cash and cash equivalents of approximately $17.4 million and working capital of approximately $16.8 million. The Company has only generated limited revenues since inception and has incurred recurring operating losses. At December 31, 2017, the Company had an accumulated deficit of approximately $109.1 million.

The Company's operating plans for the next 12 months include increased headcount in research and development and increased spending on outsourced fabrication and testing. Based on the funds it has available as of the date of the filing of this report, the Company believes that it has sufficient capital to fund its current business plans and obligations over, at least, 12 months from the date that these financial statements have been issued. The Company also believes that it has sufficient capital to enable one or more customers to license its technology. However, as the Company has not yet generated recurring revenue from planned principal operations, it is subject to all the risks inherent in the initial organization, financing, expenditures, complications and delays in a new business. Accordingly, the Company may require additional capital, the receipt of which cannot be assured. In the event the Company requires additional capital, there can be no guarantee that funds will be available on commercially reasonable terms, if at all.

3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation

The financial statements are presented in accordance with accounting principles generally accepted in the United States of America ("GAAP") and reflect the financial position, results of operations and cash flows for all periods presented.

Fair Value of Financial Instruments

Authoritative guidance requires disclosure of the fair value of financial instruments. The Company's financial instruments consist of cash and cash equivalents, accounts receivable and accounts payable, the carrying amounts of which approximate their estimated fair values primarily due to the short-term nature of the instruments or based on information obtained from market sources and management estimates. The Company measures the fair value of certain of its financial assets and liabilities on a recurring basis. A fair value hierarchy is used to rank the quality and reliability of the information used to determine fair values. Financial assets and liabilities carried at fair value which is not equivalent to cost will be classified and disclosed in one of the following three categories:

Level 1 — Quoted prices (unadjusted) in active markets for identical assets and liabilities.

Level 2 — Inputs other than Level 1 that are observable, either directly or indirectly, such as unadjusted quoted prices for similar assets and liabilities, unadjusted quoted prices in the 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.

Cash and cash equivalents

The Company maintains its operating accounts in a single reputable financial institution. The balances are insured by the U.S. Federal Deposit Insurance Corporation ("FDIC") up to specified limits. The Company's cash is maintained in checking accounts and money market funds with maturities of less than three months when purchased, which are readily convertible to known amounts of cash, and which in the opinion of management are subject to insignificant risk of loss in value.

Concentration of Credit Risk and Major Customers

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist principally of cash, cash equivalents and accounts receivable.

At times, the amounts on deposit at the financial institution exceed the federally insured limits. Management believes that the financial institutions which hold the Company's cash is financially sound and, accordingly, minimal credit risk exists. As of December 31, 2017 and 2016, the Company's cash balances were in excess of insured limits maintained at the financial institution.

The Company grants credit to its business customers. Collateral is generally not required for trade receivables. The Company maintains allowances for potential credit losses when necessary. During the year ended December 31, 2017, one customer represented 100% of revenues and 100% of the accounts receivable balance. At December 31, 2016, the Company did not have any revenue generated from customers.

Accounts Receivable

Trade accounts receivable are recorded net of allowances for cash discounts for prompt payment, doubtful accounts, and sales returns. Estimates for cash discounts and sales returns are based on analysis of contractual terms.

The Company's policy is to reserve for uncollectible accounts based on its best estimate of the amount of probable credit losses in its existing accounts receivable. The Company periodically reviews its accounts receivable to determine whether an allowance for doubtful accounts is necessary based on an analysis of past due accounts and other factors that may indicate that the realization of an account may be in doubt. Other factors that the Company considers include its existing contractual obligations, historical payment patterns of its customers and individual customer circumstances, and an analysis of days sales outstanding by customer. Account balances deemed to be uncollectible are charged to the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. At December 31, 2017, there were no allowance for doubtful accounts since the balance was subsequently collected. Any allowances recorded are included in Accounts Receivable, net in the accompanying balance sheets.

Revenue

The Company generates revenue from sales of its products and delivery of services to its customer base.

The Company records revenue when (i) persuasive evidence of an arrangement exists, (ii) delivery of the goods or performance of the services has occurred, (iii) the fee is fixed or determinable, and (iv) collectability of the sale is reasonably assured.

The Company requires all product sales to be supported by evidence of a sale transaction that clearly indicates the selling price to the customer, shipping terms and payment terms. Evidence of an arrangement generally consists of a contract or purchase order approved by the customer. The Company has ongoing relationships with certain customers from which it customarily accepts orders by telephone in lieu of purchase orders.

The Company recognizes revenue at the time it receives confirmation that the goods were either tendered at their destination, when shipped "FOB destination," or transferred to a shipping agent, when shipped "FOB shipping point." Delivery to the customer is deemed to have occurred when the customer takes title to the product. Generally, title passes to the customer upon shipment, but could occur when the customer receives the product based on the terms of the agreement with the customer.

Income Taxes

In accordance with authoritative guidance, deferred tax assets and liabilities are recorded for temporary differences between the financial reporting and tax bases of assets and liabilities using the current enacted tax rate expected to be in effect when the differences are expected to reverse. A valuation allowance is recorded on deferred tax assets unless realization is considered more likely than not.

The Company evaluates its tax positions taken or expected to be taken in the course of preparing the Company's tax returns to determine whether the tax positions are "more-likely-than-not" of being sustained by the applicable tax authority. Tax positions not deemed to meet the "more-likely-than-not" threshold are not recorded as a tax benefit or expense in the current year. The Company recognizes interest and penalties, if any, related to uncertain tax positions in interest expense. No interest and penalties related to uncertain tax positions were accrued at either December 31, 2017 or 2016.

The Company follows authoritative guidance which requires the evaluation of existing tax positions. Management has analyzed all open tax years, as defined by the statute of limitations, for all major jurisdictions, which includes both federal and states where the Company has operations. Open tax years are those that are open for examination by taxing authorities.

Property and equipment

Items capitalized as property and equipment are stated at cost. Maintenance and routine repairs are charged to operations when incurred, while betterments and renewals are capitalized. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the respective assets starting when the asset is placed in service.

Debt Discounts

Debt discounts are amortized to interest expense using the straight-line method, which approximates the interest rate method, over the earlier of the term of the related debt or their earliest date of redemption.

