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

Form 10-K

(Mark One)

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2010

or

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission File number 0-23621

MKS INSTRUMENTS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Massachusetts *(State or other Jurisdiction of Incorporation or Organization)*	**04-2277512** *(IRS Employer Identification No.)*
2 Tech Drive, Suite 201, Andover, Massachusetts *(Address of Principal Executive Offices)*	**01810** *(Zip Code)*

Registrant's Telephone Number, including area code
(978) 645-5500

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

Title of class	Name of exchange on which registered
Common Stock, no par value	NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act:
None

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

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 o No ☑

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes o No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o

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

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

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

Aggregate market value of the voting and non-voting common equity held by nonaffiliates of the registrant as of June 30, 2010 based on the closing price of the registrant's Common Stock on such date as reported by the Nasdaq Global Market: $938,960,587

Number of shares outstanding of the issuer's Common Stock, no par value, as of February 18, 2011: 51,736,456

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for MKS' Annual Meeting of Stockholders to be held on May 2, 2011 are incorporated by reference into Part III of this Form 10-K.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. When used herein, the words "believe," "anticipate," "plan," "expect," "estimate," "intend," "may," "see," "will," "would" and similar expressions are intended to identify forward-looking statements although not all forward looking statements contain these identifying words. These forward-looking statements reflect management's current opinions and are subject to certain risks and uncertainties that could cause actual results to differ materially from those stated or implied. MKS assumes no obligation to update this information. Risks and uncertainties include, but are not limited to, those discussed in the section entitled "Risk Factors" of this annual report on Form 10-K.

PART I

Item 1. ***Business***

MKS Instruments, Inc. (the "Company" or "MKS") was founded in 1961 as a Massachusetts corporation. We are a leading global provider of instruments, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of advanced manufacturing processes to improve process performance and productivity. We also provide services relating to the maintenance and repair of our products, software maintenance, installation services and training.

Our products are used in diverse markets, applications and processes. The primary markets we serve are manufacturers of capital equipment for semiconductor devices and for other thin film applications including flat panel displays, light emitting diodes ("LEDs"), solar cells, data storage media and other advanced coatings. We also leverage our technology into other markets with advanced manufacturing applications including medical equipment, pharmaceutical manufacturing, energy generation and environmental monitoring.

We are managed as one operating segment. We group our products into three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas composition analysis, control and information technology, power and reactive gas generation and vacuum technology.

For almost 50 years, we have focused on satisfying the needs of our customers by establishing long-term, collaborative relationships. We have a diverse base of customers that includes manufacturers of semiconductor capital equipment and semiconductor devices, thin film capital equipment used in the manufacture of flat panel displays, LEDs, solar cells, data storage media and other coating applications; and other industrial, medical, pharmaceutical manufacturing, energy generation, environmental monitoring and other advanced manufacturing companies, as well as university, government and industrial research laboratories. Our top 10 customers for 2010 were Applied Materials, Benchmark Electronics, Hitachi, Lam Research, Novellus Systems, Phillips, Precision Flow Tech, PSK Technologies, Samsung and Tokyo Electron.

We file reports, proxy statements and other documents with the Securities and Exchange Commission ("SEC"). You may read and copy any document we file at the SEC Headquarters at the Office of Investor Education and Assistance, 100 F Street, NE, Washington, D.C. 20549. You should call 1-800-SEC-0330 for more information on the public reference room. Our SEC filings are also available to you on the SEC's internet site at http://www.sec.gov.

Our internet address is http://www.mksinst.com. We are not including the information contained in our website as part of, or incorporating it by reference into, this annual report on Form 10-K. We make available free of charge through our internet site our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file such materials with the SEC.

Markets and Applications

We are focused on improving process performance and productivity by measuring, controlling, powering, monitoring and analyzing advanced manufacturing processes in semiconductor, thin film and certain other advanced market sectors. Approximately 64%, 52% and 58% of our net sales for the years 2010, 2009 and 2008, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. Approximately 36%, 48% and 42% of our net sales in the years 2010, 2009 and 2008, respectively, were for other advanced manufacturing applications. These include, but are not limited to, thin film processing equipment applications such as flat panel displays, LEDs, solar cells, data storage media and other thin film coatings as well as medical equipment; pharmaceutical manufacturing, energy generation and environmental monitoring processes; other industrial manufacturing; and university, government and industrial research laboratories.

During the year 2010, 2009 and 2008, international net sales accounted for approximately 43%, 46% and 44% of our net sales, respectively. International sales include sales by our foreign subsidiaries, but exclude direct export sales. Net sales by our Japan subsidiary were 14%, 12% and 15% for the years 2010, 2009 and 2008, respectively. Long-lived assets located in the U.S. were $54.8 million, $52.1 million and $60.9 million as of December 31, 2010, 2009 and 2008, respectively. Long-lived assets located outside the U.S. were $17.9 million, $17.4 million and $23.7 million as of December 31, 2010, 2009 and 2008, respectively.

Semiconductor Manufacturing Applications

The majority of our sales are derived from products sold to semiconductor capital equipment manufacturers and semiconductor device manufacturers. Our products are used in the major semiconductor processing steps such as depositing thin films of material onto silicon wafer substrates and etching and cleaning circuit patterns. In addition, we provide specialized instruments and software to monitor and analyze process performance.

We anticipate that the semiconductor manufacturing market will continue to account for a substantial portion of our sales. While the semiconductor device manufacturing market is global, major semiconductor capital equipment manufacturers are concentrated in Japan and the United States.

Other Advanced Manufacturing Applications

Our products are used in the manufacture of flat panel displays, LEDs, data storage media, solar cells and other coatings including architectural glass that require the same or similar thin film deposition processes as semiconductor manufacturing.

Flat Panel Display Manufacturing

Flat panel displays are used in electronic hand-held devices, laptop computers, desktop computer monitors and television sets. We sell products to flat panel display equipment manufacturers and to end-users in the flat panel display market. Major manufacturers of flat panel displays are concentrated in Japan, Korea and Taiwan, and major manufacturers of flat panel display equipment are concentrated in Japan and the United States. The transition to larger panel sizes and higher display resolution is driving the need for improved process control to reduce defects.

Light Emitting Diodes (LEDs)

LEDs are made using vacuum processes similar to semiconductor chip manufacturing. Because of their high brightness and long life, as well as environmentally friendly benefits such as lower power consumption, LEDs have experienced rapid acceptance in back side lighting of flat screen television displays and are emerging in general lighting applications.

Solar Cells

Our products are used in crystalline silicon and emerging thin film processes to manufacture photovoltaic (PV) cells. Crystalline silicon technology requires wafer based deposition systems and is currently the dominant manufacturing technology. Thin film deposition on a non-silicon substrate, such as glass, is the emerging technology.

Data Storage Media

Our products are used to manufacture storage media that store and read data magnetically; optical storage media that store and read data using laser technology; hard disks; data storage devices; and digital video discs.

The transition to higher density storage capacity requires manufacturing processes incorporating tighter process controls. Major manufacturers of storage media are concentrated in Japan and the Asia Pacific region, and major manufacturers of storage media capital equipment are concentrated in Europe, Japan and the United States.

Other Advanced Coatings

Thin film coatings for diverse applications such as architectural glass and packaging are deposited using processes similar to those used in semiconductor manufacturing. Thin film processing manufacturers are concentrated in Europe, Japan and the United States.

Other Advanced Applications

Our products are used in other energy generation and environmental monitoring processes such as nuclear fuel processing, fuel cell research, greenhouse gas monitoring, and chemical agent detection; medical instrument sterilization; consumable medical supply manufacturing and pharmaceutical applications. Our power delivery products are also incorporated into other end-market products such as medical imaging equipment. In addition, our products are sold to government, university and industrial laboratories for vacuum applications involving research and development in materials science, physical chemistry and electronics materials. Major equipment and process providers and research laboratories are concentrated in Europe, Japan and the United States.

Product Groups

We group our products into three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products.

Instruments and Control Systems

This product group includes pressure measurement and control, materials delivery, gas composition analysis and control and information technology products.

Pressure Measurement and Control Products. Each of our pressure measurement and control product lines consists of products that are designed for a variety of pressure ranges and accuracies.

Baratron® Pressure Measurement Products. These products are typically used to measure the pressure of the gases being distributed upstream of the process chambers, to measure process chamber pressures and to measure pressures between process chambers, vacuum pumps and exhaust lines. We believe we offer the widest range of gas pressure measurement instruments in the semiconductor and advanced thin film materials processing industries.

Automatic Pressure and Vacuum Control Products. These products enable precise control of process pressure by electronically actuating valves that control the flow of gases in and out of the process chamber to minimize the difference between desired and actual pressure in the chamber.

In most cases, Baratron pressure measurement instruments provide the pressure input to the automatic pressure control device. Together, these components create an integrated automatic pressure control subsystem. Our pressure control products can also accept inputs from other measurement instruments, enabling the automatic control of gas input or exhaust based on parameters other than pressure.

Materials Delivery Products. Each of our materials delivery product lines combines MKS flow, pressure measurement and control technologies to provide customers with integrated subsystems and precise control capabilities that are optimized for a given application.

Flow Measurement and Control Products. Flow measurement products include gas and vapor flow measurement products based upon thermal conductivity, pressure and direct liquid injection technologies. The flow control products combine the flow measurement device with valve control elements based upon solenoid, piezoelectric and piston pump technologies. These products measure and automatically control the mass flow rate of gases and vapors into the process chamber.

Gas Composition Analysis Products. Gas composition analysis instruments are sold to a variety of industries including the semiconductor industry.

Mass Spectrometry-Based Gas Composition Analysis Instruments. These products are based on quadrupole mass spectrometer sensors that separate gases based on molecular weight. These sensors include built-in electronics and are provided with software that analyzes the composition of background and process gases in the process chamber. These instruments are provided both as portable laboratory systems and as process gas monitoring systems used in the diagnosis of semiconductor manufacturing process systems.

Fourier Transform Infra-Red (FTIR) Based Gas Composition Analysis Products. FTIR-based products provide information about the composition of gases by measuring the absorption of infra-red light as it passes through the sample being measured. Gas analysis applications include measuring the compositions of mixtures of reactant gases; measuring the purity of individual process gases; measuring the composition of process exhaust gas streams to determine process health; monitoring gases to ensure environmental health and safety and monitoring combustion exhausts. These instruments are provided as portable laboratory systems and as process gas monitoring systems used in the diagnosis of manufacturing processes.

Mass spectrometry-based and FTIR-based gas monitoring systems can indicate out-of-bounds conditions, such as the presence of undesirable contaminant gases and water vapor or out-of-tolerance amounts of specific gases in the process, which alert operators to diagnose and repair faulty equipment.

Leak Detection Products. Helium leak detection is used in a variety of industries including semiconductor, heating, ventilation and air-conditioning (“HVAC”), automotive and aerospace to ensure the leak integrity of both manufactured products and manufacturing equipment. We believe that our products are the smallest mass spectrometer-based helium leak detectors currently available.

Control and Information Technology Products. We design and manufacture a suite of products that allow semiconductor and other manufacturing customers to better control their processes through computer-controlled automation. These products include digital control network products, process chamber and system controllers, connectivity products and data analysis/information products.

Control Products. Digital control network products are used to connect sensors, actuators and subsystems to the chamber and system control computers. They support a variety of industry-standard connection methods as well as conventional discrete digital and analog signals. Chamber and system control computers process these signals in real time and allow customers to precisely manage the process conditions.

Connecting sensors, chambers and tools to the factory network is essential for improving quality and productivity. Our connectivity products allow information to flow from the process sensors and subsystems and from the process tool control computer to the factory network. By enabling this information flow, we believe that we help customers optimize their processes through Advanced Process Control (“APC”), and diagnose equipment problems from a remote location (“e-diagnostics”).

Information Technology Products. We design on-line and off-line software products to analyze data to improve the quality and yield of semiconductor, thin film, pharmaceutical, injection molding and other manufacturing processes.

Power and Reactive Gas Products

This product group includes power delivery and reactive gas generation products used in semiconductor and other thin film applications, including solar and in medical imaging equipment applications.

Power Delivery Products. We design and manufacture microwave, DC and RF power delivery systems as well as RF matching networks and metrology products. In the semiconductor, thin film and other market sectors, our power supplies are used to provide energy to various etching, stripping and deposition processes. Our power amplifiers are also used in medical imaging equipment.

Reactive Gas Generation Products. We design and manufacture reactive gas generation products, which create reactive species. A reactive species is an atom or molecule in an unstable state, which is used to facilitate various chemical reactions in processing of thin films (deposition of films, etching and cleaning of films and surface modifications). A number of different technologies are used to create reactive gas including different plasma technologies and barrier discharge technologies.

Processing Thin Films. Our reactive gas products include ozone generators and subsystems used for deposition of insulators onto semiconductor devices, ozonated water delivery systems for advanced semiconductor wafer and flat panel display cleaning, microwave plasma based products for photo resist removal and a new line of remote plasma generators which provide reactive gases for a wide range of semiconductor, flat panel and other thin film process applications.

Equipment Cleaning. As materials are deposited on wafers, films, or solar cells, the deposited material also accumulates on the walls of the vacuum process chamber. Our atomic fluorine generators are used to clean the process chambers between deposition steps to reduce particulates and contamination caused by accumulated build up on the chamber walls.

Vacuum Products

This product group consists of vacuum technology products, including vacuum containment components, vacuum gauges, vacuum valves, effluent management subsystems and custom stainless steel chambers, vessels, pharmaceutical process equipment ("BPE") hardware and housings.

Vacuum Gauging Products. We offer a wide range of vacuum instruments consisting of vacuum measurement sensors and associated power supply and readout units as well as transducers where the sensor and electronics are integrated within a single package. These gauges complement our Baratron capacitance manometers for medium and high vacuum ranges. Our indirect gauges use thermal conductivity and ionization gauge technologies to measure pressure and vacuum levels, and our direct gauges use the pressure measurement technology of a MEMS-based piezo sensor.

Vacuum Valves, Stainless Steel Components, Process Solutions and Custom Stainless Steel Hardware. Our vacuum valves are used for vacuum isolation of vacuum lines, load locks, vacuum chambers and pumps for chamber isolation and vacuum containment. Our vacuum process solutions consist of vacuum fittings, traps and heated lines that are used downstream from the semiconductor process chamber to control process effluent gasses by preventing condensable materials from depositing particles near or back into the process chamber.

Custom Manufactured Components. Our design and manufacturing facilities build high purity chambers for material and thin film coating, atomic layer deposition ("ALD"), lithography and all semiconductor and solar processes. We design and build custom panels, weldments, ASME (American Society of Manufacturing Engineers) vessels and housings, as well as a line of BPE certified components for biopharmaceutical processes.

Customers

Our largest customers include leading semiconductor capital equipment manufacturers such as Applied Materials, Lam Research, Novellus Systems and Tokyo Electron. Sales to our top ten customers accounted for approximately 45%, 37% and 39% of net sales for the years 2010, 2009 and 2008, respectively. Applied Materials accounted for approximately 16%, 13% and 19% of our net sales for the years 2010, 2009 and 2008, respectively.

Sales, Marketing, Service and Support

Our worldwide sales, marketing, service and support organization is critical to our strategy of maintaining close relationships with semiconductor capital equipment and device manufacturers and manufacturers of other advanced applications. We sell our products primarily through our direct sales force. As of December 31, 2010, we had 167 sales employees worldwide, located in China, France, Germany, Japan, Korea, the Netherlands, Singapore, Sweden, Taiwan, the United Kingdom and the United States. We also maintain sales representatives and agents in a number of countries, who supplement our direct sales force. We maintain a marketing staff that identifies customer requirements, assists in product planning and specifications, and focuses on future trends in semiconductor and other markets.

As semiconductor device manufacturers have become increasingly sensitive to the significant costs of system downtime, they have required that suppliers offer comprehensive local repair service and close customer support. Manufacturers require close support to enable them to repair, modify, upgrade and retrofit their equipment to improve yields and adapt new materials or processes. To meet these market requirements, we maintain a worldwide sales and support organization in 15 countries. Technical support is provided from offices in China, France, Germany, Japan, Korea, the Netherlands, Singapore, Taiwan, the United Kingdom and the United States. Repair and calibration services are provided at 24 service depots located worldwide. We typically provide warranties from one to three years, depending upon the type of product.

Research and Development

Our products incorporate sophisticated technologies to power, measure, control and monitor increasingly complex gas-related semiconductor and other advanced manufacturing processes, thereby enhancing uptime, yield and throughput for our customers. Our products have continuously advanced as we strive to meet our customers' evolving needs. We have developed, and continue to develop, new products to address industry trends, such as the shrinking of integrated circuit critical dimensions to 32 nanometers and below and in the flat panel display and solar markets to larger substrate sizes, which require more advanced process control technology. In addition, we have developed, and continue to develop, products that support the migration to new classes of materials and ultra-thin layers, such as copper for low resistance conductors, high-k dielectric materials for capacitors and gates and low-k dielectric materials for low loss insulators that are used in small geometry manufacturing. We have undertaken an initiative to involve our marketing, engineering, manufacturing and sales personnel in the concurrent development of new products in order to reduce the time to market for new products. Our employees also work closely with our customers' development personnel helping us to identify and define future technical needs on which to focus research and development efforts. We support research at academic institutions targeted at advances in materials science and semiconductor process development.

As of December 31, 2010, we had 313 research and development employees, primarily located in the United States. Our research and development expenses were $62.7 million, $50.2 million and $72.8 million for the years 2010, 2009 and 2008, respectively. Our research and development efforts include numerous projects, none of which are individually material, and generally have a duration of 3 to 30 months depending upon whether the product is an enhancement of existing technology or a new product. Our current initiatives include projects to enhance the performance characteristics of older products, to develop new products and to integrate various technologies into subsystems.

Manufacturing

Our manufacturing facilities are located in China, Germany, Israel, Mexico, the United Kingdom and the United States. Manufacturing activities include the assembly and testing of components and subassemblies, which are integrated into our products. We outsource some of our subassembly work. We purchase a wide range of electronic, mechanical and electrical components, some of which are designed to our specifications. We consider our lean manufacturing techniques and responsiveness to customers' significantly fluctuating product demands to be a competitive advantage. As of December 31, 2010, we had 1,879 manufacturing related employees located mostly in China and the United States.

Competition

The market for our products is highly competitive. Principal competitive factors include:

- historical customer relationships;
- product quality, performance and price;
- breadth of product line;

- manufacturing capabilities; and
- customer service and support.

Although we believe that we compete favorably with respect to these factors, there can be no assurance that we will continue to do so.

We encounter substantial competition in most of our product lines, although no single competitor competes with us across all product lines. Certain of our competitors may have greater financial and other resources than us. In some cases, competitors are smaller than we are, but are well established in specific product niches. Hitachi and Horiba offer materials delivery products that compete with our product line of mass flow controllers. Nor-Cal Products and VAT offer products that compete with our vacuum components. Inficon offers products that compete with our vacuum measurement and gas analysis products. Brooks Automation and Inficon offer products that compete with our vacuum gauging products. Advanced Energy offers products that compete with our power delivery and reactive gas generator products.

