

MECHANICAL TECHNOLOGY INC
Form 10-K
March 02, 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2016
OR
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM _____ TO _____

Mechanical Technology, Incorporated

(Exact name of registrant as specified in its charter)

New York
(State or other jurisdiction)

000-06890
(Commission File Number)

14-1462255
(IRS Employer)

of incorporation or organization)

Identification No.)

325 Washington Avenue Extension, Albany, New York 12205

(Address of principal executive offices)

(518) 218-2550

(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
None	None

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

Common Stock

(\$0.01 par value)

Title of Class

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

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

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

Indicate by checkmark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Section

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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). Yesx No`

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Section 229.405 of this chapter) 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. o

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

Large accelerated filero	Accelerated filero	Non-accelerated filero (Do not check if a smaller reporting company)	Smaller reporting company x
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Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes` Nox

The aggregate market value of the voting and non-voting common equity held by non-affiliates as of June 30, 2016 (based on the last sale price of \$0.84 per share for such stock reported on the over-the-counter market for that date) was \$3,702,364.

As of February 23, 2017, the Registrant had 9,020,393 shares of common stock outstanding.

Documents incorporated by reference: Portions of the registrant's Proxy Statement for its 2017 Annual Meeting of Stockholders are incorporated by reference into Part III of this Form 10-K.

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PART I

Item 1: Business

Unless the context requires otherwise in this Annual Report on Form 10-K, the terms the “Company,” “we,” “us,” and “our” refer to Mechanical Technology, Incorporated and “MTI Instruments” refers to MTI Instruments, Inc. Other trademarks, trade names, and service marks used in this Annual Report on Form 10-K are the property of their respective owners.

Mechanical Technology, Incorporated, a New York corporation, was incorporated in 1961. The Company’s core business is conducted through MTI Instruments, Inc., a wholly-owned subsidiary incorporated in New York on March 8, 2000. The Company’s operations are headquartered in Albany, New York where it designs, manufactures, and markets its products globally.

The Company also owns a 47.5% interest, which as of December 31, 2016 has a fair value of \$0, in MeOH Power, Inc. (formerly MTI MicroFuel Cells, Inc.), which the Company operated as a subsidiary until December 31, 2013, at which time the majority interest was transferred to one of our directors. We do not expect our current interest in MeOH Power, Inc. to have a material impact on our results of operations or financial condition going forward.

MTI Instruments is a supplier of precision linear displacement solutions, vibration measurement and system balancing solutions, and wafer inspection tools. These tools and solutions are developed for markets that require the precise measurements and control of products processes for the development and implementation of automated manufacturing, assembly, and consistent operation of complex machinery.

As part of its strategy, MTI Instruments provides its customers with enabling sensors and sensing technologies that help advance manufacturing processes and new product development efforts. The demand for higher quality and lower cost products ranging from semiconductor chips to electronics and large items such as automobiles continues to drive Original Equipment Manufacturers (OEMs) and their suppliers to invest in technology and the capability to rapidly produce high quality products. The industry has moved towards flexible manufacturing doctrines around mass customization and production incorporating lean principles to reduce labor and waste, while increasing quality. Modern manufacturing advances at a very rapid pace with the help of automation controls and precision sensing technologies for operating equipment, processes in factories, and other applications with minimal or reduced human intervention. OEMs find that using automation helps them not only improve on quality, but also can save labor, energy and materials while significantly improving accuracy and precision. In some industries like semiconductors,

fabrication facilities are fully automated and are aided by humans on a low frequency basis.

Using a combination of integrated smart robotics, manufacturing lines, and a myriad of sensors that measure ongoing equipment performance, monitoring and drive controls have resulted in significant advancements in productivity and quality in manufacturing. There is no question that the world is moving from classic manufacturing and assembly towards automation and measurement.

MTI Instruments has decades of experience in working with OEMs and their subcontractors in the supply of sensor, instruments and systems technology to incorporate into OEMs' equipment and major companies' manufacturing processes as they develop and implement new process, quality and automation controls. The Company has moved to a customer and market-based approach by targeting leading companies in specific market segments including the industrial and consumer electronics, automotive and other precision automated manufacturing industries, turbo machinery and the research and development aspects within these markets for both product and process improvements.

This same approach is driving the demand for engine vibration measurement and balancing. Ongoing efforts to improve engine performance and lower fuel consumption drive both military and commercial axial turbo-machinery operators to maintain their equipment at peak performance.

These market drivers are also providing opportunity and demand for MTI to enhance current and develop new products and technologies. This has become a central theme in our supporting a larger, more complex customer base. Our efforts to become more capable and competitive in operations and quality are being met by our well defined approach to lean manufacturing principles and the achievement of International Organization for Standardization (ISO) ISO 9001:2008 certification in 2014.

Automated Monitoring and Precision Automation Manufacturing

Automated monitoring allows companies and engineers to rectify system problems before they become costly repairs and maintenance costs. MTI's latest system has a non-magnetic paper-thin probe that allows users to measure and monitor gaps in high power generators, wind turbines, and other auxiliary equipment. Its Ethernet interface supports remote access to this critical information. Meanwhile, MTI is also supporting the world-wide need for OEMs to drive continuous improvement efforts through use of the most innovative manufacturing and assembly techniques in products and processes. Due to the level of precision required, these products or processes are managed through automated systems (Piezo positioners, robot guide, dielectric material/LED wafer inspection, etc.) and require precise measurement, data transmission, analysis and management.

MTI Instruments provides advanced linear displacement solutions for OEMs that can be incorporated into a tool or equipment manufactured by a company to monitor performance and/or achieve control ("in product application") or into a process to control the manufacture of parts or measure critical parameters of parts as they enter or leave a process ("in process applications").

MTI Instruments is a preferred supplier for applications that require complex and extremely precise measurement of intricate targets and assemblies. MTI Instruments uses its significant track record and experience in capacitance, laser and fiber optic technologies to make products that range from basic sensors to complete, fully integrated measurement systems. Applications include precision positioning, material surface measurements, off-center vibration measurements, and pattern recognition analysis.

Listed below are selected MTI Instruments' automated monitoring and precision automation manufacturing product offerings:

Product Model	Description
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Accumeasure Series	Ultra-high precision capacitive systems offering nanometer accuracy.
Accumeasure D Series	Ultra-high precision digital capacitive systems offering sub-nanometer accuracy.
Microtrak PRO-2D	2D laser triangulation scanners that provide profile, displacement, and 3D images.
Microtrak TGS	Intuitive laser thickness systems using two single spot laser heads with digital linearization providing superb linearity.
MTI-2100 Fotonic Sensor Series	Fiber-optic based displacement sensor systems with high frequency response.

Axial Turbo Machinery

Turbo machines are categorized according to the type of flow. When the fuel and air flow is parallel to the axis of rotation, they are referred to as axial flow machines. MTI Instruments is a leader in the development and commercialization of vibration measurement and system balancing for axial type engines – typically medium and large turbo fan aircraft engines – for both military and commercial applications. In addition, we are exploring possibilities for expansion of its product offerings for a variety of applications within this market segment.

MTI Instruments designs and manufactures computer-based portable balancing systems (PBS) products which automatically collect and record engine vibration data, identifying vibration or balance trouble, and calculating a solution to the problem. These products are designed to quickly pinpoint engine vibration issues for improved fuel efficiency, lower maintenance cost and safety.

PBS products are used by major aircraft engine manufacturers, the U.S. and foreign militaries, and commercial airlines, as well as gas turbine manufacturers.

Listed below are selected MTI Instruments' axial turbo machinery product offerings and technologies:

Product Model	Description
PBS-4100+ Portable Balancing System	Provides easy to follow solutions for engine vibration and trim balancing problems.
PBS-4100R+ Test Cell Vibration Analysis & Trim Balancing System	Advanced trim balancing and diagnostics for engine test cells.
TSC-4800A Tachometer Signal Conditioner	Tachometer signal conditioner detects and conditions signals for monitoring, measuring, and indicating engine speeds.
1510A Calibrator	National Institute of Standards and Technology (NIST) traceable signal generator that outputs voltage signals useful to test and calibrate electronic equipment.

Industrial and Academic Research and Development (R&D)

Present-day research and process development is a core part of the modern business world; critical decisions are made from data and discoveries made through these efforts. As companies understand and profit from the benefits of organized R&D efforts, they also make further commitments and investments into new R&D cycles making internal R&D budgets reach higher and higher levels. R&D is also a tool for modern companies to proactively leapfrog competition and keep pace with trends, enhance manufacturing processes, and develop products to meet new customer demands.

MTI Instruments has a long track record of working with private sector companies as well as academic institutions on their R&D efforts. We have a dedicated line of tabletop linear displacement instruments, material testers, and wafer metrology tools that help provide valuable information to enhance products and processes. Our family of R&D related products are used widely in applications including wafer surface metrology, nano-material testing, and precision linear displacement and positioning. Our customers include testing and R&D departments in large industry and academia as well as process development laboratories focused in automotive,

electronics, semiconductor, solar, and material development.

Listed below are MTI Instruments' industrial and academic R&D product offerings and technologies:

Product Model	Description
Accumeasure Digital Series	Ultra-high precision digital capacitive systems offering sub-nanometer accuracy.
Accumeasure Analog Series	Ultra-high precision capacitive displacement systems offering nanometer accuracy.
Tensile MicroStage NEW	Specifically designed to fit under atomic force microscopes (AFMs), these MicroTensile Testers provide high resolution tensile, compression, fatigue and bend testing of up to 450 Newton (100 lbs).
Microtrak 4	Single spot laser sensor equipped with the latest complementary metal oxide semiconductor (CMOS) sensor technology with true digital data output.
Proforma 300i	Manual, non-contact measurement of semiconductor wafer thickness, total thickness variation and bow.
PV 1000	Manual tool for measuring thickness and bow of solar wafers.
MTI-2100 Fotonic Sensor Series	Fiber-optic based displacement sensor systems with high frequency response.

Marketing and Sales

MTI Instruments markets its products and services using selected and specific channels of distribution. In the Americas, for precision automated manufacturing and the R&D sectors, MTI Instruments uses a combination of direct sales and representatives. Overseas, particularly in Europe and Asia, MTI Instruments uses distributors and agents specific to our targeted end markets. For axial turbo machinery, MTI Instruments primarily sells directly to end users.

To supplement these efforts, we use both commercial and industrial search engines, targeted newsletters, purchased customer lists and participation in trade shows to identify and expand our customer base.

Product Development

MTI Instruments continuously conducts research to develop new and advance existing technologies in support of its business strategy. Along with innovation as a key hallmark to its efforts, we carefully consider a number of factors including customer needs, product or technology uniqueness, market trends, costs, the competitive landscape, and creative marketing and communications plans in developing our products. We take a customer-centered approach in order to find new ways to solve customer needs, engage with customers directly, and create a loyal customer base while offering a more compelling value proposition.

In 2016, MTI Instruments introduced a paper-thin capacitance probe that is non-magnetic, a feature that allows the probe to conform and be bonded in a thin gap and also provide accurate measurement within surrounding magnetic fields. This paper-thin probe, together with the recently launched Accumeasure D, is designed to be used to measure and monitor gaps in high power generators, wind turbines, and other auxiliary equipment. In addition, its Ethernet interface supports remote access to critical information.

We launched an additional line of SEMtester products to support the growing AFM users in the R&D market. The MTI Tensile MicroStage is designed with a reduced height to fit under AFMs or other adjustable lens microscopes. This new MicroStage also uses lightweight materials to meet air table and motorized stage requirements.

We also launched, during 2016, a line of Accumeasure D capable of measuring the thickness of non-conductive materials such as glass, plastic sheet and sapphire wafer (used in white light-emitting diode (LED) manufacturing). Additionally, we continue to invest in the development of a system to measure defects in industrial tool and internal thread inspection that utilizes our Accumeasure D series of products.

During 2015, we developed and commercialized new enhancements in our PBS 4100+ product, including the capability to measure vibration and balance a number of turbo-shaft engines for rotary wing aircraft (helicopter), which has proven effective with several commercial customers. During 2016, the PBS 4100+ has been enhanced to accommodate the latest generation of fuel-efficient aircraft engines.

With investments in research and product development, we seek to achieve a competitive position by continuously advancing our technology, producing new state-of-the-art precision measurement equipment, expanding our worldwide distribution, and providing intimate customer support. Management believes that MTI Instruments' success depends to a large extent on identifying market requirements, innovation, and utilizing our technological expertise to develop and implement new products.

Product Manufacturing & Operations

We conduct research, product development and innovation, and manufacture our products, in the United States. While many companies in the sensor, instrument and systems markets have manufacturing operations overseas, MTI is and has always been a U.S.-based manufacturing company. Products are conceived, developed, tested, and shipped out from our headquarters in Albany, New York.

Management believes that there are inherent advantages in keeping manufacturing in the U.S., including reducing the risk of inadvertent technology transfer, the ability to control manufacturing quality, and a much more effective customer management and satisfaction process. We have long-term vendor relationships and believe that most raw materials used in our products are readily available from a variety of vendors.

To prepare for future growth, we have also made strides in bringing a more flexible approach to manufacturing. While cross-training our employees in operations in different functional areas, management has also implemented lean principles on the manufacturing floor to increase capacity, productivity and throughput, eliminate waste, and quickly adapt to larger customers' demands while continuing to keep inventory levels under control. MTI has additional capabilities in its existing, flexible manufacturing space as production volumes increase.

In April 2014, the Company received initial ISO certification 9001:2008 and was most recently recertified in April 2016. The certifications were authorized by TÜVRheinland®, an independent agency. To obtain these certifications, we underwent a rigorous five step process including preparation, documentation, implementation, internal audit, and final certification. The ISO 9001:2008 certification confirms our commitment to an effective management system and continuous improvement, a practice management believes is important for continuous growth.

Intellectual Property and Proprietary Rights

We rely on trade secret and copyright laws to establish and protect the proprietary rights of our products. In addition, we enter into standard confidentiality agreements with our employees and consultants and seek to control access to and distribution of our proprietary information. Even with these precautions, however, it may be possible for a third party to copy or otherwise obtain and use our products or technology without authorization or to develop similar technology independently. In addition, effective copyright and trade secret protection may be unavailable or limited in certain foreign countries.

Significant Customers

MTI Instruments' largest customer is the U.S Air Force. We also have strong relationships with companies in the electronics, aircraft, aerospace, automotive, semiconductor and research industries. The U.S. Air Force accounted for 18.1% and 4.4%, respectively, of total product revenues during 2016 and 2015. The largest commercial customer in 2016 was an Asian distributor, who accounted for 8.1% and 6.8%, respectively, of total product revenue during 2016 and 2015.

Competition

We compete with several companies, several of which are substantially larger than MTI Instruments.

In the precision automated manufacturing market, MTI Instruments faces competition from companies including Keyence, Micro Epsilon, Schmitt Industries, Capacitec, Microsense and Lion Precision Instruments.

In the axial turbo machinery market, MTI Instruments competes with companies including ACES Systems and Meggitt Sensing Systems.

In the R&D market, we compete with companies involved in material testing, include Gatan, Deben, and E+H Metrology GmbH. Competitors in precision linear displacement include Keyence, Micro Epsilon, Schmitt Industries, Capacitec, Microsense and Lion Precision Instruments.

The primary competitive considerations in MTI Instruments' markets are product quality, performance, price, timely delivery, responsiveness and the ability to identify, pursue and obtain new customers. MTI Instruments believes that its employees, product development skills, sales and marketing systems and reputation are competitive advantages.

Research and Development

MTI Instruments conducts research and develops technology to support its existing products and develop new products. MTI incurred research and development costs of approximately \$1.2 million and \$1.5 million for the years ended December 31, 2016 and 2015, respectively. We expect to continue to invest in research and development in the future at MTI Instruments as part of our growth strategy.

Employees

As of December 31, 2016, we had 29 employees including 24 full-time employees.

