

MECHANICAL TECHNOLOGY INC  
Form 10-K  
March 30, 2009

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

**FORM 10-K**

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2008  
OR  
 TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
FOR THE TRANSITION PERIOD FROM \_\_\_\_ TO \_\_\_\_

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**Mechanical Technology, Incorporated**  
(Exact name of registrant as specified in its charter)

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**New York**  
(State or Other Jurisdiction  
of Incorporation)

**0-6890**  
(Commission File Number)

**14-1462255**  
(IRS Employer  
Identification No.)

**431 New Karner Road, Albany, New York 12205**  
(Address of registrant's principal executive office)

**(518) 533-2200**  
(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class  
Common Stock  
(\$0.01 par value)

Name of each exchange on which registered  
The NASDAQ Stock Market LLC

Securities Registered Pursuant to Section 12(g) of the Act: None

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

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

## Edgar Filing: MECHANICAL TECHNOLOGY INC - Form 10-K

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

Indicate by check mark 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.

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 definition of "large accelerated filer", "accelerated filer", and "smaller reporting company" in Rule 12b-2 of the Exchange Act (check one):

Large Accelerated Filer  Accelerated Filer  Non-Accelerated Filer  Smaller reporting company

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates as of June 30, 2008 (based on the last sale price of \$1.25 per share for such stock reported by NASDAQ for that date) was \$5,846,862. Such value excludes common stock held by executive officers, directors, and 10% or greater stockholders as of June 30, 2008. The identification of 10% or greater stockholders as of June 30, 2008 is based upon Schedule 13G and amended Schedule 13G reports publicly filed before June 30, 2008. This calculation does not reflect a determination that such parties are affiliates for any other purposes.

As of March 23, 2009, the Registrant had 4,771,658 shares of common stock outstanding.

Documents incorporated by reference: Portions of the registrant's Proxy Statement for its 2009 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, the terms "we", "us" and "our" refer to Mechanical Technology, Incorporated, a New York corporation, "MTI Micro" refers to MTI MicroFuel Cells, Inc., a Delaware corporation and our majority owned subsidiary, and "MTI Instruments" refers to MTI Instruments, Inc., a New York corporation and our wholly owned subsidiary. We have a registered trademark in the United States for "Mobion". Other trademarks, trade names, and service marks used in this Annual Report are the property of their respective owners.*

We are developing and commercializing off-the-grid rechargeable power sources for portable electronics. We have developed a patented, proprietary direct methanol fuel cell technology platform called Mobion, which generates electrical power using up to 100% methanol as fuel. Our proprietary fuel cell power solution consists of two primary components integrated in an easily manufactured device: the direct methanol fuel cell power engine, which we refer to as our Mobion Chip, and methanol replacement cartridges. Our current Mobion Chip weighs less than one ounce and is small enough to fit in the palm of one's hand. The methanol used by the technology is fully biodegradable. We have demonstrated power density of over 62 mW/cm<sup>2</sup> while producing more than 1,800 Wh/kg of energy from the direct methanol fuel feed. For these reasons, we believe our technology offers a compelling alternative to current lithium-ion and similar rechargeable battery systems currently used by original equipment manufacturers and branded partners, or OEMs, in many handheld electronic devices, such as mobile phones (including smart phones) and mobile phone accessories, digital cameras, portable media players, personal digital assistants (PDAs), and global positioning systems (GPS) devices. We believe our platform will facilitate the development of numerous product advantages, including small size, environmental friendliness, and simplicity of

design, all critical for commercialization in the consumer market, and can be implemented as three different product options: a compact external charging device, a snap-on or attached power accessory, or an embedded fuel cell power solution. We have strategic arrangements with Samsung Electronics, an OEM of mobile phones and mobile phone accessories, with a global Japanese consumer electronics company, with a U.S. based developer and marketer of universal chargers and a letter of intent with Duracell, part of the Procter & Gamble Company. Our goal is to become a leading provider of portable power for handheld electronic devices and, assuming available financing, we intend to commercialize Mobion products in 2009.

Our Mobion technology eliminates the need for active water recirculation pumps or the inclusion of water as a fuel dilutant. The water required for the electrochemical process is transferred internally within the Mobion Chip from the site of water generation on the air-side of the cell. This internal flow of water takes place without the need for any pumps, complicated re-circulation loops or other micro-plumbing tools. Our Mobion technology is protected by a patent portfolio that includes 110 U.S. patent applications covering five key technologies and manufacturing areas.

We also design, manufacture, and sell high-performance test and measurement instruments and systems serving several global markets. These products consist of: electronic, computerized gauging instruments for position, displacement and vibration applications for the design, manufacturing and test markets; wafer characterization tools for the semiconductor and solar markets; and engine balancing and vibration analysis systems for military and commercial aircraft.

## **The Portable Power Source Industry**

### *Industry Background*

Consumers demand portable electronics that offer an enhanced experience through expanded memory, improved display technologies, constant connectivity, robust software, and a reduced form factor. In addition, technological advances in semiconductor manufacturing, LED displays, memory costs and availability, wireless technologies, and software applications have resulted in a dramatic increase in the number of portable electronic devices, their usage, and power requirements. As a result of these consumer demands and technological advances, there are a number of handheld electronic devices, such as mobile phones (including smart phones) and mobile phone accessories, digital cameras, portable media players, PDAs, and GPS devices, that have been introduced into the market. Many of these devices provide consumers and mobile professionals with the ability to communicate any time, anywhere and have effectively enabled the creation of an "always-on" environment independent of the end user's location. This trend towards increased functionality in portable electronic devices has led to a "power gap" in which the disparity between a device's power supply, typically a rechargeable lithium-ion battery, and its power need are not being met. This power gap leads to a need for the end user to plug-in their devices to the electrical grid on a regular basis, which limits their ability to use these electronic devices where and when the need arises.

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### *The Power Source Bottleneck*

Improvements in rechargeable battery technology have not kept pace with the evolution of consumer electronic device performance. Over the last ten years, device performance as measured by silicon processor speed has increased by a factor of 128 times, while the energy density of lithium-ion technology has only doubled. We believe that further gains in lithium-ion technology for portable electronics will be incremental at best, as any achievable benefits may be outweighed by the decreasing stability, availability, integrity, and relative safety of these higher energy output batteries. In addition to their performance shortfalls, lithium-ion battery technology poses an environmental risk as the various heavy metals incorporated in these batteries require special disposal to prevent contamination of waste disposal sites.

According to a report dated February 2008 by Frost and Sullivan, an independent research firm, the global rechargeable lithium-ion battery market was approximately 1.8 billion units in 2006 and is projected to increase to roughly 3.9 billion units by 2013. This market can be divided into two segments: consumer and industrial applications. Consumer applications represented approximately 77% of this market and are projected to represent an overwhelming majority of sales through at least 2013.

OEMs are actively seeking improved power sources to replace existing rechargeable lithium-ion batteries and to power additional improvements to their mobile electronic devices. The development of new products using

technologies that already exist, such as radio frequency technologies and 4G wireless capabilities, but cannot be effectively commercialized on mobile devices will result from the availability of portable, compact, economical, rechargeable/replaceable higher energy density power sources, including micro fuel cells.

### *Our Solution*

At the core of our solution is our proprietary Mobion Chip engine, a design architecture that embodies a reduction in the size, complexity, and cost of fuel cell construction, which results in a reliable, manufacturable, and affordable power solution that we believe provides improved energy density and portability over competing rechargeable battery technologies. Our proprietary fuel cell power solution consists of two primary components integrated in an easily manufactured device: the direct methanol fuel cell power engine, which we refer to as our Mobion Chip, and methanol replacement cartridges. Our Mobion Chip weighs less than one ounce and is small enough to fit in the palm of one's hand. For these reasons, we believe that our Mobion platform is ideally suited to provide a replacement for rechargeable lithium-ion batteries. Based upon our ability to provide a compact, efficient, clean, safe, and long-lasting power source for lower power applications, we intend to initially target power solutions for applications, such as mobile phones (including smart phones) and mobile phone accessories, digital cameras, portable media players, PDAs, and GPS devices.

For handheld consumer electronic applications, we have demonstrated power density of over 62 mW/cm<sup>2</sup> with energy efficiencies of 1.4 Wh/cc of fuel, which is a direct result of our Mobion platform's ability to use 100% methanol — a widely available, environmentally friendly, inexpensive, and biodegradable fuel. These advantages result in higher energy density and reduced size, cost, and complexity of our power solution offering consumers portable on-demand power, independence from power outlets, and freedom from the need to constantly recharge their devices.

### **Our Strategy**

Our goal is to become a leading provider of portable power for handheld electronic devices. Key elements of our strategy designed to achieve this objective include the following:

*Business Focus.* We are focusing our efforts on the development and commercialization of our portable power source products and test and measurement instrumentation business. We continue to seek external or debt investments to finance our portable power business. We will also continue to evaluate our test and measurement instrumentation business, and may explore other strategic alternatives for both of our portable power and test and measurement instrument businesses, including but not limited to, the sale of assets and/or either company.

*Design for Mass Manufacturing.* Our portable power source products will be manufactured using standard processes, such as injection molding and automated test and assembly, which are broadly employed throughout the electronics manufacturing industry. In preparing Mobion for commercialization, our current Mobion Chip is injection molded and is being designed for mass manufacturing. In addition, we have continued integrating more functionality into our Mobion Chip while reducing its part count to one piece. Our current Mobion Chip is small enough to fit in the palm of a hand.

*Outsource Manufacturing.* We plan to outsource manufacturing to expand rapidly and diversify our production capacity. This strategy will allow us to maintain a variable cost model in which we do not incur most of our manufacturing costs until our proprietary fuel cell power solution has been shipped and billed to our customers. We intend to concentrate on our core competencies of research and development and product design. This approach should reduce our fixed capital expenditures and allow us to efficiently scale production.

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*Utilize our Technology to Provide Compelling Products.* We plan to utilize our intellectual property portfolio and technological expertise to develop and offer portable power source products across multiple electronic device markets. We intend to employ our technological expertise to reduce the overall size and weight of our portable power source products while increasing their ease of manufacturing, power capacity, and power duration and decreasing their cost. We believe that these efforts will enable us to meet customer expectations and to achieve our goal of supplying on a timely and cost-effective basis the most environmentally friendly portable power source products to our target markets. We believe our products will offer advantages in terms of performance, functionality, size, weight, and ease of use. We plan to continue enhancing our customers' industrial design alternatives and device functionality through innovative product development based on our existing capabilities

and technological advances.

*Capitalize on Growth Markets.* We intend to capitalize on the growth of the electronic device markets, including new products that may be brought about by the convergence of computing, communications, and entertainment devices. We believe our portable power source products will address the growing need for portability, connectivity, and functionality in the evolving electronic device markets. We plan to offer these power solutions to OEM customers to enable them to offer products that have advantages in terms of size, weight, power duration, and environmental friendliness. We plan to utilize our existing technologies, as well as aggressively pursue new technologies and evolving markets that demand enhanced power solutions.

*Develop Strong Customer Relationships.* We plan to develop strong and long-lasting customer relationships with leading electronic device OEMs and to provide them with power solutions for their products. We believe that our portable power source products will enable our OEM customers to deliver a more positive user experience and to differentiate their products from those of their competitors. We will attempt to enhance the competitive position of our customers by providing them with innovative, distinctive, and high-quality portable power supply products on a timely and cost-effective basis. We will work continually to improve our portable power source products, to reduce costs, and to speed the delivery of our products. We will endeavor to streamline our designs and delivery processes through ongoing design, engineering, and production improvement efforts. We will also devote considerable effort to support our customers after the purchase of our portable power source products.

*Pursue Strategic Relationships.* We intend to develop and expand strategic relationships to enhance our ability to offer value-added customer solutions, penetrate new markets, and strengthen the technological leadership of our portable power source products.

## **Products**

### *Portable Power Source Products*

We are developing three product categories of our Mobion technology: (i) external power charger products, (ii) snap-on or attached power source products, and (iii) embedded power source products. In addition, we are working with our strategic partners and suppliers to develop removable methanol cartridges that will be used to fuel our portable power source products.

*External Power Charger:* Our design for an external power charger is a standalone device that uses a standard and widely used universal serial bus, or USB, interface as a power output connector that can be used to recharge handheld mobile devices. Our current design for the device is roughly the size of two decks of playing cards (see photo below) and employs a 100% methanol fuel cartridge, which occupies the same volume as a pack of chewing gum. For each removable cartridge, our current prototype external power charger provides up to one month of power for the typical mobile phone. It can also be designed to enable a professional photographer to take over 5,000 pictures using a high end digital camera from a single cartridge. Our device is designed to provide 2.5 watts of power from its USB interface and also offer fast charge, ultra-long run time and self-charging modes.

### **Mobion external power charger with removable cartridge prototype**

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*Snap-on or Attached Power Source Products:* Similar to aftermarket battery attachments, our snap-on direct methanol fuel cell power solution is an attached power supply that is compatible with existing portable electronic devices and offers users extended run-time power. In this category, we envision a number of product applications, including attachments for digital cameras, portable media players, GPS devices, and other consumer and electronic products. Our initial design is a direct methanol fuel cell camera-grip (see photo below) that replaces comparable rechargeable lithium-ion battery-pack grips and is designed to provide twice as much energy as similar rechargeable lithium-ion battery-based products. Our Mobion direct methanol fuel cell camera grip allows photographers the benefits of extended usage plus the freedom to refill using a methanol cartridge rather than by plugging into a wall outlet.

**Sample Mobion attached power source camera-grip prototype**

*Embedded power source products:* Our goal is to produce direct methanol fuel cells that can be embedded into portable electronic devices in order to increase their run time and to provide fast charge capability by hot-swapping 100% methanol cartridges. We have developed an embedded fuel cell prototype for a GPS unit that we believe will generate three times as much usage time as GPS devices powered by conventional disposable AA batteries (see photo below.)

**Prototype of a GPS unit with an embedded Mobion power source**

We have also developed an embedded fuel cell concept model designed for a smart phone (see photo below) and believe that this concept model highlights the anticipated future product direction for our portable power source products in the consumer market.

**Concept model of a smart phone with an embedded Mobion power source**

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*Advantages of our Portable Power Source Products*

We believe that our portable power source products will offer the following advantages:

- *Off-the-grid power source.* Our products provide users of consumer electronic devices with extended mobility by providing power without having to attach to a wall outlet to recharge their devices.
- *Small size and low weight.* The dimensions of our products will enable our OEM customers to reduce the overall size and weight of their products.
- *Power density.* Our products will have power density of over 50 mW/cm<sup>2</sup> and high energy efficiencies of 1.4 Wh/cc of methanol.
- *Power duration.* Our products will offer longer run time than currently available portable charging systems.
- *Ease of manufacturing.* Our products will be manufactured using traditional injection molding techniques that will easily transfer to mass-manufacturing production lines.
- *Safety.* Our products will utilize methanol fuel, which does not require storage under pressure or at low temperatures.
- *Environmentally friendly.* Our products will utilize fully biodegradable methanol fuel.

*Codes and Standards*

In 2004, we became the world's first company to obtain micro fuel cell safety compliance certifications for a fuel cell product from Underwriter's Laboratory and CSA International. In addition, we received United Nations packaging certification and our methanol cartridges were deemed compliant by the U.S. Department of Transportation for worldwide cargo shipment. Certification is required for every commercial product prior to its shipment. Based upon our previous experiences with these regulatory agencies, we do not anticipate delays associated with seeking Underwriter's Laboratory and CSA International product certifications for our commercial products, which, assuming available financing, are anticipated to begin shipping in 2009.

Also, we helped to develop a proposal adopted by the United Nations to provide methanol fuel cartridges a separate classification and we worked with other micro fuel cell companies, and the appropriate regulatory bodies, to generate the first draft of the international standards for methanol safety and use related to transport

on commercial airplanes.

As a result of our industry coalition efforts, the International Civil Aviation Organization technical instructions and the International Air Transport Association Dangerous Goods Regulations now permit airline passengers and crew to carry on and use certain fuel cell power systems and fuel cell cartridges containing methanol. On April 30, 2008, the U.S. Department of Transportation issued a final ruling adopting the International Civil Aviation Organization, or ICAO, regulations permitting commercial aircraft passengers and crew to bring in their carry-on baggage methanol fuel cell cartridges and fuel cell systems designed for portable electronic devices. The effective date of this ruling is February 13, 2009.

#### *Test and Measurement Instrumentation Products*

We are a global supplier of computerized gauging instruments, metrology systems for semiconductor wafers, and jet engine balancing systems.

*General Dimensional Gauging:* Our gauging instruments employ fiber optic, laser, and capacitance technologies to make precision measurements in product design, production, and quality related processes. Our gauging instruments include capacitance gauging systems offering ultra-high precision measurement, a fiber-optic based vibration sensor system with extremely high frequency response, a high-speed laser sensor system utilizing the latest complementary metal-oxide semiconductor/charge-coupled device technology, and a stand-alone data acquisition system that incorporates multiple sensor technologies. These products are targeted towards the data storage, semiconductor, and automotive industries.

*Semiconductor:* Our family of wafer metrology systems range from manually operated units to fully automated systems, which test key wafer characteristics critical to producing high-quality chips used in the semiconductor industry. These units are used as quality control tools delivering highly precise measurements for thickness variations, bow, warp, resistivity, and flatness. These systems can be used on substrates varying widely in size and materials. Our wafer metrology systems include an automated wafer characterization system, a semi-automated, full wafer surface scanning system, and a device that provides for manual, non-contact measurements.

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*Jet Engine Balancing Systems:* Our portable and test cell balance systems automatically collect and record aircraft engine vibration data, identify vibration or balance issues in an engine, and calculate a solution to the problem. These units are used by major aircraft engine manufacturers, the U.S. Air Force, other military and commercial airlines and gas turbine manufacturers.

#### **Technology**

A fuel cell is an electrochemical energy conversion device, which is similar to a battery, that produces electricity from a liquid or gaseous fuel, such as methanol, and an oxidant, such as oxygen. Fuel cells are different from batteries in that they consume a reactant, which must be replenished, while batteries store electrical energy chemically in a closed system. Generally, the reactants flow in and reaction products flow out of the fuel cell. While the electrodes within a battery react and change as a battery is charged or discharged, a fuel cell's electrodes are catalytic and relatively stable.

The direct methanol fuel cell relies upon the reaction of water with methanol at the catalytic anode layer to release protons and electrons, and form carbon dioxide. The electrons pass through a circuit and generate electricity that can be used to power external devices. The protons generated through this reaction pass through the proton exchange membrane to the cathode, where they combine to form water. The anode and cathode layers of a direct methanol fuel cell are usually made of platinum particles and platinum ruthenium particles embedded on either side of a proton exchange membrane.

Methanol fuel cells need water at the anode and therefore pure methanol cannot be used without the provision of water via either active transport, such as the pumping of water generated at the cathode back to the anode layer (see Chart A), or a passive recirculation mechanism that incorporates pressurized internal ducts or piping. Without either an active or a passive recirculation mechanism, a direct methanol fuel cell would require the inclusion of water as a dilutant in the methanol fuel, which limits the energy content of the diluted fuel (see Chart

B).

**Direct Methanol Fuel Cell with Active Water Transport (Chart A)**

**Methanol Fuel Cell With Water As A Fuel Dilutant (Chart B)**

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Our Mobion technology eliminates the need for active water recirculation pumps or the inclusion of water as a fuel dilutant. The water required for reaction at the anode is transferred internally within the Mobion Chip from the site of water generation on the air-side of the cell through a proprietary, passive design that eliminates the need for water movement by external pumps, complicated re-circulation loops or other micro-plumbing tools (see Chart C).

**Our Mobion Technology with 100% Methanol and Passive Water Recirculation (Chart C)**

Our Mobion solution contains a passive water recirculation sub-system that allows for the consumption of 100% methanol, results in a reduced parts count design and offers the advantage of higher energy density than competing fuel cell technologies for portable electronic devices.

**Strategic Agreements**

On September 10, 2008, MTI Micro and Duracell, part of The Gillette Company, which is part of the Procter & Gamble Company (□Duracell□) entered into a letter of intent whereby both parties agree to explore a new relationship to collaborate on the market development and commercialization of Mobion based fuel cell systems and methanol fuel cartridges for the consumer market.

On October 31, 2008, we signed an agreement with a U.S. based developer and marketer of universal chargers to evaluate the feasibility, development and production of our Mobion products. This agreement, which took effect on August 29, 2008, will enable us and this developer to collaborate in evaluating and adopting our Mobion technology for use with a number of their products.

On July 9, 2008, we entered into an agreement with NeoSolar Corporation, or NeoSolar, a Korean manufacturer of portable digital devices and energy products, to develop Mobion fuel cell technology for use in future models of NeoSolar portable digital devices, including ultra mobile portable computers. We intend to work together to develop, test, and evaluate Mobion prototypes for their integration with a number of NeoSolar products, which could lead to the use of external Mobion power sources, like chargers and snap-on attachments, and embedded Mobion power sources for integration into various digital products.

On April 28, 2008, we entered into a development agreement with a global Japanese consumer electronics company to evaluate the feasibility, development, and production of our Mobion products. This agreement will enable us and this developer to collaborate in evaluating and adopting our Mobion technology for use in various precision imaging applications, including digital cameras. On May 12, 2008, we announced that we delivered a Mobion prototype to this company for their evaluation.

On December 13, 2007, we entered into an agreement with Trident Systems, Inc. to pursue opportunities to leverage our consumer market platform into low-power military markets. Teaming opportunities include demonstrations of unattended ground sensor prototypes powered by Mobion and evaluations and potential submissions of proposals for military programs.

On May 16, 2006, we entered into an alliance with Samsung Electronics Co., Ltd., or Samsung, to develop next-generation fuel cell prototypes for Samsung's mobile phone business. We developed, and together with Samsung we jointly tested and evaluated, our Mobion technology for several Samsung mobile phone applications. We are continuing to work with Samsung on a non-exclusive collaboration under which we continue to refine our Mobion baseline product design.



On August 1, 2004, we entered into a \$6.1 million cost-shared development contract with the U.S. Department of Energy, or the DOE, for the development of manufacturing techniques and the optimization of our Mobion product solutions. Through December 2008, the DOE has authorized \$6.1 million of spending on a cost-shared basis. This contract expires on March 31, 2009.

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## **Manufacturing**

We plan to outsource manufacturing of our portable power source products through third-party relationship contract manufacturers. We believe this strategy will provide us with a business model that allows us to concentrate on our core competencies of research and development and technological know-how and reduce our capital expenditures. In addition, this strategy will significantly reduce our working capital requirements for inventory because we will not incur most of our manufacturing costs until we have actually shipped our portable power source products to our customers and billed those customers for those products. To date, we have established an internal developmental pilot production line to test our design and engineering capabilities and a representative office in Shanghai to facilitate our efforts to develop relationships with manufacturers and low cost component suppliers in China. Although we have developed an internal developmental pilot production line, we intend to rely upon third parties to forecast production requirements and have established the basic design, function, and performance of our in-house engineering capabilities to foster the successful commercialization of our products.

The commercialization of our Mobion power solution will depend upon our ability to reduce the costs of our portable power source products, as they are currently more expensive than existing rechargeable battery technologies. In addition, we continue to work on enhancing our Mobion power source design, including our injection molded Mobion Chip, to ensure its manufacturability (including engineering, verification and product testing), design for assembly, design for testability, and design for serviceability, all of which are critical to successful high-volume production.

We assemble and test our test and instrumentation measurement products at our facilities located in Albany, New York. We believe that our existing assembly and test capacity is sufficient to meet our current needs and short-term future requirements. We believe that most of the raw materials used in our test and measurement products are readily available from a variety of vendors.

## **Sales and Marketing**

We plan to sell our portable power source products for incorporation into the products of our OEM customers or to be sold as accessories through them. We plan to generate sales to OEM customers through direct sales employees as well as outside sales representatives and distributors. We have established sales representatives in South Korea and Japan.

We build awareness in our target markets through a series of targeted campaigns, which include our website, e-mails, conferences, tradeshow, and other standard marketing efforts. In addition, we provide progress reports on our Mobion developments through a wide array of publications, active public relations, updates with industry analysts and the investment community, and speaking engagements.

We market our test and measurement instrumentation products through a combination of direct sales personnel and domestic and international distributors.

## **Customers**

We expect that our customers for our portable power source products will include a number of the world's leading electronic device OEMs.

Revenue from our test and measurement instrumentation products to Koyo, our Japanese distributor, and the U.S. Air Force accounted for 13.9% and 15.6%, respectively, of product revenue in 2008. In 2007, sales to Koyo and the U.S. Air Force accounted for 26.4% and 27.8%, respectively, of product revenue. In 2006, sales to Koyo and the U.S. Air Force accounted for 22.9% and 23.1%, respectively, of product revenue. No other single customer accounted for greater than 10% of product revenue in 2006, 2007 or 2008.

## **Competition**

We expect that the primary competitive factor in our portable power source business will be market acceptance of our portable power source products as an alternative power source to conventional lithium-ion and other rechargeable batteries. Market acceptance of our portable power source products will depend on a wide variety of factors, including the compatibility of direct methanol fuel cell power sources with portable electronic devices and the market's assessment of the advantages offered by our products in terms of size, weight, power density and duration, safety, reliability, and environmental friendliness when measured against price disadvantages. We anticipate direct competition from large Asian-based companies and some of our potential OEM customers.

Competition in the sale of our measurement and instrumentation products is based on product quality, performance, price, and timely delivery. Our competitors for test and measurement instrumentation products include National Instruments, KLA-Tencor, Capacitec, Sigma Tech, Corning Tropel, Chadwick-Helmuth, ACES Systems, Micro-Epsilon, and Keyence.

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## **Product Development**

Over the past three years, we have developed and built a number of engineering prototypes used to validate our technology and to generate discussions with potential customers about the inclusion of our technology in new products. During the same period, we have created four generations of external power charger prototypes, each of which has shown a dramatic size reduction over the previous generation. Our latest external power charger prototype achieved a 60% reduction in volume over our first generation prototype and it has incorporated a removable methanol cartridge.

We have improved the capabilities of our Mobion Chip technology during the last three years, which we expect will continue to evolve as we integrate greater functionality into our designs. This continuous iterative integration process is intended to reduce the size, simplify the design and construction, and reduce assembly complexity of our technology. We continue to improve the product design of the Mobion Chip and believe that future product generations will deliver performance improvements in terms of energy density, size, weight, and power duration and should be able to power wireless electronic devices for longer periods of time than rechargeable lithium-ion batteries.