Patents and Other Intellectual Property Rights

We rely on a combination of patent, copyright, trademark and trade secret laws and license agreements to establish and protect our proprietary rights. As of December 31, 2010, we owned 351 U.S. patents, 307 foreign patents and had 111 pending U.S. patent applications that expire at various dates through 2029. Foreign counterparts of certain of these applications have been filed or may be filed at the appropriate time.

We require each of our employees, including our executive officers, to enter into standard agreements pursuant to which the employee agrees to keep confidential all of our proprietary information and to assign to us all inventions while they are employed by us.

Employees

As of December 31, 2010, we employed 2,673 persons. We believe that our ongoing success depends upon our continued ability to attract and retain highly skilled employees for whom competition is intense. None of our employees are represented by a labor union or are party to a collective bargaining agreement. We believe that our employee relations are good.

Discontinued Operations

During 2010, we executed a plan to divest two product lines, as their growth potential no longer met our long-term strategic objectives. We completed the sale of Ion Systems, Inc. (“Ion”) during the second quarter of 2010 and the sale of the assets of the Yield Dynamics, LLC (“YDI”) business during the third quarter of 2010. The results of operations of the two product lines have been classified as discontinued operations in the consolidated statements of operations for all periods presented. The assets and liabilities of these discontinued product lines have not been reclassified and segregated in the consolidated balance sheets or consolidated statements of cash flows due to their immaterial amounts.

Item 1A. *Risk Factors*

The following factors could materially affect MKS’ business, financial condition or results of operations and should be carefully considered in evaluating the Company and its business, in addition to other information presented elsewhere in this report.

Our business depends substantially on capital spending in the semiconductor industry which is characterized by periodic fluctuations that may cause a reduction in demand for our products.

Approximately 64%, 52% and 58% of our net sales for the years 2010, 2009 and 2008, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers, and we expect that sales to such customers will continue to account for a substantial portion of our sales. Our business depends upon the capital expenditures of semiconductor device manufacturers, which in turn depend upon the demand for semiconductors.

Historically, the semiconductor market has been highly cyclical and has experienced periods of overcapacity, resulting in significantly reduced demand for capital equipment which may result in lower gross margins due to reduced absorption of manufacturing overhead. In addition, many semiconductor manufacturers have operations and customers in Asia, a region that in past years has experienced serious economic problems including currency devaluations, debt defaults, lack of liquidity and recessions. For example, reductions in demand for the products manufactured by semiconductor capital equipment manufacturers and semiconductor device manufacturers in 2008 and early 2009 adversely affected our business. The global economic uncertainty prolonged a steep downturn in semiconductor capital equipment spending and adversely affected our business, financial condition and results of operations. Our net revenues during 2009 for our semiconductor and capital equipment manufacturers and semiconductor device manufacturers decreased by 43%. However in 2010, sales to semiconductor capital equipment manufacturers and semiconductor device manufacturers increased by 167%. We cannot be certain of the timing or magnitude of future semiconductor industry downturns or recoveries. A decline in the level of orders as a result of any downturn or slowdown in the semiconductor capital equipment industry could have a material adverse effect on our business, financial condition and results of operations.

We are exposed to risks associated with instability in the financial markets and any weakness in the global economy.

The severe tightening of the credit markets, turmoil in the financial markets, and weak global economy, contributed to slowdowns in the industries in which we operate in 2008 and 2009. The markets for semiconductors and flat panel displays in particular depend largely on consumer spending. Economic uncertainty exacerbates negative trends in consumer spending and may cause certain of our customers to push out, cancel, or refrain from placing equipment or service orders, which may affect our ability to convert backlog to sales and may reduce our net sales. Difficulties in obtaining capital and deteriorating market conditions may also lead to the inability of some customers to obtain affordable financing, resulting in lower sales for us. Customers with liquidity issues may lead to additional bad debt expense for us. These conditions may also similarly affect key suppliers, which could affect their ability to deliver parts and result in delays for our products. Further, these conditions and uncertainty about future economic conditions make it challenging for us to forecast its operating results, make business decisions, and identify the risks that may affect its business, financial condition and results of operations. If we are not able to timely and appropriately adapt to changes resulting from a difficult macroeconomic environment, our business, financial condition or results of operations may be materially and adversely affected.

International sales accounted for approximately 43%, 46% and 44%, of net sales for the years 2010, 2009 and 2008, respectively, a substantial portion of which were sales to Japan, and we anticipate that international sales will continue to account for a significant portion of our net sales. In addition, certain of our key domestic customers derive a significant portion of their revenues from sales in international markets. Therefore, our sales and results of operations could be adversely affected by economic slowdowns affecting the global economy generally, as well as economic slow downs in particular regions, such as Asia or Europe, or specific countries such as Japan. International sales include sales by our foreign subsidiaries, but exclude direct export sales.

Our quarterly operating results have fluctuated, and are likely to continue to vary significantly, which may result in volatility in the market price of our common stock.

A substantial portion of our shipments occurs shortly after an order is received and therefore we operate with a low level of backlog. As a result, a decrease in demand for our products from one or more customers could occur with limited advance notice and could have a material adverse effect on our results of operations in any particular period. A significant percentage of our expenses is relatively fixed and based in part on expectations of future net sales. The inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on our results of operations. Factors that could cause fluctuations in our net sales include:

- the timing of the receipt of orders from major customers;
- shipment delays;
- disruption in sources of supply;

- seasonal variations in capital spending by customers;
- production capacity constraints; and
- specific features requested by customers.

In addition, our quarterly operating results may be adversely affected due to charges incurred in a particular quarter, for example, relating to inventory obsolescence, warranty or asset impairments.

As a result of the factors discussed above, it is likely that we may in the future experience quarterly or annual fluctuations and that, in one or more future quarters, our operating results may fall below the expectations of public market analysts or investors. In any such event, the price of our common stock could fluctuate or decline significantly.

The loss of net sales to any one of our major customers would likely have a material adverse effect on us.

Our top ten customers accounted for approximately 45%, 37% and 39% of our net sales for the years 2010, 2009 and 2008, respectively. During the years 2010, 2009 and 2008, one customer, Applied Materials, accounted for approximately 16%, 13% and 19%, respectively, of our net sales. The loss of a major customer or any reduction in orders by these customers, including reductions due to market or competitive conditions, would likely have a material adverse effect on our business, financial condition and results of operations. None of our significant customers, including Applied Materials, has entered into an agreement requiring it to purchase any minimum quantity of our products. The demand for our products from our semiconductor capital equipment customers depends in part on orders received by them from their semiconductor device manufacturer customers.

Attempts to lessen the adverse effect of any loss or reduction of net sales through the rapid addition of new customers could be difficult because prospective customers typically require lengthy qualification periods prior to placing volume orders with a new supplier. Our future success will continue to depend upon:

- our ability to maintain relationships with existing key customers;
- our ability to attract new customers and satisfy any required qualification periods;
- our ability to introduce new products in a timely manner for existing and new customers; and
- the successes of our customers in creating demand for their capital equipment products that incorporate our products.

As part of our business strategy, we have entered into and may enter into or seek to enter into business combinations and acquisitions that may be difficult and costly to integrate, may be disruptive to our business, may dilute stockholder value or may divert management attention.

In past years, we made numerous acquisitions and as a part of our business strategy, we may enter into additional business combinations and acquisitions. Acquisitions are typically accompanied by a number of risks, including the difficulty of integrating the operations, technology and personnel of the acquired companies, the potential disruption of our ongoing business and distraction of management, possible internal control weaknesses of the acquired companies, expenses related to the acquisition and potential unknown liabilities associated with acquired businesses. If we are not successful in completing acquisitions that we may pursue in the future, we may be required to reevaluate our growth strategy, and we may incur substantial expenses and devote significant management time and resources in seeking to complete proposed acquisitions that may not generate benefits for us.

In addition, with future acquisitions, we could use substantial portions of our available cash as all or a portion of the purchase price. We could also issue additional securities as consideration for these acquisitions, which could cause significant stockholder dilution without achieving the desired accretion to our business. Further, our prior acquisitions and any future acquisitions may not ultimately help us achieve our strategic goals and may pose other risks to us.

As a result of our previous acquisitions, we now have several different decentralized operating and accounting systems, resulting in a complex reporting environment. We will need to continue to modify our accounting policies, internal controls, procedures and compliance programs to provide consistency across all our operations. In order to increase efficiency and operating effectiveness and improve corporate visibility into our decentralized operations, we are currently implementing a worldwide Enterprise Resource Planning ("ERP") system. We expect to continue to implement the ERP system in phases over the next few years. Any future implementations may risk potential disruption of our operations during the conversion periods and the implementations could require significantly more management time and higher implementation costs than currently estimated.

An inability to convince semiconductor device manufacturers to specify the use of our products to our customers that are semiconductor capital equipment manufacturers would weaken our competitive position.

The markets for our products are highly competitive. Our competitive success often depends upon factors outside of our control. For example, in some cases, particularly with respect to mass flow controllers, semiconductor device manufacturers may direct semiconductor capital equipment manufacturers to use a specified supplier's product in their equipment. Accordingly, for such products, our success will depend in part on our ability to have semiconductor device manufacturers specify that our products be used at their semiconductor fabrication facilities. In addition, we may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such semiconductor fabrication facilities.

If our products are not designed into successive generations of our customers' products, we will lose significant net sales during the lifespan of those products.

New products designed by capital equipment manufacturers typically have a lifespan of five to ten years. Our success depends on our products being designed into new generations of equipment. We must develop products that are technologically advanced so that they are positioned to be chosen for use in each successive generation of capital equipment. If customers do not choose our products, our net sales may be reduced during the lifespan of our customers' products. In addition, we must make a significant capital investment to develop products for our customers well before our products are introduced and before we can be sure that we will recover our capital investment through sales to the customers in significant volume. We are thus also at risk during the development phase that our products may fail to meet our customers' technical or cost requirements and may be replaced by a competitive product or alternative technology solution. If that happens, we may be unable to recover our development costs.

The semiconductor industry is subject to rapid demand shifts which are difficult to predict. As a result, our inability to expand our manufacturing capacity in response to these rapid shifts may cause a reduction in our market share.

Our ability to increase sales of certain products depends in part upon our ability to expand our manufacturing capacity for such products in a timely manner. If we are unable to expand our manufacturing capacity on a timely basis or to manage such expansion effectively, our customers could implement our competitors' products and, as a result, our market share could be reduced. Because the semiconductor industry is subject to rapid demand shifts which are difficult to foresee, we may not be able to increase capacity quickly enough to respond to a rapid increase in demand. Additionally, capacity expansion could increase our fixed operating expenses and if sales levels do not increase to offset the additional expense levels associated with any such expansion, our business, financial condition and results of operations could be materially adversely affected.

A material amount of our assets represents goodwill and intangible assets, and our net income will be reduced if our goodwill or intangible assets become impaired.

As of December 31, 2010, our goodwill and intangible assets, net, represented approximately $141.8 million, or 14% of our total assets. Goodwill is generated in our acquisitions when the cost of an acquisition exceeds the fair value of the net tangible and identifiable intangible assets we acquire. Goodwill is subject to an impairment analysis at least annually based on the fair value of the reporting unit. Intangible assets, which relate primarily to the customer technologies, relationships, patents and trademarks and in-process research and development acquired by us as part of our acquisitions of other companies, are subject to an impairment analysis whenever events or changes in circumstances exist that indicate that the carrying value of the intangible asset might not be recoverable. During 2009, we recorded non-cash impairment charges of $205.0 million related to goodwill and intangible assets. We will continue to monitor and evaluate the carrying value of goodwill and intangible assets. If market and economic conditions or business performance deteriorate, the likelihood of the Company recording an impairment charge would increase, which could materially and adversely affect our results of operations.

We operate in a highly competitive industry.

The market for our products is highly competitive. Principal competitive factors include:

- historical customer relationships;
- product quality, performance and price;
- breadth of product line;
- manufacturing capabilities; and
- customer service and support.

Although we believe that we compete favorably with respect to these factors, we may not be able to continue to do so. We encounter substantial competition in most of our product lines. Certain of our competitors may have greater financial and other resources than we have. In some cases, competitors are smaller than we are, but well established in specific product niches. We may encounter difficulties in changing established relationships of competitors with a large installed base of products at such customers' fabrication facilities. In addition, our competitors can be expected to continue to improve the design and performance of their products. Competitors may develop products that offer price or performance features superior to those of our products. If our competitors develop superior products, we may lose existing customers and market share.

We have significant foreign operations, and outsource certain operations offshore, which pose significant risks.

We have significant international sales, service, engineering and manufacturing operations in Europe, Israel and Asia, and have outsourced a portion of our manufacturing to Mexico. In the future, we may expand the level of manufacturing and certain other operations that we perform offshore in order to take advantage of cost efficiencies available to us in those countries. However, we may not achieve the significant cost savings or other benefits that we would anticipate from moving manufacturing and other operations to a lower cost region. These foreign operations expose us to operational and political risks that may harm our business, including:

- political and economic instability;
- fluctuations in the value of currencies and high levels of inflation, particularly in Asia and Europe;
- changes in labor conditions and difficulties in staffing and managing foreign operations, including, but not limited to, the formation of labor unions;
- reduced or less certain protection for intellectual property rights;
- greater difficulty in collecting accounts receivable and longer payment cycles;
- burdens and costs of compliance with a variety of foreign laws;
- increases in duties and taxation;
- costs associated with compliance programs for import and export regulations;
- imposition of restrictions on currency conversion or the transfer of funds;
- changes in export duties and limitations on imports or exports;
- expropriation of private enterprises; and
- unexpected changes in foreign regulations.

If any of these risks materialize, our operating results may be adversely affected.

Unfavorable currency exchange rate fluctuations may lead to lower operating margins or may cause us to raise prices, which could result in reduced sales.

Currency exchange rate fluctuations could have an adverse effect on our net sales and results of operations and we could experience losses with respect to our hedging activities. Unfavorable currency fluctuations could require us to increase prices to foreign customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be adversely affected. In addition, most sales made by our foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency they receive in payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. We enter into forward foreign exchange contracts and may enter into local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. However, we cannot be certain that our efforts will be adequate to protect us against significant currency fluctuations or that such efforts will not expose us to additional exchange rate risks.

Changes in tax rates or tax regulation could affect results of operations.

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly effective tax rates could be affected by numerous factors, including changes in the: applicable tax laws; composition of pre-tax income in countries with differing tax rates; and/or valuation of our deferred tax assets and liabilities. In addition, we are subject to regular examination by the Internal Revenue Service and foreign tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of its provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our financial condition and results of operations.

Key personnel may be difficult to attract and retain.

Our success depends to a large extent upon the efforts and abilities of a number of key employees and officers, particularly those with expertise in the semiconductor manufacturing and similar industrial manufacturing industries. The loss of key employees or officers could have a material adverse effect on our business, financial condition and results of operations. We believe that our future success will depend in part on our ability to attract and retain highly skilled technical, financial, managerial and sales and marketing personnel. We cannot be certain that we will be successful in attracting and retaining such personnel.

Our proprietary technology is important to the continued success of our business. Our failure to protect this proprietary technology may significantly impair our competitive position.

As of December 31, 2010, we owned 351 U.S. patents, 307 foreign patents and had 111 pending U.S. patent applications that expire at various dates through 2029. Although we seek to protect our intellectual property rights through patents, copyrights, trade secrets and other measures, we cannot be certain that:

- we will be able to protect our technology adequately;
- competitors will not be able to develop similar technology independently;
- any of our pending patent applications will be issued;
- domestic and international intellectual property laws will protect our intellectual property rights; or
- third parties will not assert that our products infringe patent, copyright or trade secrets of such parties.

Protection of our intellectual property rights may result in costly litigation.

Litigation may be necessary in order to enforce our patents, copyrights or other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. We are, from time to time, involved in lawsuits enforcing or defending our intellectual property rights. Such litigation could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition and results of operations.

We may need to expend significant time and expense to protect our intellectual property regardless of the validity or successful outcome of such intellectual property claims. If we lose any litigation, we may be required to seek licenses from others, pay royalties, change, stop manufacturing or stop selling some of our products.

The market price of our common stock has fluctuated and may continue to fluctuate for reasons over which we have no control.

The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to the operating performance of the companies. Historically, the market price of shares of our common stock has fluctuated greatly and could continue to fluctuate due to a variety of factors. In the past, companies that have experienced volatility in the market price of their stock have been the objects of securities class action litigation. If we were the object of securities class action litigation, it could result in substantial costs and a diversion of our management’s attention and resources.

Our dependence on sole, limited source suppliers, and international suppliers, could affect our ability to manufacture products and systems.

We rely on sole, limited source suppliers and international suppliers for a few of our components and subassemblies that are critical to the manufacturing of our products. This reliance involves several risks, including the following:

- the potential inability to obtain an adequate supply of required components;
- reduced control over pricing and timing of delivery of components; and
- the potential inability of our suppliers to develop technologically advanced products to support our growth and development of new systems.

We believe we could obtain and qualify alternative sources for most sole, limited source and international supplier parts however, the transition time may be long. Seeking alternative sources for these parts could require us to redesign our systems, resulting in increased costs and likely shipping delays. We may be unable to redesign our systems, which could result in further costs and shipping delays. These increased costs would decrease our profit margins if we could not pass the costs to our customers. Further, shipping delays could damage our relationships with current and potential customers and have a material adverse effect on our business and results of operations.

We are subject to governmental regulations. If we fail to comply with these regulations, our business could be harmed.

We are subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of our products. We must ensure that the affected products meet a variety of standards, many of which vary across the countries in which our systems are used. For example, the European Union has published directives specifically relating to power supplies. In addition, the European Union has issued directives relating to regulation of recycling and hazardous substances, which may be applicable to our products, or to which some customers may voluntarily elect to adhere to. In addition, China has adopted, and certain other Asian countries have indicated an intention to adopt similar regulations. We must comply with any applicable regulation adopted in connection with these types of directives in order to ship affected products into countries that adopt these types of regulations. We believe we are in compliance with current applicable regulations, directives and standards and have obtained all necessary permits, approvals and authorizations to conduct our business. However, compliance with future regulations, directives and standards, or customer demands beyond such requirements, could require us to modify or redesign certain systems, make capital expenditures or incur substantial costs. If we do not comply with current or future regulations, directives and standards:

- we could be subject to fines;
- our production could be suspended; or
- we could be prohibited from offering particular systems in specified markets.

Some provisions of our restated articles of organization, as amended, our amended and restated by-laws and Massachusetts law could discourage potential acquisition proposals and could delay or prevent a change in control.

Anti-takeover provisions could diminish the opportunities for stockholders to participate in tender offers, including tender offers at a price above the then current market price of the common stock. Such provisions may also inhibit increases in the market price of the common stock that could result from takeover attempts. For example, while we have no present plans to issue any preferred stock, our board of directors, without further stockholder approval, may issue preferred stock that could have the effect of delaying, deterring or preventing a change in control of us. The issuance of preferred stock could adversely affect the voting power of the holders of our common stock, including the loss of voting control to others. In addition, our amended and restated by-laws provide for a classified board of directors consisting of three classes. The classified board could also have the effect of delaying, deterring or preventing a change in control of the Company.

Changes in financial accounting standards may adversely affect our reported results of operations.