Recent Developments

Adoption of Shareholder Rights Plan

On October 6, 2016 (the “Rights Dividend Declaration Date”), the Company’s Board of Directors adopted a Section 382 rights plan (the “Rights Plan”) and declared a dividend distribution of one right (the “Rights”) for each outstanding share of common stock, par value \$0.01 per share (the “Common Stock”), of the Company to shareholders of record at the close of business on October 19, 2016. Each share of common stock issued thereafter will also include one Right. Subject to the terms, provisions and conditions of the Rights Plan, if the Rights become exercisable, each Right would represent the right to purchase from the Company one share of our common stock at a purchase price of \$5.00 per share, subject to adjustment.

The Board adopted the Rights Plan in an effort to protect against a possible limitation on the Company’s ability to use its net operating loss carryforwards (“NOLs”), which totaled approximately \$51.9 million as of December 31, 2016. The Company may utilize these NOLs in certain circumstances to offset future U.S. taxable income and reduce its U.S. federal income tax liability.

For additional information about the Rights Plan and the Rights, please see the Company’s Current Report on Form 8-K filed on October 6, 2016.

Sale of Common Stock to Brookstone Partners Acquisition XXIV, LLC

On October 21, 2016, the Company issued and sold 3,750,000 shares of its common stock (the “Shares”) to Brookstone Partners Acquisition XXIV, LLC (“Brookstone”), for an aggregate of \$2,737,500, pursuant to a Securities Purchase Agreement between Brookstone and the Company. In connection therewith, we also appointed three designees of Brookstone to the Company’s Board of Directors. Immediately subsequent to the issuance of the Shares, Brookstone owned 41.7% of the outstanding shares of our common stock.

Also on October 21, 2016, the Company and Brookstone entered into a Registration Rights Agreement, pursuant to which the Company agreed to, at any time after December 20, 2016 and upon the request of holders of at least 25% of the outstanding Shares, to file a registration statement under the Securities Act of 1933, as amended (the “Securities Act”), to register the resale of the Shares.

For additional information about the Brookstone transaction, please see the Company’s Current Report on Form 8-K filed on October 21, 2016.

Departure of Directors or Certain Officers; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers

On January 18, 2017, Kevin G. Lynch resigned as President and Chief Executive Officer as well as Chairman of the Board of the Company. Mr. Lynch will remain on the Company’s Board of Directors. In conjunction with his resignation, Mr. Lynch and the Company entered into a separation agreement (dated February 1, 2017). The Company’s Board of Directors appointed Frederick W. Jones, our current Chief Financial Officer, as President and Chief Executive Officer. Mr. Jones will remain our Chief Financial Officer as well.

For additional information about the departure of Mr. Lynch and the appointment of Mr. Jones, please see the Company’s Current Reports on Form 8-K filed on January 24, 2017 and February 8, 2017.

Item 1A: Risk Factors

Factors Affecting Future Results

This Annual Report on Form 10-K contains forward-looking statements that involve risks and uncertainties within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”). Any statements contained, or incorporated by reference, in this Annual Report on Form 10-K that are not statements of historical fact may be forward-looking statements. When we use the words “anticipate,” “estimate,” “plans,” “projects,” “continuing,” “ongoing,” “expects,” “management believes,” “we believe,” “we intend,” “should,” “could,” and similar words or phrases, we are identifying forward-looking statements. Such forward-looking statements include, but are not limited to, statements regarding:

- anticipated growth, including in revenues and cash flows;
- statements with respect to management’s strategy and planned initiatives;
- management’s belief that it will have adequate resources to fund the Company’s operations and capital expenditures for the year ending December 31, 2017 and through the end of the first quarter of 2018;
- the expected impact of recent and pending accounting standards or updates;

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- projected taxable income and the ability to use deferred tax assets (currently held at a full valuation allowance);
- generating earnings in the future;
- the expectation that future cost-cutting measures will be avoided;
- future capital expenditures and spending on research and development;
- expected funding of future cash expenditures; and
- the expected impact of our investment in MeOH Power, Inc.

Forward-looking statements involve risks, uncertainties, estimates and assumptions that may cause our actual results, performance or achievements to be materially different from those expressed or implied by forward-looking statements. Important factors that could cause these differences include the following:

- statements with respect to management's strategy and planned initiatives;
- sales revenue growth may not be achieved or maintained;
- the dependence of our business on a small number of customers and potential loss of government contracts - particularly in light of potential cuts that may be imposed as a result of U.S. government budget appropriations;
- our lack of long-term purchase commitments from our customers and the ability of our customers to cancel, reduce, or delay orders for our products;
- our inability to build and maintain relationships with our customers;
- our inability to develop and utilize new technologies that address the needs of our customers;
- our inability to obtain new credit facilities;
- the cyclical nature of the electronics and military industries;
- the uncertainty of the U.S. and global economy, including as a result of the United Kingdom's impending exit from the European Union;
- the impact of future exchange rate fluctuations;
- failure of our strategic alliances to achieve their objectives or perform as contemplated and the risk of cancellation or early termination of such alliance by either party;
- the loss of services of one or more of our key employees or the inability to hire, train, and retain key personnel;

- risks related to protection and infringement of intellectual property;
- our occasional dependence on sole suppliers or a limited group of suppliers;
- our ability to generate income to realize the tax benefit of our historical net operating losses;
- risks related to the limitation of the use, for tax purposes, of our net historical operating losses in the event of certain ownership changes; and
- other risks discussed below.

Except as may be required by applicable law, we do not undertake or intend to update or revise our forward-looking statements, and we assume no obligation to update any forward-looking statements contained in, or incorporated by reference into, this Annual Report on Form 10-K as a result of new information or future events or developments. Thus, assumptions should not be made that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

Risk Factors

You should consider carefully the following risks, along with other information contained in this Annual Report on Form 10-K. The risks and uncertainties described below are not the only ones that may affect us. Additional risks and uncertainties also may adversely affect our business and operations including those discussed in the heading “Factors Affecting Future Results” above. Any of the following events, should they actually occur, could materially and adversely affect our business and financial results.

If we are unsuccessful at addressing our business challenges, we may not achieve or maintain profitability in the future, our business and results of operations and financial condition may be adversely affected and our ability to invest in and grow our business could be limited.

We have incurred significant operating and net losses since our inception. We incurred a net loss of \$359 thousand during the year ended December 31, 2016 and had an accumulated deficit of \$121.0 million as of such date. In order to achieve and maintain profitability and improve liquidity, we must successfully achieve all or some combination of the following initiatives: increasing sales, developing new products, controlling operating expenses, managing our cash flows, successfully obtaining new credit facilities, improving operational efficiency and estimating and projecting accurately our liquidity and capital resources. In “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Management’s Plan, Liquidity and Capital Resources” in this Annual Report on Form 10-K, we made estimates regarding our cash flow and results of operations for the year ending December 31,

2017 and through the end of the first quarter of 2018. If our cash flow or results of operations are less favorable than we have estimated, we may not be able to make all of our planned operating or capital expenditures or fully execute all of our other plans. Our financial success depends in part on management's ability to execute our growth strategy. We expect that we will depend primarily on cash generated by our operations for funds to pay our expenses and any other indebtedness we may incur. Our ability to make these payments depends on our future performance, which will be affected by financial, business, economic and other factors, many of which we cannot control. Our business may not generate sufficient cash flows from operations in the future and our currently anticipated growth in revenues and cash flows may not be realized, either or both of which could result in our being unable to repay indebtedness or to fund other liquidity needs. If we do not have enough money, we may be required to sell assets or borrow money, in each case on terms that may not be acceptable to us. In addition, the terms of any future debt agreements, including new lines of credit, may restrict us from adopting any of these alternatives. Further, any significant levels of indebtedness in the future could place us at a competitive disadvantage compared to our competitors that may have access to additional resources or proportionately less debt and could make us more vulnerable to economic downturns and adverse developments in our business. Any future loss incurred by the Company could have a material adverse effect on our business and our ability to generate the cash needed to operate our business. Although we generated net income in 2011, 2013 and 2014, we had a net loss during 2016 and 2015 and prior to 2011 we had generated net losses since 1998, and we may not be able to achieve or sustain profitability in the future. If we do achieve profitability in the future, the level of any profitability cannot be predicted and may vary significantly from quarter to quarter and from year to year. Failure to continue to successfully implement these initiatives could prevent us from achieving and maintaining profitability and otherwise have a material adverse effect on our business plans, liquidity, results of operations and financial condition and may result in a downsize to the business. Further, even if implemented successfully there is no guarantee that our efforts in this regard would result in sustained and improving profitability.

We currently derive all of our product revenue from our MTI Instruments business.

All of our revenue is currently derived from our MTI Instruments business. We do not have a broad portfolio of other products we could rely on to support operations if we were to experience a substantial slowdown in our MTI Instruments business, which is subject to a number of risks, including:

- dependence on a limited number of customers;
- a continued slowdown or cancellation of sales to the military as a result of a potential redeployment, or sequestration, of governmental funding;
- our ability to maintain, improve, or expand our channels of distribution;

- the potential failure to expand or maintain our business as a result of competition, a lack of brand awareness, or market saturation; and
- an inability to launch new products as a result of intense competition, uncertainty of new technology development, or limited or unavailable resources to fund development.

In addition, revenues from the sale of MTI Instruments' products can vary significantly from one period to the next. We may sell a significant amount of our products to one or a few customers for various short term projects in one period, and then have markedly decreased sales in following periods as these projects end or customers have the products they require for the foreseeable future. The fact that we sell a significant amount of our products to a limited number of customers also results in a customer concentration risk. The loss of any significant portion of such customers or a material adverse change in the financial condition of any one of these customers could have a material adverse effect on our revenues, our business and our ability to generate the cash needed to operate our business.

We may not be able to enhance our product solutions and develop new product solutions in a timely manner.

Our future operating results will depend to a significant extent on our ability to provide new products that compare favorably with alternative solutions on the basis of time to introduction, cost, performance, and end-user preferences. Our success in attracting and retaining customers and developing business will depend on various factors, including the following:

- innovative development of new products for customers;
- utilization of advances in technology;
- maintenance of quality standards;
- efficient and cost-effective solutions; and
- timely completion of the design and introduction of new products.

Our inability to develop new product solutions on a timely basis could harm our operating results and impede our growth.

Our operating results may experience significant fluctuations.

In addition to the variability resulting from the short-term nature of our customers' commitments, other factors contribute to significant periodic fluctuations in our results of operations. These factors include:

- the cyclical nature of the markets we serve;

- the timing and size of orders;
- the volume of orders relative to our capacity;
- product introductions and market acceptance of new products or new generations of products;
- evolution in the life cycles of our customers' products;
- timing of expenses in anticipation of future orders;
- changes in product mix;
- availability of manufacturing and assembly services;
- changes in cost and availability of labor and components;
- timely delivery of product solutions to customers;
- pricing and availability of competitive products;
- introduction of new technologies into the markets we serve;
- pressures on reducing selling prices;
- our success in serving new markets; and
- changes in economic conditions.

If we do not keep pace with technological innovations, our products may not be competitive and our revenue and operating results may suffer.

The electronic, semiconductor, solar, automotive and general industrial segments are subject to constant technological change. Our future success will depend on our ability to respond appropriately to changing technologies and changes in product function and quality. If we rely on products and technologies that are not attractive to end users, we may not be successful in capturing or retaining market share. Technological advances, the introduction of new products, and new design techniques could adversely affect our business prospects unless we are able to adapt to the changing conditions. Technological advances could render our products obsolete, and we may not be able to respond effectively to the technological requirements of evolving markets. As a result, we will be required to expend substantial funds for and commit significant resources to:

- continue research and development activities on all product lines;
- hire additional engineering and other technical personnel; and
- purchase advanced design tools and test equipment.

Our business could be harmed if we are unable to develop and utilize new technologies that address the needs of our customers, or our competitors do so more effectively than we do.

Our efforts to develop new technologies may not result in commercial success and/or may result in delays in development, which could cause a decline in our revenue and could harm our business.

Our research and development efforts with respect to our technologies may not result in customer or market acceptance. Some or all of those technologies may not successfully make the transition from the research and development lab to cost-effective production as a result of technology problems, competitive cost issues, yield problems, and other factors. Even when we successfully complete a research and development effort with respect to a particular technology, our customers may decide not to introduce or may discontinue products utilizing the technology for a variety of reasons, including the following:

- difficulties with other suppliers of components for the products;
- superior technologies developed by our competitors and unfavorable comparisons of our solutions with these technologies;
- price considerations; and
- lack of anticipated or actual market demand for the products.

The nature of our business will require us to make continuing investments to develop new technologies. Significant expenses relating to one or more new technologies that ultimately prove to be unsuccessful for any reason could have a material adverse effect on us. In addition, any investments or acquisitions made to enhance our technologies may prove to be unsuccessful. If our efforts are unsuccessful, our business could be harmed.

Continuing uncertainty of the U.S. and global economy may have serious implications for the growth and stability of our business.

Revenue growth and continued profitability of our business will depend significantly on the overall demand for test and measurement instrumentations in key markets including research and development, automotive, semiconductor and electronics. Softening demand in these markets caused by ongoing economic uncertainty, a return to recessionary conditions, technological developments, competitive changes or other factors may result in decreased revenue or earnings levels. The U.S. and global economy has been historically cyclical and market conditions continue to be challenging, which has resulted in individuals and companies delaying or reducing expenditures. Further delays or reductions in spending could have a material adverse effect on demand for our products, and consequently on our business, financial condition, results of operations, prospects, stock price, and ability to continue to operate.

Variability of customer requirements resulting in cancellations, reductions, or delays may adversely affect our operating results.

We are required to provide rapid product turnaround and respond to short lead times. A variety of conditions, both specific to individual customers and generally affecting the demand for OEMs' products, may cause customers to cancel, reduce, or delay orders. Cancellations, reductions, or delays by a significant customer or by a group of customers could adversely affect our operating results. Conversely, if our customers unexpectedly and significantly increase product orders, we may be required to rapidly increase production, which could strain our resources and reduce our margins.

The cyclical nature of the electronics and military industries may result in fluctuations in our operating results.

The electronics and military industries have experienced significant economic downturns at various times. These downturns are characterized by diminished product demand, accelerated erosion of average selling prices, and production overcapacity. We may seek to reduce our exposure to industry downturns by providing design and production services for leading companies in rapidly expanding industry segments. We may, however, experience substantial period-to-period fluctuations in future operating results because of general industry conditions or events occurring in the general economy.

International sales risks could adversely affect our operating results. Furthermore, our operating results could be adversely affected by changes to U.S. policy and fluctuations in the value of the U.S. dollar against foreign currencies.

Having a worldwide distribution network for our products exposes us to various economic, political, and other risks that could adversely affect our operations and operating results, including the following:

- unexpected changes in regulatory requirements;
- timing to meet regulatory requirements;
- tariffs, duties and other trade barrier restrictions;
- greater difficulty in collecting accounts receivable;
- the burdens and costs of compliance with a variety of foreign laws;
- potentially reduced protection for intellectual property rights; and
- political or economic instability in certain parts of the world.

All of these risks associated with international sales could negatively affect our operating results.

We anticipate possible changes to current policies by the U.S. government that could affect our business, including potentially through increased import tariffs and other changes in U.S. trade relations with other countries (e.g., China). Our suppliers source some of their raw materials from foreign countries, so any tariffs imposed by the U.S. government on imports into the United States would likely increase our cost of product revenue and, as a result, decrease our gross margins, operating income and net income, which could have a material adverse effect on our financial condition. Further, if the U.S. government imposes tariffs on imports into the United States, other countries may respond by imposing tariffs on products manufactured in the United States, which would increase the price of our products in these countries and may result in our customers looking to alternative sources for our products. Further, the imposition of such tariffs, and other recent and potential actions of the U.S government with respect to other countries, may generate negative views of the United States in other countries and make persons in those countries less inclined to purchase products from U.S. companies like us.

In addition, we transact our business in U.S. dollars and bill and collect our sales in U.S. dollars. In 2016, approximately 32.3% of our revenue was from customers located outside of the United States. It is possible that U.S. policy changes and uncertainty about policy could increase market volatility and currency exchange rate fluctuations. Market volatility and currency exchange rate fluctuations could impact our results of operations and financial condition related to transactions denominated in a foreign currency. A weakening of the dollar could cause our overseas vendors to require renegotiation of either the prices or currency we pay for their goods and services. Similarly, a strengthening of the dollar could cause our products to be more expensive for our international customers, which could impact price and margins and/or cause the demand for our products, and thus our revenue, to decline.