## **Intellectual Property and Proprietary Rights**

We rely on a combination of patent (both national and international), trade secret, trademark, and copyright protection to protect our intellectual property. Our strategy is to apply for patent protection for all significant design requirements. Additionally, we systematically analyze the existing intellectual property landscape for direct methanol fuel cells to determine where the greatest opportunities for developing intellectual property exist. We also enter into standard confidentiality agreements with our employees, consultants, vendors, partners and potential customers and seek to control access to and distribution of our proprietary information.

As of March 23, 2009 we had filed over 110 U.S. patent applications, 51 of which have been awarded. Of the awarded patents, 42 are assigned to us and 9 are assigned to Duracell as part of our strategic alliance agreement with them. We have filed 30 Patent Cooperation Treaty Applications and have filed for National Phase Patent Protection for 25 pieces of intellectual property in multiple countries, including Japan, the European Union, and South Korea. We have developed a portfolio of patent applications in areas including fuel cell systems, components, controls, manufacturing processes, and system packaging.

## **Research and Development**

Our research and development team is responsible for advanced research, product planning, design and development, and quality assurance. Through our supply chain, we are also working with subcontractors in developing specific components of our technologies.

The primary objective of our research and development program is to advance the development of our direct methanol fuel cell technology to enhance the commercial value of our products and technology, as well as to develop next generation fuel cell products.

We have incurred research and development costs of approximately \$12.9 million, \$11.8 million and \$8.3 million for the years ended December 31, 2006, 2007, and 2008, respectively. We expect to continue to invest in research and development in the future.

## Employees

As of March 23, 2009 we had 57 employees. Of these employees, 25 were involved in our portable power source business (including 14 scientists and engineers, of whom 10 have advanced degrees) and 30 were involved in our test and measurement instrumentation business. Two of our employees are involved in corporate functions.

## Properties

We presently lease two premises in the United States, one located at 325 Washington Avenue Extension, Albany, New York and the other at 431 New Karner Road, Albany, New York. Both leases expire at the end of 2009. We are currently in negotiations with our landlords to renew and potentially restructure our lease agreements. The 325 Washington Avenue Extension premise consists of approximately 20,700 useable square feet of space, and the 431 New Karner Road consists of approximately 23,500 useable square feet of space. Together, the premises are adequate for our current and foreseeable needs. We also lease a representative office in Shanghai, China. The lease expires in 2009 and the premise consists of approximately 160 useable square feet of space.

## Legal Proceedings

We are not currently involved in any legal proceeding that we believe would have a material adverse effect on our business or financial condition.

## Availability of Information

We make available through our website (<http://www.mechtech.com>), free of charge, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after such reports are electronically filed with, or furnished to, the SEC. These reports may be accessed through our website's Investor Relations page.

The public may read and copy any materials we file with the SEC at the SEC Public Reference Room at 100 F Street, NE, Room 1580, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. We file electronically with the SEC and the SEC maintains an Internet site (<http://www.sec.gov>) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

## Item 1A: Risk Factors

### Factors Affecting Future Results

This Annual Report on Form 10-K and the documents we have filed with the SEC that are incorporated by reference into this Annual Report on Form 10-K contain forward-looking statements that involve risks and uncertainties. Any statements contained, or incorporated by reference, in this 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," "may," "will" words or phrases, we are identifying forward-looking statements. Forward-looking statements involve risks, uncertainties, estimates and assumptions which may cause our actual results, performance or achievements to be materially different from those expressed or implied by forward-looking statements. These factors include, among others:

- our need to raise additional financing;
- our history of recurring net losses and the risk of continued net losses;
- our independent auditors have included a going concern paragraph in their opinion;
- sales revenue growth of our test and measurement instrumentation business may not be achieved;
- the dependence of our test and measurement instrumentation business on a small number of customers and potential loss of government funding;
- our ownership position in MTI Micro may be reduced as a result of our plans to seek external financing for MTI Micro's operations;
- risks related to developing Mobion direct methanol fuel cells and whether we will ever successfully develop reliable and commercially viable Mobion fuel cell solutions;
- the risk that certain European Union regulations will not be changed to permit methanol to be carried onto airplanes;
- our portable power source products or our customers' products that utilize our portable power source products may not be accepted by the market;
- our inability to build and maintain relationships with our customers;
- our limited experience in manufacturing fuel cell systems on a commercial basis;
- our dependence on others for our production requirements for our portable power source products;
- our dependence on our manufacturing subcontractors to provide high levels of productivity and satisfactory delivery schedules for our portable power source products;
- our dependence on third-party suppliers for most of the manufacturing equipment necessary to produce our portable power source products;
- our inability to obtain sufficient quantities of components and other materials, including platinum and ruthenium, necessary for the production of our portable power source products;
- our dependence on OEMs integrating Mobion fuel cell systems into their devices;
- 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;
- risks related to protection and infringement of intellectual property;
- our new technologies may not result in customer or market acceptance;
- our ability to commercialize our proposed portable power source solutions and develop new product solutions on a timely basis;
- our ability to develop and utilize new technologies that address the needs of our customers;

- intense competition in the direct methanol fuel cell and instrumentation businesses;

- changes in policies by U.S. or foreign governments that hinder, disrupt, or economically disadvantage international trade;
- the impact of future exchange rate fluctuations;
- the uncertainty of the U.S. economy;
- the historical volatility of our stock price;
- the cyclical nature of the electronics industry;
- 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;
- product liability or defects;
- risks related to the flammable nature of methanol as a fuel source;
- the loss of services of one or more of our key employees or the inability to hire, train, and retain key personnel;
- significant periodic and seasonal quarterly fluctuations in our results of operations;
- risks related to the limitation of the use of our net operating losses in the event of certain ownership changes; and
- other factors discussed under the headings "Risk Factors" 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**

*Set forth below are certain risks and uncertainties that could adversely affect our results of operations or financial condition and cause our actual results to differ materially from those expressed in our forward-looking statements. Also refer to Factors Affecting Future Results.*

***We have incurred recurring net losses and anticipate continued net losses as we execute our commercialization plan for our portable power source business. If we do not raise financing in the next few months, we will be required to dramatically downsize, discontinue, or sell our portable power source business and/or our test and measurement instrumentation business.***

We have incurred recurring net losses, including net losses of \$13.7 million in 2006, \$9.6 million in 2007 and \$12.5 million in 2008, which includes a net gain of \$0.7 million on derivatives and a gain of \$1.0 million on sales of Plug Power stock in 2008. As a result of ongoing operating losses, we had an accumulated deficit of approximately \$117.6 million as of December 31, 2008. If external resources permit, we expect to continue to incur significant expenditures to develop and commercialize our proposed portable power source products, which may entail developing our manufacturing, sales, and distribution networks; implementing internal systems and infrastructure; and hiring additional personnel. Failure to secure sufficient external funding for our portable power source business may cause us to dramatically downsize, discontinue, or sell our portable power source business.

At present, the Company does not expect to fund MTI Micro's development and commercialization of its portable power source products. Based on MTI Micro's projected cash requirements for 2009 and their current cash and cash equivalents, we believe MTI Micro will have adequate resources to fund operations into the month of April 2009. MTI Micro will be required to raise additional funds through issuance of its equity or debt, government funding and/or explore other strategic alternative, including the sale of assets and/or the company. If MTI Micro

is unable to raise additional financing, it may be required to discontinue its business operations. Based upon projected cash requirements and current cash and cash equivalents for MTI Instruments, along with cash necessary to operate the public parent company, we believe that we will have adequate resources to fund MTI Instruments and the public parent company at least through December 2009.

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***Our independent auditors have included a going concern paragraph in their opinion.***

Our auditors have included an explanatory paragraph in their opinion that accompanies our audited consolidated financial statements as of December 31, 2008, indicating that our recurring losses from operations, net capital deficiency, and current liquidity position raise substantial doubt about our ability to continue as a going concern. The accompanying consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

***Continuing uncertainty of the U.S. economy may have serious implications for the growth and stability of our business and may negatively affect our stock price.***

The revenue growth and profitability of our business will depend significantly on the overall demand for test and measurement instrumentations as well as electronic devices. Softening demand in these markets caused by ongoing economic uncertainty may result in decreased revenue or earnings levels. The U.S. 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.

***We currently derive all of our product revenue from our test and measurement instrumentation business, but our principal focus is the development and commercialization of our portable power source business.***

We currently derive all of our product revenue from our test and measurement instrumentation business, but our principal focus is the development and commercialization of our portable power source business. Our test and measurement instrumentation business is subject to a number of risks, including the following:

- a continued slow down or cancellation of sales to the military as a result of a potential redeployment of governmental funding;
- a failure to expand or maintain the 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 intensive competition, uncertainty of new technology development, and developmental timelines.

In addition, our test and measurement instrumentation products can be sold in quantity to a relatively few number of customers, resulting in a customer concentration risk. This business experienced a significant decline in sales in 2008 and sales are currently expected to be comparable in 2009. The further 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 business.

If we are required to discontinue our portable power source business due to lack of funding, all of our corporate overhead costs would be allocated to the test and measurement instrumentation business.

***We have not generated any product revenue from our portable power source business and currently have no portable power source commercial products.***

We have not generated any product revenue from our portable power source business and currently have no portable power source commercial products. The successful development and commercialization of our portable power source products will depend on a number of factors, including the following:

- continuing our research and development efforts;
- finalizing the design of our portable power source products;
- securing OEM customers to incorporate our portable power source products into products sold by them;
- arranging for adequate manufacturing capabilities; and
- completing, refining, and managing our supply chain and distribution channels.

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Additionally, our technology is new and complex, and there may be technical barriers to the development of our portable power source products. The development of our portable power source products may not succeed or may be significantly delayed. Our portable power source products will be produced through manufacturing arrangements that have not been finalized or tested on a commercial scale. If we fail to successfully develop or experience significant delays in the development of our portable power source products, or if there are significant delays in commercialization, we are unlikely to recover those losses, thus making it impossible for us to become profitable through the sales of these products. This would materially and adversely affect our business and financial condition. If adequate funds are not available in the second quarter of 2009, we may have to delay development or commercialization of our portable power source products, license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize. Any of these factors could harm our business and financial condition.

Any revenue derived in the relatively near-term relating to our portable power source business likely will result from governmental contracts or other governmental funding. We can offer no assurance that we will be able to secure continued government funding. The loss of such contracts or the inability to obtain additional contracts could materially harm our business.

***We currently do not have sufficient funds to commercialize our portable power source products.***

We will need additional funding to commercialize our portable power source business. Based upon projected cash requirements for the portable power source business in 2009 and its cash and cash equivalents of \$0.7 million at December 31, 2008, plus a \$0.5 million bridge loan in February 2009, we believe this business will have adequate resources to fund operations into the month of April 2009. If we are unable to secure the necessary additional funding, we will need to delay further commercialization plans. In order to conserve cash and extend operations while we pursue any additional necessary financing, we would be required to reduce operating expenses. There is no assurance that funds raised in any such a financing will be sufficient, that the financing will be available on terms favorable to us or to existing stockholders and at such times as required, or that we will be able to obtain the additional financing required for the continued operation and growth of our business. During the last twelve months, we have raised \$2.2 million in external debt financing. If we raise additional funds by issuing equity securities, our stockholders will experience dilution. Additional debt financing, if available, may involve restrictive covenants. Any debt financing or additional equity financing may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to liquidate some or all of our assets or delay, reduce the scope of or eliminate some or all of our research and development programs, or discontinue our portable power source business.

***Our ownership position in MTI Micro may be reduced as a result of our plans to seek external financing for MTI Micro's operations, which could limit our ability to control the operations.***

We currently own approximately 97% of the outstanding equity in MTI Micro and have control over the operations of this subsidiary. In February 2009 and September 2008, MTI Micro issued \$0.5 million and \$1.5 million, respectively of secured notes to outside investors, which notes are convertible into shares of MTI Micro. If the notes are converted, our ownership could decrease significantly. In addition, we do not currently expect to advance additional resources to MTI Micro to fund its continued direct methanol fuel cell development and commercialization programs. Instead, MTI Micro will seek additional capital from external sources to fund future development and operations. Depending on the valuation of MTI Micro at the time of future financings, if any, our ownership position could be substantially diluted, and we may no longer have sufficient equity to control the

operations of MTI Micro. If MTI Micro is unable to secure the necessary additional external financing, we may be forced to substantially downsize or eliminate its operations.

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***Our portable power source products may not be accepted by the market.***

Any portable power source products that we develop may not achieve market acceptance. The development of a successful market for our proposed portable power source products and our ability to sell those products at favorable prices may be adversely affected by a number of factors, many of which are beyond our control, including the following:

- our failure to produce portable power source products that compete favorably against other products on the basis of price, quality, performance, and life;
- competition from conventional lithium-ion or other rechargeable battery systems;
- the ability of our technologies and product solutions to address the needs of the electronic device markets, the requirements of OEMs, and the preferences of end users;
- our ability to provide OEMs with portable power source products that provide advantages in terms of size, weight, peak power, power duration, reliability, durability, performance, and value-added features compared to alternative solutions; and
- our failure to develop and maintain successful relationships with OEMs, manufacturers, distributors, and others as well as strategic partners.

Target markets for our proposed portable power source products, such as those for mobile phones (including smart phones) and mobile phone accessories, digital cameras, portable media players, PDAs, and GPS devices, are volatile, cyclical, and rapidly changing and could continue to utilize existing technology or adopt other new competing technologies. The market for certain of these products depends in part upon the development and deployment of wireless and other technologies, which may or may not address the needs of users of these new products.

Many manufacturers of portable electronic devices have well-established relationships with competitive suppliers. Penetrating these markets will require us to offer better performance alternatives to existing solutions at competitive costs. The failure of any of our target markets to continue to expand, or our failure to penetrate these markets to a significant extent, will impede our sales growth. We cannot predict the growth rate of these markets or the market share we will achieve in these markets in the future.

If our proposed portable power source products fail to gain market acceptance, it could materially and adversely affect our business and financial condition.

***Market acceptance of our customers' products that utilize our portable power source products may decline or may not develop and, as a result, our sales will be harmed.***

We currently do not anticipate selling our portable power source products directly to end users. Instead, we plan to produce portable power source products that our OEM customers incorporate into their products. As a result, the success of our proposed portable power source products will depend upon the widespread market acceptance of the products of our OEM customers. We will not control or influence the manufacture, promotion, distribution, or pricing of the products that incorporate our portable power source products. Instead, we will depend on our OEM customers to manufacture and distribute products incorporating our portable power source products and to generate consumer demand through their marketing and promotional activities. Even if our technologies and products successfully meet our customers' price and performance goals, our sales would be harmed if our OEM customers do not achieve commercial success in selling their products to consumers that incorporate our portable power source products.

Any lack of adoption in the use of our portable power source products by OEM customers in the electronic device markets, the reduced demand for our OEM customers' products, or a slowdown in their markets would adversely



affect our sales.

***If we fail to build and maintain relationships with our customers and do not satisfy our customers, we may lose future sales and our revenue may stagnate or decline.***

Because our success depends on the widespread market acceptance of our customers' products, we must develop and maintain our relationships with leading global OEMs of electronic devices, such as mobile phones (including smart phones) and mobile phone accessories, digital cameras, portable media players, PDAs, and GPS devices. In addition, we must identify areas of significant growth potential in other markets, establish relationships with OEMs in those markets, and assist them in developing products that use our portable power source products and technologies. Our failure to identify potential growth opportunities, particularly in new markets, or establish and maintain relationships with OEMs in those markets, would prevent our business from growing in those markets.

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Our ability to meet the expectations of our customers will require us to provide portable power source products for customers on a timely and cost-effective basis and to maintain customer satisfaction with our product solutions. We must match our design and production capacity with customer demand, maintain satisfactory delivery schedules, and meet specific performance goals. If we are unable to achieve these goals for any reason, our customers could reduce their purchases from us and our sales would decline or fail to develop.

Our customer relationships also can be affected by factors affecting our customers that are unrelated to our performance. These factors can include a myriad of situations, including business reversals of customers, determinations by customers to change their product mix or abandon business segments, or mergers, consolidations, or acquisitions involving our customers.

***We have no experience manufacturing portable power source products on a commercial scale.***

To date, we have focused primarily on research, development, and pilot production, and we have no experience manufacturing any portable power source products on a commercial scale. Our pilot production efforts to date have been limited in scale. It is our intent to manufacture our portable power source products through OEM customers and third-party manufacturers. Failure to secure manufacturing capabilities could materially and adversely affect our business and financial condition.

***We will rely on others for our production, and any interruptions of these arrangements could disrupt our ability to fill our customers' orders.***

We plan to rely on others for all of our production requirements for our portable power source products. The majority of this manufacturing is anticipated to be conducted in Asia by manufacturing subcontractors that also perform services for numerous other companies. We do not expect to have a guaranteed level of production capacity with any of our manufacturing subcontractors. Qualifying new manufacturing subcontractors is time consuming and might result in unforeseen manufacturing and operating problems. The loss of any relationships with our manufacturing subcontractors or assemblers or their inability to conduct their manufacturing and assembly services for us as anticipated in terms of cost, quality, and timeliness could adversely affect our ability to fill customer orders in accordance with required delivery, quality, and performance requirements. If this were to occur, the resulting decline in revenue would harm our business.

***We will depend on third parties to maintain satisfactory manufacturing yields and delivery schedules, and their inability to do so could increase our costs, disrupt our supply chain, and result in our inability to deliver our portable power source products, which would adversely affect our results of operations.***

We will depend on our manufacturing subcontractors to maintain high levels of productivity and satisfactory delivery schedules for our portable power source products from manufacturing and assembly facilities likely located primarily in Asia. We plan to provide our manufacturing subcontractors with rolling forecasts of our production requirements. We do not, however, anticipate having long-term agreements with any of our manufacturing subcontractors that guarantee production capacity, prices, lead times, or delivery schedules. Our manufacturing subcontractors will serve other customers, many of which will have greater production requirements than we do. As a result, our manufacturing subcontractors could determine to prioritize production capacity for other customers or reduce or eliminate deliveries to us on short notice. We may experience lower

than anticipated manufacturing yields and lengthening of delivery schedules. Lower than expected manufacturing yields could increase our costs or disrupt our supply chain. We may encounter lower manufacturing yields and longer delivery schedules while commencing volume production of any new products. Any of these problems could result in our inability to deliver our product solutions in a timely manner and adversely affect our operating results.

***We plan to rely on third-party suppliers for most of our manufacturing equipment.***

We plan to rely on third-party suppliers for most of the manufacturing equipment necessary to produce our portable power source products. The failure of suppliers to supply manufacturing equipment in a timely manner or on commercially reasonable terms could delay our commercialization plans and otherwise disrupt our production schedules or increase our manufacturing costs. Further, our orders with certain of our suppliers may represent a very small portion of their total orders. As a result, they may not give priority to our business, leading to potential delays in or cancellation of our orders. If any single-source supplier were to fail to supply our needs on a timely basis or cease providing us with key components, we would be required to substitute suppliers. We may have difficulty identifying a substitute supplier in a timely manner and on commercially reasonable terms. If this were to occur, our business would be harmed.

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***Shortages of components and raw materials may delay or reduce our sales and increase our costs, thereby harming our results of operations.***

The inability to obtain sufficient quantities of components and other materials, including platinum and ruthenium, necessary for the production of our portable power source products could result in reduced or delayed sales or lost orders. Any delay in or loss of sales could adversely impact our operating results. Many of the materials used in the production of our portable power source products will be available only from a limited number of foreign suppliers, particularly component suppliers located in Asia. In most cases, neither we nor our manufacturing subcontractors will have long-term supply contracts with these suppliers. As a result, we will be subject to economic instability in these Asian countries as well as to increased costs, supply interruptions, and difficulties in obtaining materials. Our customers also may encounter difficulties or increased costs in obtaining the materials necessary to produce their products into which our product solutions are incorporated.

From time to time, materials and components necessary for our portable power source products or in other aspects of our customers' products may be subject to allocation because of shortages of these materials and components. Shortages in the future could cause delayed shipments, customer dissatisfaction, and lower revenue.

***We will be subject to lengthy development periods and product acceptance cycles, which can result in development and engineering costs without any future revenue.***

We plan to provide portable power source solutions that are incorporated by OEMs into the products they sell. OEMs will make the determination during their product development programs whether to incorporate our portable power source solutions or pursue other alternatives. This process may require us to make significant investments of time and resources in the design of portable customer-specific power source solutions well before our customers introduce their products incorporating our product solutions and before we can be sure that we will generate any significant sales to our customers or even recover our investment. During a customer's entire product development process, we will face the risk that our portable power source products will fail to meet our customer's technical, performance, or cost requirements or that our products will be replaced by competing products or alternative technological solutions. Even if we complete our design process in a manner satisfactory to our customer, the customer may decide to delay or terminate its product development efforts. The occurrence of any of these events could cause sales to not materialize, to be deferred, or to be cancelled, which would adversely affect our operating results.

***We will not have long-term purchase commitments from our customers, and their ability to cancel, reduce, or delay orders could reduce our revenue and increase our costs.***

Customers for our portable power source products will not provide us with firm, long-term volume purchase commitments, but instead will issue purchase orders to buy a specified number of units. As a result, customers may be able to cancel purchase orders or reduce or delay orders at any time. The cancellation, delay, or reduction of customer purchase orders could result in reduced revenue, excess inventory, and unabsorbed

overhead. We currently have no presence in the electronic device markets. Our success in the electronic device markets will require us to establish the value added proposition of our products to OEMs that have traditionally used other portable power solutions. All of the markets we plan to serve are subject to severe competitive pressures, rapid technological change and product obsolescence, which may increase our inventory and overhead risks, resulting in increased costs.

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

We will be 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. Customers may require rapid increases in production, which could strain our resources and reduce our margins.

***If we are unable to adequately protect our intellectual property, our competitors and other third parties could produce products based on our intellectual property, which would substantially impair our ability to compete.***

Our success and ability to compete depends in part upon our ability to maintain the proprietary nature of our technologies. We rely on a combination of patent, trade secret, copyright, and trademark law and license agreements, as well as nondisclosure agreements, to protect our intellectual property. These legal means, however, afford only limited protection and may not be adequate to protect our intellectual property rights. We cannot be certain that we were the first creator of inventions covered by pending patent applications or the first to file patent applications on these inventions. In addition, we cannot be sure that any of our pending patent applications will issue. The United States Patent and Trademark Office, or other foreign patent and trademark offices may deny or significantly narrow claims made under our patent applications and, even if issued, these patents may be successfully challenged, designed around, or may otherwise not provide us with any commercial protection.

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We may in the future need to assert claims of infringement against third parties to protect our intellectual property. Regardless of the final outcome, any litigation to enforce our intellectual property rights in patents, copyrights, or trademarks could be highly unpredictable and result in substantial costs and diversion of resources, which could have a material and adverse effect on our business and financial condition. In the event of an adverse judgment, a court could hold that some or all of our asserted intellectual property rights are not infringed, or are invalid or unenforceable, and could award attorneys' fees to the other party.

***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, which 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. Whether or not such claims are valid, we cannot be certain that we have not infringed the intellectual property rights of such 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. 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 portable power source products, or could enter orders mandating that we undertake certain

remedial activities. Further, a court could order us to pay compensatory damages for such infringement, plus prejudgment interest, and could in addition treble the compensatory damages and award attorneys' fees. These damages could materially and adversely affect our business and financial condition.

***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 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. The failure to obtain and maintain trade secret protection could adversely affect our competitive position.

***Our efforts to develop new technologies may not result in commercial success, 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 terminate 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 for 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.

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***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 portable power source products that compare favorably with alternative solutions on the basis of time to introduction, cost, performance, and end-user preferences. Our success in attracting customers and developing business will depend on various factors, including the following:

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

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

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

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 proposed portable power source 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 portable power source products;
- 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.

***New technology solutions that achieve significant market share could harm our business.***

New portable power source solutions could be developed. Existing electronic devices also could be modified to allow for a different power source solution. Our business could be harmed if our products become noncompetitive as a result of a technological breakthrough that allows a new power source solution to displace our solution and achieve significant market acceptance.

***Our inability to respond to changing technologies will harm our business.***

The electronics industry is 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 consumers, we may not be successful in capturing or retaining any significant market share. In addition, any new technologies utilized in our portable power source products may not perform as expected or as desired, in which event our adoption of such products or technologies may harm our business.

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***International sales and manufacturing risks could adversely affect our operating results.***

We anticipate that the manufacturing and assembly operations for our portable power source products will be conducted primarily in Asia by manufacturing subcontractors. We also believe that many of our OEM customers will be located and much of our sales and distribution operations will be conducted in Asia. These international operations will expose us to various economic, political, and other risks that could adversely affect our operations and operating results, including the following:

- difficulties and costs of staffing and managing a multi-national organization;
- unexpected changes in regulatory requirements;
- differing labor regulations;
- potentially adverse tax consequences;
- tariffs and duties and other trade barrier restrictions;
- possible employee turnover or labor unrest;

- 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.

The risks associated with international operations could negatively affect our operating results.

***Our business may suffer if international trade is hindered, disrupted, or economically disadvantaged.***

Political and economic conditions abroad may adversely affect the foreign production and sale of our portable power source products. Protectionist trade legislation in either the United States or foreign countries, such as a change in the current tariff structures, export or import compliance laws, or other trade policies, could adversely affect our ability to sell our portable power source products in foreign markets and to obtain materials or equipment from foreign suppliers.

Changes in policies by the U.S. or foreign governments resulting in, among other things, higher taxation, currency conversion limitations, restrictions on the transfer of funds, or the expropriation of private enterprises also could have a material adverse effect on us. Any actions by countries in which we conduct business to reverse policies that encourage foreign investment or foreign trade also could adversely affect our operating results. In addition, U.S. trade policies, such as "most favored nation" status and trade preferences for certain Asian nations, could affect the attractiveness of our products to our U.S. customers and adversely impact our operating results.

***Our operating results could be adversely affected by fluctuations in the value of the U.S. dollar against foreign currencies.***

We transact our business predominantly in U.S. dollars and bill and collect our sales in U.S. dollars. In 2008, approximately 44% of our revenue was from customers outside of the United States. 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 cause the demand for our products and 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 of future exchange rate fluctuations on our operating results.

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***We expect that a majority of our manufacturing subcontractors will be located in Asia, increasing the risk that a natural disaster, labor strike, war, or political unrest in those countries would disrupt our operations.***

We expect that a majority of our manufacturing subcontractors will be located in Asia. Events out of our control, such as earthquakes, fires, floods, or other natural disasters, or political unrest, war, labor strikes, or work stoppages in Asia could disrupt their operations, which would impact our business. In addition, there is political tension between Taiwan and China that could lead to hostilities. If any of these events occur, we may not be able to obtain alternative manufacturing capacity. Failure to secure alternative manufacturing capacity could cause a delay in the shipment of our products, which would cause our revenue to fluctuate or decline.