A change in accounting standards or practices could have a significant effect on our reported results and may even affect our reporting of transactions completed before the change was effective. New accounting pronouncements and varying interpretations of existing accounting pronouncements have occurred and may occur in the future. Such changes may adversely affect our reported financial results or may impact our related business practice.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

The following table provides information concerning MKS' principal and certain other owned and leased facilities as of December 31, 2010:

Location	Sq. Ft.	Activity	Products Manufactured	Lease Expires
Akishima, Japan	26,300	Manufacturing, Customer Support and Service	Materials and Power Delivery Products	September 11, 2018
Andover, Massachusetts	118,000	Manufacturing, Research & Development and Corporate Headquarters	Pressure Measurement and Control Products	(1)
Austin, Texas	20,880	Manufacturing, Sales, Customer Support, Service and Research & Development	Control & Information Management Products	May 31, 2012
Berlin, Germany	20,750	Manufacturing, Customer Support, Service and Research & Development	Reactive Gas Generation Products	December 13, 2010 (2)
Boulder, Colorado	124,000	Manufacturing, Customer Support, Service and Research & Development	Vacuum Products	(3)
Carmiel, Israel	11,800	Manufacturing and Research & Development	Control & Information Management Products	December 31, 2012

Location	Sq. Ft.	Activity	Products Manufactured	Lease Expires
Cheshire, United Kingdom	16,000	Manufacturing, Sales, Customer Support and Service	Materials Delivery Products	November 6, 2018
Colorado Springs, Colorado	24,000	Research & Development	Not applicable	(4)
Filderstadt, Germany	9,300	Sales and Service	Not applicable	July 31, 2014
Fukuoka, Japan	9,300	Customer Support and Service	Not applicable	October 19, 2012
Kyunggi, Korea	36,500	Sales, Customer Support and Service	Not applicable	May 5, 2020
Lawrence, Massachusetts	40,000	Manufacturing	Pressure Measurement and Control Products	(4)
Lod, Israel	7,600	Customer Support and Research & Development	Not applicable	May 31, 2012
Methuen, Massachusetts	85,000	Manufacturing, Customer Support, Service and Research & Development	Pressure Measurement and Control Products and Materials Delivery Products	(4)
Munich, Germany	14,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Pressure Measurement and Control Products and Materials Delivery Products	(4)
Nogales, Mexico	67,700	Manufacturing	Pressure Measurement and Control Products and Reactive Gas Generation Products	March 31, 2014
Richardson, Texas	8,800	Sales, Customer Support and Service	Not applicable	November 30, 2012
Rochester, New York	156,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Power Delivery Products	(4)
San Jose, California	52,400	Sales, Customer Support and Service	Not applicable	(5)
Shanghai, China	6,800	Sales, Customer Support and Service	Not applicable	February 11, 2011(2)
Shenzhen, China	242,000	Manufacturing	Power Delivery Products	May 31, 2017
Shropshire, United Kingdom	25,000	Manufacturing	Control & Information Management Products	June 23, 2022
Singapore	6,100	Sales, Customer Support and Service	Not applicable	July 31, 2012
Taiwan	21,400	Sales, Customer Support and Service	Not applicable	August 31, 2012
Tokyo, Japan	8,000	Sales and Customer Support	Not applicable	December 31, 2012
Umea, Sweden	7,000	Sales, Customer Support and Research & Development	Not applicable	August 31, 2011
Wilmington, Massachusetts	118,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Reactive Gas Generation Products and Power Delivery Products	(4)

(1) MKS owns one facility with 82,000 square feet of space used for manufacturing and research and development and leases 36,000 square feet of space used for its corporate headquarters with a lease term which expires January 1, 2018.

(2) The lease on the Berlin, Germany facility was renewed in January 2011 and expires December 31, 2013. The lease on the Shanghai, China facility was renewed in February 2011 and expires August 11, 2011.

(3) MKS leases two facilities, of which one has 39,000 square feet of space and the other has 38,000 square feet of space. Both leases expire on May 31, 2015. MKS also owns a third and fourth facility with 27,000 and 20,000 square feet of space, respectively.

(4) This facility is owned by MKS.

(5) MKS leases two facilities, of which one has 32,000 square feet of currently vacated space and has a lease expiration of April 13, 2011 and the other has 20,400 square feet of space and has a lease expiration of January 31, 2018.

In addition to manufacturing and other operations conducted at the foregoing leased or owned facilities, MKS provides worldwide sales, customer support and services from various other leased facilities throughout the world not listed in the table above. See "Business — Sales, Marketing, Service and Support."

Item 3. *Legal Proceedings*

Brooks Instrument, LLC filed two lawsuits, in one case along with their affiliate BI Products, LLC (collectively with Brooks Instrument, LLC, "Brooks"), against us in the United States District Court for the Eastern District of Texas, on April 29, 2010. Brooks also filed one lawsuit against us in the United States District Court for the District of Massachusetts on April 29, 2010. These suits were related to our digital mass flow controllers and digital pressure sensors. Brooks sought injunctive relief and damages for alleged patent infringement, breach of contract and trade secret violations. None of the lawsuits specified a specific amount of damages. We responded to the allegations to deny any wrongdoing. In addition, we filed counterclaims against Brooks in the courts where they initially brought suit against us, seeking injunctive relief and damages for alleged patent infringement by Brooks, relating to their pressure transient insensitive mass flow controllers. On February 22, 2011, the parties entered into a settlement agreement, resolving all the issues in the cases, and on February 23, 2011, the parties filed stipulated dismissals with the appropriate courts.

We are subject to various other legal proceedings and claims, which have arisen in the ordinary course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on our results of operations, financial condition or cash flows.

PART II

Item 5. *Market for the 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 Global Select Market under the symbol MKSI. On February 18, 2011, the closing price of our common stock, as reported on the NASDAQ Global Select Market, was $30.61 per share. The following table sets forth for the periods indicated the high and low sales prices per share of our common stock as reported by the NASDAQ Global Select Market.

	2010		2009	
	High	Low	High	Low
First Quarter	$20.00	$15.94	$16.29	$11.38
Second Quarter	24.88	17.45	17.50	12.75
Third Quarter	22.26	16.50	20.60	13.28
Fourth Quarter	24.87	17.31	20.24	14.80

On February 18, 2011, we had approximately 159 stockholders of record.

Dividend Policy

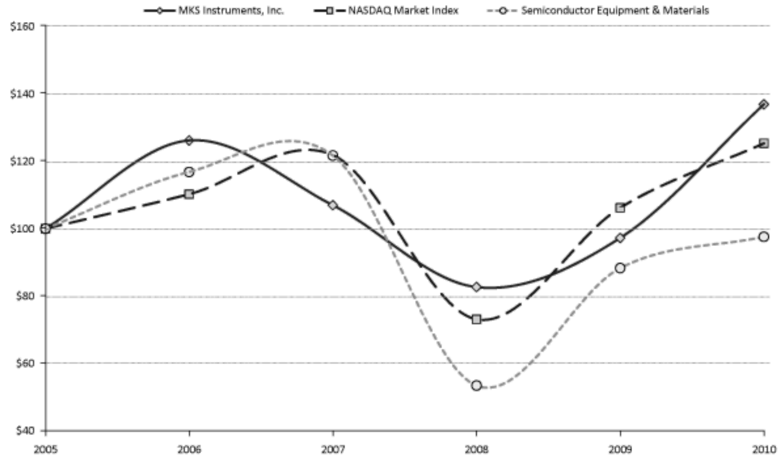
Holders of our common stock are entitled to receive dividends when they are declared by our Board of Directors. On February 1, 2011, our Board of Directors declared a quarterly cash dividend of $0.15 per share to be paid on March 18, 2011 to shareholders of record as of March 1, 2011. Future dividend declarations, if any, as well as the record and payment dates for such dividends, are subject to the final determination of our Board of Directors.

Comparative Stock Performance

The following graph compares the cumulative total shareholder return (assuming reinvestment of dividends) from investing $100 on December 31, 2005, and plotted at the last trading day of each of the fiscal years ended December 31, 2006, 2007, 2008, 2009 and 2010, in each of MKS' Common Stock; an industry group index of semiconductor equipment/material manufacturers (the "Morningstar Semiconductor Equipment & Materials Industry Group" index), compiled by Morningstar, Inc.; and the NASDAQ Market Index of companies. The stock price performance on the graph below is not necessarily indicative of future price performance. In recent years, we included in the performance graph the industry group index of semiconductor equipment/material manufacturers compiled by Hemscott Data, but such index is no longer available. Accordingly, we have selected the Morningstar Semiconductor Equipment & Materials Industry Group index in its place. The Company's Common Stock is listed on the NASDAQ Global Select Market under the ticker symbol "MKSI."

Performance Graph

COMPARISON OF CUMULATIVE TOTAL RETURN



Assumes $100 invested on December 31, 2005
Assumes dividend reinvested

	2005	2006	2007	2008	2009	2010
MKS Instruments, Inc.	$100.00	$126.22	$106.99	$82.67	$ 97.26	$136.95
NASDAQ Market Index	$100.00	$110.25	$121.88	$73.10	$106.22	$125.36
Morningstar Semiconductor Equipment & Materials Industry Group	$100.00	$116.85	$121.73	$53.42	$ 88.29	$ 97.60

The information included under the heading "Comparative Stock Performance" in Item 5 of this Annual Report on Form 10-K is "furnished" and not "filed" and shall not be deemed to be "soliciting material" or subject to Regulation 14A, shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act.

Item 6. ***Selected Financial Data***

Selected Consolidated Financial Data

	Years Ended December 31, 2010	2009	2008	2007	2006
	(In thousands, except per share data)				
Statement of Operations Data					
Net sales(1)	$853,114	$ 392,693	$621,380	$ 751,445	$ 747,548
Gross profit(1)	378,638	130,216	248,238	316,194	319,155
Income (loss) from operations(1)	195,507	(171,661)	50,874	109,946	123,179
Income (loss) from continuing operations	132,919	(149,361)	40,010	88,569	94,745
Income (loss) from discontinued operations, net of taxes(2)	9,668	(63,298)	(9,893)	(2,209)	(510)
Net income (loss)(3)	$142,587	$(212,659)	$ 30,117	$ 86,360	$ 94,235
Basic income (loss) per share:					
Continuing operations	$ 2.66	$ (3.03)	$ 0.81	$ 1.57	$ 1.71
Net income (loss)	$ 2.85	$ (4.31)	$ 0.61	$ 1.53	$ 1.70
Diluted income (loss) per share:					
Continuing operations	$ 2.61	$ (3.03)	$ 0.79	$ 1.55	$ 1.69
Net income (loss)	$ 2.80	$ (4.31)	$ 0.59	$ 1.51	$ 1.68
Balance Sheet Data					
Cash and cash equivalents	$162,476	$ 111,009	$119,261	$ 223,968	$ 215,208
Short-term investments	269,457	160,786	159,608	99,797	74,749
Working capital	643,209	461,581	452,793	514,235	461,541
Long-term investments	—	4,853	—	—	2,816
Total assets	982,413	774,069	984,939	1,076,260	1,043,720
Short-term obligations	—	12,885	18,678	20,203	23,021
Long-term obligations, less current portion	—	—	396	5,871	6,113
Stockholders' equity	$847,039	$ 684,933	$886,698	$ 954,009	$ 901,219

(1) For the years 2006 through 2009, shown in the table above, the amounts have been revised to exclude the results of two product lines that have been classified as discontinued operations. Loss from operations for 2009 includes an impairment charge of $143.0 million related to the write-down of goodwill, intangible and long-lived assets and $5.5 million of restructuring charges.

(2) Income from discontinued operations, net of taxes for 2010 includes a $4.4 million gain on the sale of the two discontinued product lines. Loss from discontinued operations, net of taxes for 2009 includes charges related to the discontinued product lines of $53.8 million for the goodwill impairment and $7.3 million for the intangible assets impairment.

(3) Net loss for 2009 includes charges, net of tax, of $202.7 million related to the write-down of goodwill, intangible and long-lived assets and $3.6 million of restructuring charges. Net income for 2008 includes an impairment charge of $3.8 million, net of tax, related to the write-down of intangible assets.

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

Overview

We are a leading worldwide provider of instruments, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of advanced manufacturing processes to improve process performance.

We are managed as one operating segment. We group our products into three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas composition analysis, control and information technology, power and reactive gas generation and vacuum technology. Our products are used in diverse markets, applications and processes. Our primary served markets are manufacturers of capital equipment for semiconductor devices, and for other thin film applications including flat panel displays, LEDs, solar cells, data storage media and other advanced coatings. We also leverage our technology in other markets with advanced manufacturing applications including medical equipment, pharmaceutical manufacturing, energy generation and environmental monitoring.

We have a diverse base of customers that includes manufacturers of semiconductor capital equipment and semiconductor devices, thin film capital equipment used in the manufacture of flat panel displays, LEDs, solar cells, data storage media and other coating applications; and other industrial, medical, energy generation, environmental monitoring and manufacturing companies, and university, government and industrial research laboratories. During the years 2010, 2009 and 2008, we estimate that approximately 64%, 52% and 58% of our net sales, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. We expect that sales to semiconductor capital equipment manufacturers and semiconductor device manufacturers will continue to account for a substantial portion of our sales.

During 2010, we executed a plan to divest two product lines, as their growth potential no longer met our long-term strategic objectives. We completed the sale of Ion Systems, Inc. ("Ion") during the second quarter of 2010 and the sale of the assets of the Yield Dynamics, LLC ("YDI") business during the third quarter of 2010 and received total net proceeds of $15.6 million. The results of operations of the two product lines have been classified as discontinued operations in the consolidated statements of operations for all periods presented. The assets and liabilities of these discontinued product lines have not been reclassified and segregated in the consolidated balance sheets or consolidated statements of cash flows due to their immaterial amounts.

We believe an improvement in the global economy in 2010, compared to 2009, contributed to a significant increase in our business, financial condition and results of operations for 2010. As a result of the improved global economy, our net revenues to semiconductor capital equipment manufacturers and semiconductor device manufacturers increased 167% for 2010 compared to 2009. The semiconductor capital equipment industry is subject to rapid demand shifts, which are difficult to predict, and we are uncertain as to the timing or extent of further increased demand or any future weakness in the semiconductor capital equipment industry.

Our net revenues sold to other advanced markets, which exclude semiconductor capital equipment and semiconductor device product applications, increased 64% in 2010 compared to the prior year. These advanced and growing markets include LED, medical, pharmaceutical, environmental, thin films, solar and other markets. Approximately 36% of our net sales for 2010 were to other advanced markets and we anticipate that these markets will continue to grow and will represent a larger portion of our revenue.

A significant portion of our net sales is to operations in international markets. International net sales include sales by our foreign subsidiaries, but exclude direct export sales. During the years 2010, 2009 and 2008, international net sales accounted for approximately 43%, 46% and 44% of our net sales, respectively. A significant portion of our international net sales were sales in Japan. We expect that international net sales will continue to represent a significant percentage of our total net sales.

Critical Accounting Policies and Estimates

Management's Discussion and Analysis of Financial Condition and Results of Operations discusses our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, we evaluate our estimates and judgments, including those related to revenue recognition and allowance for doubtful accounts, inventory, warranty costs, stock-based compensation expense, intangible assets, goodwill and other long-lived assets, in-process research and development and income taxes. We base our estimates and judgments 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.

We believe the following critical accounting policies affect the most significant judgments, assumptions and estimates we use in preparing our consolidated financial statements:

Revenue Recognition and Accounts Receivable Allowances. Revenue from product sales is recorded upon transfer of title and risk of loss to the customer provided that there is evidence of an arrangement, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. In most transactions, we have no obligations to our customers after the date products are shipped other than pursuant to warranty obligations. In some instances, we provide installation, training, support and services to customers after the product has been shipped. We defer the fair value of any undelivered elements until the undelivered element is delivered. Fair value is the price charged when the element is sold separately. Shipping and handling fees billed to customers, if any, are recognized as revenue. The related shipping and handling costs are recognized in cost of sales.

We monitor and track the amount of product returns, provide for accounts receivable allowances and reduce revenue at the time of shipment for the estimated amount of such future returns, based on historical experience. While product returns have historically been within our expectations and the provisions established, there is no assurance that we will continue to experience the same return rates that we have in the past. Any significant increase in product return rates could have a material adverse impact on our operating results for the period or periods in which such returns materialize.

While we maintain a credit approval process, significant judgments are made by management in connection with assessing our customers' ability to pay at the time of shipment. Despite this assessment, from time to time, our customers are unable to meet their payment obligations. We continuously monitor our customers' credit worthiness, and use our judgment in establishing a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically been within our expectations and the provisions established, there is no assurance that we will continue to experience the same credit loss rates that we have in the past. A significant change in the liquidity or financial position of our customers could have a material adverse impact on the collectability of accounts receivable and our future operating results.

Inventory. We value our inventory at the lower of cost (first-in, first-out method) or market. We regularly review inventory quantities on hand and record a provision to write-down excess and obsolete inventory to its estimated net realizable value, if less than cost, based primarily on our estimated forecast of product demand. Once our inventory value is written-down and a new cost basis has been established, the inventory value is not increased due to demand increases. Demand for our products can fluctuate significantly. A significant increase in the demand for our products could result in a short-term increase in the cost of inventory purchases as a result of supply shortages or a decrease in the cost of inventory purchases as a result of volume discounts, while a significant decrease in demand could result in an increase in the charges for excess inventory quantities on hand. In addition, our industry is subject to technological change, new product development and product technological obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Therefore, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results. For the twelve months ended December 31, 2008, our total charges for excess and obsolete inventory totaled $11.4 million. For 2010 and 2009, our total charges for excess and obsolete inventory totaled $13.2 million and $20.3 million, respectively.

Warranty costs. We provide for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. We provide warranty coverage for our products ranging from 12 to 36 months, with the majority of our products ranging from 12 to 24 months. We estimate the anticipated costs of repairing our products under such warranties based on the historical costs of the repairs and any known specific product issues. The assumptions we use to estimate warranty accruals are reevaluated periodically in light of actual experience and, when appropriate, the accruals are adjusted. Our determination of the appropriate level of warranty accrual is based upon estimates. Should product failure rates differ from our estimates, actual costs could vary significantly from our expectations.

Stock-Based Compensation Expense. We record compensation expense for all share-based payment awards to employees and directors based upon the estimated fair market value of the underlying instrument. Accordingly, share-based compensation cost is measured at the grant date, based upon the fair value of the award.

For the past three years, we have been issuing restricted stock units (“RSUs”) as stock-based compensation. For one year we issued restricted stock awards (“RSAs”) and prior to that, we issued share-based options. We also provide employees the opportunity to purchase shares through an Employee Stock Purchase Program (“ESPP”). For restricted stock units, the fair value is the stock price on the date of grant. For share-based options and shares issued under our ESPP, we have estimated the fair value on the date of grant using the Black Scholes pricing model, which 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, expected life, risk free interest rate and expected dividends. We are also required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. Management determined that blended volatility, a combination of historical and implied volatility, is more reflective of market conditions and a better indicator of expected volatility than historical or implied volatility alone.