In the future, customers may negotiate pricing and make payments in non-U.S. currencies. If our overseas vendors or customers require us to transact business in non-U.S. currencies, fluctuations in foreign currency exchange rates could affect our cost of goods, operating expenses, and operating margins and could result in exchange losses. In addition, currency devaluation can result in a loss to us if we hold deposits of that currency. Hedging foreign currencies can be difficult, especially if the currency is not freely traded. We cannot predict the impact that future exchange rate fluctuations may have on our operating results.

Our confidentiality agreements with employees and others may not adequately prevent disclosure of our trade secrets and other proprietary information, which could limit our ability to compete.

We rely on trade secrets to protect our proprietary technology and processes. Trade secrets are difficult to protect. We enter into confidentiality and intellectual property assignment agreements with our employees, consultants, and other advisors. These agreements generally require that the other party keep confidential and not disclose to third parties confidential information developed by the party under such agreements or made known to the party by us during the course of the party's relationship with us. However, these agreements may not be honored and enforcing a claim that a party illegally obtained and is using our trade secrets is difficult, expensive and time-consuming, and the outcome is unpredictable. Our failure to obtain and maintain trade secret protection could adversely affect our competitive position.

We depend on key personnel who would be difficult to replace, and our business will likely be harmed if we lose their services or cannot hire additional qualified personnel.

Our success depends substantially on the efforts and abilities of our senior management and key personnel. The competition for qualified management and key personnel, especially engineers, is intense. Although we maintain non-competition and non-disclosure covenants with most of our key personnel, we do not have employment agreements with most of them. The loss of services of one or more of our key employees or the inability to hire, train, and retain key personnel, especially engineers, technical support personnel, and capable sales and customer-support employees outside the United States, could delay the development and sale of our products, disrupt our business, and interfere with our ability to execute our business plan.

Future sales of our common stock, or the perception that future sales may occur, may cause the market price of our common stock to decline, even if our business is doing well.

Pursuant to the Registration Rights Agreement entered into between the Company and Brookstone, the Company is obligated to register for resale the shares of common stock sold to Brookstone in October 2016. Sales of substantial amounts of our common stock in the market after such registration, or the perception that these sales may occur, could materially and adversely affect the price of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

Brookstone's ownership of 41.6% of the outstanding shares of our common stock gives it a controlling interest in the Company.

Brookstone owns approximately 41.6% of our outstanding shares of common stock and has designated three directors that sit on our seven-member Board of Directors. Accordingly, Brookstone has the ability to exert a significant degree of influence or actual control over our management and affairs and, as a practical matter, will control corporate actions requiring shareholder approval, irrespective of how our other shareholders may vote, including the election of directors, amendments to our certificate of incorporation and bylaws, and the approval of mergers and other significant corporate transactions, including a sale of substantially all of our assets, and Brookstone may vote its shares in a manner that is adverse to the interests of our minority stockholders. For example, Brookstone will be able to prevent a merger or similar transaction, including a transaction in which stockholders will receive a premium for their shares, even if our other shareholders are in favor of such transaction. This concentration of voting control could deprive our investors of an opportunity to receive a premium for their shares of our common stock as part of a sale of the Company. Further, Brookstone's control position might adversely affect the market price of our common stock to the extent investors perceive disadvantages in owning shares of a company with a controlling shareholder.

Brookstone and their director designees may acquire interests and positions that could present potential conflicts with our and our shareholders' interests.

Brookstone and their director designees may make investments in companies and may, from time to time, acquire and hold interests in businesses that compete directly or indirectly with us. Brookstone and their director designees may also pursue, for their own accounts, acquisition opportunities that may be complementary to our business, and as a result, those acquisition opportunities might not be available to us. As part of our sale of the Shares to Brookstone in October 2016 and as required by Brookstone as a condition to purchasing the Shares, our Board of Directors renounced, to the extent permitted by New York law, the Company's expectancy with respect to being offered an opportunity to participate in any business opportunity that is discovered by or presented to a director designee (a "Business Opportunity"), whether in such director designee's capacity as a director of the Company or otherwise. Accordingly, the interests of Brookstone and the designated directors with respect to a Business Opportunity may supersede ours, and Brookstone or its affiliates or the Brookstone-designated directors may be involved with business in competition with us and may pursue opportunities for the sole benefit of Brookstone and its affiliates without our involvement, for which we have limited recourse. Such actions on the part of Brookstone or its director designees could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may become subject to claims of infringement or misappropriation of the intellectual property rights of others, which could prohibit us from selling our products, require us to obtain licenses from third parties or to develop non-infringing alternatives, and subject us to substantial monetary damages and injunctive relief.

We may receive notices from third parties that the manufacture, use, or sale of any products we develop infringes upon one or more claims of their patents. Moreover, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, that may later result in issued patents that materially and adversely affect our business. Third parties could also assert infringement or misappropriation claims against us with respect to our future product offerings, if any. We cannot be certain that we have not infringed the intellectual property rights of any third parties. Any infringement or misappropriation claim could result in significant costs, substantial damages, and our inability to manufacture, market, or sell any of our product offerings that are found to infringe another person's patent. Even if we were to prevail in any such action, the litigation could result in substantial cost and diversion of resources that could materially and adversely affect our business. If a court determined, or if we independently discovered, that our product offerings violated third-party proprietary rights, there can be no assurance that we would be able to re-engineer our product offerings to avoid those rights or obtain a license under those rights on commercially reasonable terms, if at all. As a result, we could be prohibited from selling products that are found to infringe upon the rights of others. Even if obtaining a license were feasible, it may be costly and time-consuming. A court could also enter orders that temporarily, preliminarily, or permanently enjoin us from making, using, selling, offering to sell, or importing our products that are found to infringe on third parties' intellectual property rights, or could enter orders mandating that we undertake certain remedial actions. Further, a court could order us to pay compensatory damages for any such infringement, plus prejudgment interest, and could in addition treble the compensatory damages and award attorneys' fees. Any such payments could materially and adversely affect our business and financial condition.

If we are unable to protect our information systems against service interruption or failure, misappropriation of data or breaches of security, our operations could be disrupted, we could be subject to costly government enforcement actions and private litigation and our reputation may be damaged.

Our business involves the collection, storage and transmission of personal, financial or other information that is entrusted to us by our customers and employees. Our information systems also contain the Company's proprietary and other confidential information related to our business. Our efforts to protect such information may be unsuccessful due to the actions of third parties, computer viruses, physical or electronic break-ins, catastrophic events, employee error or malfeasance or other attempts to harm our systems. Because the techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems, change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures in time. We could also experience a loss of critical data and delays or interruptions in our ability to manage inventories or process transactions. Some of our commercial partners, such as those that help us maintain our websites, may receive or store information provided by us or our users through our websites. If these third parties fail to adopt or adhere to adequate information security practices, or fail to comply with our policies in this regard, or in the event of a breach of their networks, our customers' information may be improperly accessed, used or disclosed.

If our systems are harmed or fail to function properly, we may need to expend significant financial resources to repair or replace systems or to otherwise protect against security breaches or to address problems caused by breaches. If we experience a significant security breach or fail to detect and appropriately respond to a significant security breach, we could be exposed to costly legal actions against us in connection with such incidents, which could result in orders or judgments forcing us to pay damages or fines or to take certain actions with respect to our information systems. Any incidents involving unauthorized access to or improper use of user information, or incidents that are a violation of our online privacy could harm our brand reputation and diminish our competitive position. Any of these events could have a material and adverse effect on our business, reputation or financial results. Our insurance policies carry coverage limits, which may not be adequate to reimburse us for losses caused by security breaches.

In the future, we may experience an ownership change in the Company that would result in a limitation of tax attributes relating to the use of our net operating losses.

A corporation generally undergoes an “ownership change” when the ownership of its stock, by value, changes by more than 50 percentage points over any three-year testing period. In the event of an ownership change, Section 382 of the Internal Revenue Code of 1986 imposes an annual limitation on the amount of post-ownership change taxable income a corporation may offset with pre-ownership change net operating loss (NOL) carryforwards and certain recognized built-in losses.

We estimate that as of December 31, 2016, the Company and MTI Instruments have NOL carryforwards of approximately \$51.9 million. Our ability to utilize these NOL carryforwards, including any future NOL carryforwards that may arise, may be limited by Section 382 if we undergo any further “ownership changes” as a result of subsequent changes in the ownership of our outstanding common stock pursuant to the exercise of MTI options outstanding, additional financings obtained, or otherwise.

Our risk management process may not identify all risks that we are subject to and will not eliminate all risk.

Our Enterprise Risk Management (ERM) process seeks to identify and address significant risks. Our ERM process uses the most recent integrated risk framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) to assess, manage, and monitor risks. We believe that risk-taking is an inherent aspect of the pursuit of our growth and performance strategy. Our goals are to proactively manage risks in a structured approach in conjunction with strategic planning, with the intent to preserve and enhance shareowner value, and to manage prudently, rather than wholly avoiding, risks. We can mitigate risks and their impact on the Company, however, only to a limited extent, and no ERM process can identify all risks that we

may face. Therefore, there may be risks that we are currently unaware of, that may develop in the future or that we currently consider immaterial. Further, our management of risks may prove inadequate. The emergence of risks of which we were unaware or are unable to manage could have a material adverse effect on our business, prospectus, financial condition and results of operations.

Item 1B: Unresolved Staff Comments

Not applicable.

Item 2: Properties

We lease approximately 17,400 square feet of office, manufacturing and research and development space at 325 Washington Avenue Extension, Albany, NY 12205. The current lease agreement expires on November 30, 2019. We believe our facilities are generally well maintained and adequate for our current needs and for expansion, if required.

Item 3: Legal Proceedings

At any point in time, we may be involved in various lawsuits or other legal proceedings. Such lawsuits could arise from the sale of products or services or from other matters relating to our regular business activities, compliance with various governmental regulations and requirements, or other transactions or circumstances. We do not believe there are any such proceedings presently pending that could have a material effect on our business, financial condition or results of operations.

Item 4: Mine Safety Disclosures

Not applicable.

PART II

Item 5: Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is quoted on the OTC Markets Group quotation system (OTCQB: MKTY) on the OTCQB venture stage marketplace for early stage and developing U.S. and international companies. We are current in our reporting and undergo an annual verification and management certification process. Investors can find Real-Time quotes and market information for the Company on www.otcm Markets.com. The following table sets forth the high and low bid information for our common stock as reported on the OTC Market Group quotation system for the periods indicated:

	High	Low
Fiscal Year Ended December 31, 2016		
First Quarter	\$ 1.40	\$ 0.67
Second Quarter	0.95	0.55
Third Quarter	1.41	0.35
Fourth Quarter	1.60	0.95

Fiscal Year Ended December 31, 2015

First Quarter	\$	1.20	\$	0.70
Second Quarter		1.49		0.86
Third Quarter		1.36		1.06
Fourth Quarter		1.29		0.20

Holders

We have one class of common stock, par value \$.01, and are authorized to issue 75,000,000 shares of common stock. Each share of the Company's common stock is entitled to one vote on all matters submitted to stockholders. As of December 31, 2016, there were 9,010,643 shares of common stock issued and outstanding. As of February 16, 2017, there were approximately 211 shareholders of record of the Company's common stock. The number of shareholders of record does not reflect the number of persons whose shares are held in nominee or "street" name accounts through brokers.

Dividends

We have never declared or paid dividends on our common stock and do not anticipate or contemplate paying cash dividends on our common stock in the foreseeable future. We currently intend to use all available funds to develop our business. We can give no assurances that we will ever have excess funds available to pay dividends. Any future determination as to the payment of dividends will depend upon critical requirements and limitations imposed by our credit agreements, if any, and such other factors as our Board of Directors may consider.

Item 6: Selected Financial Data

Not applicable.

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

The following discussion of our financial condition and results of operations should be read in conjunction with our Consolidated Financial Statements and the related notes included elsewhere in this Annual Report. This discussion contains forward-looking statements, which involve risk and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of certain factors, including those discussed in Item 1A: "Risk Factors" and elsewhere in this Annual Report.

Overview

MTI's core business is conducted through our wholly-owned subsidiary MTI Instruments, Inc. MTI Instruments is a supplier of precision linear displacement sensors, instruments and system solutions, vibration measurement and system balancing solutions, precision tensile measurement systems and wafer inspection tools, serving markets that require 1) the precise measurements and control of products and processes in automated manufacturing, assembly, and consistent operation of complex machinery, 2) engine balancing and vibration analysis systems for both military and commercial aircraft, 3) metrology tools for semiconductor and solar wafer characterization, and 4) tensile stage systems for materials testing and precision linear displacement gauges all for use in academic and industrial research and development settings.

Recent Developments

On July 1, 2016, the Company entered into a follow-on, multi-year contract with the U.S. Air Force to purchase new PBS4100+ and PBS4100R+ vibration measurement and balancing systems and corresponding maintenance of previously deployed systems and accessories. The total contract, if fully executed, has a value of \$9.35 million, with the initial basic one-year term of the contract having an estimated value of approximately \$1.8 million.

In addition to the basic term of the contract, the contract includes four option periods that the U.S. Air Force may exercise on or before the last day of the previous basic contract period or option period. Each option period covers the U.S. Air Force's option to purchase the Company's products set forth in the contract with respect to that specific option. Option I (concurrent with the initial basic one-year term) may be exercised at any time, from time-to-time, through June 30, 2017, Option II may be exercised at any time, from time-to-time, through June 30, 2018, Option III may be exercised at any time, from time-to-time, through June 30, 2019, and Option IV may be exercised at any time, from

time-to-time, through June 30, 2020. Within this schedule, the U.S. Air Force may exercise multiple option periods simultaneously. The contract provides the U.S. Air Force with an option to extend the term of the contract, but no such extension will be beyond June 30, 2021.

Results of Operations

Results of Operations for the Year Ended December 31, 2016 Compared to the Year Ended December 31, 2015.

The following table summarizes changes in the various components of our net loss during the year ended December 31, 2016 compared to the year ended December 31, 2015.

(Dollars in thousands)	Year Ended		\$	%
	December 31,	December 31,		
	2016	2015	Change	Change
Product revenue	\$ 7,056	\$ 6,330	\$ 726	11.5%
Operating costs and expenses:				
Cost of product revenue	\$ 2,722	\$ 2,475	\$ 247	10.0%
Research and product development expenses	\$ 1,243	\$ 1,546	\$ (303)	(19.6)%
Selling, general and administrative expenses	\$ 3,452	\$ 3,779	\$ (327)	(8.7)%
Operating loss	\$ (361)	\$ (1,470)	\$ 1,109	75.4%
Other expense, net	\$ (7)	\$ (2)	\$ (5)	(250.0)%
Loss before income taxes	\$ (368)	\$ (1,472)	\$ 1,104	75.0%
Income tax benefit (expense)	\$ 9	\$ (1,360)	\$ 1,369	100.7%
Net loss	\$ (359)	\$ (2,832)	\$ 2,473	87.3%

Product Revenue: Product revenue consists of revenue recognized from the MTI Instruments' product lines.

The \$726 thousand increase in product revenue during the year ended December 31, 2016 compared to 2015 was driven by activity under the new U.S. Air Force contract, which offset declines in commercial engine vibration analysis system sales. The U.S. Air Force was the largest government customer for the years ended December 31, 2016 and 2015, and accounted for 18.1% and 4.4%, respectively, of our annual product revenue. For the years ended December 31, 2016 and 2015, the largest commercial customer was an Asian distributor of our general instrumentation products, which accounted for 8.1% and 6.8%, respectively, of our annual product revenue.