Research and development expenses

In accordance with authoritative guidance, the Company charges research and development costs to operations as incurred. Research and development expenses consist of personnel costs for the design, development, testing and enhancement of the Company's technology, and certain other allocated costs, such as depreciation and other facilities related expenditures.

Common stock warrants

The Company classifies as equity any warrants that (i) require physical settlement or net-share settlement or (ii) provide the Company with a choice of net-cash settlement or settlement in its own shares (physical settlement or net-share settlement). The Company classifies as assets or liabilities any contracts that (i) require net-cash settlement (including a requirement to net cash settle the contract if an event occurs and if that event is outside the Company's control), (ii) gives the counterparty a choice of net-cash settlement or settlement in shares (physical settlement or net-share settlement) or (iii) that contain reset provisions that do not qualify for the scope exception. The Company assesses classification of its common stock warrants and other freestanding derivatives at each reporting date to determine whether a change in classification between assets and liabilities is required. The Company's freestanding derivatives consist of warrants to purchase common stock that were issued in connection with its notes payable. The Company evaluated these warrants to assess their proper classification and determined that the common stock warrants meet the criteria for equity classification in the balance sheet. Such warrants are measured at fair value, which the Company determines using the Black-Scholes-Merton option-pricing model.

Stock-based compensation

The Company computes stock-based compensation in accordance with authoritative guidance. The Company uses the Black-Scholes-Merton option-pricing model to determine the fair value of its stock options. The Black-Scholes-Merton option-pricing model includes various assumptions, including the fair market value of the common stock of the Company, expected life of stock options, the expected volatility and the expected risk-free interest rate, among others. These assumptions reflect the Company's best estimates, but they involve inherent uncertainties based on market conditions generally outside the control of the Company. Forfeitures are recorded when they occur.

As a result, if other assumptions had been used, stock-based compensation cost, as determined in accordance with authoritative guidance, could have been materially impacted. Furthermore, if the Company uses different assumptions on future grants, stock-based compensation cost could be materially affected in future periods.

The Company accounts for the fair value of equity instruments issued to non-employees using either the fair value of the services received or the fair value of the equity instrument, whichever is considered more reliable . The Company utilizes the Black-Scholes-Merton option-pricing model to measure the fair value of options issued to non-employees.

Use of estimates

The preparation of financial statements in conformity with GAAP requires the Company's 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 expenses during the reporting period. Significant estimates include the fair value of stock-based compensation and warrants, valuation allowance against deferred tax assets and related disclosures. Actual results could differ from those estimates.

Adoption of recent accounting standards

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-06, *Derivatives and Hedging (Topic 815): Contingent Put and Call Options in Debt Instruments* . This new standard simplifies the embedded derivative analysis for debt instruments containing contingent call or put options by removing the requirement to assess whether a contingent event is related to interest rates or credit risks. The Company has adopted ASU 2016-06 as of January 1, 2017. The ASU did not have an impact on the Company's financial condition or results of operations.

Recent accounting standards

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* , which supersedes the revenue recognition requirements in Topic 605, *Revenue Recognition* and requires entities to recognize revenue in a way that depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued ASU 2015-14, which defers by one year the effective date of ASU 2014-09. Accordingly, this guidance is effective for interim and annual periods beginning after December 15, 2017 with early adoption permitted for interim and annual periods beginning after December 15, 2016. In March 2016, the FASB issued ASU 2016-08 *Principal versus Agent Considerations (Reporting Revenue Gross versus Net)* , which finalizes its amendments to the guidance in the new revenue standard on assessing whether an entity is a principal or an agent in a revenue transaction. This conclusion impacts whether an entity reports revenue on a gross or net basis. In April 2016, the FASB issued ASU 2016-10 *Identifying Performance Obligations and Licensing* , which finalizes its amendments to the guidance in the new revenue standard regarding the identification of performance obligations and accounting for the license of intellectual property. In May 2016, the FASB issued ASU 2016-12 *Narrow-Scope Improvements and Practical Expedients,* which finalizes its amendments to the guidance in the new revenue standard on collectability, noncash consideration, presentation of sales tax, and transition. In December 2016, the FASB issued ASU 2016-20, *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers,* which continues the FASB's ongoing project to issue technical corrections and improvements to clarify the codification or correct unintended applications of guidance. The amendments are intended to make the guidance more operable and lead to more consistent application. The amendments have the same effective date and transition requirements as the new revenue recognition standard. In September 2017, the FASB Issued ASU 2017-13, *Revenue Recognition (Topic 605), Revenue from Contracts with Customers (Topic 606), Leases (Topic 840), and Leases (Topic 842), which provides additional implementation guidance on the previously issued ASU 2014-09.* Overall, ASU No. 2014-09, as amended, provides for either full retrospective adoption or a modified retrospective adoption by which it is applied only to the most current period presented. The Company has adopted Topic 606 as of January 1, 2018 and the Company has concluded that it will utilize the full retrospective method of adoption. The Company has reviewed its 2017 revenue under both Topic 605 and Topic 606 and concluded that there is no difference in the accounting treatment under each Topic. While the Company will provide expanded disclosures as a result of ASU No. 2014-09, this standard will not have any impact on its results of operations and financial condition.

In February 2016, the FASB ASU No. 2016-02, *Leases (Topic 842)* which supersedes FASB ASC Topic 840, *Leases (Topic 840)* and provides principles for the recognition, measurement, presentation and disclosure of leases for both lessees and lessors. The FASB has continued to clarify this guidance and most recently issued ASU 2017-13 "Amendments to SEC Paragraphs Pursuant to the Staff Announcement at the July 20, 2017 EITF Meeting and Rescission of Prior SEC Staff Announcements and Observer Comments." The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than twelve months regardless of classification. Leases with a term of twelve months or less will be accounted for similar to existing guidance for operating leases. The standard will be effective for annual and interim periods beginning after December 15, 2018, with early adoption permitted upon issuance. The Company is currently evaluating the impact that ASU 2016-02 will have on its financial statements and related disclosures.