Certain RSUs involve stock to be issued upon the achievement of performance conditions (performance shares) under our stock incentive plans. Such performance shares become available subject to time-based vesting conditions if, and to the extent that, financial or operational performance criteria for the applicable period are achieved. Accordingly, the number of performance shares earned will vary based on the level of achievement of financial or operational performance objectives for the applicable period. Until such time that our performance can ultimately be determined, each quarter we estimate the number of performance shares more likely than not to be earned based on an evaluation of the probability of achieving the performance objectives. Such estimates are revised, if necessary, in subsequent periods when the underlying factors change our evaluation of the probability of achieving the performance objectives. Accordingly, share-based compensation expense associated with performance shares may differ significantly from the amount recorded in the current period.

The assumptions used in calculating the fair value of share-based payment awards represents management’s best estimates, but these estimates involve inherent uncertainties and the application of management’s judgment. As a result, if factors change and we use different assumptions, our stock-based compensation expense could be materially different in the future.

Intangible assets, goodwill and other long-lived assets. As a result of our acquisitions, we have identified intangible assets and generated significant goodwill. Definite-lived intangible assets are valued based on estimates of future cash flows and amortized over their estimated useful life. Goodwill and indefinite-lived intangible assets are subject to annual impairment testing as well as testing upon the occurrence of any event that indicates a potential impairment. Intangible assets and other long-lived assets are also subject to an impairment test if there is an indicator of impairment. The carrying value and ultimate realization of these assets is dependent upon estimates of future earnings and benefits that we expect to generate from their use. If our expectations of future results and cash flows are significantly diminished, intangible assets and goodwill may be impaired and the resulting charge to operations may be material. When we determine that the carrying value of intangibles or other long-lived assets may not be recoverable based upon the existence of one or more indicators of impairment, we use the projected undiscounted cash flow method to determine whether an impairment exists, and then measure the impairment using discounted cash flows. To measure impairment for goodwill, we compare the fair value of our reporting units by measuring discounted cash flows to the book value of the reporting units. Goodwill would be impaired if the resulting implied fair value of goodwill was less than the recorded book value of the goodwill.

The estimation of useful lives and expected cash flows require us to make significant judgments regarding future periods that are subject to some factors outside of our control. Changes in these estimates can result in significant revisions to the carrying value of these assets and may result in material charges to the results of operations.

We have elected to perform our annual goodwill impairment testing as of October 31 of each fiscal year, or more often if events or circumstances indicate that there may be impairment. Reporting units are defined as operating segments or one level below an operating segment, referred to as a component. We have determined that our reporting units are components of our one operating segment. We allocate goodwill to reporting units at the time of acquisition and base that allocation on which reporting units will benefit from the acquired assets and liabilities. The estimated fair values of our reporting units were based on discounted cash flow models derived from internal earnings and internal and external market forecasts. Assumptions in estimating future cash flows are subject to a high degree of judgment and complexity. We make every effort to forecast these future cash flows as accurately as possible with the information available at the time the forecast is developed. Goodwill impairment is determined using a two-step process. The first step involves a comparison of the estimated fair value of a reporting unit to its carrying amount, including goodwill. In performing the first step, we determine the fair value of a reporting unit using a discounted cash flow (“DCF”) analysis. Determining fair value requires the exercise of significant judgment, including judgments about appropriate discount rates, perpetual growth rates, and the amount and timing of expected future cash flows. Discount rates are based on a weighted average cost of capital (“WACC”), which represents the average rate a business must pay its providers of debt and equity. The WACC used to test goodwill is derived from a group of comparable companies. The cash flows employed in the DCF analysis are derived from internal earnings and forecasts and external market forecasts. If the estimated fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not impaired and the second step of the impairment test is not necessary. If the carrying amount of a reporting unit exceeds its estimated fair value, then the second step of the goodwill impairment test must be performed. The second step of the goodwill impairment test compares the implied fair value of the reporting unit’s goodwill with its carrying amount of goodwill to measure the amount of impairment loss, if any. The implied fair value of goodwill is determined in the same manner as the amount of goodwill recognized in a business combination, whereby the estimated fair value of the reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the purchase price paid. If the carrying amount of the reporting unit’s goodwill exceeds the implied fair value of that goodwill, an impairment loss is recognized in an amount equal to that excess.

Due to various factors, including market and economic conditions that contributed to a decline in our forecasted business levels, and the excess of our consolidated net assets over market capitalization for a sustained period of time, we concluded an interim assessment for impairment should be conducted for our goodwill and intangible assets as of April 30, 2009, the date of the triggering event. In the interim assessment, we determined that for certain reporting units, the carrying amount of their net assets exceeded their respective fair values, indicating that a potential impairment existed. After completing the second step of the goodwill impairment test, we recorded a goodwill impairment charge in the second quarter of 2009 of $193.3 million. We tested the long-lived assets in question for recoverability by comparing the sum of the undiscounted cash flows attributable to each respective asset group to their carrying amounts, and determined that the carrying amounts were not recoverable. We then evaluated the fair values of each long-lived asset of the potentially impaired long-lived asset group to determine the amount of the impairment, if any. The fair value of each intangible asset was based primarily on an income approach, which is a present value technique used to measure the fair value of future cash flows produced by the asset. We estimated future cash flows over the remaining useful life of each intangible asset. As a result of this analysis, we determined that certain of our intangible assets related to completed technology, customer relationships, and patents and trademarks, had carrying values that exceeded their estimated fair values. As a result, an impairment charge of $11.7 million was recorded in the second quarter of 2009. In 2010, we reclassified $53.8 million and $11.7 million of the goodwill and intangible asset impairment charges, respectively, to discontinued operations for 2009 as the charges related to the two discontinued product lines.

As of October 31, 2010, we performed our annual impairment assessment of goodwill and determined that no additional impairment charges were required as the fair value of each reporting units exceeded its book value. We will continue to monitor and evaluate the carrying value of goodwill. If market and economic conditions or business performance deteriorate, this could increase the likelihood of us recording an impairment charge, however, management believes it is not reasonably likely that an impairment will occur at any of its reporting units over the next twelve months.

As a result of a facility consolidation in Asia, we recorded an asset impairment charge of $3.5 million in the second quarter of 2009 resulting from the write-down of the value of a building to its estimated fair value.

During the fourth quarter of 2008, we incurred an intangible asset impairment charge of $6.1 million related to the acquired YDI customer technologies, relationships, and patents and trademarks. The impairment charge was primarily related to lower than previously estimated revenues from our YDI management software due to the macroeconomic environment and industry downturn. In 2010, we reclassified the $6.1 million intangible asset impairment charge to discontinued operations for 2008 as the charge related to the YDI discontinued product line.

In-process research and development. We value tangible and intangible assets acquired through our business acquisitions, including in-process research and development ("IPR&D"), at fair value. We determine IPR&D through established valuation techniques for various projects for the development of new products and technologies and capitalize IPR&D as an intangible asset. If the projects are completed, the intangible asset will be amortized to earnings over the expected life of the completed product. If the R&D projects are abandoned, we will write-off the related intangible asset.

The value of IPR&D is determined using the income approach, which discounts expected future cash flows from projects under development to their net present value. Each project is analyzed and estimates and judgments are made to determine the technological innovations included in the utilization of core technology, the complexity, cost and time to complete development, any alternative future use or current technological feasibility and the stage of completion.

Income taxes. We evaluate the realizability of our net deferred tax assets and assess the need for a valuation allowance on a quarterly basis. The future benefit to be derived from our deferred tax assets is dependent upon our ability to generate sufficient future taxable income to realize the assets. We record a valuation allowance to reduce our net deferred tax assets to the amount that may be more likely than not to be realized. To the extent we established a valuation allowance, an expense is recorded within the provision for income taxes line in the consolidated statements of operations. In future periods, if we were to determine that it was more likely than not that we would not be able to realize the recorded amount of our remaining net deferred tax assets, an adjustment to the valuation allowance would be recorded as an increase to income tax expense in the period such determination was made.

Accounting for income taxes requires a two-step approach to recognize and measure uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if, based on the technical merits, it is more likely than not that the position will be sustained upon audit, including resolutions of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. We re-evaluate these uncertain tax positions on a quarterly basis. This evaluation is based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues under audit and new audit activity. Any change in these factors could result in the recognition of a tax benefit or an additional charge to the tax provision.

Results of Operations

The following table sets forth, for the periods indicated, the percentage of total net sales of certain line items included in our consolidated statements of operations data:

	Years Ended December 31, 2010	2009	2008
Net revenues:			
Product	89.5%	82.7%	86.5%
Service	10.5	17.3	13.5
Total net revenues	100.0%	100.0%	100.0%
Cost of revenues:			
Product	49.4	55.9	51.4
Service	6.2	10.9	8.7
Total cost of revenues	55.6%	66.8%	60.1%
Gross profit	44.4%	33.2%	39.9%
Research and development	7.3	12.8	11.7
Selling, general and administrative	14.1	25.6	19.4
Amortization of acquired intangible assets	0.2	0.7	0.6
Goodwill and asset impairment	—	36.4	—
Gain on sale of asset	(0.1)	—	—
Restructuring	—	1.4	—
Income (loss) from operations	22.9%	(43.7)%	8.2%
Interest income, net	0.1	0.4	1.0
Impairment of investments	—	—	(0.2)
Income (loss) from continuing operations before income taxes	23.0%	(43.3)%	9.0%
Provision (benefit) for income taxes	7.4	(5.3)	2.6
Income (loss) from continuing operations	15.6%	(38.0)%	6.4%
Income (loss) from discontinued operations, net of taxes	1.1	(16.1)	(1.6)
Net income (loss)	16.7%	(54.1)%	4.8%

Year Ended 2010 Compared to 2009 and 2008

Net Revenues

	Years Ended December 31, 2010	2009	2008	% Change in 2010	% Change in 2009
			(Dollars in millions)		
Product	$ 763.4	$ 325.0	$ 537.8	134.9%	(39.6)%
Service	89.7	67.7	83.6	32.4%	(19.0)%
Total net revenues	$ 853.1	$ 392.7	$ 621.4	117.2%	(36.8)%

Product revenues increased $438.5 million or 134.9% during 2010 compared to 2009. During 2010, we believe a recovery in the global economy has contributed to an increase in demand for our products in all of the markets we serve. Our increase in overall product revenues is primarily due to the increase in worldwide demand from our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers. Product revenues related to these customers increased $305.5 million or 175.2% compared to the same period for the prior year. Revenues related to other advanced markets increased $133.0 million or 88.3% compared to the same period for the prior year. The increase in demand in our other advanced markets included the LED, medical, pharmaceutical, environmental, thin films, solar and other markets. Our domestic product revenues increased by $262.5 million or 139.2% mainly due to a high concentration of sales to the semiconductor capital equipment and device manufacturer customers. Our international product revenues increased $176.0 million or 129.1% during 2010. This increase consists of a $107.7 million increase in product revenues from our semiconductor customers and an increase in product revenues of $68.3 million related to other advanced markets.

Product revenues decreased $212.8 million or 39.6% during 2009 compared to 2008 mainly due to a decrease in worldwide demand from our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers. Product revenues related to these customers decreased $132.3 million or 43.1% compared to the same period for the prior year. Revenues related to other markets decreased $80.5 million or 34.8% compared to the same period for the prior year due mainly to the global recession. Our domestic product revenues decreased by $127.4 million or 40.3% during 2009 compared to the same period for the prior year mainly due to a high concentration of sales to the semiconductor capital equipment and device manufacturer customers. Our international product revenues decreased $85.5 million or 38.5% during 2009. This decrease consists of a $39.4 million decrease in product revenues from our semiconductor customers and a decrease in product revenues of $46.1 million related to other markets.

Service revenues consisted mainly of fees for services related to the maintenance and repair of our products, software maintenance, installation services and training. Service revenues increased $21.9 million or 32.4% during 2010 compared to 2009 as a result of the improvement in the global economy in 2010. Service revenues decreased $15.9 million or 19.0% during 2009 compared to 2008 due to lower spending by our customers on these services as a result of the weakened global economic conditions in 2009.

Total international net revenues, including product and service, were $369.0 million for 2010 or 43.2% of net sales compared to $180.1 million for 2009 or 45.8% of net sales and $275.0 million or 44.2% of net sales for 2008.

Gross Profit

	Years Ended December 31,			% Points Change in	% Points Change in
	2010	2009	2008	2010	2009
	(As a percentage of net revenues)				
Product	44.8%	32.4%	40.6%	12.4%	(8.2)%
Service	41.2%	37.0%	35.8%	4.2%	1.2%
Total gross profit percentage	44.4%	33.2%	39.9%	11.2%	(6.7)%

Gross profit on product revenues increased by 12.4 percentage points during 2010 compared to the prior year. The increase was mainly due to an increase in product revenue volumes which accounted for 8.2 percentage points of the overall increase and an increase of 1.6 percentage points due to favorable product mix. In addition, our gross profit increased by 2.4 percentage points due to lower excess and obsolete inventory related net charges. The higher excess and obsolete inventory related charges in 2009 were primarily a result of a lower inventory consumption plan in the first quarter of 2009 that we implemented in response to the weakness in the markets we served during that period.

Gross profit on product revenues decreased by 8.2 percentage points during 2009 compared to the prior year. The decrease was due to an unfavorable product mix of 3.1 percentage points and a reduction in product revenue volumes partially offset by lower overhead spending, which total 2.6 percentage points. In addition, a decrease of 2.2 percentage points was a result of excess and obsolete inventory related charges. The excess and obsolete inventory related charges were primarily a result of a lower inventory consumption plan in the first quarter of 2009 that we implemented in response to the weakness in the markets we served during that period.

Cost of service revenues consists primarily of costs of providing services for repair and training which includes salaries and related expenses and other fixed costs. Service gross profit for 2010 increased 4.2 percentage points compared to the same period for the prior year. The increase is mainly a result of higher service revenue since a portion of our overhead costs are fixed. Service gross profit for 2009 increased modestly compared to the same period for the prior year.

Research and Development

	Years Ended December 31, 2010	2009	2008	% Change in 2010	% Change in 2009
	(Dollars in millions)				
Research and development expenses	$62.7	$50.2	$72.8	24.8%	(31.0)%

Research and development expenses increased $12.5 million or 24.8% during 2010 compared to the prior year. The increase includes a $5.9 million increase in compensation expense, a $2.4 million increase in spending on project materials, a $3.0 million increase in consulting and other costs and a $1.1 million increase in patent and other legal related costs. The increase in compensation expense is primarily due to the restoration of both the incentive compensation plan and certain employee benefits which were suspended as part of cost control measures in 2009. Our favorable operating profit levels resulted in an increase in incentive compensation expense, since our incentive compensation plan is based on achieving certain operating profit levels.

Research and development expenses decreased $22.5 million or 31.0% during 2009 compared to the prior year. The decrease includes a $12.0 million decrease in compensation expense, a $4.7 million reduction in spending on project materials, a $1.4 million decrease in consulting costs and a $4.5 million decrease in other discretionary spending. The decrease in compensation expense is mainly due to cost reduction measures that started in the third quarter of 2008 and continued through the third quarter of 2009, including workforce reductions that took place from the third quarter of 2008 through the first quarter of 2009.

Our research and development is primarily focused on developing and improving our instruments, components, subsystems and process control solutions to improve process performance and productivity.

We have thousands of products and our research and development efforts primarily consist of a large number of projects related to these products and new product development, none of which is individually material to us. Current projects typically have a duration of 3 to 30 months depending upon whether the product is an enhancement of existing technology or a new product. Our current initiatives include projects to enhance the performance characteristics of older products, to develop new products and to integrate various technologies into subsystems. These projects support in large part the transition in the semiconductor industry to smaller integrated circuit geometries and in the flat panel display and solar markets to larger substrate sizes, which require more advanced process control technology. Research and development expenses consist primarily of salaries and related expenses for personnel engaged in research and development, fees paid to consultants, material costs for prototypes and other expenses related to the design, development, testing and enhancement of our products as well as legal costs associated with maintaining and defending our intellectual property.

We believe that the continued investment in research and development and ongoing development of new products are essential to the expansion of our markets, and expect to continue to make significant investment in research and development activities. We are subject to risks if products are not developed in a timely manner, due to rapidly changing customer requirements and competitive threats from other companies and technologies. Our success primarily depends on our products being designed into new generations of equipment for the semiconductor industry. We develop products that are technologically advanced so that they are positioned to be chosen for use in each successive generation of semiconductor capital equipment. If our products are not chosen to be designed into our customers' products, our net sales may be reduced during the lifespan of those products.

Selling, General and Administrative

	Years Ended December 31, 2010	2009	2008	% Change in 2010	% Change in 2009
	(Dollars in millions)				
Selling, general and administrative expenses	$119.8	$100.4	$120.6	19.3%	(16.7)%

Selling, general and administrative expenses increased $19.4 million or 19.3% during 2010 compared to 2009. The increase includes a $17.9 million increase in compensation expense, a $3.1 million increase in consulting, professional and other fees and a $1.6 million increase in travel related expenses. The increase was partially offset by a $1.4 million decrease in the provision of uncollectable accounts receivable, a $1.1 million decrease in depreciation and facility related costs and by a $1.1 million favorable impact from foreign exchange fluctuations. The increase in compensation expense is primarily due to the restoration of both the incentive compensation plan and certain employee benefits which were suspended as part of cost control measures in 2009. Our favorable operating profit levels resulted in an increase in incentive compensation expense, since our incentive compensation plan is based on achieving certain operating profit levels.

Selling, general and administrative expenses decreased $20.2 million or 16.7% during 2009 compared to 2008. The decrease includes a $14.6 million decrease in compensation expense, a $2.4 million decrease in depreciation and facility related costs and a decrease of $1.5 million in consulting, professional and other fees. The decrease in compensation expense is mainly due to cost reduction measures that started in the third quarter of 2008 and continued through the third quarter of 2009, including workforce reductions that took place from the third quarter of 2008 through the first quarter of 2009.

Amortization of Acquired Intangible Assets

	Years Ended December 31, 2010	2009	2008	% Change in 2010	% Change in 2009
	(Dollars in millions)				
Amortization of acquired intangible assets	$1.3	$2.8	$4.0	(53.5)%	(30.8)%

Amortization expense for 2010 decreased $1.5 million or 53.5% as certain acquired intangible assets became fully amortized during 2009. Amortization expense for 2009 decreased $1.2 million or 30.8% as certain acquired intangible assets became fully amortized during 2008.

Goodwill and Asset Impairment Charges

	Years Ended December 31, 2010	2009	2008
	(Dollars in millions)		
Goodwill and asset impairment charges	$—	$143.0	$—

During 2009, we reviewed our goodwill and long-lived assets for potential impairment as a result of market and economic conditions that contributed to a decline in our forecasted business levels, and the excess of our consolidated net assets over our market capitalization for a sustained period of time. As a result of this impairment assessment, we recorded non-cash goodwill and intangible asset impairment charges of $193.3 million and $11.7 million, respectively. In addition, as a result of a facility consolidation in Asia in the second quarter of 2009, we recorded a non-cash impairment charge of $3.5 million to continuing operations resulting from the write-down of the value of a building to its estimated fair value. In 2010, we reclassified $53.8 million and $11.7 million of the goodwill and intangible asset impairment charges, respectively, to discontinued operations for 2009 as the charges related to the two discontinued product lines.