Information regarding government contracts included in product revenue is as follows:

(Dollars in thousands)		Revenues for the		Contract	Total Contract
		Year Ended		Revenues	Orders
Contract ⁽¹⁾	Expiration	December 31,	2015	to Date	Received
		2016		Date	To Date
				December 31,	December 31,
				2016	2016
\$9.35 million U.S. Air Force Systems, Accessories and Maintenance	06/30/2021 ⁽²⁾	\$ 1,093	\$ —	\$ 1,093	\$ 1,097
\$6.5 million U.S. Air Force Maintenance	09/27/2014 ⁽³⁾	\$ —	\$ 5	\$ 5,006	\$ 5,006

(1) Contract values represent maximum potential values at time of contract placement and may not be representative of actual results.

(2) Date represents expiration of contract, including the exercise of option extensions.

(3) Date represents expiration of contract, including the exercise of option extensions. No additional orders are expected under any of these specific contracts.

Cost of Product Revenue; Gross Margin: Cost of product revenue includes the direct material and labor cost as well as an allocation of overhead costs that relate to the manufacturing of products we sell. In addition, cost of product revenue also includes the labor and material costs incurred for product maintenance, replacement parts and service

under our contractual obligations.

Cost of product revenue during the year ended December 31, 2016 compared to 2015 increased by \$247 thousand, or 10.0%, to \$2.7 million from \$2.5 million. Gross profit, as a percentage of product revenue, rose from 60.9% during the year ended December 31, 2015 to 61.4% during the year ended December 31, 2016. The improvement in gross profit during 2016 was attributable to lower material costs due to the change in product mix, combined with lower overhead costs from reduced staffing. This gross profit, while improved, was diminished by a \$350 thousand charge to inventory for excessive inventory amounts built in advance of an order that did not materialize in 2016. The increase in the cost of product revenue was attributable to the increased sales during 2016 as discussed above under *Product Revenue*, partially offset by the lower material and overhead costs responsible for the improvements in the profit margins.

Research and Product Development Expenses: Research and product development expenses includes the costs of materials to build development and prototype units, cash and non-cash compensation and benefits for the engineering and related staff, expenses for contract engineers, fees paid to outside suppliers for subcontracted components and services, fees paid to consultants for services provided, materials and supplies consumed, facility related costs such as computer and network services, and other general overhead costs associated with our research and development activities, to the extent not reimbursed by our customers.

Research and product development expenses decreased \$303 thousand during the year ended December 31, 2016 compared to 2015 due to reduced staffing and decreased material spending on current development projects.

Selling, General and Administrative Expenses: Selling, general and administrative expenses includes cash and non-cash compensation, benefits and related costs in support of our general corporate functions, including general management, finance and accounting, human resources, selling and marketing, information technology and legal services.

Selling, general and administrative expenses for the year ended December 31, 2016 decreased by \$327 thousand, or 8.7%, to \$3.5 million in 2016 from \$3.8 million in 2015. This decrease is the result of reduced staffing and travel, lower sales commissions and a \$37 thousand reduction to prior year incentive compensation accruals compared to 2015. This decrease was partially offset by \$90 thousand in legal and advisory fees related to the adoption of the Shareholder Rights Plan and an increase of \$271 thousand in non-cash stock based compensation expense relating to the immediate vesting of options granted under the Mechanical Technology Incorporated 2014 Equity Incentive Plan in conjunction with the change in control (as defined in the Plan) as a result of the Brookstone investment.

Operating Loss: Operating loss was \$361 thousand for the year ended December 31, 2016 compared to \$1.5 million in 2015. The improvement was a result of the factors noted above, that is, the increased sales and improvement in the gross margin, combined with decreased research and development and selling, general and administrative expenses.

Other Expense: Other expense was \$7 thousand for the year ended December 31, 2016 compared to \$2 thousand in 2015. The expense for the year ended December 31, 2016 primarily related to a \$6 thousand loss recorded on the disposal of equipment in the first quarter.

Income Tax Benefit (Expense): Income tax benefit for the year ended December 31, 2016 was \$9 thousand and primarily relates to a refund received from our year ended December 31, 2015 consolidated federal income tax return. Our effective income tax rate for the year ended December 31, 2016 was (2)%. Income tax expense for the year ended December 31, 2015 was \$1.4 million and primarily related to the increase in the valuation allowance against the previously-recognized \$1.3 million deferred tax asset. Our effective income tax rate for the year ended December 31, 2015 was 92%.

Net Loss: Net loss for the year ended December 31, 2016 was \$359 thousand compared to \$2.8 million in 2015. The decrease in net loss during 2016 was attributable to increased sales and improvements in the gross margin and the decreased research and development and selling, general and administrative expenses, as discussed above, as well as the increase in the valuation allowance against the previously-recognized \$1.3 million deferred tax asset during 2015, which heavily contributed to the unusually large net loss in 2015.

Management's Plan, Liquidity and Capital Resources

Several key indicators of our liquidity are summarized in the following table:

(Dollars in thousands)	Years Ended December 31,	
	2016	2015
Cash	\$ 3,381	\$ 462
Working capital	3,990	1,413
Net loss	(359)	(2,832)
Net cash provided by (used in) operating activities	522	(1,426)
Purchase of property, plant and equipment	(136)	(55)

The Company has historically incurred significant losses (the majority, until 2012, stemming from the direct methanol fuel cell product development and commercialization programs of its former subsidiary, MeOH Power, Inc.) and had a consolidated accumulated deficit of \$121.0 million as of December 31, 2016. Management believes that the Company currently has adequate resources to avoid future cost-cutting measures that could adversely affect its business. As of December 31, 2016, we had no debt, no outstanding commitments for capital expenditures and approximately \$3.4 million of cash available to fund our operations.

Based on business developments, including changes in production levels, staffing requirements and network infrastructure improvements, additional capital equipment may be required in the foreseeable future. We expect to spend approximately \$75 thousand on capital equipment and \$1.4 million in research and development on MTI Instruments' products during 2017. We expect to finance any future expenditures and continue funding our operations from our current cash position and our projected 2017 cash flows pursuant to management's plans. We may also seek to supplement our resources by obtaining credit facilities to fund operational working capital and capital expenditure requirements. Any additional financing, if required, may not be available to us on acceptable terms or at all.

While it cannot be assured, management believes that, due in part to our current working capital level, recent realignment in sales and operations and stabilized spending, the Company will have adequate resources to fund operations and capital expenditures for the year ending December 31, 2017 and through the end of the first quarter of 2018. However, if our revenue estimates are off either in timing or amount, the Company may need to implement additional steps to ensure liquidity including, but not limited to, the deferral of planned capital spending and/or delaying existing or pending product development initiatives. Such steps, if required, could potentially have a material and adverse effect on our business, results of operations and financial condition.

Debt

During the first quarter of 2016, we entered into discussions with Bank of America, N.A. (the Bank) to strengthen our then-existing lines of credit with the Bank and re-align their terms to be more consistent with our current business plan. During such discussions, the Bank informed the Company that based on its results for 2015 it was not in compliance with certain financial covenants of the lines. Since an agreement on new covenants could not be reached, the Company decided that the lines of credit could not be utilized and therefore terminated them on March 24, 2016. There were no amounts outstanding under the credit facilities at the time of cancellation.

Backlog, Inventory and Accounts Receivable

At December 31, 2016, the Company's order backlog was \$349 thousand, compared to \$234 thousand at December 31, 2015. The increase in backlog was due to a large order for capacitance systems that we received during the fourth quarter of 2016, with scheduled deliveries through the first half of 2017.

Our inventory turnover ratios and average accounts receivable days outstanding for the years ended December 31, 2016 and 2015 and their changes are as follows:

	Years Ended December 31,		
	2016	2015	Change
Inventory turnover	2.3	2.6	(0.3)
Average accounts receivable days outstanding	35	53	(18)

The decrease in inventory turns is due to a 17% increase in average inventory balances in anticipation of orders from Asia.

The average accounts receivable days' outstanding decreased 18 days during 2016 compared to the prior year due to a proportionate increase in U.S. government sales, as commercial customers take a longer period to pay than the U.S. government.

Off-Balance Sheet Arrangements

We have no off balance sheet arrangements.

Critical Accounting Policies and Significant Judgments and Estimates

The prior discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the

United States of America. Note 2 of the Consolidated Financial Statements included in this Annual Report on Form 10-K includes a summary of our most significant accounting policies. The preparation of these consolidated financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosure of assets and liabilities. On an ongoing basis, we evaluate our estimates and judgments, including those related to revenue recognition, inventories, income taxes and share-based compensation. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. Periodically, our management reviews our critical accounting estimates with the Audit Committee of our Board of Directors.

The significant accounting policies that we believe are most critical to aid in fully understanding and evaluating our consolidated financial statements include the following:

Revenue Recognition. We recognize product revenue when there is persuasive evidence of an arrangement, delivery of the product to the customer or distributor has occurred, at which time title generally is passed to the customer or distributor, and we have determined that collection of a fixed fee is probable, all of which occur upon shipment of the product. If the product requires that we provide installation, all revenue related to the product is deferred and recognized upon the completion of the installation.

Inventory. Inventory is valued at the lower of cost or the current estimated market value of the inventory. We periodically review inventory quantities on hand and record a provision for excess or obsolete inventory based primarily on our estimated forecast of product demand, as well as based on historical usage. Demand and usage for products and materials can fluctuate significantly. A significant decrease in demand for our products could result in a short-term increase in the cost of inventory purchases and an increase of excess inventory quantities on hand. Therefore, although we make every effort to assure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand could have a significant impact on the value of our inventory and our reported operating results. If changes in market conditions result in reductions in the estimated net realizable value of our inventory below our previous estimate, we would increase our reserve in the period in which we made such a determination and record a charge to cost of product revenue.

Share-Based Payments. We grant options to purchase our common stock and award restricted stock to our employees and directors under our equity incentive plans. The benefits provided under these plans are share-based payments subject to the appropriate accounting provisions regarding Share-Based Payments. We use the fair value method of accounting with the modified prospective application, which provides for certain changes to the method for valuing share-based compensation. The valuation provisions apply to new awards and to awards that are outstanding on the effective date and subsequently modified. Under the modified prospective application, prior periods are not revised for comparative purposes.

We estimate the fair value of share-based awards on the date of grant using a Black-Scholes option-pricing model. The determination of the fair value of share-based payment awards on the date of grant using an option-pricing model is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. These variables include our expected stock price volatility over the term of the awards, actual and projected employee stock option exercise behaviors, risk-free interest rate, and expected dividends.

If factors change and we employ different assumptions for the accounting methodology during future periods, the compensation expense that we record may differ significantly from what we have recorded in the current period. Therefore, we believe it is important for investors to be aware of the high degree of subjectivity involved when using option-pricing models to estimate share-based compensation. Option-pricing models were developed for use in estimating the value of traded options that have no vesting or hedging restrictions, are fully transferable and do not cause dilution. Because our share-based payments have characteristics significantly different from those of freely traded options, and because changes in the subjective input assumptions can materially affect our estimates of fair values, in our opinion, existing valuation models, including the Black-Scholes Option Pricing model, may not provide reliable measures of the fair values of our share-based compensation. Consequently, there is a risk that our estimates of the fair values of our share-based compensation awards on the grant dates may bear little resemblance to the intrinsic values realized upon the exercise, expiration, cancellation, or forfeiture of those share-based payments in the future. Certain share-based payments, such as employee stock options, may expire worthless or otherwise result in zero intrinsic value as compared to the fair values originally estimated on the grant date and expensed in our financial statements. Alternatively, value may be realized from these instruments that are significantly in excess of the fair values originally estimated on the grant date and expensed in our financial statements. There currently is neither a market-based mechanism nor other practical application to verify the reliability and accuracy of the estimates stemming from these valuation models, nor a way to compare and adjust the estimates to actual values. Although the fair value of employee share-based awards is determined using a qualified option-pricing model, that value may not be indicative of the fair value observed in a willing buyer/willing seller market transaction. Estimates of share-based compensation expenses are significant to our financial statements, but these expenses are based on the aforementioned option valuation model and will never result in our payment of cash.

Theoretical valuation models and market-based methods are evolving and may result in lower or higher fair value estimates for share-based compensation. The timing, readiness, adoption, general acceptance, reliability, and testing of these methods is uncertain. Sophisticated mathematical models may require voluminous historical information, modeling expertise, financial analyses, correlation analyses, integrated software and databases, consulting fees, customization, and testing for adequacy of internal controls.

For purposes of estimating the fair value of stock options granted during the twelve months ended December 31, 2016 using the Black-Scholes model, we used the historical volatility of our stock for the expected volatility assumption input to the Black-Scholes model, consistent with the accounting guidance. The risk-free interest rate is based on the risk-free zero-coupon rate for a period consistent with the expected option term at the time of grant. We do not currently pay nor do we anticipate paying dividends, but we are required to assume a dividend yield as an input to the Black-Scholes model. As such, we use a zero dividend rate. The expected option term is calculated as an average time

to forfeiture for all grants.

Income Taxes. As part of the process of preparing our consolidated financial statements, we calculate income taxes for each of the jurisdictions in which we operate. This involves estimating actual current taxes due together with assessing temporary differences resulting from differing treatment for tax and accounting purposes that are recorded as deferred tax assets and liabilities. We periodically evaluate deferred tax assets, net operating loss carryforwards and tax credit carryforwards to determine their recoverability based primarily on our ability to generate future taxable income.

Significant management judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities, and any valuation allowance recorded against our net deferred tax assets. We considered all available evidence, both positive and negative, such as historical levels of income and future forecasts of taxable income amongst other items in determining our valuation allowance. In addition, our assessment requires us to schedule future taxable income in accordance with accounting standards that address income taxes to assess the appropriateness of a valuation allowance, which further requires the exercise of significant management judgment.

We account for taxes in accordance with the asset and liability method of accounting for income taxes. Under this method, we must recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate resolution. The impact of our reassessment of our tax positions for these standards did not have a material impact on our results of operations, financial condition, or liquidity.

Recent Accounting Pronouncements

A discussion of recently adopted and new accounting pronouncements is included in Note 2 of the Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable.

Item 8: Financial Statements and Supplementary Data

The Company's Consolidated Financial Statements begin on page F-1 and are incorporated in this Item 8 by reference.

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 MTI's disclosure controls and procedures as of December 31, 2016. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the

time periods specified in the U.S. Securities and Exchange Commission's (the "SEC") rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. We recognize that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and we necessarily apply our judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2016, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

(b) Management's Report on Internal Control Over Financial Reporting

Management of our Company is responsible for establishing and maintaining adequate internal control over financial reporting, as that term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

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

Under the supervision and with the participation of our management, including the principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting using the criteria set forth in *Internal Control—Integrated Framework* (2013 version) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation using the criteria set forth in *Internal Control—Integrated Framework*, Management has concluded that our internal control over financial reporting was effective as of December 31, 2016.

This annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Our report was not subject to attestation by our independent registered public accounting firm pursuant to rules of the SEC that permit us to provide only Management's Report in this annual report.

/s/ Frederick W. Jones

Chief Executive Officer and Chief Financial Officer
(Principal Executive Officer and Principal Financial
Officer)

(c) Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act, during our fiscal quarter ended December 31, 2016 that have materially affected, or are reasonable likely to materially affect, our internal control over financial reporting.

Item 9B: Other Information

No information was required to be disclosed in a current Report on Form 8-K during the fourth quarter of the fiscal year covered by this Annual Report on Form 10-K that has not been reported.

PART III

Item 10: Directors, Executive Officers and Corporate Governance

Code of Ethics: We have adopted a Code of Ethics for employees, officers and directors. A copy of the Code of Ethics is available on our website at <http://www.mechtech.com> under Governance, Governance Documents.

The remaining information required by this Item 10 is incorporated herein by reference to the information appearing under the captions “Information about our Directors,” “Executive Officers,” “Board of Director Meetings and Committees – Audit Committee” and “Section 16(a) Beneficial Ownership Reporting Compliance” in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders to be filed with the SEC on or before May 1, 2017.

Item 11: Executive Compensation

The information required by this Item 11 is incorporated herein by reference to the information appearing under the caption “Executive Compensation” in the Company’s definitive Proxy Statement for our 2017 Annual Meeting of Stockholders to be filed with the SEC on or before May 1, 2017.