On August 26, 2016, the FASB issued ASU No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)* . The amendments in ASU 2016-15 address eight specific cash flow issues and apply to all entities, including both business entities and not-for-profit entities that are required to present a statement of cash flows under FASB Accounting Standards Codification 230, Statement of Cash Flows. The amendments in ASU 2016-15 are effective for public business entities for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Early adoption is permitted, including adoption in an interim period. The Company has adopted this update as of January 1, 2018 and the adoption will not have a material impact on its financial condition or results of operations.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118") which allows companies to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. Since the Act was passed late in the fourth quarter of 2017, and ongoing guidance and accounting interpretation are expected over the next 12 months, the Company considers the accounting of the deferred tax re-measurements to be incomplete due to the forthcoming guidance and its ongoing analysis of final year-end data and tax positions. The Company expects to complete its analysis within the measurement period in accordance with SAB 118.

4. BASIC AND DILUTED LOSS PER SHARE

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares outstanding for the period. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of shares and dilutive share equivalents outstanding for the period, determined using the treasury-stock and if-converted methods. Since the Company has had net losses for all periods presented, all potentially dilutive securities are anti-dilutive. Accordingly, basic and diluted net loss per share are equal.

The following potential common stock equivalents were not included in the calculation of diluted net loss per common share because the inclusion thereof would be anti-dilutive (in thousands):

	Year Ended December 31,	
	2017	**2016**
Stock Options	2,141	1,515
Warrants	765	765
	2,906	2,280

5. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following (in thousands):

	December 31, 2017	December 31, 2016
Computer equipment	$ 77	$ 60
Laboratory equipment	76	55
Software	6	5
Office equipment	1	2
Furniture and fixtures	1	–
	161	122
Less: Accumulated depreciation and amortization	(94)	(94)
	$ 67	$ 28

Depreciation and amortization expense relating to property and equipment was approximately $19,000 and $15,000 for the years ended December 31, 2017 and 2016, respectively. The Company depreciates computer equipment, laboratory equipment and office equipment on straight-line basis over three years. Furniture and fixtures are depreciated on a straight-line basis over five years. The Company amortizes software on straight-line basis over three years.

During the year ended December 31, 2017, the Company disposed of property and equipment with a cost of approximately $21,000, the net book value of the assets at the time of the disposal was approximately $2,000.

6. COMMITMENTS AND CONTINGENCIES

Operating leases

In October 2016, the Company entered into lease agreement for approximately 200 square feet of office space in Cambridge, Massachusetts. The lease with monthly payments of $2,074 per month commenced on October 24, 2016. The lease rate will increase to $2,330 on January 1, 2018. The lease is a month to month and can be cancelled with a 30 day notice.

In January 2016, the Company entered into a lease agreement for a 3,396 square foot office facility in Los Gatos, California as its new corporate headquarters. The lease commenced on February 1, 2016 and expires on January 31, 2018. In December 2017, the company extended the lease terms for three years through January 31, 2021. The lease rate is $13,074 per month, which will decrease to $12,735 per month commencing February 1, 2018 with annual increases of 3% in each subsequent year.

Approximate future minimum lease payments required under the operating leases are as follows (in thousands):

Years ending December 31,	**Amount**
2018	$ 153
2019	157
2020	162
2021	13
Total	$ 485

Licensing agreement

In December 2006, the Company entered into licensing agreement with ASM International, NV, a semiconductor OEM located in Almere, The Netherlands, pursuant to which ASM has granted to the Company a non-exclusive, worldwide license to make, and sublicense others to make, semiconductor devices using certain ASM patents. The ASM license restricts the Company and its sublicensees from using the ASM licensed rights in the manufacture of EPI machines or any other machines used to manufacture semiconductors. The ASM license is coterminous with patents licensed by ASM, which expires on January 8, 2019, and requires the Company to pay ASM a royalty of 5% of net royalty revenue, generally defined as gross royalty revenue less certain customer offsets and credits, from the sale of any product incorporating the ASM licensed patents not manufactured on ASM equipment and a royalty of 2.5% of net revenue from the sale of any product incorporating ASM licensed patents manufactured on ASM equipment. All semiconductor devices incorporating the Company's MST ® technology manufactured prior to January 8, 2019 will be subject to the ASM license royalty. The Company incurred approximately $3,000 in royalty expense under this agreement for the year ended December 31, 2017 which is included in cost of revenue in the statement of operations. There was no royalty expense for the year ended December 31, 2016.

Legal

The Company may be involved, from time to time, in legal proceedings and claims arising in the ordinary course of its business. Such matters are subject to many uncertainties and outcomes and are not predictable with assurance. While management believes that such matters are currently insignificant, matters arising in the ordinary course of business for which the Company is or could become involved in litigation may have a material adverse effect on its business and financial condition. To the Company's knowledge, neither the Company nor any of its properties are subject to any pending legal proceedings.

7. NOTES PAYABLE

On March 17, 2015, the Company issued Senior Secured Convertible Notes (the "Secured Notes") to certain investors under which the Company borrowed approximately $7.4 million and it exchanged all of its previously outstanding unsecured convertible promissory notes for Secured Notes with an aggregate principal balance of approximately $7.35 million. The total closing represented $14.75 million. National Securities Corporation ("NSC") acted as placement agent and the Company paid a brokerage commission to NSC and also issued a warrant (the "2015 NSC Warrant") to purchase 10% of the common stock issuable upon conversion of Secured Notes in the principal amount of approximately $7.4 million at an exercise price of $7.362 per share, subject to adjustment of the exercise price to the conversion price of the Secured Notes when such conversion price became determinable. The number of shares issuable upon exercise of the 2015 NSC Warrant was initially set at 100,144 shares of the Company's common stock, subject to later adjustment to a number of shares equal to 10% of the shares issuable upon conversion of the Secured Notes. The Secured Notes were due on May 31, 2016 and accrued interest at a rate of 10% per annum. During March 2016, the maturity date for the Secured Notes was extended to May 31, 2017 and in April 2016 the Company sold an additional $5.96 million of Secured Notes

During the year ended December 31, 2016, the interest expense on the Secured Notes was approximately $2.6 million. On August 10, 2016, upon consummation of the IPO, and in accordance with the terms of the Secured Notes, all principal and accrued interest due under the Secured Notes, totaling approximately $23.5 million converted into 6,264,659 shares of common stock of the Company, based on a conversion price equal to 50% of the price of shares sold in to the public in the IPO, or $3.75 per share. There is no interest expense for the year ended December 31, 2017. The determination of the conversion price and number of shares issuable upon conversion of the Secured Notes triggered an adjustment to the 2015 NSC Warrant, increasing the number of shares issuable by 96,458 (to a total of 196,502 shares) and setting the exercise price at $3.75 per share. The modification of the number of shares issuable and exercise price of the 2015 NSC Warrant increased its fair value resulting in addition interest expense recognized in August, 2016 (See Note 10).