Gain on sale of asset

	Years Ended December 31, 2010	2009	2008
	(Dollars in millions)		
Gain on sale of asset	$0.7	$—	$—

During the first quarter of 2010, we sold two vacated facilities for proceeds of $2.1 million and recorded a $0.7 million net gain on the sale.

Restructuring

	Years Ended December 31,		
	2010	2009	2008
	(Dollars in millions)		
Restructuring	$—	$5.5	$—

In light of the global financial crisis and its impact on our semiconductor equipment OEM customers and the other markets we serve, we initiated a restructuring plan in the first quarter of 2009. The plan included a reduction in our worldwide headcount of approximately 630 people, which represented approximately 24% of our global workforce. The restructuring charges of $5.5 million in 2009 were primarily for severance and other charges associated with the reductions in workforce. The restructuring plan was completed in the first quarter of 2010.

Interest Income, Net

	Years Ended December 31,			% Change	% Change
	2010	2009	2008	in 2010	in 2009
	(Dollars in millions)				
Interest income, net	$0.9	$1.6	$6.4	(44.1)%	(74.5)%

Net interest income decreased $0.7 million during 2010 compared to the prior year and decreased $4.8 million during 2009 compared to the prior year mainly related to a general decrease in market rates and the investment mix of our portfolio during these periods.

Impairment of Investments

	Years Ended December 31,		
	2010	2009	2008
	(Dollars in millions)		
Impairment of investments	$—	$—	$(0.9)

During 2008, we recorded a net impairment charge of $0.9 million related to two investments. We liquidated our position in these two impaired investments during the third quarter of 2008, one by sale and the other by a structured payment. We received a combined total of $3.4 million from the settlement of these investments during 2008.

Provision (Benefit) for Income Taxes

	Years Ended December 31,		
	2010	2009	2008
	(Dollars in millions)		
Provision (benefit) for income taxes	$63.5	$(20.7)	$16.4

The provision (benefit) for income taxes in 2010, 2009 and 2008 are comprised of U.S. federal, state and foreign income taxes.

Our effective tax rate for the years 2010, 2009 and 2008 was 32.3%, (12.2)% and 29.1%, respectively. The effective tax rate in 2010 and related tax provision is lower than the U.S. statutory tax rate primarily due to geographic mix of income and profits earned by our international subsidiaries being taxed at rates lower than the U.S. statutory tax rate.

The effective tax rate in 2009 and related tax benefit was lower than the U.S. statutory tax rate primarily due to non-deductible goodwill impairment charges of $139.5 million during the second quarter of 2009, partially offset by discrete reserve releases.

The effective tax rate in 2008 and related tax provision was lower than the U.S. statutory tax rate primarily due to geographic mix of income and profits earned by our international subsidiaries being taxed at rates lower than the

U.S. statutory tax rate, a tax benefit relating to the U.S. federal research and development credit, and discrete reserve releases.

At December 31, 2010, our total amount of gross unrecognized tax benefits, which excludes interest and penalties, was approximately $15.3 million. At December 31, 2009, our total amount of gross unrecognized tax benefits, which excludes interest and penalties, was approximately $9.1 million. The net increase from December 31, 2009 was primarily attributable to an increase in reserves for existing uncertain tax positions. If these benefits were recognized in a future period, the timing of which is not estimable, the net unrecognized tax benefit of $12.8 million, excluding interest and penalties, would impact our effective tax rate. We accrue interest expense and, if applicable, penalties, for any uncertain tax positions. Interest and penalties are classified as a component of income tax expense. At December 31, 2010, 2009 and 2008 we had accrued interest on unrecognized tax benefits of approximately $1.0 million, $0.7 million and $1.7 million, respectively.

Over the next 12 months it is reasonably possible that we may recognize $2.8 million to $3.3 million of previously unrecognized tax benefits related to various U.S. federal, state and foreign tax positions as a result of the conclusion of various audits and the expiration of statutes of limitations. We are subject to examination by federal, state and foreign tax authorities. Our U.S. federal tax filings are open for examination for tax years 2007 through present. The statute of limitations in our other tax jurisdictions remains open between fiscal years 2001 through present.

On a quarterly basis, we evaluate both positive and negative evidence that affect the realizability of net deferred tax assets and assess the need for a valuation allowance. The future benefit to be derived from our deferred tax assets is dependent upon our ability to generate sufficient future taxable income to realize the assets. During 2010, we increased our valuation allowance by $20.1 million primarily related to capital losses incurred from our divested business operations as we determined it is more likely than not that the deferred tax assets related to these attributes will not be realized. In 2009, we recorded a net benefit to income tax expense of $5.7 million, excluding interest and penalties, due to discrete reserve releases primarily related to the close of the 2005 and 2006 U.S. federal tax audits.

During 2006, we received a notification letter from the Israeli Ministry of Industry Trade and Labor (“MITL”) indicating that our Israeli operations were in compliance with requirements relating to the tax holiday granted to our manufacturing operations in Israel in 2001. This tax holiday is currently due to expire in 2011 and is subject to meeting continued investment, employment and other requirements under the guidelines of the MITL. This tax holiday resulted in income tax savings of $2.7 million, $0.3 million and $0.2 million for the years 2010, 2009 and 2008, respectively

Our future effective income tax rate depends on various factors, such as tax legislation and the geographic composition of our pre-tax income. We monitor these factors and timely adjust our effective tax rate accordingly. Additionally, the effective tax rate could be adversely affected by changes in the valuation of deferred tax assets and liabilities. In particular, the carrying value of deferred tax assets, which are predominantly in the United States, is dependent on our ability to generate sufficient future taxable income in the United States. While we believe we have adequately provided for all tax positions, amounts asserted by taxing authorities could materially differ from our accrued positions as a result of uncertain and complex application of tax regulations. Additionally, the recognition and measurement of certain tax benefits include estimates and judgment by management and inherently includes subjectivity. Accordingly, we could record additional provisions due to U.S. federal, state, and foreign tax-related matters in the future as we revise estimates or settle or otherwise resolve the underlying matters.

Discontinued Operations

	Years Ended December 31,		
	2010	2009	2008
	(Dollars in millions)		
Income (loss) from discontinued operations, net of taxes	$9.7	$(63.3)	$(9.9)

During 2010, we divested two product lines as their growth potential no longer met our long-term strategic objectives. We completed the sale of Ion on May 17, 2010 and the sale of the assets of our YDI business on August 11, 2010 for a total of $15.6 million of net cash proceeds, after expenses, and recorded a $4.4 million pre-tax gain on the combined sales. For the year ended December 31, 2009, the loss from discontinued operations includes $65.5 million of goodwill and intangible asset impairment charges. These charges were a result of the interim impairment assessment performed on April 30, 2009. For the year ended December 31, 2008, the loss from discontinued operations includes $6.1 million of intangible asset impairment charges. These charges were a result of an impairment assessment performed in the fourth quarter of 2008.

The two product lines have been accounted for as discontinued operations. Accordingly, their results of operations have been reclassified to discontinued operations in the consolidated statements of operations for all periods presented. The assets and liabilities of these discontinued product lines have not been reclassified or segregated in the consolidated balance sheets or consolidated statements of cash flows due to their immaterial amounts.

Liquidity and Capital Resources

Cash, cash equivalents and short-term marketable securities totaled $431.9 million at December 31, 2010, an increase of $160.1 million compared to $271.8 million at December 31, 2009. This increase was mainly due to the net cash provided by operating activities as a result of our net income of $142.6 million. The primary driver in our current and anticipated future cash flows is and will continue to be cash generated from operations, consisting mainly of our net income and changes in operating assets and liabilities. In periods when our sales are growing, higher sales to customers will result in increased trade receivables, and inventories will generally increase as we build products for future sales. This may result in lower cash generated from operations. Conversely, in periods when our sales are declining, our trade accounts receivable and inventory balances will generally decrease, resulting in increased cash from operations.

Net cash provided by operating activities was $163.5 million for 2010 and resulted mainly from net income of $142.6 million, a $52.1 million increase in operating liabilities, a $22.8 million decrease in income taxes receivable, non-cash charges of $13.2 million provision for excess or obsolete inventory, $13.8 million for depreciation and amortization and $10.6 million for stock-based compensation. These increases were partially offset by an increase of $94.7 million in operating assets and a $4.4 million gain on the disposal of two discontinued operations. The $52.1 million increase in operating liabilities was due to an $11.2 million increase in accounts payable related to inventory purchases to support our increased business levels, an increase of $20.6 million in accrued compensation related to increases in incentive compensation and accrued salaries and benefits, a $5.0 million increase in customer deposits and a $3.3 million increase in the product warranty reserve. The decrease in income taxes receivable was primarily due to the collection of an income tax refund of $24.7 million. The $94.7 million increase in operating assets consisted of a $42.5 million increase in trade accounts receivable and an increase of $52.5 million of inventory as a result of our increased business levels.

Net cash provided by operating activities was $4.9 million for 2009 and resulted mainly from a net loss of $212.7 million, a $32.0 million increase in operating assets and a $4.7 million net decrease in operating liabilities, offset by a $20.3 million provision for excess or obsolete inventory, non-cash charges of $208.5 million for impairment of goodwill, intangibles and other long-lived assets, $18.8 million for depreciation and amortization and $8.8 million for stock-based compensation. The increase in operating assets consisted of a $9.9 million increase in accounts receivable as a result of higher sales in the last two months of 2009 compared to 2008 and a $19.9 million increase in income tax receivable as a result of an income tax refund due to operating losses. The net decrease in operating liabilities is mainly caused by a decrease of $5.0 million in non-current income taxes payable, a decrease of $2.3 million in accrued compensation and a decrease of $1.7 million in the product warranty reserve partially offset by an increase in accounts payable of $6.1 million. The decrease in accrued compensation is primarily as a result of the workforce reduction and mandatory time-off.

Net cash used in investing activities was $105.6 million for 2010 and resulted primarily from the net purchases of $104.1 million of available-for-sale investments and purchases of plant and equipment of $15.8 million, partially offset by $15.6 million in net proceeds from the sale of the discontinued product lines. The $15.8 million increase in plant and equipment was primarily for the purchase of calibration and test equipment. Net cash used in investing activities was $9.6 million for 2009 and resulted primarily from the net purchases of $5.9 million of available-for-sale investments and purchases of plant and equipment of $4.2 million which was primarily calibration and test equipment.

Net cash used in financing activities was $5.0 million for 2010 and consisted primarily of $13.7 million in net repayment of short-term borrowings, partially offset by $6.5 million in net proceeds related to stock-based compensation. Net cash used in financing activities was $5.6 million for 2009 and consisted primarily of $4.5 million in net repayment of short-term borrowings.

On July 31, 2010, the Optional Advance Demand Grid Note dated August 3, 2004 expired without renewal. The unsecured short-term LIBOR based loan agreement was with HSBC Bank USA and was utilized primarily by our Japanese subsidiary for short-term liquidity purposes and had a maximum borrowing amount of $5.0 million. We did not have outstanding borrowings under this line of credit at December 31, 2009, or thereafter.

Our Japanese subsidiary has lines of credit and short-term borrowing arrangements with two financial institutions which provide for aggregate borrowings as of December 31, 2010 of up to an equivalent of $30.7 million U.S. dollars, which generally expire and are renewed at three month intervals. There were no borrowings outstanding under these arrangements at December 31, 2010. Total borrowings outstanding under these arrangements at December 31, 2009 were $12.9 million at interest rates ranging from 0.76% to 1.48%.

We have provided financial guarantees for certain unsecured borrowings and have standby letters of credit, some of which do not have fixed expiration dates. At December 31, 2010, our maximum exposure as a result of these standby letters of credit and performance bonds was approximately $1.0 million.

Future payments due under debt, lease and purchase commitment obligations as of December 31, 2010 are as follows:

	Payment Due By Period					
Contractual Obligations (In thousands)	**Total**	**Less than 1 Year**	**1-3 years**	**3-5 years**	**After 5 years**	**Other**
Operating lease obligations	$ 29,158	$ 7,447	$ 11,815	$ 6,243	$ 3,653	$ —
Purchase obligations(1)	168,373	147,275	12,119	8,979	—	—
Other long-term liabilities reflected on the Balance Sheet under GAAP(2)	25,688	24	48	48	11,734	13,834
Total	$ 223,219	$ 154,746	$ 23,982	$ 15,270	$ 15,387	$ 13,834

(1) As of December 31, 2010, we have entered into purchase commitments for certain inventory components and other equipment and services used in our normal operations. The majority of these purchase commitments covered by these arrangements are for periods of less than one year and aggregate to approximately $141.6 million. Additionally, as of December 31, 2010, approximately $26.8 million represents a commitment to multiple parties engaged to provide certain computer equipment, IT network services and IT support. These contracts are for periods ranging from two to five years and the actual timing of payments and amounts may vary based on equipment deployment dates. However, the amount noted represents our expected obligation based on anticipated deployment.

(2) The majority of this balance relates to income taxes payable and accrued compensation for certain executives related to supplemental retirement benefits.

On February 1, 2011, our Board of Directors authorized a quarterly cash dividend of $0.15 per share, payable on March 18, 2011 to shareholders of record as of March 1, 2011. Future dividend declarations, if any, as well as the record and payment dates for such dividends, are subject to the final determination of our Board of Directors.

We believe that our working capital, together with the cash anticipated to be generated from operations, will be sufficient to satisfy our estimated working capital, planned capital expenditure requirements and any future cash dividends declared by our Board of Directors through at least the next 12 months.

Derivatives

We enter into derivative instruments for risk management purposes only, including derivatives designated as hedging instruments and those utilized as economic hedges. We operate internationally, and in the normal course of business, are exposed to fluctuations in interest rates and foreign exchange rates. These fluctuations can increase the costs of financing, investing and operating the business. We have used derivative instruments, such as forward contracts, to manage certain foreign currency exposure.

By nature, all financial instruments involve market and credit risks. We enter into derivative instruments with major investment grade financial institutions and no collateral is required. We have policies to monitor the credit risk of these counterparties. While there can be no assurance, we do not anticipate any material non-performance by any of these counterparties.

We hedge a portion of our forecasted foreign currency denominated intercompany sales of inventory, over a maximum period of eighteen months, using forward foreign exchange contracts accounted for as cash-flow hedges related to Japanese, South Korean, British and European currencies. To the extent these derivatives are effective in offsetting the variability of the hedged cash flows, and otherwise meet the hedge accounting criteria, changes in the derivatives' fair value are not included in current earnings but are included in accumulated other comprehensive income in stockholders' equity. These changes in fair value will subsequently be reclassified into earnings, as applicable, when the forecasted transaction occurs. To the extent that a previously designated hedging transaction is no longer an effective hedge, any ineffectiveness measured in the hedging relationship is recorded currently in earnings in the period it occurs. The cash flows resulting from forward exchange contracts are classified in the consolidated statements of cash flows as part of cash flows from operating activities. We do not enter into derivative instruments for trading or speculative purposes.

To the extent that hedge accounting criteria is not met, the foreign currency forward contracts are considered economic hedges and changes in the fair value of these contracts are recorded immediately in earnings in the period in which they occur. These include hedges that are used to reduce exchange rate risks arising from the change in fair value of certain foreign currency denominated assets and liabilities (i.e., payables, receivables) and other economic hedges where the hedge accounting criteria were not met.

We had forward exchange contracts with notional amounts totaling $87.7 million outstanding at December 31, 2010 of which $50.1 million were outstanding to exchange Japanese yen for U.S. dollars. We had forward exchange contracts with notional amounts totaling $48.7 million outstanding at December 31, 2009 of which $29.0 million were outstanding to exchange Japanese yen for U.S. dollars.

As of December 31, 2010, the unrealized loss that will be reclassified from accumulated other comprehensive income to earnings over the next twelve months is $3.1 million. The ineffective portions of the derivatives are recorded in selling, general and administrative costs and were immaterial in 2010, 2009 and 2008, respectively.

We also hedge certain intercompany and other payables with forward exchange contracts. Typically, as these derivatives hedge existing amounts that are denominated in foreign currencies, the derivatives do not qualify for hedge accounting. The foreign exchange gain or loss on these derivatives was immaterial in 2010 and 2009 and the gain of $2.7 million in 2008 was recorded in selling, general and administrative costs.

Realized and unrealized gains and losses on forward exchange contracts that do not qualify for hedge accounting are recognized currently in earnings. The cash flows resulting from forward exchange contracts are classified in our consolidated statements of cash flows as part of cash flows from operating activities. We do not hold or issue derivative financial instruments for trading purposes.

Gains and losses on forward exchange contracts that qualify for hedge accounting are classified in cost of products, which totaled a loss of $1.0 million, a gain of $1.1 million and losses of $1.2 million for the years 2010, 2009 and 2008, respectively.

Off-Balance Sheet Arrangements

We do not have any financial partnerships with unconsolidated entities, such as entities often referred to as structured finance, special purpose entities or variable interest entities which are often established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. Accordingly, we are not exposed to any financing, liquidity, market or credit risk that could arise if we had such relationships.

Recently Issued Accounting Pronouncements

In January 2010, the Financial Accounting Standards Board ("FASB") issued updated guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. This update requires new disclosures on significant transfers of assets and liabilities in and out of Level 1 and Level 2 of the fair value hierarchy (including the reasons for these transfers) and also requires a reconciliation of recurring Level 3 measurements about purchases, sales, issuances and settlements on a gross basis. In addition to these new disclosure requirements, this update clarifies certain existing disclosure requirements. For example, this update clarifies that reporting entities are required to provide fair value measurement disclosures for each class of assets and liabilities rather than each major category of assets and liabilities. This update also clarifies the requirement for entities to disclose information about both the valuation techniques and inputs used in estimating Level 2 and Level 3 fair value measurements. This update was effective for companies with interim and annual reporting periods beginning after December 15, 2009, except for the requirement to provide the Level 3 activity of purchases, sales, issuances, and settlements on a gross basis, which will become effective for interim and annual reporting periods beginning after December 15, 2010. We adopted the updated guidance in the first quarter of 2010 and the adoption did not have an impact on our financial position, results of operations, or cash flows.

In October 2009, the FASB issued guidance that establishes new accounting and reporting provisions for arrangements including multiple revenue-generating activities. This guidance provides amendments to the criteria for separating deliverables, measuring and allocating arrangement consideration to one or more units of accounting. The amendments in this guidance also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures are also required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made and changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. We do not expect this new guidance to have an impact on our consolidated financial statements.

In October 2009, the FASB issued guidance that changes the accounting model for revenue arrangements that include both tangible products and software elements that are "essential to the functionality," and scopes these products out of current software revenue guidance. The new guidance will include factors to help companies determine what software elements are considered "essential to the functionality." The amendments will now subject software-enabled products to other revenue guidance and disclosure requirements, such as guidance surrounding revenue arrangements with multiple-deliverables. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. We do not expect this new guidance to have an impact on our consolidated financial statements.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk***

Market Risk and Sensitivity Analysis

Our primary exposures to market risks include fluctuations in interest rates on our investment portfolio, short-term debt as well as fluctuations in foreign currency exchange rates.