Item 12: Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters**Equity Compensation Plans**

As of December 31, 2016, we have three equity compensation plans, each of which was originally approved by our stockholders; the Mechanical Technology Incorporated 2006 Equity Incentive Plan (the “2006 Plan”), the Mechanical Technology Incorporated 2012 Equity Incentive Plan and the Mechanical Technology Incorporated 2014 Equity Incentive Plan (collectively, the “Plans”). The 2006 Plan was amended and restated and approved by our Board of Directors in 2011 and 2009. See Note 11 of our Consolidated Financial Statements in this Annual Report on Form 10-K for a description of the Plans.

The following table presents information regarding these plans as of December 31, 2016:

Plan Category	Number of Securities To Be Issued Upon Exercise of	Weighted Average Exercise	Number of Securities Remaining Available for Future Issuance
	Outstanding Options, Warrants, Rights ⁽¹⁾ (a)	Price of Outstanding Options, Warrants, Rights (b)	Under Equity Compensation Plans (excluding securities reflected in column (a)) ⁽²⁾ (c)
Equity compensation plans approved by security holders	1,051,750	\$ 0.76	45,500
Equity compensation plans not approved by security holders ⁽³⁾	90,589	0.73	-0-

- (1) The securities available under the Plans for issuance and issuable pursuant to exercises of outstanding options may be adjusted in the event of a change in outstanding stock by reason of stock dividend, stock splits, reverse stock splits, etc.
- (2) No awards can currently be made out of the 2006 Plan.
- (3) Includes options outstanding under the 2006 Plan, which was amended by our Board of Directors without stockholder approval in 2009 and 2011 to increase the number of shares available for issuance thereunder. Under the 2006 Plan, the Board of Directors is authorized to issue stock options, stock appreciation rights, restricted stock, and other stock-based incentives to officers, employees and others. See Note 11 of our Consolidated Financial Statements in this Annual Report on Form 10-K for a further description of this Plan.

The remaining information required by this Item 12 is incorporated herein by reference to information appearing under the caption “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders to be filed with the SEC on or before May 1, 2017.

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

The information required by this Item 13 is incorporated herein by reference to the information appearing under the captions “Certain Relationships and Related Transactions” and “Information about our Directors” in our definitive Proxy Statement for the 2017 Annual Meeting of Stockholders to be filed with the SEC on or before May 1, 2017.

Item 14: Principal Accounting Fees and Services

The information required by this Item 14 is incorporated herein by reference to the information appearing under the caption “Independent Registered Public Accounting Firm” in our definitive Proxy Statement for the 2017 Annual Meeting of Stockholders to be filed with the SEC on or before May 1, 2017.

PART IV

Item 15: Exhibits, Financial Statement Schedules

15(a) (1) Financial Statements: The financial statements filed herewith are set forth on the Index to Consolidated Financial Statements on page F-1 of the separate financial section which accompanies this Report, which is incorporated herein by reference.

15(a) (2) Financial Statement Schedules: Financial statement schedules not listed have been omitted because they are either not required, not applicable, or the information has been included elsewhere in the consolidated financial statements or notes thereto.

15(a) (3)

Exhibits: The exhibits listed in the Exhibit Index below are filed as part of this Annual Report on Form 10-K.

Exhibit Number	Description
3.1	Certificate of Incorporation of the registrant, as amended and restated (Incorporated by reference from Exhibit 3.1 of the Company's Form 10-K Report for the year ended December 31, 2007).
3.2	Certificate of Amendment of the Certificate of Incorporation of the registrant (Incorporated by reference from Exhibit 3.2 of the Company's Form 8-K Report filed May 15, 2008).
3.3	Certificate of Correction of Restated Certificate of Incorporation of Mechanical Technology, Incorporated as of October 17, 2016 and Certificate of Correction of Certificate of Amendment of the Certificate of Incorporation of Mechanical Technology Incorporated, as of October 17, 2016 (Incorporated by reference from Exhibit 3.1 of the Company's Form 8-K Report filed October 21, 2016).
3.4	Amended and Restated By-Laws of the registrant (Incorporated by reference from Exhibit 3.3 of the Company's Form 8-K Report filed December 14, 2007).
4.1	Rights Agreement, dated as of October 6, 2016, between Mechanical Technology, Incorporated and American Stock Transfer & Trust Company, LLC, as Rights Agent (Incorporated by reference from Exhibit 4.1 of the Company's Form 8-K Report filed October 6, 2016).
4.2	

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Amendment No. 1 dated as of October 20, 2016, to the Rights Agreement, dated as of October 6, 2016, between Mechanical Technology, Incorporated and American Stock Transfer & Trust Company, LLC, as Rights Agent (Incorporated by reference from Exhibit 4.2 of the Company's Form 8-K Report filed October 21, 2016).

- 10.1 Mechanical Technology, Incorporated Amended and Restated 2006 Equity Incentive Plan.*
- 10.2 Form of Restricted Stock Agreement for Mechanical Technology, Incorporated Amended and Restated 2006 Equity Incentive Plan (Incorporated by reference from Exhibit 10.2 of the Company's Form 8-K Report filed July 11, 2011).*
- 10.3 Mechanical Technology, Incorporated Amended and Restated 2012 Equity Incentive Plan.*
- 10.4 Form of Restricted Stock Agreement Notice for Board of Directors and Employees for Mechanical Technology, Incorporated 2012 Equity Incentive Plan (Incorporated by reference from Exhibit 10.2 of the Company's Form 10-Q Report for the quarter ended June 30, 2012).*
- 10.5 Form of Incentive Stock Option Notice for Employees for Mechanical Technology, Incorporated 2012 Equity Incentive Plan (Incorporated by reference from Exhibit 10.3 of the Company's Form 10-Q Report for the quarter ended June 30, 2012).*
- 10.6 Form of Non-Qualified Stock Option Notice for Employees for Mechanical Technology, Incorporated 2012 Equity Incentive Plan (Incorporated by reference from Exhibit 10.4 of the Company's Form 10-Q Report for the quarter ended June 30, 2012).*
- 10.7 Form of Non-Qualified Stock Option Notice for Board of Directors for Mechanical Technology, Incorporated 2012 Equity Incentive Plan (Incorporated by reference from Exhibit 10.5 of the Company's Form 10-Q Report for the quarter ended June 30, 2012).*
- 10.8 Mechanical Technology, Incorporated 2014 Equity Incentive Plan (incorporated by reference to Exhibit A to the Registrant's Proxy Statement on Schedule 14A filed with the Commission on April 25, 2014). *
- 10.9 Form of Restricted Stock Grant Agreement under the Mechanical Technology, Incorporated 2014 Equity Incentive Plan (incorporated by reference from Exhibit 4.2 of the Company's Registration Statement on Form S-8 (File No. 333-196989) filed with the Commission on June 24, 2014). *
- 10.10 Form of Nonstatutory Stock Option Grant Agreement under the Mechanical Technology, Incorporated 2014 Equity Incentive Plan (incorporated by reference from Exhibit 4.3 of the Company's Registration Statement on Form S-8 (File No. 333-196989) filed with the Commission on June 24, 2014). *
- 10.11 Form of Incentive Stock Option Grant Agreement under the Mechanical Technology, Incorporated 2014 Equity Incentive Plan (incorporated by reference from Exhibit 4.4 of the Company's Registration Statement on Form S-8 (File No. 333-196989) filed with the Commission on June 24, 2014). *

- 10.12 Lease dated August 10, 1999 between Carl E. Touhey and Mechanical Technology, Inc. (Incorporated by reference from Exhibit 10.38 of the Company's Form 10-K Report for the fiscal year ended September 30, 1999).
- 10.13 Amendment No. 1 to Lease Agreement Between Mechanical Technology Inc. and Carl E. Touhey dated September 29, 2009 (Incorporated by reference from Exhibit 10.166 of the Company's Form 10-K Report for the year ended December 31, 2009).
- 10.14 Amendment No. 2 to Lease Agreement Between MTI Instruments Inc. and Carl E. Touhey dated May 2, 2014 (Incorporated by reference from Exhibit 10.1 of the Company's Form 10-Q Report for the quarter ended March 31, 2014).
- 10.15# Contract dated July 1, 2016 between Mechanical Technology, Incorporated and the U.S. Air Force (Incorporated by reference from Exhibit 10.1# of the Company's Form 10-Q Report for the quarter ended June 30, 2016).
- 10.16 Securities Purchase Agreement dated as of October 21, 2016, by and between Mechanical Technology, Incorporated and Brookstone Partners Acquisition XXIV, LLC (Incorporated by reference from Exhibit 10.22 of the Company's Form 8-K Report filed October 21, 2016).
- 10.17 Registration Rights Agreement dated as of October 21, 2016, by and between Mechanical Technology, Incorporated and Brookstone Partners Acquisition XXIV, LLC (Incorporated by reference from Exhibit 10.23 of the Company's Form 8-K Report filed October 21, 2016).
- 10.18 Form of Option Exercise and Stock Transfer Restriction Agreement between the Company and its Chief Executive Officer, Chief Financial Officer and Non-Employee Directors (Incorporated by reference from Exhibit 10.24 of the Company's Form 8-K Report filed October 21, 2016).
- 21 Subsidiaries of the Registrant (Incorporated by reference from Exhibit 21 of the Company's Form 10-K Report for the year ended December 31, 2015).
- 23.1 Consent of Independent Registered Public Accounting Firm – UHY LLP.
- 31.1 Certification of Chief Executive Officer and Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
- 32.1 Certification of Chief Executive Officer and Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
- 101.INS XBRL Instance Document
- 101.SCH XBRL Taxonomy Extension Schema Document
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF XBRL Taxonomy Definition Linkbase Document
101.LAB XBRL Taxonomy Extension Label Linkbase Document
101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

All exhibits for which no other filing information is given are filed herewith.

Certain portions of this exhibit have been omitted based upon a request for confidential treatment. The omitted portions have been filed with the Securities and Exchange Commission pursuant to our application for confidential treatment. The items are identified in the exhibit with “***”.

* Represents management contract or compensation plan or arrangement.

Item 16: Form 10-K Summary

None.

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.

MECHANICAL TECHNOLOGY, INCORPORATED

Date: March 2, 2017

By:

/s/ Frederick W. Jones

Frederick W. Jones

Chief Executive Officer and Chief
Financial 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

/s/ Frederick W. Jones

Title

Chief Executive Officer, Chief Financial Officer and Secretary

Date

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Frederick W. Jones	(Principal Executive, Principal Financial and Accounting Officer)	March 2, 2017
<u>/s/ David C. Michaels</u> David C. Michaels	Chairman	March 2, 2017
<u>/s/ Edward R. Hirshfield</u> Edward R. Hirshfield	Director	March 2, 2017
<u>/s/ Matthew E. Lipman</u> Matthew E. Lipman	Director	March 2, 2017
<u>/s/ Kevin G. Lynch</u> Kevin G. Lynch	Director	March 2, 2017
<u>/s/ Thomas J. Marusak</u> Thomas J. Marusak	Director	March 2, 2017
<u>/s/ William P. Phelan</u> William P. Phelan	Director	March 2, 2017
<u>/s/ Michael Toporek</u> Michael Toporek	Director	March 2, 2017

MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and

Stockholders of Mechanical Technology, Incorporated

We have audited the accompanying consolidated balance sheets of Mechanical Technology, Incorporated as of December 31, 2016 and 2015, and the related consolidated statements of operations, changes in equity, and cash flows for each of the years in the two-year period ended December 31, 2016. The Company's management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Mechanical Technology, Incorporated as of December 31, 2016 and 2015, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America.

/s/ UHY LLP

Albany, New York

March 2, 2017

A member of UHY International, a network of independent accounting and consulting firms

MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

December 31, 2016 and 2015

(Dollars in thousands, except per share)

	December 31,	
	2016	2015
	Assets	
Current Assets:		
Cash	\$ 3,381	\$ 462
Accounts receivable – less allowances of \$0 in 2016 and \$56 in 2015	881	931
Inventories	676	1,006
Prepaid expenses and other current assets	82	72
Total Current Assets	5,020	2,471
Property, plant and equipment, net	160	115
Total Assets	\$ 5,180	\$ 2,586
	Liabilities and Stockholders' Equity	
Current Liabilities:		
Accounts payable	\$ 124	\$ 152
Accrued liabilities	906	907
Total Current Liabilities	1,030	1,059
Commitments and Contingencies (Note 12)		
Stockholders' Equity:		
Common stock, par value \$0.01 per share, authorized 75,000,000; 10,026,136 issued in 2016 and 6,263,975 issued in 2015	100	63
Additional paid-in-capital	138,794	135,839
Accumulated deficit	(120,980)	(120,621)
Common stock in treasury, at cost, 1,015,493 shares in 2016 and 1,005,092 shares in 2015	(13,764)	(13,754)
Total Stockholders' Equity	4,150	1,527
Total Liabilities and Stockholders' Equity	\$ 5,180	\$ 2,586

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

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MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES**CONSOLIDATED STATEMENTS OF OPERATIONS****For the Years Ended December 31, 2016 and 2015**

(Dollars in thousands, except per share)

	Year Ended December 31, 2016	Year Ended December 31, 2015
Product revenue	\$ 7,056	\$ 6,330
Operating costs and expenses:		
Cost of product revenue	2,722	2,475
Research and product development expenses	1,243	1,546
Selling, general and administrative expenses	3,452	3,779
Operating loss	(361)	(1,470)
Other expense, net	(7)	(2)
Loss before income taxes	(368)	(1,472)
Income tax benefit (expense)	9	(1,360)
Net loss	\$ (359)	\$ (2,832)
Loss per share (Basic and Diluted)	\$ (0.06)	\$ (0.54)
Weighted average shares outstanding (Basic and Diluted)	5,988,545	5,258,883

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

MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

For the Years Ended December 31, 2016 and 2015

	Common Stock				Treasury Stock			Total Stockholders' Equity (Deficit)
	Shares	Amount	Additional Paid- in Capital	Accumulated Deficit	Shares	Amount		
January 1, 2015	6,263,975	\$ 63	\$ 135,698	\$ (117,789)	1,005,092	\$ (13,754)	\$ 4,218	
Net loss	-	-	-	(2,832)	-	-	(2,832)	
Stock based compensation	-	-	141	-	-	-	141	
December 31, 2015	6,263,975	\$ 63	\$ 135,839	\$ (120,621)	1,005,092	\$ (13,754)	\$ 1,527	
Net loss	-	-	-	(359)	-	-	(359)	
Stock based compensation	-	-	449	-	-	-	449	
Issuance of shares – stock purchase	3,750,000	37	2,700	-	-	-	2,737	
Costs of stock purchase			(201)				(201)	
Issuance of shares – option exercises	12,161	-	7	-	-	-	7	
Purchase of common stock for treasury	-	-	-	-	10,401	(10)	(10)	
December 31, 2016	10,026,136	\$ 100	\$ 138,794	\$ (120,980)	1,015,493	\$ (13,764)	\$ 4,150	

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

MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the Years Ended December 31, 2016 and 2015

(Dollars in thousands)	Year Ended December 31, 2016	Year Ended December 31, 2015
Operating Activities		
Net loss	\$ (359)	\$ (2,832)
Adjustments to reconcile net loss to net cash provided (used) by operating activities:		
Depreciation	85	80
(Bad debt recovery) provision for bad debts	(21)	56
Deferred income taxes	—	1,335
Stock based compensation	449	141
Provision for excess and obsolete inventories	365	83
Loss on disposal of equipment	6	—
Changes in operating assets and liabilities:		
Accounts receivable	71	209
Inventories	(35)	(316)
Prepaid expenses and other current assets	(10)	20
Accounts payable	(28)	(64)
Accrued liabilities	(1)	(138)
Net cash provided (used) by operating activities	522	(1,426)
Investing Activities		
Purchases of equipment	(136)	(55)
Principle payments from notes receivable – related party	—	20
Net cash used in investing activities	(136)	(35)
Financing Activities		
Proceeds from stock option exercises	7	—
Proceeds from stock purchase	2,737	—
Costs of stock purchase	(201)	—
Purchases of common stock for treasury	(10)	—
Net cash provided by financing activities	2,533	—

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Increase (decrease) in cash	2,919	(1,461)
Cash - beginning of period	462	1,923
Cash - end of period	\$ 3,381	\$ 462

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

MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Operations

Description of Business

Mechanical Technology, Incorporated (MTI or the Company), a New York corporation, was incorporated in 1961. The Company's core business is conducted through MTI Instruments, Inc. (MTI Instruments), its wholly-owned subsidiary.