8. RELATED PARTY TRANSACTIONS

On January 14, 2005, the Company executed a Secured Promissory Note (the "Promissory Note") with an officer of the Company. Under the Promissory Note, the officer borrowed $187,500 from the Company. The Promissory Note bore interest at a fixed rate of 3.76% per annum, with interest-only payments due annually through the maturity date of January 14, 2014. In December 2015, the Company agreed to extend the term of the note to January 14, 2019, subject to acceleration in the event of the sale of the sale or liquidation of the Company, bankruptcy or like event. Effective January 2016, the Company cancelled the outstanding principal of the note in the amount of $187,500. The cancellation of this note was recognized as a bonus to the officer and included in general and administrative expenses in the accompanying statement of operations for the year ended December 31, 2016. As of the date of the cancellation of the Promissory Note, there was accrued and unpaid interest under the note in the amount of approximately $7,000, which amount has been repaid by the officer. In return for the cancellation of the note, the officer was required to reimburse the Company for withholding taxes payable by the Company, in the amount of approximately $14,000.

During the year ended December 31, 2016, a director, who is also a shareholder of the Company, was paid $3,000 for his work as a consultant for the Company. There were no payments for the year ended December 31, 2017.

9. STOCKHOLDERS' EQUITY

The Company is authorized to issue to up 2,500,000 shares of preferred stock, $.001 par value. As of December 31, 2017, no shares have been designated and no shares are issued and outstanding. Preferred stock may rank prior to common stock with respect to dividends rights, liquidation preferences, or both, and may have full or limited voting rights.

In August 2016, the Company closed its IPO of 3,680,000 shares of common stock at a public offering price of $7.50 per share. In accordance with the terms of the Secured Notes, all principal plus accrued interest (totaling approximately $23.5 million) converted automatically upon consummation of the IPO into 6,264,659 shares (see Note 7).

As of December 31, 2017, the Company has reserved approximately 2.9 million shares of common stock for issuance pursuant to outstanding stock options and warrants.

In May 2017, the Company issued 10,000 shares of common stock to a consultant for services rendered. The shares were valued at fair value on the date issued and the Company recorded an expense of approximately $60,000 in general and administrative expenses on the statement of operations for the year ended December 31, 2017.

10. WARRANTS

As a result of the conversion of the Secured Notes to common stock on August 10, 2016, the 2015 NSC Warrant was adjusted in accordance with its terms (See Note 7). This adjustment consisted of (i) an increase in the number of shares issuable upon exercise of the warrant to 10% of the common shares issued upon conversion of the Secured Notes, or an increase of 96,458 shares to a total of 196,602 shares and (ii) modified the per-share exercise price of the original warrant issued to $3.75. The adjustment increased the fair value of the warrant by approximately $710,000 and was recorded as additional interest expense in the year ended December 31, 2016 in the statement of operations. The modified warrant expires at the same time as the original warrant, March 17, 2020.

On August 4, 2016, the Company issued a five-year warrant to purchase 368,000 shares of common stock at $9.375 per share to NSC in consideration for underwriting the Company's IPO in August 2016. The fair value of these warrants was determined to be approximately $539,000 and is included as a charge to additional paid-in capital as of December 31, 2016 as a deferred offering cost.

The Company estimated the fair value of warrants using the Black-Scholes option pricing model. There were no warrants issued in the year ending December 31, 2017. The fair value of warrants was estimated using the following weighted-average assumptions for the year ended December 31, 2016 is as follows:

Weighted average exercise price:	$	7.42
Weighted average grant date fair value:	$	2.49
Assumptions:		
Expected volatility		43.1%
Weighted average expected term (in years)		2.2
Risk-free interest rate		0.6%
Expected dividend yield		0.0%

The risk-free interest rate was obtained from U.S. Treasury rates for the applicable periods. The Company's expected volatility was based upon the historical volatility for industry peers and used an average of those volatilities. The expected life of the Company's options was determined using the simplified method as a result of limited historical data regarding the Company's activity. The dividend yield considers that the Company has not historically paid dividends and does not expect to pay dividends in the foreseeable future.

A summary of warrant activity for the years ended December 31, 2017 is as follows (shares in thousands except per share and contractual term):

	Number of Shares	Weighted-Average Exercise Prices	Weighted-Average Remaining Contractual Term (In Years)
Outstanding at January 1, 2017	765	$ 5.75	
Outstanding and exercisable at December 31, 2017	765	$ 5.75	2.9

The warrants outstanding at December 31, 2017 had an intrinsic value of approximately $809,000 based on a per-share stock price of $4.33 as of December 31, 2017.

11. STOCK BASED COMPENSATION

On March 14, 2007, the Company's stockholders approved the 2007 Equity Incentive Plan (the "2007 Plan"). The 2007 Plan expired in March 2017, however all options and warrants outstanding at the time of the expiration remained outstanding and exercisable by their term. At the time of the expiration of the 2007 plan, options to purchase 2,106,637 shares of common stock were outstanding.

In May 2017, the Company's shareholders approved its 2017 Stock Incentive Plan ("2017 Plan"). The 2017 Plan provides for the grant of non-qualified stock options and incentive stock options to purchase shares of the Company's common stock and for the grant of restricted and unrestricted share grants. The Company has reserved a total of 3,750,000 shares of common stock for issuance under the 2017 Plan. All employees, officers, directors, consultants, advisors and other persons who provide services to the Company or any subsidiaries of the Company are eligible to receive incentive awards under the 2017 Plan. As of December 31, 2017, awards aggregate of 90,900 shares of common stock had been granted under the 2017 Plan and total of 3,569,100 shares of common stock are reserved for reissuance.