Foreign Exchange Rate Risk

We mainly enter into forward exchange contracts to reduce currency exposure arising from intercompany sales of inventory. We sometimes also enter into forward exchange contracts to reduce foreign exchange risks arising from the change in fair value of certain foreign currency denominated assets and liabilities.

There were forward exchange contracts with notional amounts totaling $87.7 million and $48.7 million outstanding at December 31, 2010 and 2009, respectively. Of such forward exchange contracts, $50.1 million and $29.0 million, respectively, were outstanding to exchange Japanese yen for U.S. dollars with the remaining amounts relating to contracts to exchange the British pound, South Korean won and Euro for U.S. dollars. The potential fair value loss for a hypothetical 10% adverse change in the currency exchange rate on our forward exchange contracts at December 31, 2010 and 2009 would be $9.7 million and $5.3 million, respectively. The potential losses in 2010 and 2009 were estimated by calculating the fair value of the forward exchange contracts at December 31, 2010 and 2009 and comparing that with those calculated using hypothetical forward currency exchange rates.

Interest Rate Risk

Due to its short-term duration, the fair value of our cash and investment portfolio at December 31, 2010 and 2009 approximated its carrying value. Interest rate risk was estimated as the potential decrease in fair value resulting from a hypothetical 10% increase in interest rates for securities contained in the investment portfolio. The resulting hypothetical fair value was not materially different from the year-end carrying values.

From time to time, we have outstanding short-term borrowings with variable interest rates, primarily denominated in Japanese yen. There were no outstanding borrowings at December 31, 2010. At December 31, 2009, we had $12.9 million outstanding related to these short-term borrowings at interest rates ranging from 0.76% to 1.48%. Due to the short-term nature and amount of this short-term debt, a hypothetical change of 10% in interest rates would not have a material effect on our near-term financial condition or results of operations.

Item 8. ***Financial Statements and Supplementary Data***

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To Board of Directors and Shareholders of
MKS Instruments, Inc.:

In our opinion, the accompanying consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of MKS Instruments, Inc. and its subsidiaries at December 31, 2010 and 2009, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's 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. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
February 25, 2011

MKS INSTRUMENTS, INC.

CONSOLIDATED BALANCE SHEETS

	December 31, 2010	December 31, 2009
	(In thousands, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 162,476	$ 111,009
Short-term investments	269,457	160,786
Trade accounts receivable, net of allowances of $2,557 and $2,415 at December 31, 2010 and 2009, respectively	138,181	94,215
Inventories	156,429	118,004
Income tax receivable	—	14,476
Deferred income taxes	13,775	21,505
Other current assets	12,577	12,886
Total current assets	752,895	532,881
Property, plant and equipment, net	68,976	67,196
Long-term marketable securities	—	4,853
Goodwill	140,020	144,511
Intangible assets, net	1,743	4,963
Other assets	18,779	19,665
Total assets	$ 982,413	$ 774,069
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	$ —	$ 12,885
Accounts payable	36,427	26,292
Accrued compensation	29,944	10,658
Income taxes payable	5,347	—
Other current liabilities	37,968	21,465
Total current liabilities	109,686	71,300
Other liabilities	25,688	17,836
Commitments and contingencies (Note 23)		
Stockholders' equity:		
Preferred Stock, $0.01 par value, 2,000,000 shares authorized; none issued and outstanding	—	—
Common Stock, no par value, 200,000,000 shares authorized; 50,648,601 and 49,514,941 shares issued and outstanding at December 31, 2010 and 2009, respectively	113	113
Additional paid-in capital	663,792	645,411
Retained earnings	171,356	28,769
Accumulated other comprehensive income	11,778	10,640
Total stockholders' equity	847,039	684,933
Total liabilities and stockholders' equity	$ 982,413	$ 774,069

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

MKS INSTRUMENTS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31, 2010	2009	2008
	(In thousands, except per share data)		
Net Revenues			
Products	$ 763,452	$ 324,951	$ 537,759
Services	89,662	67,742	83,621
Total net revenues	853,114	392,693	621,380
Cost of revenues			
Cost of products	421,777	219,776	319,474
Cost of service	52,699	42,701	53,668
Total cost of revenues	474,476	262,477	373,142
Gross profit	378,638	130,216	248,238
Research and development	62,689	50,212	72,753
Selling, general and administrative	119,841	100,429	120,618
Amortization of acquired intangible assets	1,283	2,762	3,993
Goodwill and asset impairment charges	—	142,958	—
Gain on sale of asset	(682)	—	—
Restructuring	—	5,516	—
Income (loss) from operations	195,507	(171,661)	50,874
Interest income	1,052	1,703	7,001
Interest expense	135	62	577
Impairment of investments	—	—	(906)
Income (loss) from continuing operations before income taxes	196,424	(170,020)	56,392
Provision (benefit) for income taxes	63,505	(20,659)	16,382
Income (loss) from continuing operations	132,919	(149,361)	40,010
Income (loss) from discontinued operations, net of taxes	9,668	(63,298)	(9,893)
Net income (loss)	$ 142,587	$ (212,659)	$ 30,117
Basic income (loss) per share:			
Continuing operations	$ 2.66	$ (3.03)	$ 0.81
Discontinued operations	0.19	(1.28)	(0.20)
Net income (loss)	$ 2.85	$ (4.31)	$ 0.61
Diluted income (loss) per share:			
Continuing operations	$ 2.61	$ (3.03)	$ 0.79
Discontinued operations	0.19	(1.28)	(0.20)
Net income (loss)	$ 2.80	$ (4.31)	$ 0.59
Weighted average common shares outstanding:			
Basic	50,077	49,318	49,717
Diluted	50,927	49,318	50,754

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

MKS INSTRUMENTS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	For the Years Ended December 31, 2010, 2009 and 2008						
	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (loss)	Comprehensive Income (loss)	Total Stockholders' Equity
	Shares	Amount					
	(In thousands, except share data)						
Balance at December 31, 2007	54,261,947	$ 113	$ 685,465	$ 255,244	$ 13,187		$ 954,009
Net issuance under stock-based plans	681,493		8,861				8,861
Stock-based compensation			15,176				15,176
Tax benefit from stock-based plans			226				226
Stock repurchases	(5,667,465)		(71,790)	(43,933)			(115,723)
Comprehensive income (net of tax):							
Net income				30,117		30,117	30,117
Other comprehensive income:							
Changes in value of financial instruments designated as cash flow hedges					390	390	390
Changes in unrealized loss on investments					(187)	(187)	(187)
Foreign currency translation adjustment					(6,171)	(6,171)	(6,171)
Comprehensive income						$ 24,149	
Balance at December 31, 2008	49,275,975	$ 113	$ 637,938	$ 241,428	$ 7,219		$ 886,698
Net issuance under stock-based plans	238,966		(114)				(114)
Stock-based compensation			8,845				8,845
Tax benefit from stock-based plans			(1,258)				(1,258)
Comprehensive income (loss) (net of tax):							
Net loss				(212,659)		(212,659)	(212,659)
Other comprehensive income (loss):							
Changes in value of financial instruments designated as cash flow hedges					267	267	267
Changes in unrealized gain on investments					92	92	92
Foreign currency translation adjustment					3,062	3,062	3,062
Comprehensive loss						$ (209,238)	
Balance at December 31, 2009	49,514,941	$ 113	$ 645,411	$ 28,769	$ 10,640		$ 684,933
Net issuance under stock-based plans	1,133,660		6,524				6,524
Stock-based compensation			10,604				10,604
Tax expense from stock-based plans			1,253				1,253
Comprehensive income (net of tax):							
Net income				142,587		142,587	142,587
Other comprehensive income:							
Changes in value of financial instruments designated as cash flow hedges					(2,600)	(2,600)	(2,600)
Changes in unrealized gain on investments					28	28	28
Foreign currency translation adjustment					3,710	3,710	3,710
Comprehensive income						$ 143,725	
Balance at December 31, 2010	50,648,601	$ 113	$ 663,792	$ 171,356	$ 11,778		$ 847,039

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

MKS INSTRUMENTS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2010	2009	2008
		(In thousands)	
Cash flows from operating activities:			
Net income (loss)	$ 142,587	$ (212,659)	$ 30,117
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	13,823	18,759	23,524
Stock-based compensation	10,604	8,845	15,274
Provision for excess and obsolete inventory	13,230	20,335	11,401
Impairment of goodwill	—	193,255	—
Impairment of intangibles and other long-lived assets	—	15,242	6,069
Gain on disposal of discontinued operations	(4,432)	—	—
Deferred income taxes	10,097	(3,143)	(5,823)
Excess tax benefits from stock-based compensation	(2,112)	(40)	(280)
Other	(560)	1,003	1,300
Changes in operating assets and liabilities:			
Trade accounts receivable	(42,540)	(9,935)	23,565
Inventories	(52,467)	(4,677)	7,088
Income taxes	22,796	(19,939)	(2,199)
Other current assets	296	2,511	(3,730)
Accrued expenses and other current liabilities	40,928	(10,757)	(4,384)
Accounts payable	11,220	6,103	(9,175)
Net cash provided by operating activities	163,470	4,903	92,747
Cash flows from investing activities:			
Purchases of short-term and long-term available-for-sale investments	(410,551)	(254,057)	(324,375)
Maturities and sales of short-term and long-term available-for-sale investments	306,498	248,147	263,715
Purchases of property, plant and equipment	(15,819)	(4,179)	(13,457)
Proceeds from sale of assets	2,318	128	336
Net proceeds from sale of discontinued operations	15,582	—	—
Other	(3,651)	333	(273)
Net cash used in investing activities	(105,623)	(9,628)	(74,054)
Cash flows from financing activities:			
Proceeds from short-term borrowings	119,209	162,361	155,922
Payments on short-term borrowings	(132,872)	(166,847)	(160,771)
Repurchases of common stock	—	—	(115,723)
Payments on long-term debt	—	—	(5,000)
Net proceeds (payments) related to employee stock awards	6,524	(114)	8,861
Excess tax benefit from stock-based compensation	2,112	40	280
Other	—	(996)	(1,330)
Net cash used in financing activities	(5,027)	(5,556)	(117,761)
Effect of exchange rate changes on cash and cash equivalents	(1,353)	2,029	(5,639)
Increase (decrease) in cash and cash equivalents	51,467	(8,252)	(104,707)
Cash and cash equivalents at beginning of year	111,009	119,261	223,968
Cash and cash equivalents at end of year	$ 162,476	$ 111,009	$ 119,261
Supplemental disclosure of cash flow information:			
Cash paid during the period for:			
Interest	$ 78	$ 187	$ 649
Income taxes	$ 47,446	$ 10,038	$ 11,625

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

MKS INSTRUMENTS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Tables in thousands, except share and per share data)

1) Business Description

MKS Instruments, Inc. ("MKS" or the "Company") was founded in 1961 and is a leading worldwide provider of instruments, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of advanced manufacturing processes to improve process performance and productivity of advanced manufacturing processes. MKS is managed as one operating segment which is organized around three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. MKS' products are derived from its core competencies in pressure measurement and control, materials delivery, gas composition analysis, control and information technology, power and reactive gas generation and vacuum technology.

2) Basis of Presentation

The consolidated financial statements include the accounts of MKS Instruments, Inc. and its wholly owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, management evaluates its estimates and judgments, including those related to revenue recognition, stock-based compensation, inventory, intangible assets, goodwill, and other long-lived assets, acquisition expenses, income taxes and investments. Management bases its estimates and judgments 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.

During 2010, the Company divested two product lines, as their growth potential no longer met the Company's long-term strategic objectives. The Company completed the sale of Ion Systems, Inc. ("Ion") during the second quarter of 2010 and the sale of the assets of the Yield Dynamics, LLC ("YDI") business during the third quarter of 2010. The results of operations of the two product lines have been classified as discontinued operations in the consolidated statements of operations for all periods presented. The assets and liabilities of these discontinued product lines have not been reclassified and segregated in the consolidated balance sheets or consolidated statements of cash flows due to their immaterial amounts. Refer to Note 17 for additional disclosure of the discontinued operations.

For the years 2008 and 2009, shown in the table below, the Company revised the amounts related to cash provided by operating activities and cash used in financing activities in its consolidated statements of cash flows to correct for immaterial errors. These corrections related to adjusting the excess tax benefit amounts associated with stock-based compensation.

	Years Ended December 31,	
	2009	2008
Net cash provided by operating activities:		
As reported	$ 7,368	$ 89,777
As adjusted	4,903	92,747
Change	$ (2,465)	$ 2,970

MKS INSTRUMENTS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Tables in thousands, except share and per share data)

	Years Ended December 31, 2009	2008
Net cash used in financing activities:		
As reported	$ (8,021)	$ (114,791)
As adjusted	(5,556)	(117,761)
Change	$ 2,465	$ (2,970)

3) Summary of Significant Accounting Policies

Revenue Recognition and Accounts Receivable Allowances

Revenue from product sales is recorded upon transfer of title and risk of loss to the customer provided that there is evidence of an arrangement, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. In most transactions, the Company has no obligations to customers after the date products are shipped other than pursuant to warranty obligations. In some instances, the Company provides installation, training, support and services to customers after the product has been shipped. For revenue arrangements with multiple deliverables, the Company defers the fair value related to any undelivered elements until the undelivered element is delivered. Fair value is the price charged when the element is sold separately. The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. Shipping and handling fees, if any, billed to customers are recognized as revenue. The related shipping and handling costs are recognized in cost of sales. Accounts receivable allowances include sales returns and bad debt allowances. The Company monitors and tracks the amount of product returns and reduces revenue at the time of shipment for the estimated amount of such future returns, based on historical experience. The Company makes estimates evaluating its allowance for doubtful accounts. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon its historical experience and any specific customer collection issues that it has identified.

Research and Development

Research and development costs are expensed as incurred and consist mainly of compensation related expenses and project materials. The Company's research and development efforts include numerous projects, which generally have a duration of 3 to 30 months. Acquired in-process research and development ("IPR&D") expenses, which are capitalized at fair value as an intangible asset until the related project is completed, are then amortized over the estimated useful life of the product. Projects that are abandoned are immediately written off. In prior years, IPR&D was expensed as incurred.

Advertising Costs

Advertising costs are expensed as incurred and were immaterial in 2010, 2009 and 2008.

Stock-Based Compensation

The accounting for share-based compensation expense requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors based on estimated fair values. For restricted stock units ("RSUs"), the fair value is the fair value on the date of grant. The Company has estimated the fair value of share-based options on the date of grant using the Black Scholes pricing model, which is affected by the Company's stock price as well as assumptions regarding a number of complex and subjective variables. These variables include the Company's expected stock price volatility over the term of the awards, expected life, risk free interest rate and expected dividends. The Company is also required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates.

Management determined that blended volatility, a combination of historical and implied volatility, is more reflective of market conditions and a better indicator of expected volatility than historical or implied volatility alone. The assumptions used in calculating the fair value of share-based payment awards represent management's best estimates, but these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and the Company uses different assumptions, its stock-based compensation expense could be materially different in the future.

Net Income Per Share

Basic earnings per share is based on the weighted average number of common shares outstanding, and diluted earnings per share is based on the weighted average number of common shares outstanding and all dilutive potential common equivalent shares outstanding. The dilutive effect of options is determined under the treasury stock method using the average market price for the period. Common equivalent shares are included in the per share calculations when the effect of their inclusion would be dilutive.

Cash and Cash Equivalents and Investments

All highly liquid investments with a maturity date of three months or less at the date of purchase are considered to be cash equivalents. The appropriate classification of investments in securities is determined at the time of purchase. Debt securities that the Company does not have the intent and ability to hold to maturity are classified as "available-for-sale" and are carried at fair value. Unrealized gains and losses on securities classified as available-for-sale are included in accumulated other comprehensive income in consolidated stockholders' equity.

The Company reviews its investment portfolio on a monthly basis to identify and evaluate individual investments that have indications of possible impairment. The factors considered in determining whether a loss is other-than-temporary include: the length of time and extent to which fair market value has been below the cost basis, the financial condition and near-term prospects of the issuer, credit quality, and the Company's ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in fair value.

Concentrations of Credit Risk

The Company's significant concentrations of credit risk consist principally of cash and cash equivalents, investments, forward exchange contracts and trade accounts receivable. The Company maintains cash and cash equivalents with financial institutions including some banks with which it had borrowings. The Company maintains investments primarily in U.S. Treasury and government agency securities and corporate debt securities, with minimum rating of A1-P1 or AAA. The Company enters into forward currency contracts with high credit-quality financial institutions in order to minimize credit risk exposure. The Company's customers are primarily concentrated in the semiconductor industry, and a limited number of customers account for a significant portion of the Company's revenues. The Company regularly monitors the creditworthiness of its customers and believes it has adequately provided for potential credit loss exposures. Credit is extended for all customers based primarily on financial condition and collateral is not required.

The Company had one customer comprising 16%, 13% and 19% of net sales for 2010, 2009 and 2008, respectively. During the years 2010, 2009 and 2008, the Company estimated that approximately 64%, 52% and 58% of its net sales, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. There were no customers comprising 10% or more of the Company's accounts receivable balance as of December 31, 2010.

Inventories

The Company values its inventory at the lower of cost (first-in, first-out method) or market. The Company regularly reviews inventory quantities on hand and records a provision to write-down excess and obsolete inventory to its estimated net realizable value, if less than cost, based primarily on its estimated forecast of product demand.

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Equipment acquired under capital leases is recorded at the present value of the minimum lease payments required during the lease period. Expenditures for major renewals and betterments that extend the useful lives of property, plant and equipment are capitalized. Expenditures for maintenance and repairs are charged to expense as incurred. When assets are sold or otherwise disposed of, the cost and related accumulated depreciation are eliminated from the accounts and any resulting gain or loss is recognized in earnings.

Depreciation is provided on the straight-line method over the estimated useful lives of twenty to thirty-one and one-half years for buildings and three to seven years for machinery and equipment, furniture and fixtures and office equipment, which includes enterprise resource planning (“ERP”) software. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life of the leased asset.

Intangible Assets

Intangible assets resulting from the acquisitions of entities accounted for using the purchase method of accounting are estimated by management based on the fair value of assets acquired. These include acquired customer lists, technology, patents, trade names, covenants not to compete and IPR&D. Intangible assets are amortized from two to eight years on a straight-line basis which represents the estimated periods of benefit. During 2009 and 2008, the Company recorded impairments of indefinite-lived intangible assets of $11,699,000 and $6,069,000, respectively. These impairment charges are classified in discontinued operations in the consolidated statements of operations as the intangible assets relate to the two discontinued product lines.

Goodwill

Goodwill is the amount by which the cost of acquired net assets exceeded the fair value of those net assets on the date of acquisition. The Company allocates goodwill to reporting units at the time of acquisition and bases that allocation on which reporting units will benefit from the acquired assets and liabilities. Reporting units are defined as operating segments or one level below an operating segment, referred to as a component. The Company has determined that its reporting units are components of its one operating segment. The Company assesses goodwill for impairment on an annual basis as of October 31 or more frequently when events and circumstances occur indicating that the recorded goodwill may be impaired. If the book value of a reporting unit exceeds its fair value, the implied fair value of goodwill is compared with the carrying amount of goodwill. If the carrying amount of goodwill exceeds the implied fair value, an impairment loss is recorded equal to that excess. During 2009, the Company recorded a goodwill impairment charge of $193,254,000. In 2010, the Company reclassified $53,840,000 of the goodwill impairment charge to discontinued operations as it related to the two discontinued product lines.