***The electronics industry is cyclical and may result in fluctuations in our operating results.***

The electronics industry has experienced significant economic downturns at various times. These downturns are characterized by diminished product demand, accelerated erosion of average selling prices, and production overcapacity. In addition, the electronics industry is cyclical in nature. We will seek to reduce our exposure to

industry downturns and cyclicalities 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.

***Our strategic alliances may not achieve their objectives, and their failure to do so could impede our growth.***

Our prospects depend to a significant extent on our strategic alliances with Samsung and Duracell. In addition, we plan to explore additional strategic alliances designed to enhance or complement our technology or to work in conjunction with our technology; to provide necessary know-how, components, or supplies; and to develop, introduce, and distribute products utilizing our technology. Any strategic alliances may not achieve their intended objectives, may be cancelled by either party, and parties to our strategic alliances may not perform as contemplated. The failure of our current alliances or our inability to form additional alliances may impede our ability to introduce new products and enter new markets.

***Product liability claims against us could result in adverse publicity and potentially significant monetary damages.***

As a seller of consumer products using a flammable material such as methanol, we will face an inherent risk of exposure to product liability claims in the event that injuries result from product usage by customers. It is possible that our products could result in injury, whether by product malfunctions, defects, improper installation, or other causes. If such injuries or claims of injuries were to occur, we could incur monetary damages and our business could be adversely affected by any resulting negative publicity. The successful assertion of product liability claims against us could result in potentially significant monetary damages and, if our insurance protection is inadequate to cover these claims, could require us to make significant payments from our own resources.

***We expect to face intense competition that could result in failing to gain market share and suffering reduced revenue from our portable power source products.***

We plan to serve intensely competitive markets that are characterized by price erosion, rapid technological change, and competition from major domestic and international companies. This intense competition could result in pricing pressures, lower sales, reduced margins, and lower market share. Most of our competitors have greater market recognition, larger customer bases, and substantially greater financial, technical, marketing, distribution, and other resources than we possess and that afford them competitive advantages. As a result, they may be able to devote greater resources to the promotion and sale of products, to negotiate lower prices for raw materials and components, to deliver competitive products at lower prices, and to introduce new product solutions and respond to customer requirements more quickly than we can. Our competitive position could suffer if one or more of our customers determine not to utilize our portable power source products and instead decide to contract with our competitors or to use alternative technologies.

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Our ability to compete successfully will depend on a number of factors, both within and outside our control. These factors include the following:

- our success in designing and introducing new portable power source products;
- our ability to predict the evolving needs of our customers and to assist them in incorporating our technologies into their new products;
- our ability to meet our customer's requirements for small size, low weight, peak power, long power duration, ease of use, reliability, durability, and small form factor;
- the quality of our customer services;
- the rate at which customers incorporate our products into their own products;

- product or technology introductions by our competitors; and
- foreign currency fluctuations, which may cause a foreign competitor's products to be priced significantly lower than our products.

***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 will depend 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 and 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.

***Our operating results may experience significant fluctuations.***

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

- 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.

Accordingly, you should not rely on period-to-period comparisons as an indicator of our future performance. Negative or unanticipated fluctuations in our operating results may result in a decline in the price of our stock.

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## **Item 2: Properties**

We lease office, manufacturing and research and development space in the following locations:



<b>Location</b>	<b>Segment</b>	<b>Primary Use</b>	<b>Approximate Number of Square Feet</b>	<b>Lease Expiration</b>
Albany, NY	Test and Measurement Instrumentation	Manufacturing, office and sales	20,700	2009
Albany, NY	New Energy	Corporate headquarters, office and research and development	23,500	2009
Shanghai, China	New Energy	Representative office	160	2009

We believe our facilities are generally well maintained and adequate for our current needs and for expansion, if required. We further believe that a lease renewal on reasonable terms for these properties may be achieved.

### 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 its 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 which could have a material adverse effect on our financial condition.

### Item 4: Submission of Matters to a Vote of Security Holders

There were no matters submitted to a vote of our security holders during the fourth quarter of fiscal 2008.

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## PART II

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

#### Price Range of Common Stock

Our common stock is traded on The Nasdaq Capital Market under the symbol "MKTY". The following table sets forth the high and low sale prices of our common stock as reported by Nasdaq for the periods indicated (for periods prior to May 16, 2008, such prices have been derived by multiplying the actual prices by eight to reflect the reverse split of our common stock that was approved by our stockholders at a meeting held on May 15, 2008, pursuant to which every eight shares of our common stock were combined into one share of our common stock):

	<b>High</b>	<b>Low</b>
<b>Fiscal Year Ended December 31, 2007</b>		
First Quarter	\$ 15.44	\$ 10.56
Second Quarter	14.40	9.60
Third Quarter	11.28	7.20
Fourth Quarter	10.80	5.76
<b>Fiscal Year Ended December 31, 2008</b>		
First Quarter	\$ 7.44	\$ 3.77
Second Quarter	7.80	1.11
Third Quarter	5.50	.79
Fourth Quarter	1.93	.75

### Item 6: Selected Financial Data

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The following table sets forth our summary consolidated financial data for the fiscal years ended December 31, 2006, 2007, and 2008, which was derived from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. We derived our summary consolidated financial data for the years ended December 31, 2004 and 2005 set forth in the following table from our audited consolidated financial statement not included in this report. You should read the following summary consolidated financial data together with the information under "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements, including the related notes thereto.

(In thousands, except per share data)

	<b>Years Ended December 31,</b>				
	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Statement of Operations Data</b>					
Product revenue	\$ 7,530	\$ 6,012	\$ 7,667	\$ 9,028	\$ 6,012
Funded research and development revenue	1,040	1,829	489	1,556	1,040
Gain (loss) on derivatives	614	(10,407)	182	2,967	614
Net gain (loss) on sale of securities available for sale	3,626	10,125	4,289	2,549	3,626
(Loss) income from continuing operations before income taxes, equity in holdings' losses and minority interest	(9,121)	(14,949)	(12,980)	(7,609)	(9,121)
Income tax (expense) benefit	3,564	(1,587)	(1,895)	(2,548)	3,564
Minority interests in losses of consolidated subsidiary	1,366	1,442	1,208	582	1,366
Loss from continuing operations	(4,191)	(15,094)	(13,667)	(9,575)	(4,191)
Net (loss) income	\$ (4,191)	\$ (15,094)	\$ (13,667)	\$ (9,575)	\$ (4,191)
<b>Basic and Diluted (Loss) Earnings Per Share</b>					
Loss from continuing operations	\$ (1.15)	\$ (3.93)	\$ (3.46)	\$ (2.01)	\$ (1.15)
(Loss) earnings per share	\$ (1.15)	\$ (3.93)	\$ (3.46)	\$ (2.01)	\$ (1.15)
<b>Balance Sheet Data (as of period end):</b>					
Working capital	\$33,663	\$ 33,045	\$ 23,076	\$11,347	\$33,663
Securities available for sale	17,678	18,947	10,075	4,492	17,678
Securities available for sale - restricted	16,497	-	-	-	16,497
Total assets	66,830	41,267	33,811	18,716	66,830
Total long-term obligations	1,149	-	3,664	904	1,149
Total stockholders' equity	55,584	32,916	22,871	13,803	55,584

**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**

We are developing and commercializing off-the-grid rechargeable power sources for portable electronics. We have developed a patented, proprietary direct methanol fuel cell technology platform called Mobion, which generates electrical power using up to 100% methanol as fuel. Our proprietary fuel cell power solution consists of two primary components integrated in an easily manufactured device: the direct methanol fuel cell power engine, which we refer to as our Mobion Chip, and methanol replacement cartridges. Our Mobion Chip weighs less than one ounce and is small enough to fit in the palm of one's hand. The methanol used by the technology is fully biodegradable. We have demonstrated power density of over 62 mW/cm<sup>2</sup> while producing more than 1,800 Wh/kg of energy from the direct methanol fuel feed. For these reasons, we believe our technology offers a compelling alternative to current lithium-ion and similar rechargeable battery systems currently used by original equipment manufacturers and branded partners, or OEMs, in many handheld electronic devices, such as mobile phones (including smart phones) and mobile phone accessories, digital cameras, portable media players, PDAs, and GPS devices. We believe our platform will facilitate the development of numerous product advantages, including small

size, environmental friendliness, and simplicity of design, all critical for commercialization in the consumer market, and can be implemented as three different product options: a compact external charging device, a snap-on or attached power accessory, or a lithium-ion battery replacement embedded fuel cell power solution. With adequate funding, we intend to commercialize the Mobion platform in 2009.

Our Mobion technology eliminates the need for active water recirculation pumps or the inclusion of water as a fuel dilutant. The water required for the electrochemical process is transferred internally within the Mobion Chip from the site of water generation on the air-side of the cell. This internal flow of water takes place without the need for any pumps, complicated re-circulation loops or other micro-plumbing tools. Our Mobion technology is protected by a patent portfolio that includes over 110 U.S. patent applications covering five key technologies and manufacturing areas.

We also design, manufacture, and sell high-performance test and measurement instruments and systems serving several global markets. These products consist of: electronic, computerized gauging instruments for position, displacement and vibration applications for the design, manufacturing and test markets; wafer characterization tools for the semiconductor and solar markets; and engine balancing and vibration analysis systems for military and commercial aircraft.

Our cash requirements depend on numerous factors, including completion of our portable power source products development activities, our ability to commercialize our portable power source products, market acceptance of our portable power source products, and other factors. We expect to pursue the expansion of our operations through internal growth and strategic partnerships.

### Liquidity

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

(Dollars in thousands)	Years ended December 31,		
	2006	2007	2008
Cash and cash equivalents	\$ 14,545	\$ 7,650	\$ 1,662
Securities available for sale	10,075	4,492	□
Working capital	20,820	11,347	252
Net loss	(13,667)	(9,575)	(12,504)
Net cash used in operating activities	(12,706)	(11,683)	(10,346)
Purchase of property, plant and equipment	(1,574)	(414)	(181)

From inception through December 31, 2008, we have incurred an accumulated deficit of \$117.6 million and we expect to incur losses for the foreseeable future as we continue micro fuel cell product development and commercialization programs. We expect that losses will fluctuate from year to year and that such fluctuations may be substantial as a result of, among other factors, operating results of our businesses.

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At present, the Company does not expect to continue to fund MTI Micro's development and commercialization of its portable power source products. Based on MTI Micro's projected cash requirements for 2009 and their current cash and cash equivalents of \$0.7 million at December 31, 2008, plus a \$0.5 million bridge loan in February 2009, we believe MTI Micro will have adequate resources to fund operations into the month of April 2009. MTI Micro will be required to raise additional funds through issuance of its equity or debt, government funding and/or explore other strategic alternatives including but not limited to the sale of assets and/or the company. If MTI Micro is unable to raise additional financing, it may be required to discontinue its business operations. Based upon projected cash requirements and current cash and cash equivalents for MTI Instruments, along with cash necessary to operate the public parent company, we believe that we will have adequate resources to fund MTI Instruments and the public parent company at least through December 2009.

### Restructuring

In March 2007, the Company announced the suspension of MTI Micro's high power direct methanol fuel cell program in response to decreased funding and sales opportunities in the military market. In connection with this

action, the Company accrued restructuring charges of \$344,000 pre-tax, consisting primarily of cash-based employee severance and benefit costs related to the reduction of 23 positions within its New Energy segment and Corporate staff. Restructuring expenses were classified as selling, general and administrative expenses within the Company's Consolidated Statements of Operations for the period. All amounts under this plan were settled by March 31, 2008.

In August 2008, the Board of Directors approved a restructuring plan (the "Restructuring"), which was designed to help the Company reduce expenses and preserve cash. As part of the Restructuring, a total of 29 positions across the Company and its subsidiaries were eliminated. The Company accrued and at present expects to incur total severance and other benefit charges of approximately \$342,000 in connection with this plan. Through December 31, 2008, the Company incurred cash expenditures to implement this plan of \$273,000, and incurred the remaining cash expenditures in the first quarter of 2009.

## Results of Operations

### *Results of Operations for the Year Ended December 31, 2008 Compared to December 31, 2007.*

*Product Revenue:* Product revenue in our test and measurement instrumentation business for 2008 decreased by \$2.8 million, or 31.1%, to \$6.2 million for the fiscal year ended December 31, 2008 from \$9.0 million for the fiscal year ended December 31, 2007. The revenue decrease was primarily the result of a \$1.5 million decrease in general dimensional gauging sales from significantly lower sales to a Japanese OEM. Aviation sales also decreased \$1.4 million due to lower sales to the U.S. Air Force and commercial engine balancing system revenues decreased by \$0.3 million. These declines were partially offset by an increase in semiconductor/solar equipment sales of \$0.4 million.

In our test and measurement instrumentation business during 2008, the U.S. Air Force accounted for \$1.0 million, or 15.7%, of product revenue while during 2007, the U.S. Air Force accounted for \$2.4 million, or 26.3%, of product revenue. Additionally, during 2008, Koyo Precision, our Japanese distributor, represented \$0.9 million, or 13.9%, of product revenue while during 2007, Koyo Precision represented \$2.5 million, or 22.9%, of product revenue.

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

(Dollars in thousands)	Contract <sup>(1)</sup>	Expiration	Revenue		Revenue Contract to Date Dec. 31, 2008	Total Contract Orders Received to Date Dec. 31, 2008
			Year Ended December 31, 2007	Year Ended December 31, 2008		
	\$2.3 million Air Force New PBS-4100 Systems	07/28/2010 <sup>(2)</sup>	\$ 1,596	\$ 0	\$ 1,596	\$ 1,881
	\$8.8 million Air Force Retrofit and Maintenance of PBS-4100 Systems	06/19/2008 <sup>(3)</sup>	\$ 738	\$ 594	\$ 7,959	\$ 7,959

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

(2) Date represents expiration of contract, including all three potential option extensions.

(3) The contract expiration date has passed, however, three delivery orders remain open under the contract.

*Funded Research and Development Revenue:* Funded research and development revenue in our portable power, or new energy business decreased by \$0.4 million, or 25%, to \$1.2 million for the year ended December 31, 2008 from \$1.6 million for the year ended December 31, 2007. The decrease in revenue was primarily the result of the completion of the Samsung alliance, the SAFT contract and the NCMS contract in 2007. All revenues for 2008 were a result of reimbursement for research and development costs under the DOE contract with the final billing occurring in January of 2009. The DOE funding was suspended in 2006, and was reinstated during May 2007, thus only eight months of funding was recognized in 2007, or \$675,000. Revenue during 2007 also included \$418,000 from the SAFT contract, for which revenue recognition had been deferred until the delivery under the

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contract was accepted during the first quarter of 2007, revenue recognized under the Samsung alliance agreement of \$448,000 and revenue from the NCMS contract of \$15,000.

(Dollars in thousands)

Contract	Expiration <sup>(1)</sup>	Revenue Year Ended December 31, 2007		Revenue Year Ended December 31, 2008		Revenue Contract to Date Dec. 31, 2008
		Revenue	Percent	Revenue	Percent	
\$3.0 million DOE <sup>(2)</sup>	03/31/09	\$ 675	43.4%	\$ 1,154	100%	\$ 3,000
\$1.0 million Samsung <sup>(3)</sup>	07/31/07	448	28.8			875
\$418,000 SAFT <sup>(4)</sup>	12/31/06	418	26.9			418
\$15,000 NCMS <sup>(5)</sup>	06/30/07	15	0.9			15
<b>Total</b>		<b>\$ 1,556</b>	<b>100.0%</b>	<b>\$ 1,154</b>	<b>100%</b>	<b>\$ 4,308</b>

- (1) Dates represent expiration of contract, not date of final billing.
- (2) The DOE contract is a cost share contract. DOE funding for this contract was suspended during January 2006 and reinstated during May 2007. During 2007, we received notifications from the DOE of funding releases totaling \$1.0 million and also received an extension of the termination date for the contract from July 31, 2007 to September 30, 2008. During 2008, we received notification from the DOE of a funding release of \$325,000, and an extension of the termination date for the contract from September 30, 2008 to March 31, 2009.
- (3) The Samsung contract is a research and prototype contract. This contract included one up-front payment of \$750,000 and two milestone payments of \$125,000 each for the delivery of prototypes. The contract was amended on October 22, 2007 as we agreed to issue a credit in the amount of the last invoice in recognition of our continuing collaboration with Samsung. Therefore, revenue under this contract totaled \$875,000.
- (4) The SAFT contract is a fixed price contract. This is a subcontract with SAFT under the U.S. Army CECOM contract. The purchase order received in connection with this subcontract was revised on November 14, 2006 eliminating one milestone. As a result, the contract value was reduced from \$470,000 to \$418,000 and the expiration date was extended from September 30, 2006 to December 31, 2006.
- (5) This contract was a cost plus catalyst research contract with the National Center for Manufacturing Sciences, or NCMS.

*Cost of Product Revenue:* Cost of product revenue in our test and measurement instrumentation business decreased by \$0.2 million, or 6%, to \$3.2 million during the year ended December 31, 2008 from \$3.4 million during the year ended December 31, 2007. The decrease primarily resulted from a change in product sales mix to a higher concentration of standard products, partially offset by higher inventory reserves for potentially obsolete inventory.

Gross profit as a percentage of product revenue decreased by 13.1% to 48.9% for the year ended December 31, 2008. The decrease resulted from a change in the product sales mix to a higher concentration of standard products which yielded a lower gross margin as well as the increase in inventory reserves for potentially obsolete inventory.

*Funded Research and Product Development Expenses:* Funded research and development expenses in our new energy business increased \$0.5 million, or 26%, to \$2.4 million for the year ended December 31, 2008 from \$1.9 million for the year ended December 31, 2007. This is a result of a full year of recognition of costs associated with the DOE contract, with reimbursement also increasing by \$0.5 million for 2008.

*Unfunded Research and Product Development Expenses:* Unfunded research and product development expenses decreased \$4.0 million, or 41%, to \$5.9 million for the year ended December 31, 2008 from \$9.9 million for the year ended December 31, 2007. This decrease is attributable to three factors (a) a \$0.5 million decrease in development costs that were related to the DOE contract that was in effect for the entire year, which relates to the increase in funded research and product development expenses, (b) the maturity of development of our principle product for the new energy business line and (c) continued cost reductions by management due to decreases in funding.

*Selling, General and Administrative Expenses:* Selling, general and administrative expenses decreased by \$0.3 million, or 4%, to \$8.4 million for the year ended December 31, 2008 from \$8.7 million for the year ended

December 31, 2007. This decrease was primarily the result of (a) a \$756,000 decrease in payroll costs due to staff reductions in 2007, with a full year impact in 2008, and further layoffs in 2008 (b) \$605,000 in corresponding decreases in benefit related costs, bonuses and commissions (c) a \$715,000 decrease in stock compensation related expenses and (d) a \$583,000 decrease in general operating expenses representing management efforts to reduce expenditures due to decreases in funding sources. These decreases in expenditures were offset by increases in outside fees, including audit legal, and consulting fees of \$248,000 and a \$2,000,000 increase related to a decrease in allocations of expense from SG&A to funded and unfunded research and development costs for overhead and other costs allocable to research and development programs.

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*Operating Loss:* Operating loss for the year ended December 31, 2008 compared with the operating loss for the year ended December 31, 2007 decreased by \$0.9 million to \$12.5 million, a 7% decrease, as a result of the factors noted above.

*Gain on Sale of Securities Available for Sale:* The gain on sale of securities available for sale for the year ended December 31, 2008 was \$1.0 million compared with a gain of \$2.5 million for the year ended December 31, 2007. During 2008, we sold 1,137,166 shares of Plug Power common stock at a weighted average price of \$2.67 per share, with gross proceeds to us of \$3.3 million. As of December 31, 2008, we no longer own any Plug Power common stock.

*Gain (loss) on Derivatives:* We recorded a gain on derivative accounting of \$0.7 million for the year ended December 31, 2008 and a gain of \$3.0 on derivative accounting for the year ended December 31, 2007. Both the 2008 and 2007 gains are the result of derivative treatment of the freestanding warrants issued to investors in conjunction with our December 2006 capital raise.

*Income Tax (Expense) Benefit:* Our income tax rate for the year ended December 31, 2008 was 19%, while the income tax rate for the year ended December 31, 2007 was 33%. These tax rates were primarily the result of losses generated by operations, changes in the valuation allowance, state true-ups upon tax return filings, permanent deductible differences for the derivative valuation, and disproportionate effects of reclassification of gains on Plug Power security sales included in operating loss.

The valuation allowance against our deferred tax assets at December 31, 2008 was \$27.5 million and at December 31, 2007 was \$22.3 million. We determined that it was more likely than not that the ultimate recognition of certain deferred tax assets would not be realized.

### **Results of Operations for the Year Ended December 31, 2007 Compared to December 31, 2006.**

*Product Revenue:* Product revenue in our test and measurement instrumentation business for 2007 increased by \$1.4 million, or 17.8%, to \$9.0 million for the fiscal year ended December 31, 2007 from \$7.7 million for the fiscal year ended December 31, 2006. This performance was primarily the result of a \$602,000 increase in activity by the U.S. Air Force, driven by the New PBS-4100 systems contract. Also contributing were increased purchases by our Japanese distributor (particularly OEM capacitance), as well as increased volume in semiconductor product shipments. Total product revenue for general dimensional gauging products increased by \$298,000, or 7.2%, to \$4.5 million, while total product revenue for semiconductor products increased by \$364,000, or 71.2%, to \$875,000.

In our test and measurement instrumentation business during 2007, the U.S. Air Force accounted for \$2.4 million, or 26.3%, of product revenue while during 2006, the U.S. Air Force accounted for \$1.8 million, or 23.1%, of product revenue. Additionally, during 2007, Koyo Precision, our Japanese distributor, represented \$2.5 million, or 27.7%, of product revenue while during 2006, Koyo Precision represented \$1.8 million, or 22.9%, of product revenue.

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

(Dollars in thousands)	<b>Revenue</b>	<b>Revenue</b>	<b>Total Contract Orders Received</b>
	<b>Year Ended</b>		

Contract <sup>(1)</sup>	Expiration	December 31,		Contract to Date Dec. 31, 2007	to Date Dec. 31, 2007
		2006	2007		
\$2.3 million Air Force New PBS-4100 Systems	07/28/2010 <sup>(2)</sup>	\$ □	\$ 1,596	\$ 1,596	\$ 1,596
\$8.8 million Air Force Retrofit and Maintenance of PBS-4100 Systems	05/19/2008 <sup>(3)</sup>	\$ 1,417	\$ 738	\$ 7,365	\$ 7,365

- (1) Contract values represent maximum potential values and may not be representative of actual results.  
(2) Date represents expiration of contract, including all three potential option extensions.  
(3) Expiration date was extended during December 2007 from December 20, 2007 to May 19, 2008, and in May 2008 it was extended from May 19, 2008 to June 19, 2008.

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**Funded Research and Development Revenue:** Funded research and development revenue in our new energy business during 2007 increased by \$1.1 million, or 218.2%, to \$1.6 million for the year ended December 31, 2007 from \$489,000 for the year ended December 31, 2006. The increase in revenue was primarily the result of billings under the DOE contract, which had its funding reinstated during May 2007 after it had been suspended during 2006. This DOE funding resumption contributed an additional \$613,000 to revenue during 2007. Revenue during 2007 also included \$418,000 from the SAFT contract, for which revenue recognition had been deferred until the delivery under the contract was accepted during the first quarter of 2007. Revenue recognized under the Samsung alliance agreement increased by \$21,000 during 2007 over 2006.

(Dollars in thousands)

Contract	Expiration <sup>(1)</sup>	Revenue Year Ended December 31, 2006		Revenue Year Ended December 31, 2007		Revenue Contract to Date Dec. 31, 2007
		Revenue	Percent	Revenue	Percent	
\$3.0 million DOE <sup>(2)</sup>	09/30/08	\$ 62	12.7%	\$ 675	43.4%	\$ 1,846
\$1.0 million Samsung <sup>(3)</sup>	07/31/07	427	87.3	448	28.8	875
\$418,000 SAFT <sup>(4)</sup>	12/31/06	□	□	418	26.9	418
\$15,000 NCMS <sup>(5)</sup>	06/30/07	□	□	15	0.9	15
Total		\$ 489	100.0%	\$ 1,556	100.0%	\$ 3,154

- (1) Dates represent expiration of contract, not date of final billing.  
(2) The DOE contract is a cost share contract. DOE funding for this contract was suspended during January 2006 and reinstated during May 2007. During 2007, we received notifications from the DOE of funding releases totaling \$1.0 million and also received an extension of the termination date for the contract from July 31, 2007 to September 30, 2008. During February 2008, we received notification from the DOE of a funding release of \$500,000, and during May 2008 we received notification of a funding release of \$325,000.  
(3) The Samsung contract is a research and prototype contract. This contract included one up-front payment of \$750,000 and two milestone payments of \$125,000 each for the delivery of prototypes. The contract was amended on October 22, 2007 as we agreed to issue a credit in the amount of the last invoice in recognition of our continuing collaboration with Samsung. Therefore, revenue under this contract totaled \$875,000.  
(4) The SAFT contract is a fixed price contract. This is a subcontract with SAFT under the U.S. Army CECOM contract. The purchase order received in connection with this subcontract was revised on November 14, 2006 eliminating one milestone. As a result, the contract value was reduced from \$470,000 to \$418,000 and the expiration date was extended from September 30, 2006 to December 31, 2006.  
(5) This contract was a cost plus catalyst research contract with the National Center for Manufacturing Sciences, or NCMS.

**Cost of Product Revenue:** Cost of product revenue in our test and measurement instrumentation business increased by \$0.5 million, or 18.3%, to \$3.4 million during the year ended December 31, 2007 from \$2.9 million during the year ended December 31, 2006. As a percentage of product revenue, the annual cost of product revenue remained relatively consistent with 2006, and this increase was consistent with the higher revenue during 2007.

Gross profit as a percentage of product revenue decreased by 0.2% to 62.0% for the year ended December 31, 2007, remaining relatively consistent with 2006.

*Funded Research and Product Development Expenses:* Funded research and development expenses in our new energy business increased \$0.7 million, or 64.1%, to \$1.9 million for the year ended December 31, 2007 from \$1.2 million for the year ended December 31, 2006. While the active contracts were relatively consistent between periods, costs for the DOE contract increased \$1.3 million, reflecting its reinstatement during May 2007, while costs for the Samsung contract increased by \$22,000. These increases were partially offset by a decrease in costs for the SAFT contract of \$576,000, as that contract was completed during the first quarter of 2007.