The following table summarizes the stock-based compensation expense recorded in the Company's results of operations during the years ended December 31, 2017 and 2016 for stock options and restricted stock (in thousands):

	Year Ended December 31,	
	2017	2016
Research and development	$ 435	$ 158
General and administrative	2,822	1,892
Selling and Marketing	761	418
	$ 4,018	$ 2,468

As of December 31, 2017, there was approximately $4.2 million of total unrecognized compensation expense related to non-vested share-based compensation arrangements that are expected to vest. This cost is expected to be recognized over a weighted-average period of 2.4 years.

The Company records compensation expense for employee awards with graded vesting using the straight-line method. The Company records compensation expense for nonemployee awards with graded vesting using the accelerated expense attribution method. The Company recognizes compensation expense over the requisite service period applicable to each individual award, which generally equals the vesting term. The Company estimates the fair value of each option award using the Black-Scholes-Merton option pricing model. Forfeitures are recognized when realized.

The Company estimated the fair value of employee and non-employee stock options using the Black-Scholes option pricing model. The fair value of employee stock options is being amortized on a straight-line basis over the requisite service periods of the respective awards. The Company recognizes forfeitures as they occur rather than estimate their forfeiture rate. The fair value of employee stock options issued was estimated using the following weighted-average assumptions:

	Year Ended December 31,	
	2017	2016
Weighted average exercise price:	$ 6.73	$ 7.47
Weighted average grant date fair value:	$ 2.94	$ 3.50
Assumptions:		
Expected volatility	42.7%	44.1%
Weighted average expected term (in years)	6.0	5.8
Risk-free interest rate	2.16%	1.46%
Expected dividend yield	0.0%	0.0%

The risk-free interest rate was obtained from U.S. Treasury rates for the applicable periods. The Company's expected volatility was based upon the historical volatility for industry peers and used an average of those volatilities. The expected life of the Company's options was determined using the simplified method as a result of limited historical data regarding the Company's activity. The dividend yield considers that the Company has not historically paid dividends and does not expect to pay dividends in the foreseeable future.

Prior to the Company's IPO in August 2016, the fair value of the common stock was determined by the board of directors based on a variety of factors, including valuations prepared by third parties, the Company's financial position, the status of development efforts within the Company, the current climate in the marketplace and the prospects of a liquidity event, among others.

The following table summarizes stock option activity during the year ended December 31, 2017 (in thousands except exercise prices and contractual terms):

	Number of Shares	Weighted-Average Exercise Prices	Weighted-Average Remaining Contractual Term (In Years)	Intrinsic Value
Outstanding at January 1, 2017	1,515	$ 7.21		
Granted	628	$ 6.73		
Exercised	—	$ —		
Expired	(2)	$ 43.42		
Outstanding at December 31, 2017	2,141	$ 7.03	8.3	$ 14
Exercisable at December 31, 2017	965	$ 7.19	7.9	$ —

During the year ended December 31, 2017, the Company granted options under its 2007 Plan purchase 593,292 shares of its common stock to its employees. The fair value of these options was approximately $1.8 million. During the year ended December 31, 2017, the Company granted options under its 2017 Plan purchase 35,000 shares of its common stock to its employees. The fair value of these options was approximately $62,000.

The Company issues restricted stock to employees, directors and consultants and estimates the fair value based on the closing price on the day of grant. The following table summarizes all restricted stock activity during the year ended December 31, 2017 (in thousands except per share data):

	Number of Shares	Weighted-Average Grant Date Fair Value
Outstanding at January 1, 2017	462	$ 8.07
Granted	136	$ 6.60
Vested	(476)	$ 7.95
Cancelled	–	$ –
Outstanding non-vested shares at December 31, 2017	121	$ 6.90

12. 401(k) PLAN

During 2002, the Company established a plan under Section 401(k) of the Internal Revenue Code (the 401(k) Plan). The 401(k) Plan covers substantially all of its employees who have attained 18 years of age. Employees may elect to contribute part of their annual compensation to the 401(k) Plan, up to the maximum deferral allowance for individuals by the Internal Revenue Service under Code Section 401(k), and the Company may make a matching contribution. During 2017 and 2016, there were no matching contributions made by the Company.

13. INCOME TAXES

On December 22, 2017, the 2017 Tax Cut and Jobs Act ("the Act") was enacted into law and the new legislation contains several key tax provisions, including a one-time mandatory transition tax on undistributed foreign earnings and a reduction of the corporate income tax rate to 21% effective January 1, 2018, among others. The Company is required to recognize the effect of the tax law changes in the period of enactment, such as determining the estimated transition tax, re-measuring its U.S. deferred tax assets and liabilities at a 21% rate as well as reassessing the net realizability of its deferred tax assets and liabilities. The one-time transition tax does not apply to the Company as it does not have any undistributed foreign earnings. The provisional amount related to the re-measurement of its deferred tax balance is a reduction of approximately $9.9 million. Due to the corresponding valuation allowance fully offsetting deferred taxes, there is no income statement impact. Upon completion of our 2017 U.S. income tax return in 2018 we may identify additional re-measurement adjustments to our recorded deferred tax assets. We will continue to assess our provision for income taxes as future guidance is issued, but do not currently anticipate significant revisions will be necessary. Any such revisions will be treated in accordance with the measurement period guidance outlined in SAB 118.

The loss before provision for income taxes consisted of the following (in thousands):

	Year Ended December 31,	
	2017	2016
Domestic	$ (13,068)	$ (12,610)
International	—	—
Total	$ (13,068)	$ (12,610)

The Company had no income tax expense due to operating losses incurred for the years ended December 31, 2017 and 2016. The Company accounts for income taxes in accordance with ASC 740, which requires that the tax benefit of net operating losses, temporary differences and credit carryforwards be recorded as an asset to the extent that management assesses that realization is "more likely than not." Realization of the future tax benefits is dependent on the Company's ability to generate sufficient taxable income within the carryforward period. Because of the Company's recent history of operating losses, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not likely to be realized and, accordingly, has provided a full valuation allowance. The valuation decreased by approximately $5.3 million during the year ended December 31, 2017 and increased by approximately $283,000 during the year ended December 31, 2016.