Impairment of Long-Lived Assets

The Company evaluates the recoverability of its long-lived assets whenever events and changes in circumstances indicate that the carrying amount of an asset may not be fully recoverable. This periodic review may result in an adjustment of estimated depreciable lives or asset impairment. When indicators of impairment are present, the carrying values of the asset are evaluated in relation to their operating performance and future undiscounted cash flows of the underlying business. If the future undiscounted cash flows are less than their book value, impairment exists. The impairment is measured as the difference between the book value and the fair value of the underlying asset. Fair values are based on estimates of market prices and assumptions concerning the amount and timing of estimated future cash flows and assumed discount rates, reflecting varying degrees of perceived risk. During 2009, the Company recorded an impairment charge of $3,544,000 resulting from the write-down of the value of a building to its estimated fair value.

Foreign Exchange

The functional currency of the majority of the Company's foreign subsidiaries is the applicable local currency. For those subsidiaries, assets and liabilities are translated to U.S. dollars at year-end exchange rates. Income and expense accounts are translated at the average exchange rates prevailing during the year. The resulting translation adjustments are included in accumulated other comprehensive income in consolidated stockholders' equity. Foreign exchange transaction gains and losses, which arise from transaction activity, are reflected in selling, general and administrative expenses in the statement of operations.

Income Taxes

The Company records income taxes using the asset and liability method. Deferred income tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective income tax bases, and operating loss and tax credit carryforwards. On a quarterly basis, the Company evaluates both the positive and negative evidence that affects the realizability of net deferred tax assets and assesses the need for a valuation allowance. The future benefit to be derived from its deferred tax assets is dependent upon its ability to generate sufficient future taxable income to realize the assets. The Company records a valuation allowance to reduce its net deferred tax assets to the amount that is more likely than not to be realized. To the extent the Company establishes a valuation allowance, an expense will be recorded as a component of the provision for income taxes on the statement of operations. As of December 31, 2008, the Company had a valuation allowance of $4,653,000 primarily related to state tax credit carryforwards. During 2009, the Company increased the valuation allowance by $548,000 primarily for state tax credit carryforwards, as the Company has determined it is more likely than not that this tax attribute will not be realized. As a result, the valuation allowance was $5,201,000 at December 31, 2009. During 2010, the Company increased the valuation allowance by $20,066,000 primarily related to capital losses incurred from its divested business operations, as the Company determined it is more likely than not that this tax attribute will not be realized. As a result, the valuation allowance is $25,267,000 at December 31, 2010.

Accounting for income taxes requires a two-step approach to recognize and measure uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if, based on the technical merits, it is more likely than not that the position will be sustained upon audit, including resolutions of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. The Company reevaluates these uncertain tax positions on a quarterly basis. This evaluation is based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues under audit and new audit activity. Any change in these factors could result in the recognition of a tax benefit or an additional charge to the tax provision.

4) Recently Issued Accounting Pronouncements

In January 2010, the Financial Accounting Standards Board ("FASB") issued updated guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. This update requires new disclosures on significant transfers of assets and liabilities in and out of Level 1 and Level 2 of the fair value hierarchy (including the reasons for these transfers) and also requires a reconciliation of recurring Level 3 measurements about purchases, sales, issuances and settlements on a gross basis. In addition to these new disclosure requirements, this update clarifies certain existing disclosure requirements. For example, this update clarifies that reporting entities are required to provide fair value measurement disclosures for each class of assets and liabilities rather than each major category of assets and liabilities. This update also clarifies the requirement for entities to disclose information about both the valuation techniques and inputs used in estimating Level 2 and Level 3 fair value measurements. This update was effective for companies with interim and annual reporting periods beginning after December 15, 2009, except for the requirement to provide the Level 3 activity of purchases, sales, issuances, and settlements on a gross basis, which will become effective for interim and annual reporting periods beginning after December 15, 2010. The Company adopted the updated guidance in the first quarter of 2010 and the adoption did not have a material impact on the Company's financial position, results of operations, or cash flows.

(Tables in thousands, except share and per share data)

In October 2009, the FASB issued guidance that establishes new accounting and reporting provisions for arrangements including multiple revenue-generating activities. This guidance provides amendments to the criteria for separating deliverables, measuring and allocating arrangement consideration to one or more units of accounting. The amendments in this guidance also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures are also required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made and changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. The Company does not expect this new guidance to have a material impact on its consolidated financial statements.

In October 2009, the FASB issued guidance that changes the accounting model for revenue arrangements that include both tangible products and software elements that are "essential to the functionality," and scopes these products out of current software revenue guidance. The new guidance will include factors to help companies determine what software elements are considered "essential to the functionality." The amendments will now subject software-enabled products to other revenue guidance and disclosure requirements, such as guidance surrounding revenue arrangements with multiple-deliverables. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. The Company does not expect this new guidance to have an impact on its consolidated financial statements.

5) Cash and Cash Equivalents and Investments

In 2008, the Company recorded net impairment charges of $906,000 related to two investments. The Company liquidated its position in these two investments during the third quarter of 2008, one by sale and the other by a structured payment. The Company received a combined total of $3,369,000 from the settlement of these investments during 2008.

The fair value of short-term available-for-sale investments with maturities or estimated lives of less than one year consists of the following:

	Years Ended December 31, 2010	2009
Money market funds and certificates of deposit	$ 15,716	$ 4,296
Equity mutual funds	491	449
U.S. agency obligations	230,394	150,648
Corporate obligations	22,856	5,393
	$ 269,457	$ 160,786

(Tables in thousands, except share and per share data)

The fair value of long-term available-for-sale investments with maturities or estimated lives of one to five years consists of the following:

	Years Ended December 31, 2010	2009
U.S. agency obligations	$ —	$ 4,853

The following table shows the gross unrealized gains and (losses) aggregated by investment category:

	Cost	Gross Unrealized Gains	Gross Unrealized (Losses)	Estimated Fair Value
As of December 31, 2010:				
Equity mutual funds	$ 659	$ —	$ (168)	$ 491
U.S. agency obligations	168,713	35	(28)	168,720
Corporate obligations	27,980	7	(7)	27,980
	$ 197,352	$ 42	$ (203)	$ 197,191
As of December 31, 2009:				
Equity mutual funds	$ 649	$ —	$ (200)	$ 449
U.S. agency obligations	147,354	75	(82)	147,347
Corporate obligations	1,493	1	—	1,494
	$ 149,496	$ 76	$ (282)	$ 149,290

Available-for-sale equity mutual funds consisted of certain U.S. and international equity mutual funds associated with the Company's supplemental defined contribution retirement benefits.

Interest income is accrued as earned. Dividend income is recognized as income on the date the stock trades "ex-dividend." The cost of marketable securities sold is determined by the specific identification method and realized gains or losses are reflected in income and were not material in 2010, 2009 and 2008.

6) Fair Value Measurements

In accordance with the provisions of fair value accounting, a fair value measurement assumes that a transaction to sell an asset or transfer a liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability and defines fair value based upon an exit price model.

(Tables in thousands, except share and per share data)

The fair value measurement guidance establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The guidance describes three levels of inputs that may be used to measure fair value:

Level 1 — Quoted prices in active markets for identical assets or liabilities as of the reporting date. Active markets are those in which transactions for the asset and liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis. Level 1 assets and liabilities include money market funds, debt and equity securities and derivative contracts that are traded in an active exchange market.

Level 2 — Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts whose value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes corporate obligations and non-exchange traded derivative contracts.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

Assets and liabilities of the Company measured at fair value on a recurring basis as of December 31, 2010, are summarized as follows:

		Fair Value Measurements at Reporting Date Using		
Description	**December 31, 2010**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets:				
Money market funds and certificates of deposit	$ 22,748	$ 22,748	$ —	$ —
Available-for-sale equity securities:				
Equity mutual funds(1)	491	491	—	—
Available-for-sale debt securities:				
U.S. agency obligations	267,712	267,712	—	—
Corporate obligations	30,329	30,329	—	—
Derivatives — currency forward contracts	369	—	369	—
Total assets	$ 321,649	$ 321,280	$ 369	$ —
Liabilities:				
Supplemental retirement benefits(2)	$ 707	$ 707	$ —	$ —
Derivatives — currency forward contracts	3,463	—	3,463	—
Total liabilities	$ 4,170	$ 707	$ 3,463	$ —

MKS INSTRUMENTS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Tables in thousands, except share and per share data)

Assets and liabilities of the Company measured at fair value on a recurring basis as of December 31, 2009, are summarized as follows:

		Fair Value Measurements at Reporting Date Using		
Description	December 31, 2009	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds and certificates of deposit	$ 8,071	$ 8,071	$ —	$ —
Available-for-sale equity securities:				
Equity mutual funds(1)	449	449	—	—
Available-for-sale debt securities:				
U.S. agency obligations	158,665	158,665	—	—
Corporate obligations	5,393	5,393	—	—
Derivatives — currency forward contracts	1,505	—	1,505	—
Total assets	$ 174,083	$ 172,578	$ 1,505	$ —
Liabilities:				
Supplemental retirement benefits(2)	$ 546	$ 546	$ —	$ —
Derivatives — currency forward contracts	423	—	423	—
Total liabilities	$ 969	$ 546	$ 423	$ —

(1) Relates to short-term investments associated with the Company's supplemental defined contribution retirement benefits.

(2) Relates to the Company's obligations to pay benefits under its supplemental defined contribution retirement benefits, which are included in Other liabilities.

Money Market Funds and Certificates of Deposit

As of December 31, 2010, this asset class consisted of time deposits denominated in the Euro currency and a money market portfolio that comprises Federal government and U.S. Treasury securities. The asset class is classified within Level 1 of the fair value hierarchy because its underlying investments are valued using quoted market prices in active markets for identical assets. As of December 31, 2009, this asset class consisted primarily of certificates of deposit at financial institutions.

Available-For-Sale Equity Securities

As of December 31, 2010 and December 31, 2009, available-for-sale equity securities consisted of certain U.S. and international equity mutual funds, classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in an active market for identical assets.

Available-For-Sale Debt Securities

As of December 31, 2010 and December 31, 2009, available-for-sale debt securities consisted of U.S. agency and corporate obligations classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in an active market for identical assets.

(Tables in thousands, except share and per share data)

Supplemental Retirement Benefits

As of December 31, 2010 and December 31, 2009, supplemental defined contribution retirement benefit liabilities were measured at fair-value based on the market return of certain U.S. and international equity mutual funds, classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in an active market for identical assets.

Derivatives

As a result of the Company's global operating activities, the Company is exposed to market risks from changes in foreign currency exchange rates, which may adversely affect its operating results and financial position. When deemed appropriate, the Company minimizes its risks from foreign currency exchange rate fluctuations through the use of derivative financial instruments. The principal market in which the Company executes its foreign currency contracts is the institutional market in an over-the-counter environment with a relatively high level of price transparency. The market participants usually are large commercial banks. The forward foreign currency exchange contracts are valued using broker quotations, or market transactions and are classified within Level 2 of the fair value hierarchy.

Assets and liabilities of the Company measured at fair value on a non-recurring basis as of and for the twelve months ended December 31, 2009 are summarized as follows:

		Fair Value Measurements at Reporting Date Using			
Description	December 31, 2009	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Losses
Assets:					
Goodwill(1)	$ 144,511	$ —	$ —	$ 144,511	$ 193,254
Definite-lived intangible assets(2)	4,963	—	—	4,963	11,699
Long-lived assets held and used	1,297	—	1,297	—	3,544
Total assets	$ 150,771	$ —	$ 1,297	$ 149,474	$ 208,497

(1) For the twelve months ended December 31, 2009, the goodwill impairment charge of $193,254,000 includes $53,840,000 of charges classified in discontinued operations in the consolidated statement of operations.

(2) For the twelve months ended December 31, 2009, the definite-lived intangible asset impairment charge of $11,699,000 is classified in discontinued operations in the consolidated statement of operations.

In accordance with the provisions of accounting for goodwill and other intangible assets, during the second quarter of 2009, goodwill with a carrying amount of $337,765,000 was written down to its implied fair value of $144,511,000, resulting in an impairment charge of $193,254,000, which was included in earnings in such quarter. In accordance with the provisions of accounting for the impairment of long-lived assets, during the second quarter of 2009, definite-lived intangible assets with a carrying amount of $18,866,000, were written down to their fair value of $7,167,000, resulting in an impairment charge of $11,699,000, which was included in earnings in such quarter. Refer to Note 10 for the information and description used to develop the inputs and the fair value determination of the Level 3 goodwill and other definite-lived intangible assets.

The long-lived asset held with a carrying amount of $4,841,000 was written down in the second quarter of 2009 to its fair value of $1,297,000, resulting in a loss of $3,544,000, which was included in earnings in such quarter. During the first quarter of 2010, the Company sold this long-lived asset for its net realizable value of approximately

(Tables in thousands, except share and per share data)

$1,297,000. In addition, the Company sold a vacated facility during the first quarter of 2010 and received net proceeds of $785,000 and recorded a net gain on the sale of $682,000.

7) Derivatives

The Company enters into derivative instruments for risk management purposes only, including derivatives designated as hedging instruments and those utilized as economic hedges. The Company operates internationally and, in the normal course of business, is exposed to fluctuations in interest rates and foreign exchange rates. These fluctuations can increase the costs of financing, investing and operating the business. The Company has used derivative instruments, such as forward contracts, to manage certain foreign currency exposure.

By nature, all financial instruments involve market and credit risks. The Company enters into derivative instruments with major investment grade financial institutions and no collateral is required. The Company has policies to monitor the credit risk of these counterparties. While there can be no assurance, the Company does not anticipate any material non-performance by any of these counterparties.

The Company hedges a portion of its forecasted foreign currency denominated intercompany sales of inventory, over a maximum period of eighteen months, using forward foreign exchange contracts accounted for as cash-flow hedges related to Japanese, South Korean, British and European currencies. To the extent these derivatives are effective in off-setting the variability of the hedged cash flows, and otherwise meet the hedge accounting criteria, changes in the derivatives' fair value are not included in current earnings but are included in OCI in stockholders' equity. These changes in fair value will subsequently be reclassified into earnings, as applicable, when the forecasted transaction occurs. To the extent that a previously designated hedging transaction is no longer an effective hedge, any ineffectiveness measured in the hedging relationship is recorded currently in earnings in the period it occurs. The cash flows resulting from forward exchange contracts are classified in the consolidated statements of cash flows as part of cash flows from operating activities. The Company does not enter into derivative instruments for trading or speculative purposes.

To the extent the hedge accounting criteria is not met, the related foreign currency forward contracts are considered as economic hedges and changes in the fair value of these contracts are recorded immediately in earnings in the period in which they occur. These include hedges that are used to reduce exchange rate risks arising from the change in fair value of certain foreign currency denominated assets and liabilities (i.e., payables, receivables) and other economic hedges where the hedge accounting criteria were not met.

As of December 31, 2010 and 2009, the Company had outstanding forward foreign exchange contracts with gross notional values of $87,666,000 and $48,724,000, respectively. The following tables provide a summary of the primary net hedging positions and corresponding fair values held as of December 31, 2010 and 2009:

	December 31, 2010	
Currency Hedged (Buy/Sell)	Gross Notional Value	Fair Value(1)
U.S. Dollar/Japanese Yen	$ 50,104	$ (2,876)
U.S. Dollar/South Korean Won	27,574	(563)
U.S. Dollar/Euro	6,934	305
U.S. Dollar/U.K. Pound Sterling	3,054	40
Total	$ 87,666	$ (3,094)

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Tables in thousands, except share and per share data)

Currency Hedged (Buy/Sell)	December 31, 2009 Gross Notional Value	Fair Value(1)
U.S. Dollar/Japanese Yen	$ 28,980	$ 1,220
U.S. Dollar/South Korean Won	8,477	(338)
U.S. Dollar/Euro	8,069	149
U.S. Dollar/U.K. Pound Sterling	3,198	51
Total	$ 48,724	$ 1,082

(1) Represents the net receivable (payable) amount included in the consolidated balance sheet.

The following table provides a summary of the fair value amounts of the Company's derivative instruments:

Derivatives Designated as Hedging Instruments	Years Ended December 31, 2010	2009
Derivative assets:		
Forward exchange contracts	$ 369	$ 1,505
Derivative liabilities:		
Forward exchange contracts	(3,463)	(423)
Total net derivative asset (liability) designated as hedging instruments(1)	$ (3,094)	$ 1,082

(1) The derivative asset of $369,000 and derivative liability of $3,463,000 are classified in other current assets and other current liabilities, respectively, in the consolidated balance sheet as of December 31, 2010. The derivative asset of $1,505,000 and derivative liability of $423,000 are classified in other current assets and other current liabilities, respectively, in the consolidated balance sheet as of December 31, 2009.

The following table provides a summary of the gains (losses) on derivatives designated as hedging instruments:

Derivatives Designated as Cash Flow Hedging Relationships	Years Ended December 31, 2010	2009	2008
Forward exchange contracts:			
Net gain (loss) recognized in OCI(1)	$(3,346)	$1,290	$ 465
Net gain (loss) reclassified from accumulated OCI into income(2)	(957)	1,062	(1,176)
Net gain (loss) recognized in income(3)	—	313	(223)

(1) Net change in the fair value of the effective portion classified in OCI.

(2) Effective portion classified as cost of products.

(3) Ineffective portion amount excluded from effectiveness testing, classified in selling, general and administrative.

The following table provides a summary of gains on derivatives not designated as hedging instruments:

Derivatives Not Designated as Hedging Instruments	Years Ended December 31, 2010	2009	2008
Forward exchange contracts:			
Net gain recognized in income(1)	$—	$ 9	$2,669

(1) Classified in selling, general and administrative.

(Tables in thousands, except share and per share data)

The $2,669,000 gain recognized in 2008 was primarily attributable to the settlement of cash and intercompany loans at different foreign exchange rates related to a legal entity consolidation among some of the Company's foreign subsidiaries.

8) Inventories

Inventories consist of the following:

	Years Ended December 31, 2010	2009
Raw material	$ 82,012	$ 56,083
Work in process	21,891	16,501
Finished goods	52,526	45,420
	$ 156,429	$ 118,004

Inventory related excess and obsolete charges of $13,230,000, $20,335,000 and $11,401,000 were recorded in cost of products in the years ended December 31, 2010, 2009 and 2008, respectively.

9) Property, Plant and Equipment

Property, plant and equipment consist of the following:

	Years Ended December 31, 2010	2009
Land	$ 8,131	$ 9,086
Buildings	63,633	64,786
Machinery and equipment	97,888	92,136
Furniture and fixtures and office equipment	50,642	52,844
Leasehold improvements	18,385	18,050
Construction in progress	3,968	1,355
	242,647	238,257
Less: accumulated depreciation and amortization	173,671	171,061
	$ 68,976	$ 67,196

As a result of a facility consolidation in Asia, the Company recorded an asset impairment charge of $3,544,000 in the second quarter of 2009 resulting from the write-down of the value of a building to its estimated fair value.