MTI Instruments was incorporated in New York on March 8, 2000 and is a supplier of precision linear displacement solutions, vibration measurement and system balancing systems, and wafer inspection tools, consisting of electronic gauging instruments for position, displacement and vibration application within the industrial manufacturing/production markets, as well as the research, design and process development market; tensile stage systems for materials testing at academic and industrial research settings; and engine vibration analysis systems for both military and commercial aircraft. These tools, systems and solutions are developed for markets and applications that require the precise measurements and control of products, processes, and the development and implementation of automated manufacturing, assembly, and consistent operation of complex machinery.

Liquidity

The Company has historically incurred significant losses primarily due to its past efforts to fund direct methanol fuel cell product development and commercialization programs, and had a consolidated accumulated deficit of approximately \$121.0 million as of December 31, 2016. As of December 31, 2016, we had working capital of approximately \$4.0 million, no debt, no outstanding commitments for capital expenditures, and approximately \$3.4 million of cash available to fund our operations.

Based on the Company's projected cash requirements for operations and capital expenditures, its current available cash of approximately \$3.4 million and our projected 2017 cash flow pursuant to management's plans, management believes it will have adequate resources to fund operations and capital expenditures for the year ending December 31, 2017 and through the end of the first quarter of 2018. If cash generated from operations is insufficient to satisfy the Company's operational working capital and capital expenditure requirements, the Company may be required to obtain

credit facilities, if available, to fund these initiatives. The Company has no other formal commitments for funding future needs of the organization at this time and any additional financing during 2017, if required, may not be available to us on acceptable terms or at all.

2. Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary, MTI Instruments. All intercompany balances and transactions are eliminated in consolidation.

The Company records its investment in MeOH Power, Inc. using the equity method of accounting. The fair value of the Company's interest in MeOH Power, Inc. has been determined to be \$0 as of December 31, 2016 and December 31, 2015, based on MeOH Power, Inc.'s net position and expected cash flows. As of December 31, 2016, the Company retained its equity ownership of approximately 47.5% of MeOH Power, Inc.'s outstanding common stock, or 75,049,937 shares. The Company previously held warrants to purchase 31,904,136 shares of common stock of MeOH Power, Inc., which expired in December 2016.

Use of Estimates

The consolidated financial statements of the Company have been prepared in accordance with United States of America Generally Accepted Accounting Principles (U.S. GAAP), which require 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Fair Value of Financial Instruments

The Company's financial instruments consist of cash, accounts receivable and accounts payable. The estimated fair values of these financial instruments approximate their carrying values at December 31, 2016 and 2015. The estimated fair values have been determined through information obtained from market sources, where available.

Accounts Receivable and Allowance for Doubtful Accounts

Trade accounts receivable are stated at the invoiced amount billed to customers and do not bear interest. An allowance for doubtful accounts, if necessary, represents the Company's best estimate of the amount of probable credit losses in its existing accounts receivable. The Company determines the allowance based on historical write-off experience and current exposures identified. The Company reviews its allowance for doubtful accounts monthly. Past due balances over 90 days and over a specified amount are reviewed individually for collectability. All other balances are reviewed on a pooled basis by type of receivable. Account balances are charged off against the allowance when the Company believes it is probable the receivable will not be recovered. The Company does not have any off-balance-sheet credit exposure related to its customers.

Inventories

Inventories are valued at the lower of cost (first-in, first-out) or market. The Company provides estimated inventory allowances for excess, slow moving and obsolete inventory as well as inventory whose carrying value is in excess of net realizable value.

Property, Plant, and Equipment

Property, plant and equipment are stated at cost and depreciated using the straight-line method over their estimated useful lives as follows:

Leasehold improvements	Lesser of the life of the lease or the useful life of the improvement
Computers and related software	3 to 5 years
Machinery and equipment	3 to 10 years
Office furniture, equipment and fixtures	2 to 10 years

Significant additions or improvements extending assets' useful lives are capitalized; normal maintenance and repair costs are expensed as incurred. The costs of fully depreciated assets remaining in use are included in the respective

asset and accumulated depreciation accounts. When items are sold or retired, related gains or losses are included in net (loss) income.

Income Taxes

Deferred tax assets and liabilities are recognized for temporary differences between financial statement and income tax bases of assets and liabilities, loss carryforwards, and tax credit carryforwards, for which income tax benefits are expected to be realized in future years. A valuation allowance has been established to reduce deferred tax assets, if it is more likely than not that all, or some portion, of such deferred tax assets will not be realized. The effect on deferred taxes of a change in tax rates is recognized in the period that includes the enactment date.

The Company accounts for uncertain tax positions in accordance with accounting standards that address income taxes. The Company must recognize in its financial statements the impact of a tax position, if that position is more likely than not to be sustained on an audit, based on the technical merits of the position.

Equity Method Investments

The Company's consolidated net income (loss) will include our proportionate share, if any, of the net income or loss of our equity method investee. When the Company records its proportionate share of net income, it increases equity income (loss), net in our consolidated statements of operations and our carrying value in that investment. Conversely, when the Company records its proportionate share of a net loss, it decreases equity income (loss), net in our consolidated statements of operations and our carrying value in that investment. The Company's proportionate share of the net income or loss of our equity method investee includes significant operating and non-operating items recorded by our equity method investee. These items can have a significant impact on the amount of equity income (loss), net in our consolidated statements of operations and our carrying value in that investment. The carrying value of our equity method investment is also impacted by our proportionate share of items impacting the equity investee's accumulated other comprehensive income, if any. When the Company's carrying value in an equity method investee company has been reduced to zero, no further losses are recorded in the Company's financial statements unless the Company guaranteed obligations of the investee company or has committed additional funding. When the investee company subsequently reports income, the Company will not record its share of such income until it equals the amount of its share of losses not previously recognized.

Fair Value Measurement

The estimated fair value of certain financial instruments, including cash and short-term debt approximates their carrying value due to their short maturities and varying interest rates. "Fair value" is the price that would be received to sell an asset or transfer a liability in an orderly transaction between market participants at the measurement date. The Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs. Based on the observability of the inputs used in the valuation methods, the Company is required to provide the following information according to the fair value accounting standards. These standards established a fair value hierarchy as specified that ranks the quality and reliability of the information used to determine fair values. Financial assets and liabilities are classified and disclosed in one of the following three categories:

- Level 1:** Quoted market prices in active markets for identical assets or liabilities, which includes listed equities.
- Level 2:** Observable market based inputs or unobservable inputs that are corroborated by market data. These items are typically priced using models or other valuation techniques. These models are primarily financial industry-standard models that consider various assumptions, including the time value of money, yield curves, volatility factors, as well as other relevant economic measures.
- Level 3:** These use unobservable inputs that are not corroborated by market data. These values are generally estimated based upon methodologies utilizing significant inputs that are generally less observable from objective sources.

Product Revenue

Product revenue is recognized when there is persuasive evidence of an arrangement, the collection of a fixed fee is probable or determinable, and delivery of the product to the customer or distributor has occurred, at which time title generally is passed to the customer or distributor. All of these generally occur upon shipment of the product. If the product requires specific customer acceptance criteria, such as on-site customer acceptance and/or acceptance after install, then revenue is deferred until customer acceptance occurs or the acceptance provisions lapse, unless the Company can objectively and reliably demonstrate that the criteria specified in the acceptance provisions is satisfied.

MTI Instruments currently has distributor agreements in place for the international sale of general instrument and semiconductor products in certain global regions. Such agreements grant a distributor the right of first refusal to act as distributor for such products in the distributor's territory. In return, the distributor agrees to not market other products which are considered by MTI Instruments to be in direct competition with MTI Instruments' products. The distributor is allowed to purchase MTI Instruments' equipment at a price which is discounted off the published domestic/international list prices. Such list prices can be adjusted by MTI Instruments during the term of the distributor agreement. Generally, payment terms with the distributor are standard net 30 days; however, on occasion, extended payment terms have been granted. Title and risk of loss of the product passes to the distributor upon delivery to the independent carrier (standard "free-on-board" factory), and the distributor is responsible for any required training and/or service with the end-user. The sale (and subsequent payment) between MTI Instruments and the distributor is not contingent upon the successful resale of the product by the distributor. Distributor sales are covered by MTI Instruments' standard one-year warranty and there are no special return policies for distributors.

Cost of Product Revenue

Cost of product revenue includes material, labor, overhead and shipping and handling costs.

Deferred Revenue

Deferred revenue consists of billings to customers in advance of services performed, completed installation or customer acceptance. As of December 31, 2016 and 2015, the Company had no deferred revenue.

Warranty

The Company accrues a warranty liability at the time product revenue is recorded based on historical experience. The liability is reviewed during the year and is adjusted, if appropriate, to reflect new product offerings or changes in experience. Actual warranty claims are tracked by product line. Warranty liability was \$14 thousand and \$16 thousand at December 31, 2016 and 2015, respectively. Warranty expense was \$5 thousand and \$13 thousand for 2016 and 2015, respectively.

Long-Lived Assets

The Company accounts for impairment or disposal of long-lived assets in accordance with accounting standards that address the financial accounting and reporting for the impairment or disposal of long-lived assets, specify how impairment will be measured, and how impaired assets will be classified in the consolidated financial statements. On a quarterly basis, the Company analyzes the status of its long-lived assets at each subsidiary for potential impairment. As of December 31, 2016, the Company does not believe that any of its long-lived assets have suffered any type of impairment that would require an adjustment to that asset's recorded value.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash and highly liquid short-term investments with original maturities of less than three months.

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Net Income (Loss) per Share

The Company computes basic income (loss) per common share by dividing net income (loss) by the weighted average number of common shares outstanding during the reporting period. Diluted income (loss) per share reflects the potential dilution, if any, computed by dividing income (loss) by the combination of dilutive common share equivalents, comprised of shares issuable under outstanding investment rights, warrants and the Company's share-based compensation plans, and the weighted average number of common shares outstanding during the reporting period. Dilutive common share equivalents include the dilutive effect of in-the-money stock options, which are calculated based on the average share price for each period using the treasury stock method. Under the treasury stock method, the exercise price of a stock option, the amount of compensation cost, if any, for future service that the Company has not yet recognized, and the amount of windfall tax benefits that would be recorded in additional paid-in capital, if any, when the stock option is exercised are assumed to be used to repurchase shares in the current period.

Share-Based Payments

The Company accounts for stock based awards exchanged for employee service in accordance with the share-based payment accounting guidance. Stock-based compensation represents the cost related to stock-based awards granted to employees and directors. The Company measures stock-based compensation cost at grant date based on the estimated fair value of the award, and recognizes the cost as expense on a straight-line basis in accordance with the vesting of the options (net of estimated forfeitures) over the option's requisite service period. The Company estimates the fair value of stock-based awards using a Black Scholes valuation model. Stock-based compensation expense is recorded in the lines titled "Cost of product revenue," "Selling, general and administrative expenses" and "Research and product development expenses" in the Consolidated Statements of Operations based on the employees' respective functions.

The Company records deferred tax assets for awards that potentially can result in deductions on the Company's income tax returns based on the amount of compensation cost that would be recognized upon issuance of the award and the Company's statutory tax rate. Differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the Company's income tax return are recorded in Additional Paid-In Capital (if the tax deduction exceeds the deferred tax asset) or in the Consolidated Statement of Operations (if the deferred tax asset exceeds the tax deduction and no historical pool of windfall tax benefits exists). Since the adoption of the revised accounting standard on share-based payments, no tax benefits have been recognized related to share-based compensation since the Company has established a full valuation allowance to offset all potential tax benefits associated with these deferred tax assets.

Concentration of Credit Risk

Financial instruments that subject the Company to concentrations of credit risk principally consist of cash equivalents and trade accounts receivable. The Company's trade accounts receivable are primarily from sales to commercial customers, the U.S. government and state agencies. The Company does not require collateral and has not historically experienced significant credit losses related to receivables from individual customers or groups of customers in any particular industry or geographic area. In 2016 and 2015, approximately 32.3% and 34.6%, respectively, of our product revenues was from customers outside of the United States.

The Company has cash deposits in excess of federally insured limits, but does not believe them to be at risk.

Research and Development Costs

The Company expenses research and development costs as incurred. The Company incurred research and development costs of approximately \$1.2 million and \$1.5 million, which was entirely related to MTI Instruments, for the years ended December 31, 2016 and 2015, respectively.

Advertising Costs

The Company expenses advertising costs as incurred. The Company incurred advertising costs of approximately \$22 and \$127 thousand, which was entirely related to MTI Instruments, for the years ended December 31, 2016 and 2015, respectively.

Other Comprehensive Income

The Company had no other comprehensive income (loss) items for the years ended December 31, 2016 and 2015.

Effect of Recent Accounting Standards or Updates Not Yet Effective

Changes to U.S. GAAP are established by the Financial Accounting Standards Board (the FASB) in the form of accounting standard updates (ASUs) to the FASB's Accounting Standards Codification (ASC). The Company considered the applicability and impact of all ASUs. ASUs not mentioned below were assessed and determined to be either not applicable or are expected to have minimal impact on our consolidated financial position or results of operations.

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In May 2014, the FASB issued Accounting Standards Update 2014-09 (Revenue from Contracts with Customers) to clarify the principles for recognizing revenue and to develop a common revenue standard for GAAP and International Financial Reporting Standards. The standard is principles-based and provides a five-step model to determine when and how revenue is recognized. The core principle is that a company should recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. To achieve that core principle, an entity should apply the following steps: Step 1: Identify the contract(s) with a customer. Step 2: Identify the performance obligations in the contract. Step 3: Determine the transaction price. Step 4: Allocate the transaction price to the performance obligations in the contract. Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation. This standard also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. This standard, as amended, will be effective for the Company for annual and interim reporting periods beginning after December 15, 2017. This standard may be applied retrospectively to each prior period presented or retrospectively with the cumulative effect recognized as of the date of initial application. Early adoption is permitted, but no earlier than calendar 2017. This standard could impact the timing and amounts of revenue recognized. The Company is currently evaluating the impact of this standard on its consolidated financial statements. The Company has not yet selected a transition method and in preparation for our adoption of the new standard in our 2018 fiscal year, we are obtaining representative samples of contracts and other forms of agreements with our customers in the U.S. and international locations and are evaluating the provisions contained therein in light of the five-step model specified by this standard.

In July 2015, the FASB issued ASU 2015-11 (Inventory (Topic 330): Simplifying the Measurement of Inventory), which applies to inventory that is measured using first-in, first-out (FIFO) or average cost. Under the updated guidance, an entity should measure inventory that is within scope at the lower of cost and net realizable value, which is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. Subsequent measurement is unchanged for inventory that is measured using last-in, last-out (LIFO). This standard will be effective for the Company for annual and interim periods beginning after December 15, 2016, and should be applied prospectively with early adoption permitted at the beginning of an interim or annual reporting period. The Company plans to adopt this new standard in the first quarter of fiscal year 2017 on a prospective basis and does not expect the adoption to have a material impact on its Consolidated Financial Statements. In accordance with the ASU, the Company intends to disclose the nature of and reason for the change in accounting principle in its first periodic report in which the Company adopts the standard.