The Company's deferred tax assets are as follows (in thousands):

	Year Ended December 31,	
	2017	2016
Deferred tax assets:		
Net operating loss carryforwards	$ 14,907	$ 19,431
Tax credit	1,074	695
Fixed assets and intangibles	1,784	3,239
Stock compensation	1,621	1,302
Accruals and other	111	152
Total deferred tax assets	$ 19,497	$ 24,819
Valuation allowance	(19,497)	(24,819)
Net deferred tax asset	$ –	$ –

Net operating losses and tax credit carryforwards as of December 31, 2017, are as follows (in thousands):

	Amount	Expiration in years
Net operating losses, federal	$ 63,510	2027-2037
Net operating losses, state	$ 25,962	2030-2037
Tax credits, federal	$ 918	2027-2037
Tax credits, state	$ 729	2022-2032

The effective tax rate of the Company's provision (benefit) for income taxes differs from the federal statutory rate as follows:

	Year ending December 31,	
	2017	2017
Statutory rate	34.00%	34.00%
State rate	1.13%	(9.63)%
Non-deductible items	(1.07)%	(2.72)%
Change in valuation allowance	(34.77)%	(16.93)%
Change in tax credits	0.71%	(2.82)%
Non-deductible interest expense	—%	(1.90)%
Changes in deferreds due to tax reform	(75.66)%	–
Changes in valuation allowance due to tax reform	75.66%	–
Total	–	–

Utilization of U.S. net operating losses and tax credit carryforwards may be limited by "ownership change" rules, as defined in Section 382 of the Internal Revenue Code. Similar rules may apply under state tax laws. The Company has not conducted a study to-date to assess whether a limitation would apply under Section 382 of the Internal Revenue Code as and when it starts utilizing its net operating losses and tax credits. The Company will continue to monitor activities in the future. In the event the Company previously experienced an ownership change, or should experience an ownership change in the future, the amount of net operating losses and research and development credit carryovers available in any taxable year could be limited and may expire unutilized.

The Company establishes reserves for uncertain tax positions based on the largest amount that is more-likely-than-not to be sustained. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. It is the Company's policy to recognize interest and penalties related to income tax matters in income tax expense. As of December 31, 2017 and 2016, respectively, the Company has no accrued interest or penalties related to uncertain tax positions.

The Company files income tax returns in the U.S. federal jurisdiction and various state jurisdictions. In the normal course of business, the Company is subject to examination by their respective taxing authorities. The Company is not currently under audit by the Internal Revenue Service or other similar state or local authority. The statute of limitations remain effectively open for all tax years from inception (2007) through 2017. Tax years outside the normal statute of limitations remain open to examination by tax authorities due to tax attributes generated in earlier years which have been carried forward and may be examined and adjusted in subsequent years when utilized.

The following table summarizes the activity related to the Company's gross unrecognized tax benefits for the years ended December 31, 2017 and 2016 (in thousands):

	2017	2016
January 1 – unrecognized tax benefits	$ 510	$ –
Increases (decreases) – prior year tax positions	(3)	463
Increases – current year tax positions	99	47
December 31 - unrecognized tax benefits	$ 606	$ 510

The following table summarizes the activity in the Company's Valuation Allowance and Qualifying Accounts for the years ended December 31, 2017 and 2016 (in thousands):

	Balance at Beginning of Year	Additions	Deductions	Balance at End of Year
Deferred tax assets valuation allowance				
Year ended December 31, 2017	$ 24,819	$ 892	$ 6,214	$ 19,497
Year ended December 31, 2016	$ 24,536	$ 11,296	$ 11,013	$ 24,819

14. SUBSEQUENT EVENTS

The Company has evaluated subsequent events since December 31, 2017, the date of these financial statements. On March 2, 2018 the Compensation Committee of the Board of Directors of the Company approved the issuance of 200,432 shares of Restricted Stock Awards and 335,424 Stock Options to its employees.

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

Not applicable.

Item 9A. Controls and Procedures

(a) *Evaluation of Disclosure Controls and Procedures* .

Our management, with the participation of our chief executive officer and chief financial officer evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Based upon that evaluation, our management, including our chief executive officer and chief financial officer, concluded that our disclosure controls and procedures were effective as of December 31, 2017 in ensuring all material information required to be filed has been made known in a timely manner.

(b) Changes in internal control over financial reporting.

There were no changes to our internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act that occurred during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(c) Management’s report on internal controls over financial reporting.

Our management is responsible for establishing and maintaining adequate internal controls over financial reporting, as defined under Rule 15a-15(f) under the Exchange Act. Our management has assessed the effectiveness of our internal controls over financial reporting as of December 31, 2017 based on the framework established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (“COSO”). Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements. An internal control material weakness is a significant deficiency, or aggregation of deficiencies, that does not reduce to a relatively low level the risk that material misstatements in financial statements will be prevented or detected on a timely basis by employees in the normal course of their work. Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2017, and based on that evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2017.

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

Item 9B. Other Information

Not applicable.

PART III

The information required by Part III is omitted from this report because we will file a definitive proxy statement within 120 days after the end of our 2017 fiscal year pursuant to Regulation 14A for our 2018 Annual Meeting of Stockholders, or the 2018 Proxy Statement, and the information to be included in the 2018 Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance

The information required under this item will be contained in the 2018 Proxy Statement and is hereby incorporated by reference.

Item 11. Executive Compensation

The information required under this item will be contained in the 2018 Proxy Statement and is hereby incorporated by reference.

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

The information required under this item will be contained in the 2018 Proxy Statement and is hereby incorporated by reference.

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

The information required under this item will be contained in the 2018 Proxy Statement and is hereby incorporated by reference.

Item 14. Principal Accountant Fees and Services

The information required under this item will be contained in the 2018 Proxy Statement and is hereby incorporated by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Financial Statements

(1) Financial statements for our company are listed in the index under Item 8 of this document

(2) All financial statement schedules are omitted because they are not applicable, not material or the required information is shown in the financial statements or notes thereto.