*Unfunded Research and Product Development Expenses:* Unfunded research and product development expenses decreased \$1.9 million, or 16.1%, to \$9.9 million for the year ended December 31, 2007 from \$11.8 million for the year ended December 31, 2006. This decrease reflects a \$2.2 million decrease in development costs related to (a) the DOE contract that resumed during May 2007, which related increase is reflected in funded research and product development expenses, and (b) cost savings from the decision to suspend work on our high power program during March 2007. This decrease was partially offset by a \$317,000 increase in product development expenses in our test and measurement instrumentation business reflecting increased staffing and external product development costs focused on the development of the division's new stand-alone measurement and data acquisition solution, stand-alone laser head, as well as other precision measurement solutions.

*Selling, General and Administrative Expenses:* Selling, general and administrative expenses decreased by \$1.3 million, or 13.2%, to \$8.7 million for the year ended December 31, 2007 from \$10.1 million for the year ended December 31, 2006. This decrease was primarily the result of (a) a \$387,000 decrease in non-cash stock-based compensation charges reflecting the difference between sign on and promotion grants during 2006 compared with primarily annual compensation grants during 2007 and the reversal of expense during 2007 related to certain cancelled executive stock-based performance grants where performance goals were not met, (b) a \$528,000 decrease in outside services, including audit, legal, and consulting fees, (c) a \$345,000 decrease in recruiting and relocation costs, (d) a \$178,000 increase in severance costs attributable to employees terminated as a result of our March 2007 restructuring, (e) a \$632,000 decrease in wages and benefits, which was also attributable to our March 2007 restructuring, (f) a \$227,000 decrease in other operating expenses, primarily insurance and laboratory operating fees, (g) a \$647,000 increase related to a decrease in allocations of expense from SG&A to funded and unfunded research and development costs for overhead and other costs allocable to research and development programs, and (h) a \$40,000 decrease in other expenses, net.

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*Operating Loss:* Operating loss for the year ended December 31, 2007 compared with the operating loss for the year ended December 31, 2006 decreased by \$4.4 million to \$13.3 million, a 24.7% decrease, as a result of the factors noted above.

*Gain on Sale of Securities Available for Sale:* The gain on sale of securities available for sale for the year ended December 31, 2007 was \$2.5 million compared with a gain of \$4.3 million for the year ended December 31, 2006. During 2007, we sold 1,452,770 shares of Plug Power common stock at a weighted average price of \$3.53 per share, with gross proceeds to us of \$5.1 million.

*Gain (loss) on Derivatives:* We recorded a gain on derivative accounting of \$3.0 million for the year ended December 31, 2007 and a gain of \$0.2 million on derivative accounting for the year ended December 31, 2006. Both the 2007 and 2006 gains are the result of derivative treatment of the freestanding warrants issued to investors in conjunction with our December 2006 capital raise.

*Income Tax (Expense) Benefit:* Our income tax rate for the year ended December 31, 2007 was 33%, while the income tax rate for the year ended December 31, 2006 was 15%. These tax rates were primarily the result of losses generated by operations, changes in the valuation allowance, state true-ups upon tax return filings, permanent deductible differences for the derivative valuation, and disproportionate effects of reclassification of gains on Plug Power security sales included in operating loss.

The valuation allowance against our deferred tax assets at December 31, 2007 was \$22.3 million and at December 31, 2006 was \$18.9 million. We determined that it was more likely than not that the ultimate recognition of certain deferred tax assets would not be realized.



## Liquidity and Capital Resources

We have incurred significant losses as we continue to fund the development and commercialization of our portable power source business. We expect that losses will fluctuate from year to year and that such fluctuations may be substantial as a result of, among other factors, our operating results, the availability of equity financing, including warrants issued in connection with the December 2006 capital raise, and the ability to attract government funding resources to offset research and development costs. As of December 31, 2008, we had an accumulated deficit of \$117.6 million. During the year ended December 31, 2008, our results of operations resulted in a net loss of \$12.5 million and cash used in operating activities totaling \$10.3 million. This cash use in 2008 was funded primarily by cash and cash equivalents on hand as of December 31, 2007 of \$7.7 million and proceeds from the sales of securities available for sale of \$3.0 million.

We expect to continue to incur losses during this global economic slowdown, and we expect to continue funding our operations from current cash and cash equivalents, proceeds, if any, from debt or equity financings and government funding. We expect to spend approximately \$1.2 million in research and development on MTI Instruments' products during 2009.

In September 2008, MTI Micro closed on \$1.5 million of funding in the form of convertible secured notes (the "Bridge Notes") from an investor group (the "Bridge Investors") that included Dr. Walter L. Robb, a member of our Board of Directors. We agreed to convert \$0.7 million of our prior advances to MTI Micro into these Bridge Notes. In February 2009, MTI Micro and the Bridge Investors agreed to, among other things, amend the Bridge Notes ("Amendment No. 1") to permit MTI Micro to sell additional Bridge Notes with an additional principal amount of up to \$0.5 million to additional investors, and to extend the maturity date from March 31, 2009 to May 31, 2009 (the "Maturity Date"). No other terms of the Bridge Notes were amended. Following the effectiveness of the Amendment No. 1, MTI Micro borrowed an additional \$0.5 million from an existing Bridge Investor, a fund managed by Dr. Walter L. Robb, a member of our Board of Directors, bringing the aggregate outstanding principal amount borrowed under the Bridge Notes, as amended, to \$2.7 million, including conversion of outstanding debt totaling \$0.7 million owed to the Company. The Bridge Notes carry an annual interest rate of 10%. If a qualified financing event (expected to be Series A Preferred Stock) occurs prior to the maturity of the Bridge Notes, all note holders will exchange their principal and interest amounts for MTI Micro securities issued during the qualified financing event (at then-issued prices). If no such qualifying financing event occurs before the Maturity Date, the Bridge Notes will either be repaid or converted into securities of MTI Micro at a mutually agreeable price among all note holders. These Bridge Notes are secured by all of the assets of MTI Micro, including intellectual property. Lastly, five-year warrants to purchase additional securities were issued to all investors, having an aggregate exercise price equal to 10% of the outstanding principal amounts under the Bridge Notes. These warrants will be priced in a manner similar to the conversion of the Bridge Notes.

We have no other commitments for funding future needs of the organization at this time and financing during 2009 may not be available to us on acceptable terms, if at all. We may also seek to supplement our resources through additional debt or equity financings, sales of assets (including MTI Micro or MTI Instruments), and additional government funding.

Working capital was \$0.2 million at December 31, 2008, a \$11.1 million decrease from \$11.3 million at December 31, 2007. This decrease was primarily the result of the use of cash in operations and sales of securities available for sale securities.

At December 31, 2008, the Company's order backlog was \$1,372,000, compared to \$445,000 at December 31, 2007.

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Our inventory turnover ratios and average accounts receivable days sales outstanding for the years ended December 31, 2007 and 2008 and their changes are as follows:

	Years Ended		
	December 31,		
	2007	2008	Change
Inventory turnover	2.3	1.5	(0.8)
Average accounts receivable days sales outstanding	58	48	(10)

The decline in inventory turnover stemmed from an increase in inventory balances of \$136,000 at December 31, 2008, as compared to December 31, 2007, to support a higher level of subassemblies necessary for two large orders expected to ship during the first quarter of 2009.

The decrease in average accounts receivable days sales outstanding in 2008 compared with 2007 was primarily attributable to our decision to grant our largest commercial customer 90-day payment terms during 2007. This customer accounted for 28% of our total product revenue in 2007, but only 14% of total sales in 2008. These extended payment terms were eliminated in conjunction with the expiration of our formal distribution agreement in September 2008 and the customer is now back to net 30 payment terms.

Cash flow used by operating activities was \$10.3 million during 2008 compared with \$11.7 million during 2007. This cash use decrease of \$1.4 million reflects a net decrease in cash expenditures to fund operations of \$0.9 million, together with net balance sheet changes which decreased cash expenditures by \$0.5 million, reflecting the timing of cash payments and receipts, particularly a reduction of accounts receivable of \$0.8 million and the recognition of deferred revenue.

Capital expenditures were \$0.2 million during 2008, a decrease of \$0.2 million from the prior year. This decrease was attributable to lower laboratory equipment expenditures to support our micro fuel cell business. Capital expenditures in 2008 included manufacturing, laboratory and demonstration equipment. We had no outstanding commitments for capital expenditures as of December 31, 2008.

During 2008, we sold our remaining 1,137,166 shares of Plug Power common stock with proceeds totaling \$3.0 million and gains totaling \$1.0 million. These proceeds reflect our previously announced strategy to raise additional capital through the sale of Plug Power stock to fund our micro fuel cell operations. We expect the net gains to be offset by our operating losses for purposes of computing taxable income. We estimate that as of December 31, 2008, our remaining net operating loss carry forwards were approximately \$64.0 million.

### Off-Balance Sheet Arrangements

Pursuant to a financing transaction between us and certain investors on December 15, 2006, we issued warrants to purchase up to an aggregate 378,472 shares of our common stock exercisable at any time until December 19, 2011 at an exercise price per share of \$18.16. The shares issuable upon exercise of these warrants would be issued under a shelf registration statement covering the resale of such shares. The terms of the warrant agreement permit a cash settlement with the holders of the warrants if we are acquired by, or merge with, a private company. Because of the possibility of such a settlement, we have classified this agreement as an asset/liability derivative in accordance with SFAS No. 133 and EITF 00-19.

### Contractual Payment Obligations

We have entered into various agreements that result in contractual payment obligations in future years. These contracts include financing arrangements for the Bridge Notes and leases. The following table summarizes cash payments that we are committed to make under the existing terms of contracts to which we are a party as of December 31, 2008. This table does not include contingencies.

Contractual Payment Obligations (in thousands)	Less			More	
	Than 1	1-3	3-5	Than	Total
	Year	Years	Years	5	
				Years	
Convertible Notes:					
Principal (1)	\$ 1,500	\$ □	\$ □	\$ □	\$ 1,500
Interest	44	□	□	□	44
Operating Leases (2)	601	19	□	□	620
Uncertain Tax Position Liability	213	□	□	□	213
Total Contractual Payment Obligations	\$ 2,358	\$ 19	\$ □	\$ □	\$ 2,377

(1) Reflects amounts outstanding with respect to the Bridge Notes. In February 2009, MTI Micro issued an additional \$500,000 of Bridge Notes due on May 31, 2009.

(2) Reflects payment obligations under certain manufacturing, laboratory and office facility lease agreements.

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## Market Risk

Market risk is the risk that changes in market conditions will adversely affect earnings or cashflow. We categorize our market risks as interest rate risk and credit risk. Immediately below are detailed descriptions of the market risks and explanations as to how each of these risks are managed.

**Interest Rate Risk.** Interest rate risk is the risk that changes in interest rates could adversely affect earnings or cashflows. The Company's cash equivalents are sensitive to changes in interest rates. Interest rate changes would result in a change in interest income due to the difference between the current interest rates on cash. Interest rate risk sensitivity analysis is used to measure interest rate risk by computing estimated changes in cashflows as a result of assumed changes in market interest rates. A 10% decrease in 2008 interest rates would be immaterial to the Company's consolidated financial statements.

Our Bridge Notes have fixed interest rates. Changes in the current market rates for the Bridge Notes would not result in a change in interest expense due to the fixed rate.

**Credit Risk.** Credit risk is the risk of loss we would incur if counterparties fail to perform their contractual obligations. Financial instruments that subject the Company to concentrations of credit risk principally consist of cash equivalents, marketable securities, trade accounts receivable and unbilled contract costs.

Our trade accounts receivable and unbilled contract costs and fees are primarily from sales to commercial customers, the U.S. government and state agencies. We do not require collateral and have not historically experienced significant credit losses related to receivables or unbilled contract costs and fees from individual customers or groups of customers in any particular industry or geographic area.

Our deposits its cash and invests in marketable securities primarily through commercial banks and investment companies. Credit exposure to any one entity is limited by Company policy.

## Critical Accounting Policies and Significant Judgments and Estimates

The following 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 to the consolidated audited financial statements includes a summary of our most significant accounting policies. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, and 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, securities available for sale, income taxes, share-based compensation and derivatives. We base our estimates on historical experience and on various other factors that are believed to be 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, we review 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 financial statements include the following:

**Revenue Recognition.** We recognize revenue from development contracts based upon the relationship of actual costs to estimated costs to complete the contract. These types of contracts typically provide development services to achieve a specific scientific result relating to direct methanol fuel cell technology. Some of these contracts require us to contribute to the development effort. The customers for these contracts are commercial customers and various state and federal government agencies. While government agencies are providing revenue, we do not expect the government to be a significant end user of the resulting products. Therefore, we do not reduce funded research and product development expense by the funding received. When it appears probable that estimated costs will exceed available funding on fixed price contracts and we are not successful in securing additional funding, we record the estimated additional expense before it is incurred.

We apply the guidance in SAB No. 104, Revenue Recognition, in the evaluation of commercially funded fuel cell research and prototype agreements to determine when to properly recognize income. Payments received in connection with commercial research and prototype agreements are deferred and recognized on a straight-line basis over the term of the agreement for service-related payments. For milestone and prototype delivery payments, if and when achieved, revenue is deferred and recognized on a straight-line basis over the remaining term of the agreement. When revenue qualifies for recognition it will be recorded as funded research and development revenue. The costs associated with research and prototype-producing activities are expensed as incurred. Expenses in an amount equal to revenue recognized are reclassified from unfunded research and product development to funded research and product development.

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We also recognize revenue from product sales in accordance with SAB No. 104. 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 installation to be performed by us, 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.

**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 provisions of SFAS No. 123R, Share-Based Payment, and SEC Staff Accounting Bulletin 107, Share-Based Payments. Effective January 1, 2006, we use the fair value method to apply the provisions of FAS 123R with the modified prospective application, which provides for certain changes to the method for valuing share-based compensation. The valuation provisions of FAS 123R 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. Share-based compensation expense recognized under FAS 123R for the year ended December 31, 2008 was \$0.8 million. At December 31, 2008, total unrecognized estimated compensation expense related to non-vested awards granted prior to that date was \$0.7 million, which is expected to be recognized over a weighted average period of .98 years.

Upon adoption of FAS 123R, we began estimating the value of share-based awards on the date of grant using a Black-Scholes option-pricing model. Prior to the adoption of FAS 123R, the value of each share-based award was estimated on the date of grant using the Black-Scholes model for the pro forma information required to be disclosed under FAS 123. 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 in the application of FAS 123R during future periods, the compensation expense that we record under FAS 123R 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 under FAS 123R. 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 in accordance with FAS 123R and SAB 107 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 the payment of cash by us.

The guidance in FAS 123R and SAB 107 is still relatively new, and best practices are not well established. The application of these principles may be subject to further interpretation and refinement over time. There are significant differences among valuation models, and there is a possibility that we will adopt different valuation models in the future. This may result in a lack of consistency in future periods and materially affect the fair value estimate of share-based payments. It may also result in a lack of comparability with other companies that use different models, methods, and assumptions.

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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 three months ended December 31, 2008 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 guidance in FAS 123R and SAB 107. 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 estimated using both historical term measures and projected termination estimates.

**Income Taxes.** As part of the process of preparing our consolidated financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. This process involves the estimation of our actual current tax exposure together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. Included in this assessment is the determination of net operating loss carry forwards. These differences result in a net deferred tax asset. We must assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent that we believe that recovery is not likely, we must establish a valuation allowance.

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 have recorded a valuation allowance as a result of uncertainties in our ability to realize certain net deferred tax assets, primarily consisting of net operating losses being carried forward. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust the recorded valuation allowance, which could materially impact our financial position and results of operations. We have recorded a full valuation allowance against our net deferred tax assets of \$27.5 million as of December 31, 2008. In the event actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust our valuation allowance which could materially impact our financial position and results of operations.

During June 2006, the Financial Accounting Standards Board, or FASB, issued Interpretation No. 48, Accounting for Uncertainty in Income Taxes, an Interpretation of FASB Statement No. 109 or FIN 48, which became effective for us beginning in fiscal 2007. FIN 48 addresses the determination of how tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under FIN 48, 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 in accordance with FIN 48 did not have a material impact on our results of operations, financial condition, or liquidity.

**Derivative Instruments.** We account for derivative instruments and embedded derivative instruments in accordance with SFAS No. 133, Accounting for Derivative Instruments and Hedging Activities, as amended. The amended standard requires an entity to recognize all derivatives as either assets or liabilities in the statement of financial position and measure these instruments at fair value. Fair value is estimated using the Black-Scholes Pricing model. We also follow EITF Issue No. 00-19, Accounting for Derivative Financial Instruments Indexed to and Potentially Settled in, a Company's Own Stock, which requires freestanding contracts that are settled in a company's own stock, including common stock warrants, to be designated as an equity instrument, asset or a liability. Under the provisions of EITF Issue No. 00-19, a contract designated as an asset or a liability must be carried at fair value, with any changes in fair value recorded in the results of operations. A contract designated as an equity instrument can be included in equity, with no fair value adjustments are required.

The asset/liability derivatives are valued on a quarterly basis using the Black-Scholes Pricing model. Significant assumptions used in the valuation included exercise dates, closing prices for our common stock, volatility of our common stock, and a proxy risk-free interest rate. Gains (losses) on derivatives are included in "Gain (loss) on derivatives" in our consolidated statement of operations.

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## New Accounting Pronouncements

### Effect of Recent Accounting Pronouncements:

In June 2008, the FASB Staff Position EITF No. 03-6-1, *Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities* ("EITF No. 03-6-1"). EITF No. 03-6-1 addresses whether instruments granted in share-based payment transactions are participating securities prior to vesting and therefore need to be included in the earnings allocation in calculating earnings per share under the two-class method described in SFAS No. 128, "Earnings per Share." EITF No. 03-6-1 requires companies to treat unvested share-based payment awards that have non-forfeitable rights to dividend or dividend equivalents as a separate class of securities in calculating earnings per share. It is effective for calendar-year companies beginning January 1, 2009. The Company is currently assessing the potential impact of implementing this standard.

In May 2008, the FASB issued FASB Staff Position No. APB 14-1, "Accounting for Convertible Debt Instruments That May Be Settled in Cash upon Conversion (Including Partial Cash Settlement)" (FSP14-1). This staff position applies to convertible debt instruments that, by their stated terms, may be settled in cash (or other assets) upon conversion, including partial cash settlement, unless the embedded conversion option is required to be separately accounted for as a derivative under FAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." FSP 14-1 requires the issuer to separately account for the liability and equity components of convertible debt instruments in a manner that reflects the issuer's nonconvertible debt borrowing rate on the instrument's issuance date when interest cost is recognized. This staff position is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years. Early adoption is not allowed. The Company expects that the adoption of FSP 14-1 will not have a material effect on the financial statements.

In May 2008, the FASB issued SFAS No. 162, *The Hierarchy of Generally Accepted Accounting Principles* ("FASB No. 162"). This standard identifies the sources of accounting principles and the framework for selecting the principles to be used in the preparation of financial statements that are presented in conformity with generally accepted accounting principles ("GAAP") in the United States (the GAAP hierarchy). The standard is effective 60 days following the SEC's approval of the Public Company Accounting Oversight Board amendments to AU Section 411, *The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles*. The Company is currently assessing the potential impact of implementing this standard.

In April 2008, the FASB issued FASB Staff Position No. FAS 142-3, *Determination of the Useful Life of Intangible Assets* ("FSP FAS 142-3"). FSP FAS 142-3 amends the factors that should be considered in developing renewal or extension assumptions used to determine the useful life of a recognized intangible asset under SFAS No. 142, "Goodwill and Other Intangible Assets." The objective of FSP FAS 142-3 is to improve the consistency between the

useful life of a recognized intangible asset under SFAS No. 142 and the period of expected cash flows used to measure the fair value of the asset under SFAS No. 141(R) and GAAP. FSP FAS 142-3 is effective for financial statements issued for years beginning after December 15, 2008, and interim periods within those years and applied prospectively to intangible assets acquired after the effective date. Since the Company's consolidated financial statements presently do not include any intangible assets, it does not expect the adoption of FSP FAS 142-3 to have a material impact on its financial position, results of operations or cash flows.

In March 2008, the FASB issued SFAS No. 161, *Disclosures about Derivative Instruments and Hedging Activities, an amendment of FASB Statement No. 133* (SFAS No. 161). SFAS No. 161 changes the disclosure requirements for derivative instruments and hedging activities. Entities are required to provide enhanced disclosures about (a) how and why an entity uses derivative instruments, (b) how derivative instruments and related hedging items are accounted for under SFAS No. 133 and its related interpretations, and (c) how derivative instruments and related hedging items affect an entity's financial position, financial performance, and cash flows. This statement is effective as of the beginning of an entity's first fiscal year beginning after November 15, 2008. This statement will be effective for the Company for its fiscal year beginning January 1, 2009. The Company has not yet determined the impact, if any, of this statement on its Consolidated Financial Statements.

In December 2007, the FASB issued SFAS No. 141R, *Business Combinations* (a replacement of FASB Statement No. 141) (SFAS No. 141R), which significantly changes the principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree. The statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. SFAS No. 141R is effective prospectively, except for certain retrospective adjustments to deferred tax balances, for fiscal years beginning after December 15, 2008. This statement will be effective for the Company for its fiscal year beginning January 1, 2009. The Company has not yet determined the impact, if any, of this statement on its Consolidated Financial Statements.

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In December 2007, the FASB issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements* (an amendment of ARB No. 51) (SFAS No. 160). SFAS No. 160 requires that accounting and reporting for minority interests will be recharacterized as noncontrolling interests and classified as a component of equity. SFAS No. 160 also establishes reporting requirements that provide sufficient disclosures that clearly identify and distinguish between the interests of the parent and the interests of the noncontrolling owners. SFAS No. 160 applies to all entities that prepare consolidated financial statements, except not-for-profit organizations, but will affect only those entities that have an outstanding noncontrolling interest in one or more subsidiaries or that deconsolidate a subsidiary. This statement is effective as of the beginning of an entity's first fiscal year beginning after December 15, 2008. This statement will be effective for the Company for its fiscal year beginning January 1, 2009. Based upon the December 31, 2008 balance sheet, the impact of adopting SFAS No. 160 would be to reclassify \$11,000 from minority interests in consolidated subsidiaries to the Company's stockholders' equity section as a separate component of stockholders' equity. In addition, the exercise of existing convertible notes could result in a change of ownership structure of MTI Micro and in the related accounting.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (SFAS No. 159). SFAS No. 159 provides companies with an option to report selected financial assets and financial liabilities at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings at each subsequent reporting date. The adoption of this statement on January 1, 2008 did not have a material effect on the Company's Consolidated Financial Statements as the Company did not elect to implement the fair value option for its marketable equity securities.

#### **Item 7A. Quantitative And Qualitative Disclosures About Market Risk**

The Company is exposed to market risk from changes in interest rates and credit risk, which could affect its future results of operations and financial condition. We manage our exposure to these risks through regular operating and financing activities. (See "Market Risk", included in Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations above.)

#### **Item 8: Financial Statements and Supplementary Data**

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 follows page 45 of this report and are incorporated herein by reference.

*Selected Quarterly Financial Data*

(Unaudited and in thousands except per share amounts)	Q1	Q2	Q3	Q4
<b>2007</b>				
Product revenue	\$ 1,701	\$ 2,275	\$ 2,196	\$ 2,856
Funded research and development revenue	615	353	357	231
Gross profit □ product revenue	963	1,459	1,348	1,828
Gross profit (loss) □ funded research and development	391	(151)	(334)	(241)
Net loss	\$ (3,156)	\$ (2,487)	\$ (2,481)	\$ (1,451)

**Loss per Share (Basic and Diluted):**

Net loss	\$ (0.66)	\$ (0.52)	\$ (0.52)	\$ (0.31)
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**2008**

Product revenue	\$ 1,980	\$ 1,720	\$ 1,400	\$ 1,124
Funded research and development revenue	173	309	399	273
Gross profit □ product revenue	1,140	894	565	444
Gross loss □ funded research and development	(183)	(325)	(420)	(327)
Net loss	\$ (3,187)	\$ (3,278)	\$ (4,016)	\$ (2,023)

**Loss per Share (Basic and Diluted):**

Net loss	\$ (0.67)	\$ (0.69)	\$ (0.84)	\$ (0.42)
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**Item 9: Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

None.

**Item 9A: Controls and Procedures**

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

*Evaluation of Disclosure Controls and Procedures:* Our management, with the participation of our chief executive officer, who is also our acting principal financial officer, evaluated the effectiveness of MTI's disclosure controls and procedures as of December 31, 2008. 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 SEC's 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 valuation of our disclosure controls and procedures as of December 31, 2008, our chief executive officer, who is also our acting principal financial officer, concluded that, as of such date, our disclosure controls and procedures were not effective due to staffing turnover and a lack of adequate resources within the accounting and finance department. In August 2008, the Board of Directors approved a restructuring plan (the "August 2008 Restructuring"), which was designed to help the Company reduce expenses and preserve cash. As part of the Restructuring, the Company's Chief Financial Officer transitioned out of the Company along with other several other accounting and Information Technology personnel. Prior to the August 2008 Restructuring, the Company's Controller left the



Company to pursue other opportunities. Additionally, effective December 1, 2008 the Company's Interim Chief Financial and Director of Financial Reporting resigned from the Company. In response to the turnover, the Company has retained an outside consulting firm to provide controllership and chief financial officer related services.

Changes in Internal Control over Financial Reporting: Except as described in the paragraph above, 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, 2008 that have materially affected, or are reasonably likely to materially affect our internal control over financial reporting.

**(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, who is also our acting 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* 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 not effective as of December 31, 2008 as a result of the matters referred to in section (a) of this Item 9A above.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis. As of December 31, 2008, management determined the turnover of its accounting and Information Technology staff and resulting lack of resources is a material weakness. Management believes the cost savings resulting from the August 2008 Restructuring outweighs any increase in control risk.

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 registered public accounting firm pursuant to temporary rules of the SEC that permit us to provide only Management's report in this annual report.

/s/ Peng K. Lim  
Chief Executive Officer  
(Principal Executive Officer and Principal Financial Officer)

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**Item 9B: Other Information**

None.

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**PART III**

**Item 10: Directors, Executive Officers and Corporate Governance**

**(a) Directors**

Incorporated herein by reference is the information appearing under the captions "Information about our Directors" and "Compliance with Section 16(a) of the Securities Exchange Act of 1934" in our definitive Proxy Statement for our 2009 Annual Meeting of Stockholders to be filed with the SEC.

**(b) Executive Officers**

Incorporated herein by reference is the information appearing under the captions "Executive Officers" and "Compliance with Section 16(a) of the Securities Exchange Act of 1934" in our definitive Proxy Statement for our 2009 Annual Meeting of Stockholders to be filed with the SEC.