In November 2015, the FASB issued ASU 2015-17 (Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes) as part of its ongoing simplification initiative, with the objective of reducing complexity in accounting standards. The amendments in this standard require entities that present a classified balance sheet to classify all deferred tax liabilities and assets as a noncurrent amount. The current requirement that deferred tax liabilities and assets of a tax-paying component of an entity be offset and presented as a single amount is not affected by the amendments in this standard. Additionally, the amendments in this standard align the deferred income tax presentation with the requirements in International Accounting Standards (IAS) 1 (Presentation of Financial Statements.) This standard will be effective for the Company for annual and interim reporting periods beginning on or after December 15, 2016. The Company plans to adopt this new standard in the first quarter of fiscal year 2017 on a

prospective basis and does not expect the adoption to have a material impact on its Consolidated Financial Statements as its deferred tax assets and liabilities are currently in a full valuation allowance. In accordance with the ASU, the Company intends to disclose the nature of and reason for the change in accounting principle and a statement that prior periods were not retrospectively adjusted in its first periodic report in which the Company adopts the standard.

In January 2016, the FASB issued ASU 2016-01 (Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Liabilities) the main objective of which is to enhance the reporting model for financial instruments to provide users of financial statements with more decision-useful information and address certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. This standard will be effective for the Company for annual and interim reporting periods beginning on or after December 15, 2017, and early adoption is permitted. The Company is currently evaluating the impact of this standard but we do not expect the adoption of it to have a material impact on our consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02 (Leases (Topic 842)), which requires lessees to recognize a right-of-use asset and a lease liability on their balance sheet for virtually all of their leases (other than leases that meet the definition of a short-term lease). The lease liability will be equal to the present value of lease payments and the right-of-use asset will be based on the lease liability, subject to adjustment such as for initial direct costs. For income statement purposes, this standard retains a dual model similar to ASC 840, requiring leases to be classified as either operating or finance. For lessees, operating leases will result in straight-line expense (similar to current accounting by lessees for operating leases under ASC 840) while finance leases will result in a front-loaded expense pattern (similar to current accounting by lessees for capital leases under ASC 840). While this standard maintains similar accounting for lessors as under ASC 840, this standard reflects updates to, among other things, align with certain changes to the lessee model. This standard will be effective for the Company for annual and interim reporting periods beginning on or after December 15, 2018, and early adoption is permitted. Although we have not completed our assessment, we believe adoption of this standard may have a significant impact on our consolidated balance sheets. However, we do not expect the adoption to change the recognition, measurement or presentation of lease expense within our consolidated statements of operations or the consolidated statements of cash flows. Information about our undiscounted future lease payments and the timing of those payments is in Note 12, Commitments and Contingencies.

In March 2016, the FASB issued ASU 2016-09 (Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting), which simplifies several aspects related to the accounting for employee share-based payment transactions. This standard addresses several aspects of the accounting for share-based payment award transactions, including: (a) income tax consequences; (b) classification of awards as either equity or liabilities; and (c) classification on the statement of cash flows. This standard requires all income tax effects of awards, including excess tax benefits, to be recorded as income tax expense (or benefit) in the income statement when it arises, subject to the normal valuation allowance considerations. All tax-related cash flows resulting from share-based payments are required to be reported as operating activities in the statement of cash flows. The updates relating to the income tax effects of the share-based payments including the cash flow presentation must be adopted either prospectively or retrospectively. This standard also allows companies to make an accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. If an election is made, the change to recognize forfeitures as they occur must be adopted using a modified retrospective approach with a cumulative effect adjustment recorded to opening retained earnings. This standard will be effective for the Company for annual and interim reporting periods beginning after December 15, 2016, and early adoption is permitted. The Company plans to adopt this new standard in the first quarter of fiscal year 2017. The Company expects the adoption of this standard to impact our provision for income taxes, the amount of which depends on the vesting activity of our share-based compensation awards in any given period, and to eliminate the presentation of excess tax benefits as a financing inflow on our statement of cash flows. Further, we expect to make an accounting policy election to account for forfeitures of share-based compensation awards based on an estimate, consistent with our current practice. The Company has \$1.3 million in tax benefits that were not previously recognized because the related tax deduction had not reduced taxes payable so there will be a cumulative effect adjustment of the change on retained earnings at the time of the adoption. The Company does not expect the adoption of this standard to have any other material impacts on our consolidated financial statements and disclosures. The Company expects that the adoption of this new guidance in fiscal 2017 will impact our reported income taxes and cash flows from operating activities, but the amounts of which are dependent upon the underlying vesting or exercise activity and related future stock prices. In accordance with the ASU, the Company intends to disclose the nature of and reason for the change in accounting principle in its first periodic report in which the Company adopts the standard.

In April 2016, the FASB issued ASU 2016-10 (Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing), which clarifies the identification of performance obligations and the licensing implementation guidance. This standard is expected to reduce the cost and complexity of applying the guidance on identifying promised goods or services. This standard will be effective for the Company for annual and interim reporting periods beginning after December 15, 2017. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15 (Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments), which clarifies the treatment of several cash flow categories. In addition, ASU 2016-15 clarifies that when cash receipts and cash payments have aspects of more than one class of cash flows and cannot be

separated, classification will depend on the predominant source or use. This standard will be effective for the Company for annual and interim reporting periods beginning after December 15, 2017, and early adoption permitted. This standard should be applied using a retrospective transition method to each period presented. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In December 2016, the FASB issued ASU 2016-20 (Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers), which clarifies the treatment of ASU 2014-09 over 13 different issues. This standard will be effective for the Company for annual and interim reporting periods beginning after December 15, 2017. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In January 2017, the FASB issued ASU 2017-03 (Accounting Changes and Error Corrections (Topic 250) and Investments – Equity Method and Joint Ventures (Topic 323); Amendments to SEC Paragraphs Pursuant to Staff Announcements at the September 22, 2016 and November 17, 2016 Emerging Issues Task Force (EITF) Meetings (SEC Update)), which amends certain topics of the ASC as defined in this ASU and also adds an SEC paragraph and amends other topics pursuant to an SEC Staff Announcement made at the September 22, 2016 EITF meeting. The Company will adopt this standard in fiscal 2017 and does not expect the adoption of it to have a material impact on our consolidated financial statements other than financial statement disclosure.

Recently Adopted Accounting Standards

In August 2014, the FASB issued ASU 2014-15 (Presentation of Financial Statements – Going Concern), which requires management to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and provide related footnote disclosures. This standard is effective for the Company for annual and interim reporting periods ending after December 15, 2016. The Company adopted this standard on December 31, 2016. The adoption of this standard had no impact on the Company's consolidated financial statements (see Note 1).

In February 2015, the FASB issued ASU 2015-02 (Consolidation (Topic 810): Amendments to the Consolidation Analysis), which changes the analysis that a reporting entity must perform to determine whether it should consolidate certain types of legal entities. The Company adopted this standard on January 1, 2016. The adoption of this standard had no impact on the Company's consolidated financial statements.

3. Accounts Receivable

Accounts receivables consist of the following at December 31:

(dollars in thousands)	2016	2015
U.S. and State Government	\$ 103	\$ 15
Commercial	778	972
Allowance for doubtful accounts	—	(56)
Total	\$ 881	\$ 931

4. Inventories

Inventories consist of the following at December 31:

(dollars in thousands)	2016	2015
Finished goods	\$ 244	\$ 412
Work in process	143	240
Raw materials	289	354
Total	\$ 676	\$ 1,006

5. Property, Plant and Equipment

Property, plant and equipment consist of the following at December 31:

(dollars in thousands)

2016	2015
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Leasehold improvements	\$	39	\$	39
Computers and related software		1,068		1,052
Machinery and equipment		892		853
Office furniture and fixtures		25		61
		2,024		2,005
Less: Accumulated depreciation		1,864		1,890
	\$	160	\$	115

Depreciation expense was \$85 thousand and \$80 thousand for 2016 and 2015, respectively. Repairs and maintenance expense was \$14 thousand and \$13 thousand for 2016 and 2015, respectively.

6. Income Taxes

Income tax benefit (expense) for each of the years ended December 31 consists of the following:

(dollars in thousands)

	2016	2015
Federal	\$ 10	\$ (20)
State	(1)	(5)
Deferred	—	(1,335)
Total	\$ 9	\$ (1,360)

The significant components of deferred income tax (expense) benefit from operations for each of the years ended December 31 consists of the following:

(dollars in thousands)

	2016	2015
Deferred tax benefit (expense)	\$ 240	\$ 50
Net operating loss carry forward	(120)	370
Valuation allowance	(120)	(1,755)
	\$ —	\$ (1,335)

The Company's effective income tax rate from operations differed from the Federal statutory rate for each of the years ended December 31 as follows:

	2016	2015
Federal statutory tax rate	(34) %	(34) %
Change in valuation allowance	33	119
State research and development credits	—	—
Expiration of stock option	2	1
Prior year tax adjustments and other	(4)	5
Other, net	1	1
Tax rate	(2) %	92%

Pre-tax loss was \$368 thousand and \$1.5 million for 2016 and 2015, respectively.

Deferred Tax Assets:

Deferred tax assets are determined based on the temporary differences between the financial statement and tax bases of assets and liabilities as measured by the enacted tax rates. Temporary differences, net operating loss carryforwards and tax credit carryforwards that give rise to deferred tax assets and liabilities are summarized as follows as of December 31:

(dollars in thousands)

	2016	2015
Current deferred tax assets:		
Inventory valuation	\$ 225	\$ 99
Inventory capitalization	2	—
Vacation pay	29	29
Warranty and other sale obligations	5	5
Allowance for accounts receivable	—	19
Allowance for related party note receivable	95	92
Other reserves and accruals	24	26
	380	270
Valuation allowance – current	(380)	(270)
Net current deferred tax assets	\$ —	\$ —
Noncurrent deferred tax assets:		
Net operating loss	\$ 17,464	\$ 17,583
Property, plant and equipment	(17)	3
Stock options	269	120
Research and development tax credit	450	450
Alternative minimum tax credit	54	54
	18,220	18,210
Valuation allowance – noncurrent	(18,220)	(18,210)
Non-current net deferred tax assets	\$ —	\$ —

As of December 31, 2016, the Company has approximately \$450 thousand of research and development tax credit carry forwards, which begin to expire in 2018, and approximately \$54 thousand of alternative minimum tax credit carry forwards, which have no expiration date.

Valuation Allowance:

The Company provides for recognition of deferred tax assets if the realization of such assets is more likely than not to occur in accordance with accounting standards that address income taxes. Significant management judgment is required in determining the period in which the reversal of a valuation allowance should occur. The Company has considered all available evidence, both positive and negative, such as historical levels of income and future forecasts of taxable income amongst other items, in determining its valuation allowance. In addition, the Company's assessment requires us to schedule future taxable income in accordance with accounting standards that address income taxes to assess the appropriateness of a valuation allowance which further requires the exercise of significant management judgment.

The Company decided to re-establish a full valuation allowance at December 31, 2015 for its deferred tax assets. This decision was based upon actual results differing from estimates used as a basis for the previous partial valuation of the deferred tax asset. As a result, the Company incurred a one-time, \$1.3 million, non-cash expense in 2015 to eliminate the partial valuation allowance which was established in 2011. Although the Company expects to generate levels of pre-tax earnings in the future, it believes that it is appropriate to have a full valuation allowance on its deferred tax assets at December 31, 2016 as well. We will continue to evaluate the ability to realize our deferred tax assets and related valuation allowance on a quarterly basis.

The valuation allowance at December 31, 2016 and 2015 was \$18.6 million and \$18.5 million, respectively. Activity in the valuation allowance for deferred tax assets is as follows as of December 31:

(dollars in thousands)	2016	2015
Valuation allowance, beginning of year	\$ 18,480	\$ 16,725
Increase resulting in income tax expense	—	1,335
Allowance for accounts receivable	—	19
Allowance for related party note receivable	(16)	3
Inventory	128	25
Net operating income (loss)	(120)	373
Property, plant and equipment	(20)	6
Stock options	149	43
Other reserves and accruals	(1)	(49)
Valuation allowance, end of year	\$ 18,600	\$ 18,480

Net operating losses:

At December 31, 2016, the Company has unused Federal net operating loss carryforwards of approximately \$51.9 million. Of these, \$1.1 million will expire in 2020, with the remainder expiring through 2036. Of the Company's carryforwards, \$1.3 million represents windfall tax benefits from stock option transactions, the tax effect of which are not included in the Company's net deferred tax assets.

The Company's and/or its subsidiaries' ability to utilize their net operating loss carryforwards may be significantly limited by Section 382 of the IRC of 1986, as amended, if the Company or any of its subsidiaries undergoes an "ownership change" as a result of changes in the ownership of the Company's or its subsidiaries' outstanding stock pursuant to the exercise of the warrants or otherwise.

Unrecognized tax benefits:

The unrecognized tax benefits in accordance with accounting standards that address income taxes at December 31, 2016 and 2015 was \$1.2 million. These unrecognized tax benefits relate to former subsidiaries of the Company and a prior investment in a partnership.

In future periods, if \$1.2 million of these unrecognized benefits become supportable, the Company may not recognize a change in its effective tax rate as long as it remains in a partial valuation allowance position. Additionally, the Company does not have uncertain tax positions that it expects will increase or decrease within twelve months of this reporting date. The Company recognizes interest and penalties related to uncertain tax positions as a component of tax expense. The Company did not recognize any interest or penalties in 2016 and 2015.

The Company files income tax returns, including returns for its subsidiaries, with federal and state jurisdictions. The Company is no longer subject to IRS or NYS examinations for its federal and state returns for any periods prior to 2009, although carryforward attributes that were generated prior to 2009 may still be adjusted upon examination by the IRS if they either have been or will be used in a future period.

7. Accrued Liabilities

Accrued liabilities consist of the following at December 31:

(dollars in thousands)	2016	2015
Salaries, wages and related expenses	\$ 223	\$ 237
Liability to shareholders for previous acquisition	363	363
Legal and professional fees	128	86
Warranty and other sale obligations	14	16
Commissions	27	36
Other	151	169
	\$ 906	\$ 907

8. Stockholders' Equity**Common Stock**

The Company has one class of common stock, par value \$.01. Each share of the Company's common stock is entitled to one vote on all matters submitted to stockholders. As of December 31, 2016 and 2015 there were 9,010,643 and 5,258,883 shares of common stock issued and outstanding, respectively.

Reservation of Shares

The Company has reserved common shares for future issuance as follows as of December 31, 2016:

Stock options outstanding	1,142,339
Common stock available for future equity awards or issuance of options	45,500

Number of common shares reserved

1,187,839

9. Retirement Plan

The Company maintains a voluntary savings and retirement plan under IRC Section 401(k) covering substantially all employees. Employees must complete six months of service and have attained the age of twenty-one prior to becoming eligible for participation in the plan. The Company plan allows eligible employees to contribute a percentage of their compensation on a pre-tax basis and the Company matches employee contributions dollar for dollar up to a discretionary amount, currently 4%, of the employee's salary, subject to annual tax deduction limitations. Company matching contributions vest at a rate of 25% annually for each year of service completed. Company matching contributions were \$97 thousand and \$119 thousand for 2016 and 2015, respectively. The Company may also make additional discretionary contributions in amounts as determined by management and the Board of Directors. There were no additional discretionary contributions by the Company for the years 2016 or 2015.

10. (Loss) Income per Share

The following table sets forth the reconciliation of the numerators and denominators of the basic and diluted per share computations for continuing operations for the years ended December 31:

(dollars in thousands, except shares)

	2016	2015
<u>Numerator:</u>		
Net loss	\$ (359)	\$ (2,832)
<u>Denominator:</u>		
Basic EPS:		
Common shares outstanding, beginning of period	5,258,883	5,258,883
Weighted average common shares issued during the period	729,662	—
Denominator for basic earnings per common shares —		
Weighted average common shares	5,988,545	5,258,883
Diluted EPS:		
Common shares outstanding, beginning of period	5,258,883	5,258,883
Common stock equivalents – options	—	—
Weighted average common shares issued during the period	729,662	—
Denominator for diluted earnings per common shares -		
Weighted average common shares	5,988,545	5,258,883

Not included in the computation of earnings per share-assuming dilution for the year ended December 31, 2016 were options to purchase 1,142,339 shares of the Company's common stock. These potentially dilutive items were excluded because the Company incurred a loss during the periods and their inclusion would be anti-dilutive.