Exhibit No.	Description	Method of Filing
3.1	Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
3.2	Amended and Restated Bylaws of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
3.3	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
3.4	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
4.1	Warrant dated February 9, 2015 issued to Liquid Patent Advisors, LLC	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
4.2	Form of Senior Secured Convertible Promissory Note issued by the Registrant to investors in the offering completed on March 17, 2015	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
4.3	Warrant dated March 17, 2015 issued to National Securities Corporation	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
4.4	Form of Senior Secured Convertible Promissory Note issued by the Registrant to investors in the offering completed on April 1, 2016	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
4.5	Warrant dated August 10, 2016 issued to National Securities Corporation	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on September 19, 2016.

10.1	Assignment of Patent Rights dated April 3, 2009 between Dr. Robert Mears and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.2	License Agreement dated December 22, 2006 between ASM International, NV and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.3+	2007 Stock Incentive Plan	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.4	Exclusive License and Collaboration Agreement dated March 3, 2010 between K2 Energy Limited and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.5	Letter Agreement dated June 6, 2014 between K2 Energy Limited and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.6+	Executive Employment Agreement dated October 16, 2015 between Scott Bibaud and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.7	Allonge to Secured Promissory Note dated December 4, 2015 between Dr. Robert Mears and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.8+	Employment Agreement dated January 1, 2016 between Erwin Trautmann and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.9+	Employment Agreement dated January 1, 2016 between Ron Cope and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.10+	Employment Agreement dated January 13, 2016 between Dr. Robert Mears and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.11+	Letter Agreement regarding loan forgiveness dated January 13, 2016 between Dr. Robert Mears and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.12	Lease Agreement dated January 19, 2016 between 750 University, LLC and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.13+	Employment Agreement dated February 23, 2016 between Francis Laurencio and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.14+	Amendment No. 1 dated February 26, 2016 to Employment Agreement dated October 12, 2015 between Scott Bibaud and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.

10.15	Securities Purchase Agreement dated April 1, 2016 between the Purchasers of Senior Secured Convertible Promissory Notes and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.16	Amended and Restated Registration Rights Agreement dated April 1, 2016 between the Purchasers of Senior Secured Convertible Promissory Notes and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.17	Amended and Restated Security Agreement dated April 1, 2016 between the Purchasers of Senior Secured Convertible Promissory Notes and the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
10.18+	Form of Restricted Stock Agreement	Incorporated by reference from the Registrant's Amendment No. 1 to Registration Statement on Form S-1 filed on July 29, 2016
10.19+	Atomera Incorporated 2017 Stock Incentive Plan	Incorporated by reference from the Registrant's Definitive Proxy Statement filed on April 10, 2017.
10.20	First Amendment to Lease Agreement dated January 19, 2016 between 750 University, LLC and the Registrant	Filed electronically herewith
21.1	List of Subsidiaries	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 30, 2016.
23.1	Consent of Marcum LLP, Independent Registered Public Accounting Firm	Filed electronically herewith
31.1	Certifications Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith
31.2	Certifications Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350) .	Filed electronically herewith
101.INS	XBRL Instance Document	Filed electronically herewith
101.SCH	XBRL Taxonomy Extension Schema Document	Filed electronically herewith
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	Filed electronically herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	Filed electronically herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	Filed electronically herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	Filed electronically herewith

+ Indicated management compensatory plan, contract or arrangement.

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.

ATOMERA INCORPORATED.

Date: March 6, 2018

By: */s/ Scott A. Bibaud*
Scott A. Bibaud
Chief Executive Officer,
(Principal Executive Officer)
and Director

Date: March 6, 2018

By: */s/ Francis B. Laurencio*
Francis B. Laurencio
Chief Financial Officer
(Principal Financial and
Accounting 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 and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ *Scott A. Bibaud* Scott A. Bibaud	Chief Executive Officer and Director *(Principal Executive Officer)*	March 6, 2018
/s/ *John D. Gerber* John Gerber	Director and Chairman	March 6, 2018
/s/ *Erwin Trautmann* Erwin Trautmann	Executive Vice President of Strategic Business Development and Director	March 6, 2018
/s/ *Rolf Stadheim* Rolf Stadheim	Director	March 6, 2018
/s/ *C. Rinn Cleavelin* C. Rinn Cleavelin, Ph.D.	Director	March 6, 2018
/s/ *Steven K. Shevick* Steven K. Shevick	Director	March 6, 2018

Exhibit 10.20

FIRST AMENDMENT TO LEASE

THIS FIRST AMENDMENT TO LEASE (this "Amendment") is made as of the 19th day of December, 2017 by and between **750 UNIVERSITY, LLC,** a California limited liability company ("Landlord") and **ATOMERA INCORPORATED,** a Delaware corporation ("Tenant").

R E C I T A L S

A. Tenant currently leases from Landlord approximately, which Landlord and Tenant hereby agree consists of approximately three thousand three hundred ninety-six (3,396) rentable square feet of space located at 750 University Avenue, Suite 280, Los Gatos, California (the "Premises") pursuant to that certain lease dated January 19, 2017 (the "Lease").

B. The Lease provides for a termination date of January 31, 2018.

C. Landlord and Tenant desire to extend the term of the Lease on the terms and conditions set forth herein.

NOW, THEREFORE, the parties hereby mutually promise, covenant and agree as follows:

1. **Term** . The term of the Lease is hereby extended for three (3) years from and after February 1, 2018, so that the term of the Lease shall extend to and include January 31, 2021. The period commencing on February 1, 2018 and ending on January 31, 2021 is referred to herein as the "Extended Term".

2. **Basic Rent** . During the Extended Term the basic rent as provided in paragraphs 4(a) and 5(a) of the Lease shall be as follows:

February 1, 2018 through January 31, 2019	$12,735.00 per month
February 1, 2019 through January 31, 2020	$13,117.05 per month
February 1, 2020 through January 31, 2021	$13,510.56 per month

3. **Direct Expense Increases** . During the Extended Term, Tenant shall continue to pay to Landlord Tenant's Percentage Share of Direct Expense Increases as provided in paragraph 5 of the Lease, except that the Base Year for purposes of determining the Direct Expense Increases shall be 2018.