Incorporated herein by reference is the information appearing under the caption "Board of Director Meetings and Committees" "Audit Committee" in our definitive Proxy Statement for our 2009 Annual Meeting of Stockholders to be filed with the SEC.

Code of Ethics: We have adopted a Code of Ethics for employees, officers and directors. The Code of Ethics is intended to comply with Item 406 of Regulation S-K of the Exchange Act and with applicable rules of Nasdaq. A copy may be obtained at no charge by written request to the attention of our Secretary at 431 New Karner Road, Albany, New York 12205. A copy of the Code of Ethics is also available on our website at <http://www.mechtech.com>.

**Item 11: Executive Compensation**

Incorporated herein by reference is the information appearing under the caption "Executive Compensation" in the Company's definitive Proxy Statement for our 2009 Annual Meeting of Stockholders to be filed with the SEC.

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

Incorporated herein by reference is the information appearing under the caption "Principal Stockholders" in our definitive Proxy Statement for our 2009 Annual Meeting of Stockholders to be filed with the SEC.

**Equity Compensation Plans**

As of December 31, 2008, we have three equity compensation plans, each of which has been approved by our stockholders; the Mechanical Technology, Incorporated 1996 Stock Incentive Plan (the "1996 Plan"), 1999 Employee Stock Incentive Plan (the "1999 Plan") and 2006 Equity Incentive Plan (the "2006 Plan"), to which we refer collectively as the Plans. See Note 13 to the Consolidated Financial Statements referred to in Item 8 for a description of these Plans.

The following table presents information regarding these plans:

Plan Category	Number of Securities To Be		Weighted Average Exercise Price of Outstanding Options, Warrants, Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a))
	Issued Upon Exercise of Outstanding Options, Warrants, Rights <sup>(1)</sup>	Outstanding		
	(a)	(b)		(c)
Equity compensation plans approved by security holders	780,340	\$ 21.56		68,641

- (1) Under the 1996, 1999 and 2006 Plans, 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.

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

Incorporated herein by reference is the information appearing under the caption "Certain Relationships and Related Transactions" in our definitive Proxy Statement for the 2009 Annual Meeting of Stockholders to be filed with the SEC.

**Item 14: Principal Accountant Fees and Services**

Incorporated herein by reference is the information appearing under the caption "Independent Accountants" in our definitive Proxy Statement for the 2009 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission.

**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:** The following consolidated financial statement schedule for the years ended December 31, 2006, 2007, and 2008 is included pursuant to Item 15(d):

Report of Independent Registered Public Accounting Firm on Financial Statements Schedule; Schedule II - Valuation and Qualifying Accounts.

All other 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 immediately preceding the exhibits are filed as part of this Annual Report on Form 10-K.

The following exhibits are filed as part of this Report:

Exhibit Number	Description
3.1	Certificate of Incorporation of the registrant, as amended and restated. (22)
3.2	Certificate of Amendment of the Certificate of Incorporation of the registrant. (23)
3.3	By-Laws of the registrant, as amended and restated. (21)
4.1	Form of Common Stock Purchase Warrant to be issued by the Company. (17)
10.14	Mechanical Technology, Incorporated 1996 Stock Incentive Plan. (1)
10.30	Mechanical Technology, Incorporated 1999 Employee Stock Incentive Plan. (2)
10.38	Lease dated August 10, 1999 between Carl E. Touhey and Mechanical Technology, Inc. (3)

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10.43	Lease dated April 2, 2001 between Kingfisher LLC and Mechanical Technology, Inc. (4)
10.44	First Amendment to lease dated March 13, 2003 between Kingfisher LLC and Mechanical Technology, Inc. (5)
10.119	Strategic Alliance Agreement, dated as of September 19, 2003, between The Gillette Company and MTI MicroFuel Cells Inc (terminated September 3, 2008). (6)
10.123	Amendment to the Strategic Alliance Agreement between The Gillette Company and MTI MicroFuel Cells Inc. dated August 18, 2004 (terminated September 3, 2008). (8)
10.131	Amendment No. 2 to the Strategic Alliance Agreement between The Gillette Company and MTI MicroFuel Cells Inc. dated June 20, 2005 (terminated September 3, 2008). (9)
10.132	Second Amendment to lease dated December 12, 2005 between Kingfisher, LLC and Mechanical Technology, Incorporated. (10)
10.136	Employment Agreement dated September 25, 2002 between Cynthia A. Scheuer and Mechanical Technology, Incorporated and MTI MicroFuel Cells Inc. (11)
10.137	Employment Agreement dated November 19, 2004 between Juan Becerra and MTI MicroFuel Cells Inc (terminated March 4, 2008, no Separation Agreement). (11)

10.139	Employment Agreement dated May 4, 2006 between Peng K. Lim and MTI MicroFuel Cells Inc (amended and restated on December 31, 2008). (13)
10.140	Form of Restricted Stock Agreement for the 1996 and 1999 Mechanical Technology, Inc. Stock Incentive Plans. (14)
10.141 (A)	Alliance Agreement dated May 16, 2006 between MTI MicroFuel Cells Inc. and Samsung Electronics Co., Ltd. (15)
10.142	Third Amendment to lease dated August 7, 2006 between Kingfisher, LLC and Mechanical Technology, Incorporated. (15)
10.143 (A)	Amendment No. 3 to the Strategic Alliance Agreement dated September 13, 2006, between MTI MicroFuel Cells Inc. and The Gillette Company (terminated September 3, 2008). (16)
10.144	Form of Subscription Agreement. (17)
10.145	Mechanical Technology, Incorporated 2006 Equity Incentive Plan. (12)
10.147	Employment Agreement dated March 27, 2007 between Robert Kot and MTI Instruments, Inc (terminated January 2009). (18)
10.148	Fourth Amendment to lease dated August 6, 2007 between Kingfisher LLC and Mechanical Technology, Incorporated. (19)
10.150	Future Collaboration Agreement dated October 22, 2007 between MTI MicroFuel Cells Inc. and Samsung Electronics Co., Ltd. (20)
10.151	Employment Agreement dated April 3, 2006 between James K. Prueitt and MTI MicroFuel Cells Inc (amended and restated on December 31, 2008) (22).

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10.152	Separation Agreement dated September 4, 2008 between Cynthia A. Scheuer and Mechanical Technology, Incorporated (24)
10.153	Form of Convertible Note and Warrant Purchase Agreement dated September 18, 2008 (24)
10.154	Amended and Restated Employment Agreement dated December 30, 2008 between James K. Prueitt and MTI MicroFuel Cells Inc.
10.155	Amended and Restated Employment Agreement dated December 31, 2008 between Peng K. Lim and Mechanical Technology, Inc.
10.156	Amendment to Employment Agreement dated March 27, 2007 between Robert Kot and MTI Instruments, Inc.
10.157	Separation Agreement and Release Agreement dated January 16, 2009 between Robert Kot and MTI Instruments, Inc.
10.158	Amendment No. 1 to Convertible Note and Warrant Purchase Agreement dated February 20, 2009
10.159	Letter Agreement dated February 24, 2009 between Peng K. Lim and Mechanical Technology, Inc.
10.160	Letter Agreement dated February 24, 2009 between James K. Prueitt and MTI MicroFuel Cells Inc.
14.1	Code of Ethics. (11)
21	Subsidiaries of the Registrant. (7)
23.2	Consent of Independent Registered Public Accounting Firm □ PricewaterhouseCoopers LLP.
31	Rule 13a-14(a)/15d-14(a) Certification of Principal Executive Officer and Principal Financial Officer.
32	Section 1350 Certification of Principal Executive Officer and Principal Financial Officer.

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Certain exhibits were previously filed (as indicated below) and are incorporated herein by reference. All other exhibits for which no other filing information is given are filed herewith:

- (1) Filed as Appendix A to the registrant's Definitive Proxy Statement Schedule 14A filed November 19, 1996.
- (2) Filed as an Exhibit to the registrant's Proxy Statement, Schedule 14A, dated February 13, 1999.
- (3) Filed as an Exhibit to the registrant's Form 10-K Report for the fiscal year ended September 30, 1999.
- (4) Filed as an Exhibit to our Form 10-K Report for the fiscal year ended September 30, 2001.
- (5) Filed as an Exhibit to the registrant's Form 10-K Report for the year ended December 31, 2002.
- (6) Filed as an Exhibit to the registrant's Form 10-Q Report for the fiscal quarter ended September 30, 2003.
- (7) Filed as an Exhibit to the registrant's Form 10-K Report for the year ended December 31, 2003.
- (8) Filed as an Exhibit to the registrant's Form 10-Q Report for the quarter ended September 30, 2004.
- (9) Filed as an Exhibit to the registrant's Form 8-K Report dated June 20, 2005.
- (10) Filed as an Exhibit to the registrant's Form 8-K Report dated December 12, 2005.
- (11) Filed as an Exhibit to the registrant's Form 10-K Report for the year ended December 31, 2005.
- (12) Filed as an Exhibit to the registrant's Proxy Statement, Schedule 14A, dated April 3, 2006.
- (13) Filed as an Exhibit to the registrant's Form 8-K Report dated May 4, 2006.
- (14) Filed as an Exhibit to the registrant's Form 8-K Report dated May 18, 2006.
- (15) Filed as an Exhibit to the registrant's Form 10-Q Report for the quarter ended June 30, 2006.

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- (16) Filed as an Exhibit to the registrant's Form 10-Q Report for the quarter ended September 30, 2006.
- (17) Filed as an Exhibit to the registrant's Form 8-K Report dated December 15, 2006.
- (18) Filed as an Exhibit to the registrant's Form 8-K Report dated March 28, 2007.
- (19) Filed as an Exhibit to the registrant's Form 10-Q Report for the quarter ended June 30, 2007.
- (20) Filed as an Exhibit to the registrant's Form 8-K Report dated October 25, 2007.
- (21) Filed as an Exhibit to the registrant's Form 8-K Report dated December 14, 2007.
- (22) Filed as an Exhibit to the registrant's Form 10-K Report for the year ended December 31, 2007.
- (23) Filed as an Exhibit to the registrant's Form 8-K Report dated May 15, 2008.
- (24) Filed as an Exhibit to the registrant's Form 10-Q Report for the quarter ended September 30, 2008.

- (A) Certain portions of this exhibit have been omitted pursuant to a request for confidential treatment filed with the Securities and Exchange Commission.

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## 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 27, 2009

By: /s/ Peng K. Lim  
Peng K. Lim  
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Peng K. Lim</u> Peng K. Lim	Chairman, Chief Executive Officer, Principal Executive Officer, Principal Financial Officer and Director	March 27, 2009
<u>/s/ Thomas J. Marusak</u> Thomas J. Marusak	Director	March 27, 2009
<u>/s/ William P. Phelan</u> William P. Phelan	Director	March 27, 2009
<u>/s/ E. Dennis O'Connor</u> E. Dennis O'Connor	Director	March 27, 2009
<u>/s/ Walter L. Robb</u> Dr. Walter L. Robb	Director	March 27, 2009

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### REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON FINANCIAL STATEMENT SCHEDULE

To the Board of Directors and Stockholders  
of Mechanical Technology, Incorporated:

Our audits of the consolidated financial statements referred to in our report dated March 27, 2009 appearing on page F-2 of this Form 10-K of Mechanical Technology, Incorporated, also included an audit of the financial statement schedule listed in Item 15(a)(2) of this Form 10-K. In our opinion, this financial statement schedule presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements.

/s/PricewaterhouseCoopers LLP

Buffalo, New York  
March 27, 2009

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**MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES**  
**VALUATION AND QUALIFYING ACCOUNTS**  
**(DOLLARS IN THOUSANDS)**

Description	Balance at Beginning of Period	Additions Charged to Costs and Expenses	Additions Charged to Other Accounts	Deductions	Balance at End of Period
<b>Allowance for doubtful accounts (accounts receivable) for the years ended:</b>					
December 31, 2006	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
December 31, 2007	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
December 31, 2008	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

Includes accounts written off as uncollectible and recoveries.

**Valuation allowance for deferred tax assets for the years ended:**

December 31, 2006	\$ 10,923	\$ 7,915	\$ (23)	\$ 0	\$ 18,815
December 31, 2007	\$ 18,815	\$ 3,518	\$ 0	\$ 0	\$ 22,333
December 31, 2008	\$ 22,333	\$ 5,219	\$ 0	\$ 0	\$ 27,552

**Inventory reserve for the years ended:**

December 31, 2006	\$ 48	\$ 136	\$ (1)	\$ (33)	\$ 150
December 31, 2007	\$ 150	\$ 137	\$ 28	\$ 133	\$ 182
December 31, 2008	\$ 182	\$ 446	\$ (42)	\$ (75)	\$ 511

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**MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES**  
**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

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Notes to Consolidated Financial Statements	F-7 to F-36

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**Report of Independent Registered Public Accounting Firm**

To the Board of Directors and Shareholders of  
Mechanical Technology, Incorporated:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, shareholders' equity and comprehensive loss, and of cash flows present fairly, in all material respects, the financial position of Mechanical Technology, Incorporated and its subsidiaries at December 31, 2008 and 2007, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2008 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements 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. An audit 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, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has suffered recurring losses from operations and has a net capital deficiency that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ PricewaterhouseCoopers LLP  
Buffalo, New York  
March 27, 2009

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**MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES  
CONSOLIDATED BALANCE SHEETS  
December 31, 2007 and 2008**

(Dollars in thousands)

	<b>December 31,</b>	
	<b>2007</b>	<b>2008</b>
<b>Assets</b>		
<b>Current Assets:</b>		
Cash and cash equivalents	\$ 7,650	\$ 1,662
Securities available for sale	4,492	□
Accounts receivable	1,369	540



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Inventories, net	1,373	1,509
Prepaid expenses and other current assets	329	272
Total Current Assets	15,213	3,983
Property, plant and equipment, net	2,159	1,528
Deferred income taxes	1,344	□
Total Assets	\$ 18,716	\$ 5,511

**Liabilities and Stockholders' Equity**

**Current Liabilities:**

Accounts payable	\$ 273	\$ 508
Accrued liabilities	2,121	1,692
Deferred revenue	117	8
Convertible notes payable □ related party	□	1,500
Income taxes payable	11	23
Deferred income taxes	1,344	□
Total Current Liabilities	3,866	3,731

**Long-Term Liabilities:**

Uncertain tax position liability	208	213
Derivative liability	696	41
Total Long-Term-Liabilities	904	254
Total Liabilities	4,770	3,985

**Commitments and Contingencies**

Minority interests	143	11
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**Stockholders' Equity:**

Common stock, par value \$0.01 per share, authorized 75,000,000; 5,777,578 issued in 2007 and 5,776,750 issued in 2008	58	58
Paid-in-capital	132,065	132,781
Accumulated deficit	(105,066)	(117,570)
Accumulated Other Comprehensive Income (Loss):		
Unrealized gain on securities available for sale, net of tax	500	□
Common stock in treasury, at cost, 1,005,092 shares in 2007 and 2008	(13,754)	(13,754)
Total Stockholders' Equity	13,803	1,515
Total Liabilities and Stockholders' Equity	\$ 18,716	\$ 5,511

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, 2006, 2007, and 2008**

(Dollars in thousands, except per share)

	Years Ended December 31,		
	2006	2007	2008
Product revenue	\$ 7,667	\$ 9,028	\$ 6,224
Funded research and development revenue	489	1,556	1,154
Total revenue	8,156	10,584	7,378
Operating costs and expenses:			

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Cost of product revenue	2,900	3,430	3,181
Research and product development expenses:			
Funded research and product development	1,152	1,891	2,409
Unfunded research and product development	11,769	9,874	5,855
Total research and product development expenses	12,921	11,765	8,264
Selling, general and administrative expenses	10,072	8,738	8,369
Operating loss	(17,737)	(13,349)	(12,436)
Gain on derivatives	182	2,967	655
Gain on sale of securities available for sale	4,289	2,549	1,018
Other income, net	286	224	3
Loss before income taxes and minority interests	(12,980)	(7,609)	(10,760)
Income tax expense	(1,895)	(2,548)	(2,004)
Minority interests in losses of consolidated subsidiary	1,208	582	260
Net loss	\$ (13,667)	\$ (9,575)	\$ (12,504)

Loss per Share (Basic and Diluted):

Loss per share	\$ (3.46)	\$ (2.01)	\$ (2.62)
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The accompanying notes are an integral part of the consolidated financial statements.

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**MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**  
**AND COMPREHENSIVE LOSS**  
**For the Years Ended December 31, 2006, 2007, and 2008**

(Dollars in thousands)

	Years Ended December 31,		
	2006	2007	2008
<b>Common Stock</b>			
Balance, beginning	\$ 49	\$ 58	\$ 58
Issuance of shares □ capital	8	□	
Issuance of shares □ stock options	1	□	
Balance, ending	\$ 58	\$ 58	\$ 58
<b>Paid-In Capital</b>			
Balance, beginning	\$ 122,436	\$ 130,968	\$ 132,065
Capital raise and warrant issuance, net of expenses	6,303	□	
Issuance of shares □ stock options	1,187	60	
Share-based compensation	2,406	1,558	844
MTI MicroFuel Cell investment	(1,284)	(521)	(128)
Elimination of unearned compensation due to change in accounting principle	(80)	□	
Balance, ending	\$ 130,968	\$ 132,065	\$ 132,781
<b>Accumulated Deficit</b>			
Balance, beginning	\$ (81,718)	\$ (95,385)	\$ (105,066)
Cumulative effect of adoption of FIN 48	□	(106)	
Net loss	(13,667)	(9,575)	(12,504)
Balance, ending	\$ (95,385)	\$ (105,066)	\$ (117,570)

**Accumulated Other Comprehensive Income (Loss):**

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Balance, beginning	\$ 5,983	\$ 984	\$ 500
Change in unrealized (loss) gain on securities available for sale (net of taxes of \$0 in 2006, 2007, and 2008)	(3,212)	68	
Less reclassification adjustment for gains included in net income (net of taxes of \$1,913 in 2006, \$2,518 in 2007 and \$1,971 in 2008)	(1,787)	(552)	(500)
Balance, ending	\$ 984	\$ 500	\$

**Restricted Stock Grants □ Unearned Compensation**

Balance, beginning	\$ (80)	\$ □	\$
Elimination of unearned compensation due to change in accounting principle	80	□	
Balance, ending	\$ □	\$ □	\$

**Treasury Stock**

Balance, beginning	\$ (13,754)	\$ (13,754)	\$ (13,754)
Balance, ending	\$ (13,754)	\$ (13,754)	\$ (13,754)
<b>Total Stockholders' Equity</b>	\$ 22,871	\$ 13,803	\$ 1,515

**Total Comprehensive Loss:**

Net loss	\$ (13,667)	\$ (9,575)	\$ (12,504)
Other comprehensive loss:			
Reclassification adjustment for gains included in net income, net of taxes	(1,787)	(552)	(500)
Change in unrealized (loss) gain on securities available for sale, net of taxes	(3,212)	68	
Total comprehensive loss	\$ (18,666)	\$ (10,059)	\$ (13,004)

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

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**MECHANICAL TECHNOLOGY, INCORPORATED AND SUBSIDIARIES  
CONSOLIDATED STATEMENTS OF CASH FLOWS  
For the Years Ended December 31, 2006, 2007, and 2008**

(Dollars in thousands)

	Years Ended December 31,		
	2006	2007	2008
<b>Operating Activities</b>			
Net loss	\$ (13,667)	\$ (9,575)	\$ (12,504)
Adjustments to reconcile net loss to net cash used by operating activities:			
Gain on derivatives	(182)	(2,967)	(655)
Gain on sale of securities available for sale	(4,289)	(2,549)	(1,018)
Depreciation and amortization	1,101	1,129	819
Minority interests in losses of consolidated subsidiary	(1,208)	(582)	(260)
Allowance for bad debts	(1)	□	□
Loss (gain) on disposal of fixed assets	40	39	(7)
Deferred income taxes	1,890	2,518	1,971
Stock based compensation	2,406	1,558	844
Changes in operating assets and liabilities:			
Accounts receivable	(614)	244	829
Other receivables □ related parties	3	□	□
Inventories	(158)	(157)	(136)
Prepaid expenses and other current assets	9	113	57
Accounts payable	277	(379)	235

Income taxes payable	25	23	17
Deferred revenue	746	(749)	(109)
Accrued liabilities - related parties	(2)	□	□
Accrued liabilities	918	(349)	(429)
Net cash used by operating activities	(12,706)	(11,683)	(10,346)

**Investing Activities**

Purchases of property, plant and equipment	(1,574)	(414)	(181)
Proceeds from sale of property, plant and equipment	2	12	□
Proceeds from sale of securities available for sale	6,249	5,130	3,039
Net cash provided by investing activities	4,677	4,728	2,858

**Financing Activities**

Gross proceeds from capital raise and warrants issued	10,900	□	□
Proceeds from issuance of convertible debt □ related party	□	□	1,500
Cost of capital raise	(744)	□	□
Proceeds from stock option exercises	1,188	60	□
Net cash provided by financing activities	11,344	60	1,500
Increase (decrease) in cash and cash equivalents	3,315	(6,895)	(5,988)
Cash and cash equivalents - beginning of year	11,230	14,545	7,650
Cash and cash equivalents - end of year	\$ 14,545	\$ 7,650	\$ 1,662

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

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**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. MTI operates in two segments, the New Energy segment which is conducted through MTI MicroFuel Cells Inc. (□MTI Micro□), a majority owned subsidiary, and the Test and Measurement Instrumentation segment, which is conducted through MTI Instruments, Inc. (□MTI Instruments□), a wholly owned subsidiary.

At its MTI Micro subsidiary, the Company□s Mobion<sup>®</sup> cord-free power packs are being developed to replace current lithium-ion and similar rechargeable battery systems in many handheld electronic devices for the military and consumer markets. Mobion<sup>®</sup> power packs are based on direct methanol fuel cell technology which has been recognized as enabling technology for advanced portable power sources by the scientific community and industry analysts. As the need for advancements in portable power increases, MTI Micro is developing Mobion<sup>®</sup> cord-free rechargeable power pack technology as a superior solution for powering the multi-billion dollar portable electronics market.

At its MTI Instruments subsidiary, the Company continues to be a worldwide supplier of precision non-contact physical measurement solutions, condition based monitoring systems, portable balancing equipment and semiconductor wafer inspection tools. MTI Instruments□ products use a comprehensive array of technologies to solve complex real world applications in numerous industries including manufacturing, semiconductor, commercial/military aviation, automotive and data storage. The Company□s products consist of electronic gauging instruments for position, displacement and vibration applications within the design, manufacturing/production, test and research markets; semiconductor products for wafer characterization of semi-insulating and

semi-conducting wafers within the semiconductor industry; and engine balancing and vibration analysis systems for both military and commercial aircraft.

### **Reverse Stock Split**

Unless otherwise noted, all capital values, share, and per share amounts in the consolidated financial statements have been retroactively restated for the effects of the Company's reverse split of its issued and outstanding common stock at a rate of 1-for-8 which became effective on May 16, 2008. This action was approved by stockholders on May 15, 2008.

### **Liquidity and Going Concern**

The Company incurred significant losses as it continued to fund the direct methanol fuel cell product development and commercialization programs of its majority owned subsidiary, MTI MicroFuel Cells Inc. ("MTI Micro"), and had a consolidated accumulated deficit of \$117,570 thousand and working capital of \$252 thousand at December 31, 2008. Because of these losses, limited current cash, cash equivalents and securities available for sale, negative cash flows and accumulated deficit, the report of the Company's independent registered public accounting firm for the year ended December 31, 2008 expressed substantial doubt about the Company's ability to continue as a going concern.

During 2008, the Company sold 1,137,166 shares of Plug Power Inc. ("Plug Power") common stock with proceeds totaling \$3,039 thousand and gains totaling \$1,018 thousand. These proceeds reflect the Company's previous strategy to raise additional capital through the sale of Plug Power common stock in order to fund MTI Micro operations.

At present, the Company does not expect to continue to fund MTI Micro's portable power source business. Based on the Company's projected cash requirements for operations and capital expenditures and its current cash and cash equivalents of \$1,662 thousand at December 31, 2008, management believes it will have adequate resources to fund its current operations, excluding MTI Micro operations, through December 2009.

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In September 2008, MTI Micro issued convertible secured notes to external investors, including Dr. Walter L. Robb, a member of the Company's Board of Directors, totaling \$1,500 thousand. In February 2009, MTI Micro issued a convertible secured note to an external investor, a fund managed by Dr. Walter L. Robb, a member of the Company's Board of Directors, in the amount of \$500 thousand (See Notes 17 and 18). In order to continue full commercialization of its micro fuel cell solution, MTI Micro will need to do one or more of the following to raise additional resources, or reduce its cash requirements:

- further reduce its current expenditure run-rate;
- obtain additional government or private funding of MTI Micro's direct methanol fuel cell research, development, manufacturing readiness and commercialization; or
- secure additional debt or equity financing.

There is no guarantee that resources will be available to MTI Micro on terms acceptable to it, or at all, or that such resources will be received in a timely manner, if at all, or that MTI Micro will be able to reduce its expenditure run-rate without materially and adversely affecting its business. Based upon MTI Micro's projected cash requirements for 2009 and its cash and cash equivalents of \$700 thousand at December 31, 2008, plus the \$500 thousand bridge loan in February 2009, management believes it will have adequate resources to fund its MTI Micro operations into the month of April 2009.

## **2. Accounting Policies**

### **Principles of Consolidation**

The consolidated financial statements include the accounts of the Company and its majority-owned subsidiaries. All significant inter-company transactions are eliminated in consolidation.

Minority interest in subsidiaries consists of equity securities issued by a subsidiary of the Company. No gain or loss was recognized as a result of the issuance of these securities, and the Company owned a majority of the voting equity of the subsidiary both before and after the transactions. The Company reflects the impact of the equity securities issuances in its investment in subsidiary and additional paid-in-capital accounts for the dilution or anti-dilution of its ownership interest in the subsidiary.

### Use of Estimates

The preparation of the consolidated financial statements is in conformity with accounting principles generally accepted in the United States of America (["U.S. GAAP"]) which requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the 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 and cash equivalents, marketable securities, accounts receivable, unbilled contract costs and fees, derivatives and accounts payable. The estimated fair values of these financial instruments approximate their carrying values at December 31, 2007 and 2008. The estimated fair values have been determined through information obtained from market sources, where available, or Black-Scholes Option Pricing model valuations.

### Fair Value Measurement

On January 1, 2008, the Company adopted SFAS No. 157, *Fair Value Measurements* (["SFAS No. 157"]). SFAS No. 157 applies to all financial instruments that are being measured and reported on a fair value basis. However, in February 2008, the FASB issued FASB Staff Position No. FAS 157-2, *Effective Date of FASB Statement No. 157* (["FSP No. 157-2"]), which deferred the effective date of SFAS No. 157 for one year for non-financial assets and liabilities, except for certain items that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). The Company is currently evaluating the impact of SFAS No. 157 on its consolidated financial statements for items within the scope of FSP No. 157-2, which will become effective on January 1, 2009.