Not included in the computation of earnings per share-assuming dilution for the year ended December 31, 2015 were options to purchase 926,565 shares of the Company's common stock. These potentially dilutive items were excluded because the Company incurred a loss during the periods and their inclusion would be anti-dilutive.

11. Stock Based Compensation

Stock-based incentive awards are provided to employees and directors under the terms of the Company's 2006 Equity Incentive Plan (2006 Plan), which was amended and restated effective June 30, 2011, September 16, 2009 and October 20, 2016, 2012 Equity Incentive Plan (the 2012 Plan), which was amended and restated as of October 20, 2016, and 2014 Equity Incentive Plan (the 2014 Plan) (collectively, the Plans). Awards under the Plans have generally included at-the-money options and restricted stock grants.

Stock options are awards which allow holders to purchase shares of the Company's common stock at a fixed price. Stock options issued to employees and non-employee members of the MTI Board of Directors generally vest at a rate of 25% on each of the first four anniversaries of the date of the award. Certain options granted may be fully or partially exercisable immediately, may vest on other than a four year schedule or vest upon attainment of specific performance criteria. Restricted stock awards generally vest one year after the date of grant; however, certain awards may vest immediately or vest upon attainment of specific performance criteria. Option exercise prices are generally equivalent to the closing market price of the Company's common stock on the date of grant. Unexercised options generally terminate either seven or ten years after date of grant.

The 2006 Plan was adopted by the Company's Board of Directors on March 16, 2006 and approved by stockholders on May 18, 2006. The 2006 Plan was amended and restated by the Board of Directors effective September 16, 2009, June 30, 2011 and October 20, 2016. The September 16, 2009 amendment increased the initial aggregate number of 250,000 shares of common stock that may be awarded or issued to 600,000, the June 30, 2011 amendment increased the aggregate number of shares of common stock that may be awarded or issued under the 2006 Plan to 1,200,000, and the October 2016 amendment allowed for the award agreement or another agreement entered into between the Company and the award grantee to vary the method of exercise of options issued under the 2006 Plan and the provisions governing expiration of options or other awards under the 2006 Plan following termination of the award recipient. The number of shares that may be awarded under the 2006 Plan and awards outstanding has been adjusted for stock splits and other similar events. Under the 2006 Plan, the Board of Directors is authorized to issue stock options, stock appreciation rights, restricted stock, and other stock-based incentives to officers, employees and others. In connection with seeking stockholder approval of the 2012 Plan, the Company agreed not to make further awards under the 2006 Plan.

The 2012 Plan was adopted by the Company's Board of Directors on April 14, 2012 and approved by its stockholders on June 14, 2012. The 2012 Plan was amended and restated by the Board of Directors effective October 20, 2016. The October 2016 amendment allowed for the award agreement or another agreement entered into between the Company and the award grantee to vary the method of exercise of options issued under the 2012 Plan and an agreement entered into between the Company and the award grantee to vary the provisions governing expiration of options or other awards under the 2012 Plan following termination of the award recipient. The 2012 Plan provides an initial aggregate number of 600,000 shares of common stock that may be awarded or issued. The number of shares that may be awarded under the 2012 Plan and awards outstanding may be subject to adjustment on account of any recapitalization, reclassification, stock split, reverse stock split and other dilutive changes in our common stock. Under the 2012 Plan, the Board of Directors is authorized to issue stock options (incentive and nonqualified), stock appreciation rights, restricted stock, restricted stock units and other stock-based awards to employees, officers, directors, consultants and advisors of the Company and its subsidiaries. Incentive stock options may only be granted to employees of the Company and its subsidiaries.

The 2014 Plan was adopted by the Company's Board of Directors on March 12, 2014 and approved by its stockholders on June 11, 2014. The 2014 Plan provides an initial aggregate number of 500,000 shares of common stock that may be awarded or issued. The number of shares that may be awarded under the 2014 Plan and awards outstanding may be subject to adjustment on account of any stock dividend, spin-off, stock split, reverse stock split, split-up, recapitalization, reclassification, reorganization, combination or exchange of shares, merger, consolidation, liquidation, business combination, exchange of shares or the like. Under the 2014 Plan, the Board-appointed administrator of the 2014 Plan is authorized to issue stock options (incentive and nonqualified), stock appreciation rights, restricted stock, restricted stock units, phantom stock, performance awards and other stock-based awards to employees, officers and directors of, and other individuals providing bona fide services to or for, the Company or any affiliate of the Company. Incentive stock options may only be granted to employees of the Company and its subsidiaries.

In connection with the sale of shares of common stock to Brookstone, the Company entered into an Option Exercise and Stock Transfer Restriction Agreement (collectively, the Option and Transfer Agreements) with its Chief Executive Officer, its Chief Financial Officer and each of its non-employee directors (collectively, the Insiders). The Option and Transfer Agreements amend the stock option grant agreements between the Company and each Insider with respect to an option granted under, and modify the terms of any option to purchase Common Stock held by each such Insider (collectively, Options) granted under, the Plans. The Option and Transfer Agreements restrict the aggregate amount of shares of Common Stock for which the Insiders may exercise Options during calendar years 2016, 2017, 2018 and 2019, and provide for a modified procedure for exercising Options in order to ensure the limit on the aggregate amount of Options that may be exercised in any such year is not exceeded. Such amendments and modifications also operate to, except with respect to the termination of Options in connection with an Insider's termination of employment or service in connection with misconduct as described in the Option and Transfer Agreements, (i) remove all references to an expiration of the exercisability of such Options within a special, delineated time period following the termination of service to or employment by the Company, and (ii) provide that all vested Options are exercisable by the Insider until default expiration under the applicable Plan (i.e., ten years from the date of grant). If an Option and Transfer Agreement is terminated, the limitations on Option exercises described above will terminate, but the exercisability of the Insider's vested Options until default expiration under the applicable Plan and stock option agreement (i.e., ten years from the date of grant) will survive indefinitely.

During 2016, the Company granted options to purchase 261,000 shares of the Company's common stock from the 2014 Plan, which generally vest 25% on each of the first four anniversaries of the date of the award. The exercise price of these options is \$0.78 per share and was based on the closing market price of the Company's common stock on the date of grant. Using a Black-Scholes Option Pricing Model, the weighted average fair value of these options is \$0.74 per share and was estimated at the date of grant.

During 2016, the Company granted options to purchase 2,000 shares of the Company's common stock from the 2012 Plan, which generally vest 25% on each of the first four anniversaries of the date of the award. The exercise price of these options is \$0.78 per share and was based on the closing market price of the Company's common stock on the date of grant. Using a Black-Scholes Option Pricing Model, the weighted average fair value of these options is \$0.74 per share and was estimated at the date of grant.

During 2015, the Company granted options to purchase 140,000 shares of the Company's common stock from the 2014 Plan, which generally vest 25% on each of the first four anniversaries of the date of the award. The exercise price of these options is \$1.20 per share and was based on the closing market price of the Company's common stock on the date of grant. Using a Black-Scholes Option Pricing Model, the weighted average fair value of these options is \$1.14 per share and was estimated at the date of grant.

Stock-based compensation expense for the years ended December 31, 2016 and 2015 was generated from stock option awards. Stock options are awards that allow holders to purchase shares of the Company's common stock at a fixed price. Under the 2014 and 2012 Plans, stock options issued to employees generally vest 25% over four years. Options issued to non-employee members of the MTI Board of Directors generally vest 25% over four years. Certain options granted may be fully or partially exercisable immediately, may vest on other than a four year schedule or vest upon attainment of specific performance criteria. Restricted stock awards generally vest one year after the date of grant, although certain awards may vest immediately or vest upon attainment of specific performance criteria. Option exercise prices are generally equivalent to the closing market value price of the Company's common stock on the date of grant. Unexercised options generally terminate ten years after date of grant.

The Company estimates the fair value of stock options using a Black-Scholes valuation model. Key inputs and assumptions used to estimate the fair value of stock options include the grant price of the award, the expected option term, volatility of the Company's stock, an appropriate risk-free rate, and the Company's dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards, and subsequent events are not indicative of the reasonableness of the original estimates of fair value made by the Company. The Company's estimate of an expected option term was calculated in accordance with the simplified method for calculating the expected term assumption.

The following table presents the weighted-average assumptions used for options granted under the 2014 Plan:

	2016	2015
Option term (years)	5.05	4.25
Volatility	171.91%	191.97%
Risk-free interest rate	1.52%	1.57%
Dividend yield	0%	0%
Weighted-average fair value per option granted	\$ 0.74	\$ 1.14

The following table presents the weighted-average assumptions used for options granted under the 2012 Plan:

	2016
Option term (years)	5.05
Volatility	171.91%
Risk-free interest rate	1.52%
Dividend yield	0%
Weighted-average fair value per option granted	\$ 0.74

Share-based compensation expense recognized in the Consolidated Statements of Operations is based on awards ultimately expected to vest, therefore, awards are reduced for estimated forfeitures. The revised accounting standard requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Total share-based compensation expense, related to all of the Company's share-based awards, recognized for the years ended December 31, was comprised as follows:

	2016		2015
(dollars in thousands, except eps)			
Cost of product \$ revenue	3	\$	2
Research and product development	45		9
Selling, general and administrative	401		130
Share-based \$ compensation expense	449	\$	141
Impact on basic \$ and diluted	0.08	\$	0.03

EPS

Total unrecognized compensation costs related to non-vested awards as of December 31, 2016 and December 31, 2015 is \$49 thousand and \$307 thousand, respectively, and is expected to be recognized over a weighted-average remaining vesting period of approximately 1.04 years and 2.56 years, respectively.

Presented below is a summary of the Company's stock option plans' activity for the years ended December 31:

	2016	2015
Shares under option, beginning	926,565	802,908
Granted	263,000	140,000
Exercised	(12,161)	—
Forfeited	(19,436)	(11,061)
Expired/canceled	(15,629)	(5,282)
Shares under option, ending	1,142,339	926,565
Options exercisable	1,043,214	456,400
Remaining shares available for granting of options	45,500	280,436

The weighted average exercise price for the Plans is as follows for each of the years ended December 31:

	2016	2015
Shares under option, beginning	\$ 0.77	\$ 0.72
Granted	\$ 0.78	\$ 1.20
Exercised	\$ 0.57	\$ —
Forfeited	\$ 0.89	\$ 0.72
Expired/canceled	\$ 1.69	\$ 4.54
Shares under option, ending	\$ 0.76	\$ 0.77
Options exercisable, ending	\$ 0.75	\$ 0.63

The following table summarizes information for options outstanding and exercisable for the Plans as of December 31, 2016:

Exercise Price Range	Outstanding Options			Options Exercisable		
	Number	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number	Weighted Average Exercise Price	
\$0.29 - \$1.15	986,339	7.03	\$ 0.69	887,214	\$ 0.66	
\$1.16 - \$1.40	156,000	7.63	\$ 1.22	156,000	\$ 1.22	
	1,142,339	7.11	\$ 0.76	1,043,214	\$ 0.75	

The aggregate intrinsic value (i.e. the difference between the closing stock price and the price to be paid by the option holder to exercise the option) is \$788 thousand for the Company's outstanding options and \$735 thousand for the exercisable options as of December 31, 2016. The amounts are based on the Company's closing stock price of \$1.45 as of December 31, 2016.

There were no unvested restricted stock grants for the year ended December 31, 2016 and 2015.

Non-vested options activity is as follows for the year ended December 31:

	2016	2016 Weighted Average Exercise Price
Options		
Non-vested options balance, beginning January 1	470,165	\$0.91
Non-vested options granted	263,000	\$0.78
Vested options	(614,604)	\$0.85
Non-vested options forfeited	(19,436)	\$0.89

Non-vested options balance, ending December 31	99,125	\$0.92
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12. Commitments and Contingencies

Contingencies:

Legal

We are subject to legal proceedings, claims and liabilities which arise in the ordinary course of business. When applicable, we accrue for losses associated with legal claims when such losses are probable and can be reasonably estimated. These accruals are adjusted as additional information becomes available or circumstances change. Legal fees are charged to expense as they are incurred.

Commitments:

Leases

The Company and its subsidiary lease certain manufacturing, laboratory and office facilities. The lease provides for the Company to pay its allocated share of insurance, taxes, maintenance and other costs of the leased property. MTI Instruments did not execute its option under the agreement to terminate the lease as of December 1, 2016.

Future minimum rental payments required under non-cancelable operating leases (with initial or remaining lease terms in excess of one year) as of December 31, 2016 are: \$221 thousand in 2017, \$221 thousand in 2018 and \$207 thousand in 2019. Rent expense under all leases was \$231 thousand for both 2016 and 2015.

Employment Agreement

The Company has an employment agreement with one employee that provides certain payments upon termination of employment under certain circumstances, as defined in the agreement. As of December 31, 2016, the Company's potential minimum obligation to this employee was approximately \$73 thousand.

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13. Related Party Transactions

MeOH Power, Inc.

As of December 31, 2016, the Company owned an aggregate of approximately 47.5% of MeOH Power, Inc.'s outstanding common stock, or 75,049,937 shares. The number of shares of MeOH Power, Inc.'s common stock authorized for issuance is 240,000,000 as of December 31, 2016.

On December 18, 2013, MeOH Power, Inc. and the Company executed a Senior Demand Promissory Note (the Note) in the amount of \$380 thousand to secure the intercompany amounts due to the Company from MeOH Power, Inc. upon the deconsolidation of MeOH Power, Inc. Interest accrues on the Note at the Prime Rate in effect on the first business day of the month, as published in the Wall Street Journal. At the Company's option, all or part of the principal and interest due on this Note may be converted to shares of common stock of MeOH Power, Inc. at a rate of \$0.07 per share. Interest began accruing on January 1, 2014. At December 31, 2013, the Company recorded a full allowance against the Note. In 2014, \$115 thousand was received from MeOH Power, Inc. in principle and interest and an additional \$20 thousand was released from the allowance in advance of a January 2015 payment from MeOH Power, Inc. As of December 31, 2016 and December 31, 2015, \$275 thousand and \$266 thousand, respectively, of principal and interest are available to convert into shares of common stock of MeOH Power, Inc. Any adjustments to the allowance are recorded as miscellaneous expense during the period incurred.

Legal Services

During the year ended December 31, 2016, the Company paid \$80 thousand to Couch White, LLP for legal services associated with contract review. A partner at Couch White, LLP is an immediate family member of one member of our Board of Directors.

14. Geographic and Segment Information

The Company sells its products on a worldwide basis with its principal markets listed in the table below where information on product revenue is summarized by geographic area for the Company as a whole for each of the years ended December 31:

(dollars in thousands)	2016	2015
Product revenue:		
United States	\$ 4,774	\$ 4,139
Association of South East Asian Nations (ASEAN)	1,368	1,421
Europe, the Middle East and Africa (EMEA)	659	650
North America	205	106
South America	50	14
 Total product revenue	 \$ 7,056	 \$ 6,330

Revenues are attributed to regions based on the location of customers. In 2016 and 2015, approximately 32.3% and 34.6%, respectively, of our product revenues was from customers outside of the United States.

Long-lived assets of \$160 thousand and \$115 thousand at December 31, 2016 and 2015, respectively consist of property, plant and equipment all located within the United States.

At MTI Instruments, the largest commercial customer in 2016 and 2015 was an Asian distributor of our general instrumentation products, who accounted for 8.1% and 6.8% of total product revenue in 2016 and 2015, respectively. The U.S. Air Force continues to be the largest government customer, accounting for 18.1% and 4.4% of total product revenue in 2016 and 2015, respectively.

The Company operates in one segment and therefore segment information is not presented.

15. Debt

During the first quarter of 2016, we entered into discussions with Bank of America, N.A. (the Bank) to strengthen the Company's then-existing lines of credit and re-align their terms to be more consistent with our current business plan. During such discussions, the Bank informed the Company that based on its results for 2015 it was not in compliance with certain financial covenants of the lines. Since an agreement on new covenants could not be reached, the Company decided that the lines of credit could not be utilized and therefore terminated them on March 24, 2016. There were no amounts outstanding under the credit facilities at the time of cancellation.