4. **Cash Security Deposit** **.**

4.1 Concurrently with Tenant's execution of this Amendment, Tenant shall deliver to Landlord the sum of Twelve Thousand Seven Hundred Thirty-five Dollars ($12,735.00), which sum shall be held by Landlord as a security deposit for the faithful performance by Tenant of all of the terms, covenants and conditions of this lease to be kept and performed by Tenant. It is expressly understood and agreed that such deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. If Tenant defaults with respect to any provision of this lease, including but not limited to, the provisions relating to the payment of basic rent and direct expenses, Landlord may (but shall not be required to) use, apply, or retain all or any part of this security deposit for the payment of any amount which Landlord may spend by reason of Tenant's default or to compensate Landlord for any other loss or damage which Landlord may suffer by reason of default. If any portion of said deposit is so used, Tenant shall, within ten (10) days after written demand therefor, deposit cash with Landlord in the amount sufficient to restore the security deposit to its original amount; Tenant's failure to do so shall be a material breach of this lease. Landlord shall not be required to keep this security deposit separate from its general funds and Tenant shall not be entitled to interest on such deposit. If Tenant is not in default at the expiration or termination of this lease, the security deposit or any balance thereof shall be returned to Tenant after Tenant has vacated the Premises. In the event of termination of Landlord's interest in this lease, Landlord shall transfer said deposit to Landlord's successor in interest, and Tenant agrees that Landlord shall thereupon be released from liability for the return of such deposit or any accounting therefor.

4.2 Tenant may not assign or encumber the security deposit, except in connection with a permitted assignment of this lease consented to in writing by Landlord. Any attempt to do so shall be void and shall not be binding on Landlord. Tenant waives the provisions of California Civil Code Section 1950.7, and all other provisions of law now in force or that become in force after the date of execution of this lease, that provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of rent, to repair damage caused by Tenant, or to clean the Premises. Landlord and Tenant agree that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other foreseeable or unforeseeable loss or damage caused by the act or omission of Tenant or Tenant's officers, agents, employees, independent contractors, or invitees.

5. **Cancellation of Letter of Credit Requirement .** Upon delivery of the cash security deposit to Landlord as specified in paragraph 4 above, paragraph 4(f) of the Lease shall be deleted in its entirety and the letter of credit required thereunder shall be cancelled and Tenant shall have no further obligation to provide a letter of credit to Landlord.

6 . **Tenant Improvements .** Landlord will perform a remodel within the Premises at Tenant's request during the Extended Term between October 1, 2018 and June 30, 2019, with no less than ninety (90) days advance written notice from Tenant. The remodel shall consist of the tenant improvements ("Tenant Remodel Work") specified in the plans and specifications attached hereto as Exhibit A. Tenant will cooperate with Landlord and Landlord's contractor to allow Landlord's contractor to complete the Tenant Remodel Work.

7. **Brokers** . Tenant represents and warrants to Landlord that it has not dealt with any broker other than McCandless Management Corporation (Landlord’s broker) and agrees to indemnify, defend, protect and hold Landlord harmless from and against any and all claims from any other broker claiming to have represented Tenant in connection with this Amendment.

8. **Authority** . Each individual executing this Amendment on behalf of a corporation represents and warrants that he/she is duly authorized to execute and deliver this Amendment on behalf of the corporation and that this Amendment is binding upon said corporation in accordance with its terms.

6. **Restatement of Other Lease Terms** . Except as specifically modified herein, all terms, covenants and conditions of the Lease shall remain in full force and effect.

IN WITNESS WHEREOF, Landlord and Tenant have executed and delivered this lease as of the date first written above.

Landlord :

750 UNIVERSITY, LLC,
a California limited liability company

By McCandless Management corporation,
a California corporation, its Authorized Agent

By: /s/ Steven E. Sund

Name: Steven E. Sund

Title: President

Date: 12/19/17

Tenant :

ATOMERA INCORPORATED,
a Delaware corporation

By: /s/ Scott A. Bibaud

Name: Scott A. Bibaud

Title: President

Date: 12/19/17

By: /s/ Francis B. Laurencio

Name: Francis B. Laurencio

Title: CFO

Date: December 19, 2017

Exhibit 23.1 Consent of Marcum LLP, Independent Registered Public Accounting Firm

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statement of Atomera Incorporated on Forms S-8 (File No. 333-213093 and File No. 333-218666) and Form S-3 (File No. 333-219782) of our report dated March 6, 2018, with respect to our audits of the financial statements of Atomera Incorporated as of December 31, 2017 and 2016 and for each of the two years in the period ended December 31, 2017, which report is included in this Annual Report on Form 10-K of Atomera Incorporated for the year ended December 31, 2017.

/s/ Marcum LLP

Marcum LLP
New York, NY
March 6, 2018

Exhibit 31.1

CERTIFICATIONS

I, Scott A. Bibaud, certify that:

(1) I have reviewed this annual report on Form 10-K of Atomera Incorporated;

(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 company 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 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 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 quarter (the registrant's fourth quarter in the case of an annual report) 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 officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, 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.

ATOMERA INCORPORATED

Date: March 6, 2018

By: /s/ *Scott A. Bibaud*
Scott A. Bibaud, Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Francis B. Laurencio, certify that:

(1) I have reviewed this annual report on Form 10-K of Atomera Incorporated;

(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 company 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 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 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 quarter (the registrant's fourth quarter in the case of an annual report) 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 officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, 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.

ATOMERA INCORPORATED

Date: March 6, 2018

By: /s/ *Francis B. Laurencio*
Francis B. Laurencio, Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

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

In connection with the Annual Report of Atomera Incorporated (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Scott A. Bibaud, the Chief Executive Officer, and Francis B. Laurencio, the Chief Financial Officer, of the Company, respectively, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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.

By:	/s/ *Scott A. Bibaud*	Dated: March 6, 2018
	Scott A. Bibaud	
Title:	President and Chief Executive Officer	

By:	/s/ *Francis B. Laurencio*	Dated: March 6, 2018
	Francis B. Laurencio	
Title:	Chief Financial Officer	

This certification is made solely for the purposes of 18 U.S.C. Section 1350, subject to the knowledge standard contained therein, and not for any other purpose.