Current items subject to SFAS No. 157 include financial assets including ["Securities available for sale"] (see Note 7) and financial liabilities including ["Derivative liability"] (see Note 15) on the balance sheet. As defined in SFAS No. 157, ["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 hierarchy as specified by SFAS No. 157. This hierarchy ranks the quality and reliability of the information used to determine fair values.

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Financial assets and liabilities are classified and disclosed in one of the following three categories:

- |                 |   |
|-----------------|---|
| <b>Level 1:</b> | Quoted market prices in active markets for identical assets or liabilities, which includes listed equities.   |
| <b>Level 2:</b> | 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. |
| <b>Level 3:</b> | 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.

In determining the appropriate levels, the Company performs a detailed analysis of financial assets and liabilities that are subject to SFAS No. 157. At each reporting period, all assets and liabilities for which the fair value measurements are based upon significant unobservable inputs are classified as Level 3.

The following is a summary of the Company's fair value instruments categorized by their associated fair value input level:

(Dollars in thousands)

Balance Sheet Classification	Level 1	Level 2	Level 3	Balance at December 31, 2008
Financial Assets:				
Securities available for sale	\$ 0	\$ 0	\$ 0	\$ 0
Total fair value of assets	\$ 0	\$ 0	\$ 0	\$ 0
Financial Liabilities:				
Derivative liability	\$ 0	\$ 0	\$ 41	\$ 41
Total fair value of liabilities	\$ 0	\$ 0	\$ 41	\$ 41

The following is a rollforward of Level 3 fair value instruments for the year ended December 31, 2008:

(Dollars in thousands)

Instrument	Total Gains /			Ending Balance as of December 31, 2008
	Beginning Balance as of Jan. 1, 2008	(Losses) Realized and Unrealized	Purchases, Issuances, Sales and Settlements	
Derivative liability	\$ 696	\$ 655	\$ 0	\$ 41
Total Level 3 instruments	\$ 696	\$ 655	\$ 0	\$ 41

### Accounting for Derivative Instruments

The Company accounts for derivative instruments and embedded derivative instruments in accordance with Statement of Financial Accounting Standards (SFAS) No. 133, *Accounting for Derivative Instruments and Hedging Activities*, as amended. The amended standard requires an entity to recognize all derivatives as either assets or liabilities in the statement of financial position and measure these instruments at fair value. Fair value is estimated using the Black-Scholes Option Pricing model. The Company also follows Emerging Issues Task Force (EITF) Issue No. 00-19, *Accounting for Derivative Financial Instruments Indexed to and Potentially Settled in, a Company's Own Stock*, which requires freestanding contracts that are settled in a company's own stock, including common stock warrants, to be designated as an equity instrument, asset or a liability. Under the provisions of EITF Issue No. 00-19, a contract designated as an asset or a liability must be carried at fair value, with any changes in fair value recorded in the results of operations. A contract designated as an equity instrument can be included in equity, with no fair value adjustments are required.

The asset/liability derivatives are valued on a quarterly basis using the Black-Scholes Option Pricing model. Significant assumptions used in the valuation include exercise dates, closing market prices for the Company's

common stock, volatility of the Company's common stock, and proxy risk-free interest rates. Gains (losses) on derivatives are included in "Gain (loss) on derivatives" in the Consolidated Statement of Operations.

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### Accounts Receivable and Allowance for Doubtful Accounts

Trade accounts receivable are recorded at the invoiced amount 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 primarily the straight-line method over their estimated useful lives:

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

The Company accounts for taxes in accordance with SFAS No. 109, *Accounting for Income Taxes* ("SFAS No. 109"), which requires the use of the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred income taxes are recognized for the tax consequences of "temporary differences" by applying enacted statutory tax rates applicable for future years to differences between financial statement and tax bases of existing assets and liabilities. Under SFAS No. 109, the effect of tax rate changes on deferred taxes is recognized in the income tax provision in the period that includes the enactment date. The provision for taxes is reduced by investment and other tax credits in the years such credits become available. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets unless it is more likely than not those assets will be realized.

Effective January 1, 2007, the Company adopted the provisions of FASB Interpretation (FIN) No. 48, *Accounting for Uncertainty in Income Taxes* [an Interpretation of FASB Statement No. 109]. FIN 48 contains a two-step approach to recognizing and measuring uncertain tax positions (tax contingencies) accounted for in accordance with SFAS No. 109. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized upon ultimate settlement. The Company considers many factors when evaluating and estimating its tax positions and tax benefits, which may require periodic



adjustments and which may not accurately forecast actual outcomes.

### **Revenue Recognition**

The Company applies the guidance within SEC Staff Accounting Bulletin (SAB) No. 104, *Revenue Recognition* (SAB No. 104) in the evaluation of its contracts to determine when to properly recognize revenue. Under SAB No. 104, revenue is recognized when title and risk of loss have passed to the customer, there is persuasive evidence of an arrangement, the fee is fixed or determinable, delivery has occurred or services have been rendered, the sales price is determinable, and collectability is reasonably assured.

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### **Product Revenue**

Product revenue is recognized when there is persuasive evidence of an arrangement, the collection of a fixed fee is probable or determinable, 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 which generally occur upon shipment of the product. If the product requires installation to be performed by the Company, all revenue related to the product is deferred and recognized upon the completion of the installation. If the product requires specific customer acceptance, 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 are 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, but MTI Instruments must provide advance notice at least 90 days before the price adjustment goes into effect. 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.

Some of MTI Instruments' direct sales, particularly sales of semi-automatic and fully-automated semiconductor metrology equipment, or rack-mounted vibration systems, involve on-site customer acceptance and/or installation. In those instances, revenue recognition does not take place at time of shipment. Instead, MTI Instruments recognizes the sale after the unit is installed and/or an on-site acceptance is given by the customer. Agreed-upon acceptance terms and conditions, if any, are negotiated at the time of purchase.

### **Funded Research and Development Revenue**

The Company performs funded research and development for government agencies under both cost reimbursement and fixed-price contracts. Cost reimbursement contracts provide for the reimbursement of allowable costs. On fixed-price contracts, revenue is generally recognized on the percentage of completion method based upon the proportion of costs incurred to the total estimated costs for the contract. Revenue from reimbursement contracts is recognized as the services are performed. In each type of contract, the Company generally receives periodic progress payments or payments upon reaching interim milestones. When the current estimates of total contract revenue for commercial development contracts indicate a loss, a provision for the entire loss on the contract is recorded. Any losses incurred in performing funded research and development projects are recognized as research and development expense as incurred. When government agencies are providing funding they do not expect the government to be the only significant end user of the resulting products. These contracts do not require delivery of products that meet defined performance specifications, but are best efforts arrangements to achieve overall research and development objectives. Included in accounts receivable are billed and unbilled work-in-progress on contracts. Billings in excess of contract revenues earned are recorded as deferred revenue. While the Company's accounting for government contract costs is subject to audit by the

sponsoring entity, in the opinion of management, no material adjustments are expected as a result of such audits. Adjustments are recognized in the period made.

### **Commercial Research and Prototype Agreement Income**

The Company also applies the guidance in SAB No. 104 in the evaluation of commercially funded fuel cell research and prototype agreements in order to determine when to properly recognize income. Payments received in connection with commercial research and prototype agreements are deferred and recognized on a straight-line basis over the term of the agreement for service-related payments, and for milestone and prototype delivery payments, if and when achieved, revenue is deferred and recognized on a straight-line basis over the remaining term of the agreement. Under this policy, when revenue qualifies for recognition it will be recorded in the Consolidated Statements of Operations in the line "Funded research and development revenue." The costs associated with research and prototype-producing activities are expensed as incurred. Expenses in an amount equal to revenues recognized are reclassified from "Unfunded research and product development" to "Funded research and product development" in the Consolidated Statements of Operations.

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Information regarding MTI Micro's government and commercial funded research and development contracts is as follows:

<b>Contract Name</b>	<b>Expiration (1)</b>
\$3,000 thousand DOE (2)	03/31/09
\$1,250 thousand NYSERDA (3)	06/30/06
\$1,000 thousand Samsung (4)	07/31/07
\$418 thousand SAFT (5)	12/31/06
\$250 thousand ARL	09/30/05
\$210 thousand NIST (6)	06/30/05
\$150 thousand Harris (7)	06/25/04
\$70 thousand Marine Corps	03/31/05
\$15 thousand NCMS (8)	06/30/07

- (1) Dates represent expiration of contract, not date of final billing.
- (2) The DOE contract is a cost share contract. DOE funding for this contract was suspended during January 2006 and reinstated during May 2007. During 2007, the Company received notifications from the DOE of funding releases totaling \$1,000,000 and also received an extension of the termination date for the contract from July 31, 2007 to September 30, 2008. During 2008, the Company received notification from the DOE of funding releases totaling \$325,000 and also received an extension of the termination date for the contract from September 30, 2008 to March 31, 2009.
- (3) The total contract value for this cost shared contract is \$1,300,000 consisting of four Phases: Phase I for \$500,000 was from March 12, 2002 through September 30, 2003; Phase II for \$200,000 was from October 28, 2003 through October 31, 2004; Phase III for \$348,000 was from August 23, 2004 through August 31, 2005; and Phase IV for \$202,000 which commenced on December 14, 2004 and expired on June 30, 2006. Phases I, II, and III have been completed, while. Phase IV expired before it was completed.
- (4) The Samsung contract is a research and prototype contract. This contract included one up-front payment of \$750,000 and two milestone payments of \$125,000 each for the delivery of prototypes. The contract was amended on October 22, 2007 as MTI Micro agreed to issue a credit in the amount of the last invoice in recognition of the Company's continuing collaboration with Samsung. Therefore, revenue under this contract totaled \$875,000.
- (5) The SAFT contract is a fixed price contract. This is a subcontract with SAFT under the U.S. Army CECOM contract. The purchase order received in connection with this subcontract was revised on November 14, 2006 eliminating one milestone. As a result, the contract value was reduced from \$470,000 to \$418,000 and the expiration date was extended from September 30, 2006 to December 31, 2006.
- (6) Represents a fixed price subcontract with CSMP under NIST and includes the original contract for \$200,000 and a contract amendment for \$10,000.
- (7) Represents a fixed price contract that includes the original contract for \$200,000, an amendment for \$50,000, and a 2005 amendment reducing the contract by \$100,000.

- (8) This contract was a cost plus catalyst research contract with the National Center for Manufacturing Sciences (NCMS).

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The Company's cost-shared contracts require that MTI Micro conduct research, deliver direct methanol fuel cell prototypes, and other deliverables pursuant to predefined work plans and schedules. For cost-shared contracts spanning multiple years, the following table summarizes as of December 31, 2008 the total expenditures incurred or expected to be incurred by MTI Micro along with the related funded research and development revenue received or expected to be received:

Contract	Total Contract Value	
	Funded Expense	Funded Revenue
DOE	\$6,144	\$3,000

(dollars in thousands)

MTI Micro retains ownership of the intellectual property (IP) generated by MTI Micro under each of its federal government contract and under the contract with Samsung. Each federal government agency retains a government use license and march-in rights if MTI Micro fails to commercialize technology generated under the contract. In addition, under the New York State Energy Research and Development Authority (NYSERDA) contract, MTI Micro has the right to elect to retain any invention made under the NYSERDA contract within six months of invention. NYSERDA also retains rights to a government use license for New York State and its political subdivisions for any inventions made under the contract. Additionally, MTI Micro agreed to pay NYSERDA a royalty of 5.0% of the sales price of any product sold incorporating IP developed pursuant to the NYSERDA contract. If the product is manufactured by a New York State manufacturer, this royalty is reduced to 1.5%. Total royalties are subject to a cap equal to two times the total contract funds paid by NYSERDA to MTI Micro, and may potentially be reduced to reflect any New York State jobs created by MTI Micro.

#### **Prototype Evaluation Agreements**

The Company recognizes income derived from its micro fuel cell prototype evaluation agreements, where the Company receives a lump-sum amount from Original Equipment Manufacturers (OEMs) which are testing the Company's Mobion prototypes for an OEM-specific application, upon delivery of the evaluation prototypes. These prototypes are returned to the Company once the evaluation period expires. There are no warranties given to any OEM regarding these prototypes, and each evaluation agreement is considered a customer specific arrangement. The costs associated with executing these prototype evaluation arrangements are expensed in research and development expense as they are incurred. Income derived from these arrangements of \$23 thousand in 2008 and zero in 2007 are recorded in the Consolidated Statements of Operations in the line titled "Other income (expense), net."

#### **Cost of Product Revenue**

Cost of product revenue includes material, labor and overhead. Costs incurred in connection with funded research and development arrangements are included in funded research and product development expenses.

#### **Deferred Revenue**

Deferred revenue consists of payments received from customers in advance of services performed, completed installation or customer acceptance.

#### **Warranty**

The Company records a warranty reserve at the time product revenue is recorded based on a historical rate. The reserve 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.

#### **Accounting for Goodwill and Other Intangible Assets**

Intangible assets include patents and trade names. Goodwill and other intangible assets are accounted for in accordance with SFAS No. 142, *Goodwill and Other Intangible Assets*. Intangible assets with finite useful lives are amortized over those periods. Indefinite life intangible assets are tested for impairment annually, and will be tested for impairment between annual tests if an event occurs or circumstances change that would indicate that the carrying amount may be impaired. Definite life assets are tested for impairment whenever events or circumstances indicate that a carrying amount of an asset may not be recoverable. An impairment loss would be recognized when the carrying amount of an asset exceeds the estimated undiscounted cash flows used in determining the fair value of the asset. The amount of the impairment loss to be recorded is calculated by the excess of the assets carrying value over its fair value. Fair value is generally determined using a discounted cash flow analysis. Costs related to internally-developed intangible assets are expensed as incurred.

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### **Accounting for Impairment or Disposal of Long-Lived Assets**

The Company accounts for impairment or disposal of long-lived assets in accordance with SFAS No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*. This Statement addresses financial accounting and reporting for the impairment or disposal of long-lived assets and specifies 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, 2008, 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.

### **Securities Available for Sale**

Management determines the appropriate classification of its investments in marketable securities at the time of purchase and reevaluates such determinations at each balance sheet date. Marketable securities for which the Company does not have the intent or ability to hold to maturity are classified as available for sale. Securities available for sale are carried at fair value, with the unrealized gains and losses, net of income taxes, reported as a separate component of stockholders' equity. The Company has had no investments that qualify as trading or held to maturity. Realized gains and losses are included in the caption "Gain (loss) on sale of securities available for sale" in the Consolidated Statements of Operations. The cost of securities sold is based on the specific identification method.

### **Net (Loss) Income per Common Share**

The Company reports net (loss) income per basic and diluted common share in accordance with SFAS No. 128, *Earnings Per Share*, which establishes standards for computing and presenting (loss) income per share. Basic earnings (loss) per common share are computed by dividing net (loss) income by the weighted average number of common shares outstanding during the reporting period. Diluted (loss) income per share reflects the potential dilution, if any, computed by dividing net (loss) income 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 has three share-based employee compensation plans and MTI Micro has one share-based employee compensation plan, all of which are described more fully in Note 13, Stock Based Compensation.

In December 2004, the Financial Accounting Standards Board (FASB) revised SFAS No. 123 (FAS 123R), *Share-Based Payment*, which establishes accounting for share-based awards exchanged for employee services and requires companies to expense the estimated fair value of these awards over the requisite employee service period. The accounting provisions of FAS 123R were adopted by the Company as of January 1, 2006. In March 2005, the SEC issued SAB 107, *Share-Based Payment* (SAB 107) to assist filers by simplifying some of the implementation challenges of FAS 123R. In particular, SAB 107 provides supplemental implementation guidance on FAS 123R, including guidance on valuation methods, classification of compensation expense, inventory capitalization of share-based compensation cost, income tax effects, disclosures in Management's Discussion and Analysis and several other issues. The Company applied the principles of SAB 107 in conjunction with its adoption of FAS 123R.

Under FAS 123R, share-based compensation cost is measured at the grant date, based on the estimated fair value of the award, and is recognized as expense over the employee's requisite service period. The Company has awards with performance conditions, but no awards with market conditions. The Company adopted the provisions of FAS 123R on January 1, 2006, the first day of the Company's fiscal year, using the modified prospective application, which provided for certain changes to the method for valuing share-based compensation. Under the modified prospective application, prior periods were not revised for comparative purposes. The valuation provisions of FAS 123R apply to new awards and to awards that are outstanding on the effective date and subsequently modified or cancelled. Estimated compensation expense for awards outstanding at the effective date will be recognized over the remaining service period using the compensation cost calculated for pro forma disclosure purposes under the original FASB Statement No. 123, *Accounting for Stock-Based Compensation* (FAS 123).

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In November 2005, the FASB issued Staff Position No. FAS 123(R)-3, *Transition Election Related to Accounting for Tax Effects of Share-Based Payment Awards*. The Company elected to adopt the alternative transition method provided in this FASB Staff Position for calculating the tax effects of share-based compensation pursuant to FAS 123R. This method included a simplified method to establish the beginning balance of the additional paid-in capital pool related to the tax effects of employee share-based compensation, which is available to absorb tax deficiencies recognized subsequent to the adoption of FAS 123R.

Prior to the adoption of FAS 123R, the Company accounted for stock-based awards to employees and directors using the intrinsic value method in accordance with Accounting Principles Board (APB) Opinion No. 25, *Accounting for Stock Issued to Employees*, and related Interpretations as permitted under FAS 123. Under the intrinsic value method, stock-based compensation was typically only recognized by the Company due to modifications in option provisions, since the exercise price of the Company's and MTI Micro's common stock options granted to employees and directors generally equaled the fair market value of the underlying stock at the date of grant.

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 (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 Selling, general and administrative expenses and Unfunded 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 recognized 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 FAS 123R, no tax benefits have been recognized related to share-based compensation since the Company has incurred net operating losses and has established a full valuation allowance to offset all potential tax benefits associated with these deferred tax assets. The Company continues to record the fair market value of stock options and warrants granted to non-employees and non-directors in exchange for services in accordance with EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, in the Consolidated Statements of Operations.

## Advertising

The costs of advertising are expensed as incurred. Advertising expense was approximately \$110, \$102, and \$92 thousand for the years ended December 31, 2006, 2007, and 2008, respectively.

## Concentration of Credit Risk

Financial instruments that subject the Company to concentrations of credit risk principally consist of cash equivalents, marketable securities, trade accounts receivable and unbilled contract costs.

The Company's trade accounts receivable and unbilled contract costs and fees 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 or unbilled contract costs and fees from individual customers or groups of customers in any particular industry or geographic area.

The Company deposits its cash and invests in marketable securities primarily through commercial banks and investment companies. Credit exposure to any one entity is limited by Company policy.

## Research and Development Costs

The Company expenses research and development costs as incurred.

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## Comprehensive (Loss) Income

Comprehensive (loss) income includes net (loss) income, as well as changes in stockholders' equity, other than those resulting from investments by stockholders (i.e., issuance or repurchase of common shares and dividends).

## Effect of Recent Accounting Pronouncements

In June 2008, the FASB Staff Position EITF No. 03-6-1, *Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities* (EITF No. 03-6-1). EITF No. 03-6-1 addresses whether instruments granted in share-based payment transactions are participating securities prior to vesting and therefore need to be included in the earnings allocation in calculating earnings per share under the two-class method described in SFAS No. 128, "Earnings per Share." EITF No. 03-6-1 requires companies to treat unvested share-based payment awards that have non-forfeitable rights to dividend or dividend equivalents as a separate class of securities in calculating earnings per share. It is effective for calendar-year companies beginning January 1, 2009. The Company is currently assessing the potential impact of implementing this standard.

In May 2008, the FASB issued FASB Staff Position No. APB 14-1, "Accounting for Convertible Debt Instruments That May Be Settled in Cash upon Conversion (Including Partial Cash Settlement)" (FSP14-1). This staff position applies to convertible debt instruments that, by their stated terms, may be settled in cash (or other assets) upon conversion, including partial cash settlement, unless the embedded conversion option is required to be separately accounted for as a derivative under FAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." FSP 14-1 requires the issuer to separately account for the liability and equity components of convertible debt instruments in a manner that reflects the issuer's nonconvertible debt borrowing rate on the instrument's issuance date when interest cost is recognized. This staff position is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years. Early adoption is not allowed. The Company expects that the adoption of FSP 14-1 will not have a material effect on the financial statements.

In May 2008, the FASB issued SFAS No. 162, *The Hierarchy of Generally Accepted Accounting Principles* (FASB No. 162). This standard identifies the sources of accounting principles and the framework for selecting the principles to be used in the preparation of financial statements that are presented in conformity with generally accepted accounting principles (GAAP) in the United States (the GAAP hierarchy). The standard is effective 60 days following the SEC's approval of the Public Company Accounting Oversight Board amendments to AU Section 411, *The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles*. The Company

is currently assessing the potential impact of implementing this standard.

In April 2008, the FASB issued FASB Staff Position No. FAS 142-3, *Determination of the Useful Life of Intangible Assets* (□FSP FAS 142-3□). FSP FAS 142-3 amends the factors that should be considered in developing renewal or extension assumptions used to determine the useful life of a recognized intangible asset under SFAS No. 142, □Goodwill and Other Intangible Assets.□ The objective of FSP FAS 142-3 is to improve the consistency between the useful life of a recognized intangible asset under SFAS No. 142 and the period of expected cash flows used to measure the fair value of the asset under SFAS No. 141(R) and GAAP. FSP FAS 142-3 is effective for financial statements issued for years beginning after December 15, 2008, and interim periods within those years and applied prospectively to intangible assets acquired after the effective date. Since the Company□s consolidated financial statements presently do not include any intangible assets, it does not expect the adoption of FSP FAS 142-3 to have a material impact on its financial position, results of operations or cash flows.

In March 2008, the FASB issued SFAS No. 161, *Disclosures about Derivative Instruments and Hedging Activities, an amendment of FASB Statement No. 133* (□SFAS No. 161□). SFAS No. 161 changes the disclosure requirements for derivative instruments and hedging activities. Entities are required to provide enhanced disclosures about (a) how and why an entity uses derivative instruments, (b) how derivative instruments and related hedging items are accounted for under SFAS No. 133 and its related interpretations, and (c) how derivative instruments and related hedging items affect an entity□s financial position, financial performance, and cash flows. This statement is effective as of the beginning of an entity□s first fiscal year beginning after November 15, 2008. This statement will be effective for the Company for its fiscal year beginning January 1, 2009. The Company has not yet determined the impact, if any, of this statement on its Consolidated Financial Statements.

In December 2007, the FASB issued SFAS No. 141R, *Business Combinations*□a replacement of FASB Statement No. 141 (□SFAS No. 141R□), which significantly changes the principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree. The statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. SFAS No. 141R is effective prospectively, except for certain retrospective adjustments to deferred tax balances, for fiscal years beginning after December 15, 2008. This statement will be effective for the Company for its fiscal year beginning January 1, 2009. The Company has not yet determined the impact, if any, of this statement on its Consolidated Financial Statements.

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In December 2007, the FASB issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements*□an amendment of ARB No. 51 (□SFAS No. 160□). SFAS No. 160 requires that accounting and reporting for minority interests will be recharacterized as noncontrolling interests and classified as a component of equity. SFAS No. 160 also establishes reporting requirements that provide sufficient disclosures that clearly identify and distinguish between the interests of the parent and the interests of the noncontrolling owners. SFAS No. 160 applies to all entities that prepare consolidated financial statements, except not-for-profit organizations, but will affect only those entities that have an outstanding noncontrolling interest in one or more subsidiaries or that deconsolidate a subsidiary. This statement is effective as of the beginning of an entity□s first fiscal year beginning after December 15, 2008. This statement will be effective for the Company for its fiscal year beginning January 1, 2009. Based upon the December 31, 2008 balance sheet, the impact of adopting SFAS No. 160 would be to reclassify \$11 thousand from minority interests in consolidated subsidiaries to the Company□s stockholders□ equity section as a separate component of stockholders□ equity. In addition, the exercise of existing convertible notes could result in a change of ownership structure of MTI Micro and in the related accounting.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (□SFAS No. 159□). SFAS No. 159 provides companies with an option to report selected financial assets and financial liabilities at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings at each subsequent reporting date. The adoption of this statement on January 1, 2008 did not have a material effect on the Company□s Consolidated Financial Statements as the Company did not elect to implement the fair value option for its marketable equity securities.

### 3. Accounts Receivable and Allowance for Doubtful Accounts

Receivables consist of the following at December 31:

	2007	2008
	(dollars in thousands)	
U.S. and State Government:		
Amount billable	\$ 0	\$ 102
Amount billed	79	4
Total U.S. and State Government	79	106
Commercial	1,290	434
Total	\$ 1,369	\$ 540

As of December 31, 2007 and 2008, the Company concluded that a reserve for doubtful trade accounts receivable was not considered necessary.

#### 4. Issuance of Stock by Subsidiary

MTI Micro was formed on March 26, 2001 and as of December 31, 2008, the Company owns approximately 97% of MTI Micro's outstanding common stock.

On December 31, 2006, MTI Micro issued 3,772,727 shares of its common stock at a price of \$1.10 per share to the Company in connection with the conversion of its \$4,150 thousand loan receivable to equity; on December 1, 2006, MTI Micro issued 739 shares of its common stock at a price of \$1.61 per share to the Company as compensation for the minority stockholder benefit in connection with the Company issuing Company options to MTI Micro employees; on November 11, 2006, MTI Micro issued 1,960,506 shares of its common stock at a price of \$1.06 per share to the Company in connection with the transfer of \$2,070 thousand worth of Plug Power common stock to MTI Micro; on September 30, 2006, MTI Micro issued 2,574,627 shares of its common stock at a price of \$1.34 per share to the Company in connection with the conversion of its \$3,450 thousand loan receivable to equity; on September 1, 2006, MTI Micro issued 56,055 shares of its common stock at a price of \$3.10 per share to the Company as compensation for the minority stockholder benefit in connection with the Company issuing Company options to MTI Micro employees; on May 27, 2006, MTI Micro issued 50,158 shares of its common stock at a price of \$2.32 to the Company as compensation for the minority stockholder benefit in connection with the Company issuing Company options to MTI Micro employees; between April 11 and April 18, 2006, MTI Micro issued 1,662,400 shares of its common stock at a price of \$2.50 per share to the Company in connection with the transfer of \$4,156 thousand worth of Plug Power common stock to MTI Micro; and on March 31, 2006, MTI Micro issued 1,400,000 shares of its common stock at a price of \$2.50 per share to the Company in connection with the conversion of its \$3,500 thousand loan receivable to equity.

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Between October 10 and October 25, 2007, MTI Micro issued 4,050,488 shares of its common stock at a price between \$0.37 and \$0.41 per share to the Company in connection with the transfer of \$2,808 thousand worth of Plug Power common stock to MTI Micro; on November 16, 2007, MTI Micro issued 1,630,339 shares of its common stock at a price of \$0.33 per share to the Company in connection with the transfer of \$1,113 thousand worth of Plug Power common stock to MTI Micro; on September 1, 2007, MTI Micro issued 35,625 shares of its common stock at a price of \$0.62 per share to the Company as compensation for the minority stockholder benefit in connection with the Company issuing Company options to MTI Micro employees; on September 30, 2007, MTI Micro issued 2,740,715 shares of its common stock at a price of \$0.69 per share to the Company in connection with the conversion of its \$1,900 thousand loan receivable to equity; on June 1, 2007, MTI Micro issued 8,653 shares of its common stock at a price of \$0.94 per share to the Company as compensation for the minority stockholder benefit in connection with the Company issuing Company options to MTI Micro employees; on June 30, 2007, MTI Micro issued 6,083,334 shares of its common stock at a price of \$0.60 per share to the Company in connection with the conversion of its \$3,650 thousand loan receivable to equity; on March 1, 2007, MTI Micro issued 682 shares of its common stock at a price of \$0.98 per share to the Company as compensation for the minority stockholder benefit in connection with the Company issuing Company options to MTI Micro employees; and on March 31, 2007, MTI Micro issued 4,243,721 shares of its common stock at a price of \$0.84 per share to the Company in connection with the conversion of its \$3,550 thousand loan receivable to equity.



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On September 1, 2008, MTI Micro issued 22,738 shares of its common stock at a price of \$0.36 per share to the Company as compensation for the minority shareholder benefit in connection with the Company issuing its options to MTI Micro employees; on June 30, 2008, MTI Micro issued 10,416,667 shares of its common stock to the Company at a price of \$0.24 per share in connection with conversion of its \$2,500 thousand loan receivable to equity; on June 4, 2008, MTI Micro issued 5,464,612 shares of its common stock to the Company at a price of \$0.33 per share in connection with the transfer of \$1,810 thousand worth of Plug Power common stock to MTI Micro; on June 1, 2008, MTI Micro issued 78 shares of its common stock at a price of \$0.44 per share to the Company as compensation for the minority shareholder benefit in connection with the Company issuing its options to MTI Micro employees; on April 1, 2008, MTI Micro issued 1,854,569 shares of its common stock to the Company at a price of \$0.42 per share in connection with the transfer of \$1,855 thousand worth of Plug Power common stock to MTI Micro; on March 1, 2008, MTI Micro issued 8,653 shares of its common stock at a price of \$0.68 per share to the Company as compensation for the minority shareholder benefit in connection with the Company issuing its options to MTI Micro employees.

The decrease in the Company's paid-in-capital of \$1,284, \$521, and \$128 thousand in 2006, 2007, and 2008, respectively, represents the changes in the Company's equity investment in MTI Micro, which resulted from the anti-dilutive impact of the Company's investments into and third-party stock transactions in MTI Micro stock.

### 5. Inventories

Inventories, net consist of the following at December 31:

	<b>2007</b>	<b>2008</b>
	<b>(dollars in thousands)</b>	
Finished goods	\$ 467	\$ 772
Work in process	168	449
Raw materials, net	738	288
	<b>\$ 1,373</b>	<b>\$ 1,509</b>

### 6. Property, Plant and Equipment

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

	<b>2007</b>	<b>2008</b>
	<b>(dollars in thousands)</b>	
Leasehold improvements	\$ 1,213	\$ 1,213
Computers and related software	2,241	2,199
Machinery and equipment	3,895	4,018
Office furniture and fixtures	303	299
	<b>7,652</b>	<b>7,729</b>
Less accumulated depreciation	5,493	6,201
	<b>\$ 2,159</b>	<b>\$ 1,528</b>

Depreciation expense was \$1,101, \$1,129, and \$819 thousand for 2006, 2007, and 2008, respectively. Repairs and maintenance expense was \$75, \$82, and \$57 thousand for 2006, 2007, and 2008, respectively.

### 7. Securities Available for Sale

Securities available for sale are classified as current assets and accumulated net unrealized gains (losses) are charged to other comprehensive income (loss).

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The principal components of the Company's securities available for sale consist of the following at:

Security	Book Basis	Unrealized Gain	Recorded Fair Value	Quoted Market Price Per NASDAQ	Ownership	Shares
(dollars in thousands, except stock price and share data)						
December 31, 2007						
Plug Power	\$ 2,021	\$ 2,471	\$ 4,492	\$ 3.95	1.29%	1,137,166
December 31, 2008						
Plug Power	\$ 0	\$ 0	\$ 0		0%	0

The book basis roll forward of Plug Power securities as of December 31 is as follows:

	2007	2008
(dollars in thousands)		
Securities available for sale, beginning of period	\$ 10,075	\$ 4,492
Sale of shares	(8,054)	(4,492)
Securities book basis	2,021	0
Unrealized gain on securities available for sale	2,471	0
Securities available for sale, end of period	\$ 4,492	\$ 0

Accumulated unrealized gains related to securities available for sale for each of the years ended December 31 are as follows:

	2006	2007	2008
(dollars in thousands)			
Accumulated unrealized gains	\$ 5,473	\$ 2,471	\$ 0
Accumulated deferred tax expense on unrealized gains	(4,489)	(1,971)	0
Accumulated net unrealized gains	\$ 984	\$ 500	\$ 0

Realized gains related to Plug Power securities available for sale sold during each of the years ended December 31 are as follows:

	2006	2007	2008
(dollars in thousands, except shares)			
Shares sold	1,103,500	1,452,770	1,137,166
Proceeds	\$ 6,249	\$ 5,130	\$ 3,039
Total net gain on sales	\$ 4,289	\$ 2,549	\$ 1,018

The Company regularly reviews its securities available for sale to determine if any declines in value of those securities available for sale are other than temporary. The Company assesses whether declines in the value of its securities in publicly traded companies, measured by comparison of the current market price of the securities to the carrying value of the Company's securities, are considered to be other than temporary based on factors that include the length of time carrying value exceeds fair market value, the Company's assessment of the financial condition and the near term prospects of the companies and the Company's intent with respect to the securities.

**8. Income Taxes**

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

	2006	2007	2008
	(dollars in thousands)		
Operations before minority interest			
Federal	\$ 0	\$ 0	\$ 0
State	(5)	(30)	(33)
Deferred	(1,890)	(2,518)	(1,971)
Total	\$ (1,895)	\$ (2,548)	\$ (2,004)

Income tax benefit (expense) allocated directly to stockholders' equity for each of the years ended December 31 is as follows:

	2006	2007	2008
	(dollars in thousands)		
Total change in unrealized (gain) loss on securities available for sale:			
Deferred tax benefit (expense)	\$ 2,774	\$ 1,201	989
Valuation allowance (expense)	(2,774)	(1,201)	(989)
Tax effect of reclassification adjustment for gains included in net income (loss)	1,913	2,518	1,971
	\$ 1,913	\$ 2,518	\$ 1,971

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

	2006	2007	2008
	(dollars in thousands)		
Deferred tax benefit (expense)	\$ 1,158	\$ 1,181	\$ 721
Net operating loss carry forward	3,983	3,069	3,837
Valuation allowance	(5,118)	(4,250)	(4,558)
Disproportionate tax effect of reclassification adjustment for gains included in net income (loss)	(1,913)	(2,518)	(1,971)
	\$ (1,890)	\$ (2,518)	\$ (1,971)

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

	2006	2007	2008
Federal statutory tax rate	34%	34%	34%
State taxes, net of federal tax effect	3	1	3
Change in valuation allowance	(37)	(56)	(42)
Disproportionate tax effect of reclassification adjustment for gains included in net income (loss)	(13)	(28)	(16)
Permanent tax difference on derivative valuation	0	16	2
Other, net	(2)	0	0
Tax Rate	(15)%	(33)%	(19)%

Pre-tax loss before minority interests was \$12,980, \$7,609, and \$10,760 thousand for 2006, 2007, and 2008, respectively. The deferred tax assets and liabilities as of December 31 consist of the following tax effects relating to temporary differences and carry forwards:

	2007	2008
	(dollars in thousands)	
Current deferred tax (liabilities) assets:		
Inventory valuation	\$ 73	\$ 204
Inventory capitalization	13	13
Securities available for sale	(1,362)	□
Vacation pay	147	77
Warranty and other sale obligations	29	12
Other reserves and accruals	56	22
	(1,044)	328
Valuation allowance	(300)	(328)
Net current deferred tax liabilities	\$ (1,344)	\$ □
Noncurrent deferred tax assets (liabilities):		
Net operating loss	\$ 21,037	\$ 24,874
Property, plant and equipment	27	27
Stock options	1,800	2,138
Research and development tax credit	459	459
Alternative minimum tax credit	54	54
	23,377	27,552
Valuation allowance	(22,033)	(27,552)
Non-current net deferred tax assets	\$ 1,344	\$ □

The valuation allowance at December 31, 2007 and 2008 was \$22,333 and \$27,880 thousand, respectively. The net change in the valuation allowance was \$3,518 thousand in 2007 and \$5,547 thousand in 2008. The valuation allowance at December 31, 2007 and 2008 reflects the estimate that it is more likely than not that the net deferred tax assets may not be realized. During 2007, in addition to the increases in the valuation allowance reflected in continuing operations of \$4,250 thousand and reflected in stockholders equity of \$1,201 thousand, the valuation allowance was decreased by \$1,933 thousand as the result of the adoption of FIN 48.

At December 31, 2008, the Company has unused Federal net operating loss carry forwards of approximately \$63,511 thousand. Of these carry forwards, \$1,325 thousand 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 Federal net operating loss carry forwards, if unused, will begin to expire in 2010. The Company's and/or its subsidiaries' ability to utilize their net operating loss carryforwards, may be significantly limited by Section 382 of the Internal Revenue Code of 1986, as amended, if the Company or any of its subsidiaries undergoes an "ownership change" as a result of subsequent changes in the ownership of the Company's or its subsidiaries' outstanding stock pursuant to the exercise of the warrants, the conversion of the notes, or otherwise. 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 imposes an annual limitation on the amount of post-ownership change taxable income a corporation may offset with pre-ownership change net operating loss carryforwards and certain recognized built-in losses.

As of December 31, 2008, although no formal 382 study has been performed, the Company and its subsidiaries do not appear to have had an ownership change for Section 382 purposes. However, when combined with the changes that the Company has experienced through December 31, 2008, any additional change in ownership that could result from the conversion of MTI Micro's convertible notes payable is likely to trigger a Section 382 ownership change that will subject MTI Micro's net operating loss carryforwards to significant annual Section 382 limitations and will likely result in MTI Micro no longer being permitted to be included in Mechanical Technology, Inc. and Subsidiaries' consolidated federal and combined New York State tax returns, resulting in Mechanical

Technology, Inc. not being able to utilize MTI Micro's net operating losses.

MTI Micro's separate company net operating loss carryforwards as of December 31, 2008, which are currently included with Mechanical Technology, Inc.'s consolidated net operating loss carryforwards, equal approximately \$59.6 million.

As of December 31, 2008, the Company has approximately \$459 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. Deferred tax assets and liabilities 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.

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The Company adopted the provisions of FIN 48 on January 1, 2007, the first day of its 2007 fiscal year. As a result of the implementation of FIN 48, the Company recorded a \$106 thousand increase in the net liability for uncertain tax positions, which was recorded as an adjustment to the Company's opening balance of retained earnings on January 1, 2007. Additionally, the same tax position that triggered the Company's FIN 48 adoption charge caused the Company to reclassify \$80 thousand from current income taxes payable to non-current liabilities for uncertain tax positions.

A reconciliation of the beginning and ending amount of unrecognized tax benefits in accordance with FIN 48 for 2007 and 2008 is as follows:

	2007	2008
	(dollars in thousands)	
Balance as of January 1,	\$ 2,024	\$ 2,044
Additions for tax positions related to the current year	□	□
Additions for tax positions of prior years	20	5
Reductions for tax positions of prior years	□	□
Settlements	□	□
Balance as of December 31,	\$ 2,044	\$ 2,049

In future periods, if \$1,836 thousand of these unrecognized benefits become supportable, the Company may not recognize a change in its effective rate as long as it remains in a full valuation allowance position, \$213 thousand of these unrecognized tax benefits would affect the Company's effective tax rate if recognized. Included in the balance of unrecognized tax benefits at December 31, 2008 is \$213 thousand related to tax positions for which it is reasonably possible that the total amounts could significantly change during the next twelve months. This amount represents unrecognized tax benefits in connection with state combined reporting. In accordance with the Company's accounting policy, it recognizes interest and penalties related to uncertain tax positions as a component of tax expense. This policy did not change as a result of the adoption of FIN 48. As of January 1, 2008, accrued interest included in Uncertain Tax Position Liability totaled \$49 thousand. During the year ended December 31, 2008, the Company recognized \$5 thousand in potential interest expense on uncertain tax positions, and the Company's Consolidated Balance Sheet as of that date includes total interest of \$54 thousand associated with these positions.

The Company files income tax returns, including returns for its subsidiaries, with federal and state jurisdictions. The Company is no longer subject to IRS examination for its federal returns for any periods prior to 2005, although carryforward attributes that were generated prior to 2005 may still be adjusted upon examination by the IRS if they either have been or will be used in a future period. The Company has an ongoing tax examination by New York State for the years 2002 through 2004 for which an amount of \$20 thousand is included in current liabilities and \$213 thousand is included in long-term liabilities at December 31, 2008.

On February 2, 2009, New York State notified the Company that it was no longer going to pursue the issue associated with potentially not permitting the Company to file combined tax returns for the period 2002 through 2004. The Company had recorded a \$213 thousand long-term liability for this issue. Therefore, since New York State has accepted the Company's combined tax return filings and settled the examination subsequent to year end the Company will recognize the benefit from the reversal of this liability during the first quarter of 2009.

**9. Accrued Liabilities**

Accrued liabilities consist of the following at December 31:

	<b>2007</b>	<b>2008</b>
	<b>(dollars in thousands)</b>	
Salaries, wages and related expenses	\$ 937	\$ 746
Acquisition and disposition costs	363	363
Legal and professional fees	230	212
Warranty and other sale obligations	72	31
Commissions	95	33
Other	424	307
	<b>\$ 2,121</b>	<b>\$ 1,692</b>

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**10. Stockholders' Equity****Common Shares**

Changes in common shares are as follows for the years ended December 31:

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Balance, beginning	4,870,742	5,760,585	5,777,578
Fractional shares redeemed during reverse stock split	□	□	(203)
Issuance of shares for stock option exercises	89,974	10,743	□
Issuance of shares for restricted and unrestricted stock grants	9,510	6,875	□
Issuance of shares for capital raise	756,945	□	□
Issuance of shares for anti-dilution penalty	33,414	□	□
Forfeiture of restricted stock grants	□	(625)	(625)
Balance, ending	5,760,585	5,777,578	5,776,750

**Treasury Stock**

Changes in treasury stock are as follows for the years ended December 31:

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Balance, beginning	1,005,092	1,005,092	1,005,092
Balance, ending	1,005,092	1,005,092	1,005,092

**Sale of Common Stock**

On March 27, 2008, the Company filed a registration statement on Form S-1 with the SEC for a proposed underwritten public offering, with proceeds of up to \$30 million, of units consisting of shares of the Company's common stock and warrants to purchase shares of the Company's common stock. This registration statement was withdrawn on September 18, 2008.

*Capital Raise:* On December 15, 2006, the Company entered into agreements with certain investors to sell 756,944 shares of common stock and warrants to purchase 378,472 shares of common stock for an aggregate purchase price of \$10,900 thousand. The common stock and warrants were sold in units, with each unit consisting of 12.5 shares of common stock and a warrant to purchase 6.25 shares of common stock, at an exercise price of \$18.16 per share. Each non-certificated unit was sold at a negotiated price of \$180.00. The

shares of common stock and warrants are immediately separable and were issued separately (see Warrants Issued below). The common stock, the warrants and shares issuable upon exercise of the warrants are registered with the SEC on the Company's filed and effective registration statement.

In connection with the 2006 capital raise, in December 2006, the Company paid Rodman & Renshaw, LLC placement fees, recorded in equity against the proceeds of the capital raise, of \$570 thousand.

### Warrants Issued

On December 20, 2006, the Company issued warrants to investors to purchase 378,472 shares of the Company's common stock at an exercise price of \$18.16 per share. These warrants will be fair valued by the Company until expiration or exercise of the warrants. The warrants became exercisable on June 20, 2007 and expire on December 19, 2011. The fair value of the warrants at December 31, 2007 and 2008 was \$696 thousand and \$41 thousand, respectively.

### Reservation of Shares

The Company has reserved common shares for future issuance as follows as of December 31, 2008:

Stock options outstanding	780,340
Stock options available for issuance	68,641
Warrants outstanding	378,472
Number of common shares reserved	1,227,453

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## 11. Retirement Plan

The Company maintains a voluntary savings and retirement plan under Internal Revenue Code 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 \$269, \$283, and \$136 thousand for 2006, 2007, and 2008, 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 2006, 2007, or 2008.

## 12. Loss 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:

	2006	2007	2008
	(dollars in thousands, except shares)		
<b>Numerator:</b>			
Net loss	\$ (13,667)	\$ (9,575)	\$ (12,504)
<b>Denominator:</b>			
Basic EPS:			
Common shares outstanding, beginning of period	3,865,650	4,755,493	4,772,486
Weighted average common shares issued during the period	87,533	9,111	□
Weighted average restricted shares forfeited during the period	□	(360)	(323)
Weighted average common shares deemed during the			

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period in conjunction with the reverse stock split			(127)
Effect of non-vested restricted stock	(390)	(697)	323
Denominator for basic earnings per common shares □			
Weighted average common shares	3,952,793	4,763,547	4,772,359
Diluted EPS:			
Common shares outstanding, beginning of period	3,865,650	4,755,493	4,772,486
Weighted average common shares issued during the period	87,533	9,111	□
Weighted average restricted shares forfeited during the period	□	(360)	(323)
Weighted average common shares deemed during the period in conjunction with the reverse stock split	□	□	(127)
Effect of non-vested restricted stock due to anti-dilutive effect	(390)	(697)	323
Denominator for diluted earnings per common shares □ Weighted average common shares	3,952,793	4,763,547	4,772,359

Not included in the computation of earnings per share-assuming dilution for the year ended December 31, 2006 were options to purchase 688,649 shares of the Company's common stock, 625 unvested restricted shares of the Company's common stock and options to purchase 33,668 shares of MTI Micro's common stock. These potentially dilutive items were excluded because the Company incurred a loss for this period and their inclusion would be anti-dilutive. The MTI options expire between January 4, 2007 and November 9, 2016, while the MTI Micro options expire between September 29, 2012 and September 18, 2015. The Company also has 378,472 warrants outstanding as of December 31, 2006; however, these were excluded in the computation of earnings per share in 2006 and part of 2007 because they were not eligible to be exercised until June 20, 2007.

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Not included in the computation of earnings per share-assuming dilution for the year ended December 31, 2007 were options to purchase 776,696 shares of the Company's common stock, warrants to purchase 378,472 shares of the Company's stock, 625 unvested restricted shares of the Company's common stock and options to purchase 22,668 shares of MTI Micro's common stock. These potentially dilutive items were excluded because the Company incurred a loss for this period and their inclusion would be anti-dilutive.

Not included in the computation of earnings per share-assuming dilution for the year ended December 31, 2008 were options to purchase 780,340 shares of the Company's common stock, warrants to purchase 378,472 shares of the Company's stock, and options to purchase 15,001 shares of MTI Micro's common stock. These potentially dilutive items were excluded because the Company incurred a loss for this period and their inclusion would be anti-dilutive.

### 13. Stock Based Compensation

#### MTI Option Plans

Stock-based incentive awards are provided to employees and directors under the terms of the Company's 1996 Stock Incentive Plan (□1996 Plan□), 1999 Employee Stock Incentive Plan (□1999 Plan□) and 2006 Equity Incentive Plan (□2006 Plan□), (collectively, the □Plans□). Awards under the Plans have generally included at-the-money options and restricted stock grants. MTI Micro also issued awards under the MTI MicroFuel Cells Inc. 2001 Employee, Director and Consultant Stock Option Plan (□2001 MTI Micro Plan□). During 2005, MTI Micro ceased making grants under the 2001 MTI Micro Plan and determined that it would make no new awards under this plan in the future.



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The 1996 Plan was approved by stockholders during December 1996 and expired during October 2006. The 1996 Plan provided an initial aggregate number of 500,000 shares of common stock to be awarded or issued. The number of shares available to be awarded under the 1996 Plan and awards outstanding were adjusted for stock splits and rights offerings. The total number of shares which may be awarded under the 1996 Plan was 468,352 during 2005. Under the 1996 Plan, the Board of Directors was authorized to issue stock options, stock appreciation rights, restricted stock, and other stock-based incentives to officers, employees and others.

The 1999 Plan was adopted by the Company's Board of Directors and approved by stockholders on March 18, 1999. The 1999 Plan provides that an initial aggregate number of 1,000,000 shares of common stock may be awarded or issued. The number of shares which may be awarded under the 1999 Plan and awards outstanding have been adjusted for stock splits, and during 2005, 2006, and 2007, the total number of shares which may be awarded under the 1999 Plan was 562,500 shares. Under the 1999 Plan, the Board of Directors is authorized to issue stock-based awards to officers, employees and others.

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 provides that an initial aggregate number of 2,000,000 shares of common stock may be awarded or issued. The number of shares which may be awarded under the 2006 Plan and awards outstanding have 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.

Stock-based compensation expense for the year ended December 31, 2008 was generated from stock 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 generally vest 25% per year beginning one year after grant. Options issued to non-employee members of the MTI Board of Directors generally vest upon grant. 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 value 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.

### **Share-Based Compensation Information under FAS 123R**

As discussed in Note 2 "Significant Accounting Policies," effective January 1, 2006, the Company adopted the fair value recognition provisions for stock-based awards granted to employees using the modified prospective application method provided by FAS 123R. Stock-based compensation cost is measured at grant date, based on the fair value of the award, and is recognized as expense over the employee requisite service period.

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The Company estimates the fair value of stock options using a Black Scholes valuation model consistent with the provisions of FAS 123R and SAB 107. 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 fair value of each stock option grant was estimated at the date of grant using a Black-Scholes Option Pricing model. The following table presents the weighted-average assumptions used for options granted:

	2007	2008
Option term (years) A	3.61	4.4
Volatility B	72.76%	81.72%
Risk-free interest rate range C	3.23 - 5.04%	1.55-3.36%
Dividend yield D	0%	0%
Weighted-average fair value per option granted	\$ 6.16	\$ 1.71

- A The option term is the number of years that the Company estimates, based upon historical experience and the full contractual term of the options outstanding, those options will be outstanding prior to exercise.
- B The expected stock price volatility as of the grant date is based on the historical volatility of the Company's common stock price over a period corresponding to the expected term of the option, adjusted for activity that is not expected to occur in the future.
- C The risk-free interest rate is the implied yield on U.S. Treasury zero coupon issues with a remaining term equal to the expected term used as the assumption in the model.
- D The dividend yield assumption is based on the Company's history and expectation of future dividend payouts, which may be subject to substantial change in the future.

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. FAS 123R requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

**Stock-Based Compensation Expense – All Accounting Treatments**

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:

	<b>2006</b>	<b>2007</b>	<b>2008</b>
	<b>(dollars in thousands, except eps)</b>		
Unfunded research and product development	\$ 512	\$ 216	\$ 186
Selling, general and administrative	1,894	1,342	658
Share-based compensation expense before taxes	2,406	1,558	844
Related income tax benefits-A	□	□	□
Share-based compensation expense, net of taxes	\$ 2,406	\$ 1,558	\$ 844
Impact on basic and diluted EPS	\$ (0.61)	\$ (0.33)	\$ (0.18)

A Income tax effect is zero due to the Company maintaining a full valuation allowance.

As of January 1, 2006, the adoption of FAS 123R resulted in the elimination of unearned compensation related to restricted stock (contra equity account) against additional paid-in capital totaling approximately \$80 thousand. Total unrecognized compensation costs related to non-vested awards as of December 31, 2007 and December 31, 2008 is \$1,595 thousand and \$744 thousand, respectively and is expected to be recognized over a weighted-average vesting period of approximately 1.31 years and .98 years, respectively.

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

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Shares under option, beginning	630,155	688,649	776,696
Granted	195,594	231,719	213,039
Exercised	(89,974)	(10,743)	□
Canceled/Forfeited	(21,887)	(65,115)	(58,956)
Expired	(25,239)	(67,814)	(150,439)

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Shares under option, ending	688,649	776,696	780,340
Options exercisable	506,661	578,544	532,298
Remaining shares available for granting of options	262,020	128,105	68,641

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

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Shares under option, beginning	30.08	32.32	25.92
Granted	32.32	10.96	2.80
Exercised	13.20	5.60	□
Canceled/Forfeited	34.32	28.40	13.10
Expired	42.40	41.04	20.57
Shares under option, ending	32.32	25.92	21.56
Options exercisable, ending	32.96	28.40	28.33

The following table summarizes information for options outstanding and exercisable at December 31, 2008:

Exercise Price Range	Outstanding Options		Weighted Average Exercise Price	Options Exercisable	
	Number	Weighted Average Remaining Contractual Life		Number	Weighted Average Exercise Price
\$1.16 - \$3.60	211,875	6.6	\$ 2.79	35,000	\$ 1.16
\$3.61 - \$14.24	157,208	5.2	\$ 11.20	105,404	\$ 11.63
\$14.25 - \$22.64	91,438	3.3	\$ 19.85	90,703	\$ 19.85
\$22.65 - \$33.36	134,121	3.3	\$ 29.21	132,284	\$ 29.25
\$33.37 - \$50.24	160,385	3.7	\$ 41.16	143,594	\$ 41.84
\$50.25 - \$103.76	25,313	1.1	\$ 84.41	25,313	\$ 84.41
	780,340	4.6	\$ 21.56	532,298	\$ 28.33

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 zero for both the Company's outstanding and exercisable options as of December 31, 2008. The amounts are based on the Company's closing stock price of \$1.16 as of December 31, 2008.

The total intrinsic value of options exercised during the years ended December 31, 2006, 2007, and 2008 was \$1,307, \$44, and zero, respectively. The total cash received by the Company as a result of stock option exercises for the year ended December 31, 2008 was zero. The Company settles employee stock option exercises with newly issued shares of Company common stock.

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The number and weighted average grant-date fair value of unvested restricted stock for the period ended December 31, 2008 is as follows:

	Number	Weighted Average Grant-Date Fair Value
Unvested restricted stock, beginning	625	\$ 10.72
Granted	□	□
Forfeited	(625)	\$ 10.72
Vested	□	□

Unvested restricted stock, ending □

The aggregate intrinsic value of restricted stock vested during the year ended December 31, 2008 was zero.

### MTI Micro Option Plan

The 2001 MTI Micro Plan was approved by MTI Micro's stockholders in 2001 and provided an initial aggregate number of 1,766,000 shares of MTI Micro common stock to be awarded. The number of shares which may be awarded under the 2001 MTI Micro Plan and awards outstanding have been adjusted for a 2004 reverse stock split, and during 2005, 2006, and 2007, the total number of shares which may be awarded under the 2001 MTI Micro Plan were 3,416,667 shares. Under the 2001 MTI Micro Plan, the MTI Micro Board of Directors was authorized to award stock options to officers, directors, employees and consultants. No further grants will be made under this plan.

Options issued to employees generally vest 25% per year beginning one year after grant. Option exercise prices were determined by MTI Micro's Board of Directors. Unexercised options generally terminate ten years after date of grant. Up until January 1, 2006, MTI Micro followed APB Opinion No. 25 and related Interpretations, in accounting for employee stock-based compensation and to provide the disclosures required under SFAS No. 123. APB Opinion No. 25 requires no recognition of compensation expense for most of the stock-based compensation arrangements provided by MTI Micro, namely, broad-based employee stock purchase plans and option grants where the exercise price is equal to or not less than the market value at the date of grant. However, APB Opinion No. 25 requires recognition of compensation expense for variable award plans over the vesting periods of such plans, based upon the then-current market values of the underlying stock. As of January 1, 2006, MTI Micro is accounting for employee stock-based compensation under FAS 123R.

Presented below is a summary of compensation expense, which is included in the summary of the Company's compensation expense under all share-based awards above, for the MTI Micro plan:

	2006	2007	2008
	(dollars in thousands)		
Stock options	\$ 25	\$ 12	\$ 2
Total stock-based compensation expense	\$ 25	\$ 12	\$ 2

Presented below is a summary of the 2001 MTI Micro stock option plans activity for the years ended December 31:

	2006	2007	2008
Shares under option, beginning	78,461	33,668	22,668
Granted	□	□	□
Exercised	□	□	□
Canceled/Forfeited	(44,793)	(11,000)	(7,667)
Shares under option, ending	33,668	22,668	15,001
Options exercisable	17,003	18,626	15,001
Remaining shares available for granting of options	3,325,196	3,336,196	3,343,863

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

	2006	2007	2008
Shares under option, beginning	\$ 3.22	\$ 3.61	\$ 3.70
Granted	□	□	□

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Exercised			
Canceled/Forfeited	2.93	3.42	3.33
Shares under option, ending	3.61	3.70	3.89
Options exercisable, ending	3.57	3.63	3.89

The fair value of MTI Micro options granted in 2005, which is amortized to expense over the option vesting period in determining the pro forma impact, was estimated on the date of grant using the Black-Scholes Option Pricing model with the following weighted average assumptions for the year ended December 31:

	<b>2005</b>
Expected life of option	5 years
Risk-free interest rate	4.28%
Expected volatility of the MTI Micro's stock	77.3%
Expected dividend yield on MTI Micro's stock	0%

The weighted average fair value of MTI Micro options granted for the year ended December 31 is as follows:

	<b>2005</b>
Fair value of each option granted	\$ 3.68
Fair value of all options granted	\$930,890

In accordance with SFAS No. 123, the weighted average fair value of stock options granted is required to be based on a theoretical statistical model using the preceding Black-Scholes Option Pricing model assumptions.

Outstanding Options			Options Exercisable			
Exercise Price Range	Number	Weighted Average		Weighted Average Exercise Price	Number	Weighted Average Exercise Price
		Remaining Contractual Life	Contractual Life			
\$2.55 - \$2.75	2,000	4.2		\$ 2.55	2,000	\$ 2.55
\$2.76 - \$3.79	3,334	5.0		\$ 2.76	3,334	\$ 2.76
\$3.80 - \$4.65	1,167	3.9		\$ 3.80	1,167	\$ 3.80
\$4.66 - \$4.66	8,500	5.2		\$ 4.66	8,500	\$ 4.66
	15,001	4.9		\$ 3.89	15,001	\$ 3.89

Based upon an estimated common stock price of \$.13 at December 31, 2008, the intrinsic value of all MTI Micro's outstanding and exercisable options are zero, since all exercise prices are above the estimated common stock fair value price.

On December 30, 2005, the Company granted options to acquire 1,021,213 shares of MTI common stock, par value \$0.01 per share, to certain Optionees. The options have an exercise price per share of \$2.80 (the closing price of the Company's common stock on December 30, 2005). The Company issued the options pursuant to a November 28, 2005 stock option exchange offer. MTI Micro options outstanding for a purchase of a total of 2,392,947 shares of MTI Micro common stock, par value \$0.01 per share, were tendered by the Optionees and then cancelled by MTI Micro as a result of this exchange. Each option is exercisable for one share of MTI common stock. The exchange rate was 0.125 options for each two MTI Micro options, rounded down to the nearest whole option, or if an individual had an MTI Micro option balance in excess of 150,000 options, then at a rate of 0.125 options for each four MTI Micro options in excess of 150,000 options. The exchange was accounted for in accordance with EITF 00-23 Issue 1 and no compensation expense was recorded.

	<b>Years Ended December 31,</b>		
	<b>2006</b>	<b>2007</b>	<b>2008</b>
	<b>(dollars in thousands)</b>		
<b>Non-Cash Investing and Financing Activities:</b>			
Change in investment and paid-in capital resulting from other investors' activity in MTI Micro stock	\$ (1,284)	\$ (521)	\$ (128)
<b>Cash Payments:</b>			
Taxes paid (tax refunds), net	3	(10)	□

## 15. Derivatives

The Company held or has outstanding as of December 31, the following derivative financial instruments:

	<b>2007</b>	<b>2008</b>	<b>Expiration</b>
<b>Derivatives issued:</b>			
Warrants, exercisable beginning June 20, 2007, to purchase the Company's common stock issued to three investors at a purchase price of \$18.16 per share	378,472	378,472	12/19/2011

*Warrant Derivative to Purchase MTI Common Stock:* The warrants issued during the Company's December 2006 capital raise were legally freestanding, detachable and transferable by the holders. The features of the warrant allowed both straight cash exercises as well as cashless exercises. Due primarily to a stipulation in the warrant agreement which allowed a potential cash settlement with the holders if the Company was acquired by, or merged with a private company, these warrants were classified as an asset/liability derivative in accordance with SFAS No. 133 (paragraph 11) and EITF 00-19.

The estimated fair value of this warrant at the date issued was \$10.16 per share, using a Black-Scholes Option Pricing model and assumptions similar to those used for valuing the Company's employee share-based compensation. The fair value of the derivative is recorded in the "Derivative Liability" line on its financial statements, and is valued quarterly using the Black-Scholes Option Pricing Model. The assumptions used for the valuations as of December 31 were as follows:

	<b>2007</b>	<b>2008</b>
Expected life of option (days)	1,450	1,084
Risk-free interest rate	3.45%	1.55%
Expected volatility of stock	73.46%	93.45%
Expected dividend yield	None	None

The Company recognizes changes in fair value in its Consolidated Statements of Operations in the line titled "Gain on derivatives."

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## 16. Commitments and Contingencies

### Lawrence Litigation

On September 9, 1998, Barbara Lawrence, the Lawrence Group, Inc. ("Lawrence") and certain other Lawrence-related entities ("Plaintiffs") initially filed suit in the United States Bankruptcy Court for the Northern District of New York ("Bankruptcy Court") and the United States District Court for the Northern District of New York ("District Court"), which were subsequently consolidated in the District Court, against First Albany Corporation, now known as Broadpoint Capital, Inc. ("BCI"), the Company, Dale Church, Edward Dohring, Beno Sternlicht, Alan Goldberg and George McNamee (Church, Dohring, Sternlicht, Goldberg and McNamee are

former Directors of the Company), Marty Mastroianni (former President and Chief Operating Officer of the Company) and 33 other individuals (the Defendants) who purchased a total of 820,909 shares (307,841 post-split) of the Company's stock from the Plaintiffs. The case concerns the Defendants' 1997 purchase of the Company's common stock from the Plaintiffs at the price of \$2.25 per share (\$6.00 per share post split). BCI acted as Placement Agent in connection with the negotiation and sale of the shares, including in proceedings before the Bankruptcy Court, which approved the sale in September 1997.

Plaintiffs claim that the Defendants failed to disclose material inside information to the Plaintiffs in connection with the sale and that the \$2.25 per share (\$6.00 per share post split) purchase price was unfair. Plaintiffs are seeking damages of \$5 million plus punitive damages and costs. In April 1999, Defendants filed a motion to dismiss the amended complaint, which was denied by the Bankruptcy Court. On appeal in October 2000, Plaintiffs' claims were dismissed by the District Court. In November 2000, Plaintiffs filed an appeal of that dismissal with the United States Court of Appeals for the Second Circuit. In June 2002, the Second Circuit Court of Appeals reversed the District Court decision in part and remanded the case for further consideration of the Plaintiffs' claims as motions to modify the Bankruptcy Court sale order. The Plaintiffs' claims have now been referred back to Bankruptcy Court for such consideration. By order and decision dated September 30, 2003, the Bankruptcy Court allowed certain limited discovery to proceed, and this process is still underway.

The Company believes the claims have no merit and intends to defend them vigorously. The Company cannot predict the outcome of the claims nor reasonably estimate a range of possible loss given the current status of the litigation. Accordingly, no amounts have been reserved for this matter.

### Leases

The Company and its subsidiaries lease certain manufacturing, laboratory and office facilities. The leases generally provide for the Company to pay either an increase over a base year level for taxes, maintenance, insurance and other costs of the leased properties or the Company's allocated share of insurance, taxes, maintenance and other costs of leased properties. The leases contain renewal provisions.

Future minimum rental payments required under non-cancelable operating leases are (dollars in thousands): \$601 in 2009, \$11 in 2010, \$8 in 2011 and \$0 in 2012. Rent expense under all leases was \$745, \$685, and \$645 thousand for 2006, 2007, and 2008, respectively.

### Warranties

Below is a reconciliation of changes in product warranty liabilities at December 31:

	2007	2008
	(dollars in thousands)	
Balance, beginning of period	\$ 19	\$ 72
Accruals for warranties issued	126	47
Accruals related to pre-existing warranties (including changes in estimates)	□	(59)
Settlements made (in cash or in kind)	(73)	(29)
Balance, end of period	\$ 72	\$ 31

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### Licenses

On January 24, 2008, the Company cancelled its non-exclusive licensing agreement with Los Alamos National Laboratory (LANL) covering certain direct methanol fuel cell technology. This agreement, which was last amended on May 17, 2006, prescribed annual license fees ranging from \$35,000 in 2008 to \$100,000 in 2019. The Company paid a one-time fee of \$50,000 to cancel the agreement, and no future royalties will be paid. The Company cancelled this agreement because it no longer considers the direct methanol fuel cell technology licensed from LANL to be applicable to its future products.

Under the NYSERDA contract, MTI Micro agreed to pay NYSERDA a royalty of 5.0% of the sales price of any product sold incorporating IP developed pursuant to the NYSERDA contract. If the product is manufactured by a New York State manufacturer, this royalty is reduced to 1.5%. Total royalties are subject to a cap equal to two times the total contract funds paid by NYSERDA to MTI Micro, and may be reduced to reflect any New York State jobs created by MTI Micro.

### **Employment Agreements**

The Company has employment agreements with certain employees that provide severance payments, certain other payments, accelerated vesting and exercise extension periods of certain options upon termination of employment under certain circumstances, as defined in the applicable agreements. As of December 31, 2008, the Company's potential minimum obligation to these employees was approximately \$639 thousand.

### **Contract Losses**

During 2005, MTI Micro entered into a fixed price contract with Saft America, Inc. (SAFT) under the U.S. Army CECOM contract. The total fixed price to be paid at the completion was amended on November 14, 2006 from \$470 thousand to \$418 thousand, in recognition of the elimination of Milestone 4. As of December 31, 2006, MTI Micro forecasted costs in excess of this revised contract value of \$66 thousand, and accrued this amount for the anticipated cost overrun for this project. The project was completed during February 2007.

### **17. Related Party Transactions**

Management believes transactions among related parties are as fair to the Company as obtainable from unaffiliated third parties.

During the Company's December 2006 capital raise, Sidney V. Gold, a stockholder in MTI Micro, purchased 5,000 units consisting of 62,500 shares of the Company's common stock and warrants exercisable for five years to purchase an additional 31,250 shares of the Company's common stock at an exercise price of \$18.16 per share. The purchase price per unit was \$180.00.

In September 2008, MTI Micro issued convertible secured notes to external investors, including Dr. Walter L. Robb, a member of the Company's Board of Directors, totaling \$1,500 thousand. In February 2009, MTI Micro issued a convertible secured note to an external investor, a fund managed by Dr. Walter L. Robb, a member of the Company's Board of Directors, in the amount of \$500 thousand. (See Note 18).

### **18. Secured Convertible Notes and Related Instruments - related party**

On September 18, 2008, MTI Micro executed a Convertible Note and Warrant Purchase Agreement (the Purchase Agreement), Secured Convertible Promissory Note Agreements (the Bridge Notes), Security Agreement (the Security Agreement) and Warrant Agreements (the Warrants) with the Company and other accredited investors, including Dr. Walter L. Robb, a member of the Company's Board of Directors (the Other Investors), and together with the Company, the Investors. The Bridge Notes allow MTI Micro to borrow up to an aggregate of \$2,200 thousand, including conversion of the outstanding debt totaling \$700 thousand owed to the Company. Under this agreement, MTI Micro closed on \$1,500 thousand of funding from Other Investors on September 18, 2008.

On February 20, 2009, MTI Micro and the Investors agreed to, among other things, amend the Bridge Notes (Amendment No. 1) to permit MTI Micro to sell additional Bridge Notes with an additional principal amount of up to \$500 thousand to additional investors, and to extend the maturity date from March 31, 2009 to May 31, 2009 (the Maturity Date). No other terms of the Bridge Notes were amended. Following the effectiveness of the Amendment No. 1, MTI Micro borrowed an additional \$500 thousand from an existing Bridge Investor, a fund managed by Dr. Walter L. Robb, a member of the Company's Board of Directors, bringing the aggregate outstanding principal amount borrowed under the Bridge Notes, as amended, to \$2,700 thousand, including conversion of outstanding debt totaling \$700 thousand owed to the Company.

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The Bridge Notes have an interest rate of 10%, compounded annually. Accrued Interest at December 31, 2008 was \$44 thousand. If MTI Micro's next equity financing (the Next Equity Financing) raises at least \$3,500



thousand (including conversion of the Bridge Notes) and occurs before the Maturity Date, the outstanding principal and, at MTI Micro's option, accrued interest shall be automatically converted into equity securities (which are expected to be Series A Preferred Stock) issued in the Next Equity Financing at the price per share paid by investors in such Next Equity Financing. MTI Micro intends to use the proceeds for general corporate purposes, including development and commercialization activities in support of its portable power source products. This financing was a private placement with an accredited investor and was exempt from registration pursuant to Section 4(2) of the Securities Act of 1933, as amended.

If the Next Equity Financing does not occur on or before the Maturity Date, all principal and accrued interest outstanding under the Bridge Notes shall be converted to equity securities of MTI Micro, based upon a valuation of MTI Micro to be agreed to by MTI Micro and the holders of a majority in interest of the Bridge Notes within thirty (30) days following the Maturity Date, which valuation and terms shall be negotiated in good faith by the parties (a "Negotiated Conversion"). Depending on the valuation of MTI Micro at the time of conversion, the Company's ownership position could be substantially diluted, and the Company may no longer have sufficient equity to control the operations of MTI Micro. If MTI Micro and holders of a majority interest of the Bridge Notes cannot agree upon the valuation and terms of a Negotiated Conversion, and do not consummate such Negotiated Conversion within thirty (30) days following the Maturity Date, then all principal and accrued interest outstanding under the Bridge Notes shall be due and payable upon demand by the holders at any time thereafter.

In the event of a change of control of MTI Micro prior to the consummation of the Next Equity Financing, a negotiated conversion, or the repayment in full of all principal and accrued interest under the Bridge Notes, then all unpaid principal and accrued interest shall become immediately due and payable in an amount equal to 125% of the principal amount of the Bridge Notes and 100% of the accrued interest then outstanding within thirty (30) days following the consummation of a change in control.

The Bridge Notes contain customary negative covenants for loans of this type, including limitations on MTI Micro's ability to incur indebtedness, issue securities, and dispose of assets. As of December 31, 2008, MTI Micro was not in default. The Bridge Notes are secured by all of MTI Micro's assets (including intellectual property), have a first priority security interest in all of MTI Micro's assets (including intellectual property), and are senior to all other debts and obligations of MTI Micro in accordance with the provisions of a Security Agreement among MTI Micro and the Investors.

### **Warrants**

The Investors will also receive Warrants to purchase securities issued in the Next Equity Financing or issued in a Negotiated Conversion, as applicable, having an aggregate exercise price equal to 10% of the principal amount of the outstanding Bridge Notes. The per share exercise price of the Warrants shall be the per share price at which securities are sold or issued in the Next Equity Financing or Negotiated Conversion, as applicable. The Warrants will be net-exercisable and will expire on the earlier of: (i) the fifth anniversary of the Warrant issue date; (ii) immediately prior to a change in control; (iii) thirty days following the Maturity Date if no Negotiated Conversion is consummated; or (iv) immediately prior to an initial public offering of MTI Micro.

Because the Next Equity Financing or a Negotiated Conversion has not yet taken place, the warrant's exercise price and number of shares are not yet determinable. As such, the warrants have not been measured. When the Next Equity Financing or a Negotiated Conversion does occur, the warrants will be measured and recognized at that time.

As of December 31, 2008, the Company owned approximately 97% of MTI Micro and MTI Micro's financial results presently consolidated into the Company's financial information. Conversion of the Bridge Notes and exercise of the Warrants into equity of MTI Micro by the Other Investors besides the Company could result in substantial dilution of the Company's ownership interest in MTI Micro, and could result in the Company deconsolidating future financial results of MTI Micro.

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## **19. 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 and funded research and development revenue is summarized by geographic area for the Company as a whole for each of the years ended December 31:

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	2006	2007	2008
	(dollars in thousands)		
<b>Product revenue:</b>			
United States	\$ 4,737	\$ 5,453	\$ 3,309
Japan	1,762	2,516	904
Singapore	355	287	112
Hong Kong	83	163	502
Other Pacific Rim	197	143	215
Germany	60	104	162
United Kingdom	52	20	189
Other Europe	63	37	160
Canada	36	112	212
Middle East	61		315
Rest of World	261	193	144
Total product revenue	\$ 7,667	\$ 9,028	\$ 6,224
<b>Funded research and development revenue:</b>			
South Korea	\$ 427	\$ 448	\$ 0
United States	62	1,108	1,154
Total funded research and development revenue	\$ 489	\$ 1,556	\$ 1,154
Total revenue	\$ 8,156	\$ 10,584	\$ 7,738

Revenues are attributed to regions based on the location of customers.

The Company operates in two business segments, New Energy and Test and Measurement Instrumentation. The New Energy segment is focused on commercializing DMFCs. The Test and Measurement Instrumentation segment designs, manufactures, markets and services computer-based balancing systems for aircraft engines, high performance test and measurement instruments and systems, and wafer characterization tools for the semiconductor industry. The Company's principal operations are located in North America.

The accounting policies of the New Energy and Test and Measurement Instrumentation segments are similar to those described in the summary of significant accounting policies (See Note 2). The Company evaluates performance based on profit or loss from operations before income taxes, accounting changes, items management does not deem relevant to segment performance, and interest income and expense. Inter-segment sales are not significant.

Total product revenues contributed by the Test and Measurement Instrumentation products segment and their percentage of total product revenues for each of the years ended December 31 are shown below:

	2006		2007		2008	
	Sales	%	Sales	%	Sales	%
	(dollars in thousands)					
Aviation	\$ 2,990	39.00%	\$ 3,664	40.58%	\$ 1,979	31.79%
General Gauging	4,165	54.32	4,489	49.72	2,980	47.87
Semiconductor	512	6.68	875	9.70	1,266	20.34
Total	\$ 7,667	100.00%	\$ 9,028	100.00%	6,225	100.00%
Total Foreign-Based Revenue	\$ 2,930	38.22%	\$ 3,575	39.60%	2,915	46.84%

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In the Test and Measurement Instrumentation segment, the U.S. Air Force accounted for \$1,774 thousand or 23.1% of total revenue in 2006, \$2,375 thousand or 26.3% of total product revenue in 2007, and \$974 thousand or 15.65% of total product revenue in 2008. Sales to a Japanese distributor accounted for \$2,501 thousand or 27.7% of total product revenue in 2007, and \$864 thousand or 13.88% of total product revenue in 2008.

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In the New Energy segment, the DOE accounted for \$63 thousand or 12.8% of total funded research and development revenue in 2006, \$675 thousand or 43.4% of total funded research and development revenue in 2007, and \$1,154 thousand or 100% of total funded research and development revenue in 2008. Samsung accounted for \$448 thousand or 28.9% of total funded research and development revenue in 2007.

Summarized financial information concerning the Company's reportable segments is shown in the following table. The "Other" column includes corporate related items and items such as income taxes or unusual items, which are not allocated to reportable segments. The "Reconciling Items" column includes minority interests in a consolidated subsidiary. In addition, segments' non-cash items include any depreciation and amortization in reported profit or loss. The New Energy segment figures include the Company's direct micro fuel cell operations, equity securities of Plug Power, gains on the sale of these securities, and (losses) gains related to the embedded derivative for the purchase of Plug Power common stock.

	Test and			Reconciling Items	Consolidated Totals
	New Energy	Measurement Instrumentation	Other		
(Dollars in thousands)					
<b>Year Ended December 31, 2006</b>					
Product revenue	\$ 7,667	\$ 7,667	\$ 7,667	\$ 7,667	\$ 7,667
Funded research and development revenue	489	489	489	489	489
Research and product development expenses	11,588	1,333	1,333	1,333	12,921
Selling, general and administrative expenses	2,733	2,457	4,882	4,882	10,072
Gain on securities available for sale	4,289	4,289	4,289	4,289	4,289
Segment (loss) profit from continuing operations					
before income taxes, equity in holdings					
losses and minority interests	(12,847)	662	(795)	662	(12,980)
Segment (loss) profit	(12,847)	662	(2,690)	1,208	(13,667)
Total assets	15,565	2,782	15,464	2,782	33,811
Securities available for sale	10,075	10,075	10,075	10,075	10,075
Capital expenditures	1,284	200	90	200	1,574
Depreciation and amortization	604	94	403	94	1,101

	Test and			Reconciling Items	Consolidated Totals
	New Energy	Measurement Instrumentation	Other		
(Dollars in thousands)					
<b>Year Ended December 31, 2007</b>					
Product revenue	\$ 9,028	\$ 9,028	\$ 9,028	\$ 9,028	\$ 9,028
Funded research and development revenue	1,556	1,556	1,556	1,556	1,556
Research and product development expenses	10,115	1,650	1,650	1,650	11,765
Selling, general and administrative expenses	1,921	2,650	4,167	4,167	8,738
Gain on securities available for sale	2,549	2,549	2,549	2,549	2,549
Segment (loss) profit from continuing operations					
before income taxes, equity in holdings					
losses and minority interests	(11,189)	789	2,791	789	(7,609)
Segment (loss) profit	(11,189)	789	243	582	(9,575)
Total assets	8,128	3,018	7,570	3,018	18,716
Securities available for sale	4,492	4,492	4,492	4,492	4,492
Capital expenditures	212	177	25	177	414
Depreciation and amortization	715	117	297	117	1,129

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	Test and			Reconciling Items	Consolidated Totals
	New Energy	Measurement Instrumentation	Other		
(Dollars in thousands)					

**Year Ended December 31, 2008**

Product revenue	\$	□	\$ 6,224	\$	□	\$	□	\$ 6,224
Funded research and development revenue		1,154	□		□		□	1,154
Research and product development expenses		6,614	1,650		□		□	8,264
Selling, general and administrative expenses		2,463	2,331		3,575		□	8,369
Gain (loss) on securities available for sale		1,214	□		(196)		□	1,018
Segment (loss) profit from continuing operations before income taxes, equity in holdings□ losses and minority interests		(8,961)	(1,415)		(384)		□	(10,760)
Segment (loss) profit		(8,961)	(1,415)		(2,388)		260	(12,504)
Total assets		2,093	2,132		1,286		□	5,511
Securities available for sale		□	□		□		□	□
Capital expenditures		105	60		16		□	181
Depreciation and amortization		621	128		70		□	819

The following table presents the details of □Other□ segment (loss) profit for each of the years ended December 31:

	2006	2007	2008
	(dollars in thousands)		
Corporate and other (expenses) income:			
Depreciation and amortization	\$ (403)	\$ (297)	\$ (70)
Interest income	486	413	(106)
Gain on derivatives	182	2,967	655
Income tax (expense) benefit	(1,895)	(2,548)	(2,004)
Other expense, net	(1,060)	(292)	(863)
Total (expense) income	\$ (2,690)	\$ 243	\$ (2,388)

**20. Restructuring**

In March 2007, the Company announced the suspension of MTI Micro's high power direct methanol fuel cell program in response to decreased funding and sales opportunities in the military market. In connection with this action, the Company accrued restructuring charges of \$344 thousand pre-tax, consisting primarily of cash-based employee severance and benefit costs related to the reduction of 23 positions within its New Energy segment and Corporate staff. Restructuring expenses were classified as selling, general and administrative expenses within the Company's Consolidated Statements of Operations for the period. All amounts under this plan were settled by March 31, 2008.

In August 2008, the Board of Directors approved a restructuring plan (the "Restructuring"), which was designed to help the Company reduce expenses and preserve cash. As part of the Restructuring, a total of 29 positions across the Company and its subsidiaries were eliminated. The Company accrued and at present expects to incur total severance and other benefit charges of approximately \$342 thousand in connection with this plan. Through December 31, 2008, the Company incurred cash expenditures to implement this plan of \$273 thousand, and incurred the remaining cash expenditures in the first quarter of 2009.