Depreciation and amortization of property, plant and equipment totaled $12,298,000, $14,352,000 and $14,523,000 for the years 2010, 2009 and 2008, respectively. In 2010, the Company reclassified $85,000, $264,000 and $531,200 of depreciation and amortization of property, plant and equipment to discontinued operations for the years 2010, 2009 and 2008, respectively.

10) Goodwill and Intangible Assets

Goodwill

The Company tests goodwill for impairment on an annual basis, which has been determined to be as of October 31 of each fiscal year. The Company also tests goodwill between annual tests if an event occurs or circumstances change that indicate that the fair value of a reporting unit may be below its carrying value.

Goodwill impairment is determined using a two-step process. The first step involves a comparison of the estimated fair value of a reporting unit to its carrying amount, including goodwill. In performing the first step, the Company determines the fair value of a reporting unit using a discounted cash flow ("DCF") analysis. Determining fair value requires the exercise of significant judgment, including judgments about appropriate discount rates, perpetual growth rates, and the amount and timing of expected future cash flows. Discount rates are based on a weighted average cost of capital ("WACC"), which represents the average rate a business must pay its providers of debt and equity. The WACC used to test goodwill was derived from a group of comparable companies. The cash flows employed in the DCF analysis were derived from internal earnings and forecasts and external market forecasts. If the estimated fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not impaired and the second step of the impairment test is not necessary. If the carrying amount of a reporting unit exceeds its estimated fair value, then the second step of the goodwill impairment test must be performed.

The second step of the goodwill impairment test compares the implied fair value of the reporting unit's goodwill with its carrying amount of goodwill to measure the amount of impairment loss, if any. The implied fair value of goodwill is determined in the same manner as the amount of goodwill recognized in a business combination, whereby the estimated fair value of the reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the purchase price paid. If the carrying amount of the reporting unit's goodwill exceeds the implied fair value of that goodwill, an impairment loss is recognized in an amount equal to that excess.

The Company determined that during the second quarter of 2010, an interim assessment for impairment was required for the goodwill allocated to its CIT reporting unit, since a component of the reporting unit was sold, and a second component was classified as held for sale. During this interim assessment, the Company determined that the estimated fair value of its CIT reporting unit exceeded its carrying amount and as a result, the goodwill of the reporting unit was not impaired and the second step of the impairment test was not required.

During the second quarter of 2009, the Company determined an interim assessment for impairment should be conducted for its goodwill due to various factors, including market and economic conditions that contributed to a decline in the Company's forecasted business levels, and the excess of the Company's consolidated net assets over its market capitalization for a sustained period of time. During this interim assessment, the Company determined that for certain reporting units, the carrying amount of their net assets exceeded their respective fair values, indicating that a potential impairment existed. After completing the second step of the goodwill impairment test, the Company recorded a goodwill impairment charge in the second quarter of 2009 of $193,254,000. In 2010, the Company reclassified $53,840,000 of the goodwill impairment charge to discontinued operations for 2009 as it related to the two discontinued product lines.

As of October 31, 2010, the Company performed its annual impairment assessment of goodwill and determined that no additional impairment charges were required, as the fair value of each reporting unit exceeded its book value.

(Tables in thousands, except share and per share data)

The changes in the carrying amount of goodwill and accumulated impairment losses were as follows:

	2010			2009		
	Gross Carrying Amount	Accumulated Impairment Loss	Net	Gross Carrying Amount	Accumulated Impairment Loss	Net
Beginning balance at January 1	$ 337,765	$ (193,254)	$ 144,511	$ 337,765	$ —	$ 337,765
Acquired goodwill	2,292	—	2,292	—	—	—
Sale of discontinued operations(1)	(60,623)	53,840	(6,783)	—	—	—
Impairment losses(2)	—	—	—	—	(193,254)	(193,254)
Ending balance at December 31	$ 279,434	$ (139,414)	$ 140,020	$ 337,765	$ (193,254)	$ 144,511

(1) In 2010, the Company sold its Ion business and assets of its YDI business and as a result charged the related net goodwill to the gain on sale of discontinued operations.

(2) For the twelve months ended December 31, 2009, $53,840,000 of the goodwill impairment charge is classified in discontinued operations in the consolidated statement of operations.

In 2010, the Company purchased a technology company for $2,447,000 to enhance its product portfolio. The Company recorded $2,292,000 of goodwill in connection with the acquisition.

Intangible Assets

The Company is required to test certain long-lived assets when indicators of impairment are present. For the purposes of the impairment test, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. Due to various factors, including market and economic conditions that contributed to a decline in the Company’s forecasted business levels, and the excess of the Company’s consolidated net assets over market capitalization for a sustained period of time, the Company concluded an interim assessment for impairment should be conducted for its intangible assets as of April 30, 2009. The Company tested the long-lived assets in question for recoverability by comparing the sum of the undiscounted cash flows attributable to each respective asset group to their carrying amounts, and determined that the carrying amounts were not recoverable. Management then evaluated the fair values of each long-lived asset of the potentially impaired long-lived asset group to determine the amount of the impairment, if any. The fair value of each intangible asset was based primarily on an income approach, which is a present value technique used to measure the fair value of future cash flows produced by the asset. The Company estimated future cash flows over the remaining useful life of each intangible asset. As a result of this analysis, the Company determined that certain of its intangible assets related to completed technology, customer relationships, and patents and trademarks had carrying values that exceeded their estimated fair values. As a result, an impairment charge of $11,699,000 was recorded in the second quarter of 2009. This impairment charge is classified in discontinued operations in the consolidated statement of operations as the intangible assets relate to the two discontinued product lines.

During the fourth quarter of 2008, the adverse economic climate was a significant factor that indicated that the carrying amount of certain long-lived asset groups were not recoverable. A review of future cash flows identified asset groups which had carrying values in excess of future cash flows. The Company reviewed the fair value of the long-lived assets for these asset groups and determined that intangible assets related to customer technologies, relationships, and patents and trademarks had carrying values that exceeded their estimated fair values. As a result, an impairment charge of $6,069,000 was recorded in the fourth quarter of 2008. This impairment charge is classified in discontinued operations in the consolidated statement of operations as the intangible assets relate to a discontinued product line.

MKS INSTRUMENTS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Tables in thousands, except share and per share data)

Components of the Company's acquired intangible assets are comprised of the following:

As of December 31, 2010:	Gross(1)	Accumulated Amortization(1)	Net
Completed technology	$ 76,829	$ (76,230)	$ 599
Customer relationships	8,940	(8,083)	857
Patents, trademarks, trade names and other	24,638	(24,351)	287
	$ 110,407	$ (108,664)	$ 1,743

(1) Excludes $18,299,000 and $16,603,000 from gross and accumulated amortization, respectively, as a result of the Company's sale of its Ion business and assets of its YDI business.

As of December 31, 2009:	Gross	Impairment Charges(1)	Accumulated Amortization	Net
Completed technology	$ 88,855	$ (3,812)	$ (82,705)	$ 2,338
Customer relationships	21,879	(7,113)	(13,326)	1,440
Patents, trademarks, trade names and other	29,672	(774)	(27,713)	1,185
	$ 140,406	$ (11,699)	$ (123,744)	$ 4,963

(1) For the twelve months ended December 31, 2009, the intangible asset impairment charge of $11,699,000 is classified in discontinued operations in the consolidated statement of operations.

Aggregate amortization expense related to acquired intangibles for the years 2010, 2009 and 2008 were $1,525,000, $4,407,000 and $9,001,000, respectively. In 2010, the Company reclassified $242,000, $1,645,000 and $5,008,000 of amortization expense to discontinued operations for the years 2010, 2009 and 2008, respectively. Estimated amortization expense for each of the three remaining fiscal years is as follows:

Year	Amount
2011	$ 988
2012	389
2013	366

11) Other Assets

	Years Ended December 31, 2010	2009
Other Assets:		
Deferred tax assets, net	$ 15,076	$ 17,373
Other	3,703	2,292
Total other assets	$ 18,779	$ 19,665

(Tables in thousands, except share and per share data)

12) Other Liabilities

	Years Ended December 31, 2010	Years Ended December 31, 2009
Other Current Liabilities:		
Product warranties	$ 9,865	$ 6,560
Deferred revenue	4,970	4,101
Non-income taxes	5,715	2,479
Other	17,418	8,325
Total other current liabilities	$ 37,968	$ 21,465
Other Liabilities:		
Long-term income tax payable	$ 13,688	$ 6,773
Accrued compensation	11,064	10,424
Other	936	639
Total other liabilities	$ 25,688	$ 17,836

13) Product Warranties

The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. While the Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of its component suppliers, the Company's warranty obligation is affected by shipment volume, product failure rates, utilization levels, material usage and supplier warranties on parts delivered to the Company. Should actual product failure rates, utilization levels, material usage, or supplier warranties on parts differ from the Company's estimates, revisions to the estimated warranty liability would be required. The product warranty liability is included in other current liabilities in the consolidated balance sheets.

Product warranty activities were as follows:

	Years Ended December 31, 2010	Years Ended December 31, 2009
Beginning balance	$ 6,560	$ 8,334
Provisions for product warranties	9,518	2,520
Direct charges to warranty liability	(6,213)	(4,294)
Ending balance	$ 9,865	$ 6,560

14) Restructuring

In the first quarter of 2009, the Company initiated a restructuring plan due to the global financial crisis and its impact on the Company's semiconductor equipment OEM customers and the other markets it serves. The plan included a reduction in the Company's worldwide headcount of approximately 630 people, which represented approximately 24% of its global workforce.

The Company recorded restructuring charges of $5,812,000 during 2009. The restructuring charges were primarily for severance and other charges associated with the reductions in workforce. As of December 31, 2009, the accrued restructuring costs totaled $220,000 and were included in accrued compensation in the consolidated balance sheet. The restructuring plan was completed in the first quarter of 2010.

(Tables in thousands, except share and per share data)

The activity related to the Company's restructuring accrual is shown below:

	Years Ended December 31, 2010	2009
Beginning balance	$ 220	$ —
Severance and employee related costs(1)	—	5,812
Payments	(220)	(5,592)
Ending balance	$ —	$ 220

(1) For the twelve months ended December 31, 2009, restructuring charges of $296,000 are classified in discontinued operations in the consolidated statement of operations.

15) Debt

Credit Agreements and Short-Term Borrowings

On July 31, 2010, the Optional Advance Demand Grid Note dated August 3, 2004 expired without renewal. The unsecured short-term LIBOR-based loan agreement was with HSBC Bank USA and was utilized primarily by the Company's Japanese subsidiary for short-term liquidity purposes and had a maximum borrowing amount of $5,000,000. The Company did not have outstanding borrowings under this line of credit at December 31, 2009 or thereafter.

The Company's Japanese subsidiary has lines of credit and short-term borrowing arrangements with two financial institutions which provide for aggregate borrowings as of December 31, 2010 of up to an equivalent of $30,656,000 U.S. dollars, which generally expire and are renewed at three month intervals. There were no borrowings outstanding under these arrangements at December 31, 2010. Total borrowings outstanding under these arrangements at December 31, 2009 were $12,885,000 at interest rates ranging from 0.76% to 1.48%.

16) Income Taxes

A reconciliation of the Company's effective tax rate to the U.S. federal statutory rate follows:

	Years Ended December 31, 2010	2009	2008
U.S. Federal income tax statutory rate	35.0%	(35.0)%	35.0%
Federal and state tax credits	(1.1)	(2.2)	(4.0)
State income taxes, net of federal benefit	1.0	(0.6)	1.6
Effect of foreign operations taxed at various rates	(2.4)	(2.2)	(8.4)
Qualified production activity tax benefit	(0.8)	(0.6)	(2.8)
Non-deductible goodwill	—	27.2	—
Deferred tax asset valuation allowance	(0.1)	0.3	6.1
Other	0.7	0.9	1.6
	32.3%	(12.2)%	29.1%

(Tables in thousands, except share and per share data)

The components of income before income taxes and the related provision (benefit) for income taxes consist of the following:

	Years Ended December 31, 2010	2009	2008
Income (loss) before income taxes:			
United States	$ 110,779	$ (193,341)	$ 6,665
Foreign	85,645	23,321	49,727
	$ 196,424	$ (170,020)	$ 56,392
Current taxes (benefit):			
United States Federal	$ 27,789	$ (24,606)	$ 9,454
State	3,323	(175)	1,488
Foreign	22,296	7,265	11,263
	53,408	(17,516)	22,205
Deferred taxes:			
United States Federal	10,021	(394)	(8,330)
State and Foreign	76	(2,749)	2,507
	10,097	(3,143)	(5,823)
Provision (benefit) for income taxes	$ 63,505	$ (20,659)	$ 16,382

The significant components of the deferred tax assets and deferred tax liabilities were as follows:

	Years Ended December 31, 2010	2009
Deferred tax assets:		
Loss carryforwards and credits	$ 27,604	$ 8,131
Inventory and warranty reserves	17,116	19,611
Accounts receivable and other accruals	2,794	2,568
Depreciation and amortization	—	6,370
Stock-based compensation	5,692	6,602
Executive supplemental retirement benefits	4,584	3,305
Other	3,824	2,547
Total deferred tax assets	$ 61,614	$ 49,134
Deferred tax liabilities:		
Acquired intangible assets	(3,927)	(5,015)
Depreciation and amortization	(1,621)	—
Other	(1,950)	(40)
Total deferred tax liabilities	(7,498)	(5,055)
Valuation allowance	(25,267)	(5,201)
Net deferred tax assets	$ 28,849	$ 38,878

(Tables in thousands, except share and per share data)

At December 31, 2010, the Company had gross Massachusetts research credit carryforwards of $6,588,000. These credit carryforwards will expire at various dates through 2025. In addition, at December 31, 2010, the Company had U.S. federal capital loss carryforwards of $1,655,000 and $59,524,000 that will expire in 2013 and 2015, respectively.

During 2010, the Company sold the assets of its YDI business that resulted in the expiration of business credit carryforwards of $810,000 and U.S. federal net operating losses of $1,936,000. U.S. federal net operating losses remain available to the Company in the amount of $3,553,000 which will expire at various dates through 2027.

Although the Company believes that its tax positions are consistent with applicable U.S. federal, state and international laws, certain tax reserves are maintained at December 31, 2010 should these positions be challenged by the applicable tax authority and additional tax assessed on audit.

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits is as follows:

	Years Ended December 31,		
	2010	2009	2008
Balance at beginning of year	$ 9,085	$ 14,678	$ 16,123
Increase (decrease) for prior years	(6)	(41)	49
Increases for the current year	6,795	1,693	1,680
Reductions related to settlements with taxing authorities	—	(7,245)	(1,533)
Reductions related to expiration of statute of limitations	(604)	—	(1,641)
Balance at end of year	$ 15,270	$ 9,085	$ 14,678

At December 31, 2010, the total amount of gross unrecognized tax benefits, which excludes interest and penalties, was approximately $15,270,000. The net increase from December 31, 2009 was primarily attributable to an increase in reserves for existing uncertain tax positions. At December 31, 2010, if these benefits were recognized in a future period, the timing of which is not estimable, the net unrecognized tax benefit of $12,789,000, excluding interest and penalties, would impact the Company's effective tax rate.

The Company accrues interest expense and, if applicable, penalties, for any uncertain tax positions. Interest and penalties are classified as a component of income tax expense. At December 31, 2010, 2009 and 2008 we had accrued interest on unrecognized tax benefits of approximately $986,000, $651,000 and $1,730,000, respectively.

Over the next 12 months it is reasonably possible that the Company may recognize $2,800,000 to $3,300,000 of previously unrecognized tax benefits related to various U.S. federal, state and foreign tax positions as a result of the conclusion of various audits and the expiration of the statute of limitations. The Company is subject to examination by federal, state and foreign tax authorities. The Company's U.S. federal tax filings are open for examination for tax years 2007 through present. The statute of limitations in the Company's other tax jurisdictions remains open between fiscal year 2001 through present.

On a quarterly basis, the Company evaluates both positive and negative evidence that affects the realizability of net deferred tax assets and assesses the need for a valuation allowance. The future benefit to be derived from its deferred tax assets is dependent upon its ability to generate sufficient future taxable income to realize the assets. During 2010, the Company increased its valuation allowance by $20,066,000 primarily related to capital losses incurred from the Company's divested business operations, as the Company has determined it is more likely than not that the deferred tax assets related to these attributes will not be realized.

Through December 31, 2010, the Company has not provided deferred income taxes on the undistributed earnings of its foreign subsidiaries because such earnings were intended to be permanently reinvested outside the U.S. Determination of the potential deferred income tax liability on these undistributed earnings is not practicable because such liability, if any, is dependent on circumstances existing if and when remittance occurs. At December 31, 2010, the Company had $321,462,000 of undistributed earnings in its foreign subsidiaries.

(Tables in thousands, except share and per share data)

During 2006, the Company received a notification letter from the Israeli Ministry of Industry Trade and Labor ("MITL") indicating that its Israeli operations were in compliance with requirements relating to the tax holiday granted to its manufacturing operations in Israel in 2001. This tax holiday is currently due to expire in 2011 and is subject to meeting continued investment, employment and other requirements under the guidelines of the MITL. This tax holiday resulted in income tax savings of $2,700,000, $300,000 and $200,000 for the years 2010, 2009 and 2008, respectively.

17) Discontinued Operations

During 2010, the Company executed a plan to divest two product lines, as their growth potential no longer met the Company's long-term strategic objectives. The Company completed the sale of Ion on May 17, 2010 for $15,092,000 of net cash proceeds after expenses and recorded a pre-tax gain on the sale of $4,208,000. The Company completed the sale of the assets of its YDI business on August 11, 2010 for $490,000 of net cash proceeds after expenses and recorded a pre-tax gain on the sale of $224,000.

The two product lines have been accounted for as discontinued operations. Accordingly, their results of operations have been reclassified to discontinued operations in the consolidated statements of operations for all periods presented. The assets and liabilities of these discontinued businesses have not been reclassified or segregated in the consolidated balance sheets or consolidated statements of cash flows due to their immaterial amounts. Net revenues and income (loss) from discontinued operations are below:

	Years Ended December 31,		
	2010	2009	2008
Net revenues	$ 11,974	$ 18,713	$ 25,614
Income (loss) from discontinued operations before income taxes	$ 2,320	$ (68,837)	$ (15,340)
Gain from disposal of discontinued operations before income taxes	4,432	—	—
Income tax (benefit)	(2,916)	(5,539)	(5,447)
Income (loss) from discontinued operations	$ 9,668	$ (63,298)	$ (9,893)

For 2009, the loss from discontinued operations before income taxes includes $65,539,000 of goodwill and intangible asset impairment charges. These charges were a result of the interim impairment assessment performed on April 30, 2009. For 2008, the loss from discontinued operations before income taxes includes $6,069,000 of intangible asset impairment charges. These charges were a result of an impairment assessment performed in the fourth quarter of 2008.

18) Stockholders' Equity

Stock Option Exchange Program

Pursuant to the Company's tender offer to exchange outstanding stock options, during the third quarter 2009, options to purchase 1,330,000 shares of common stock were exchanged for 189,000 RSUs with a one year vesting period. Participants exchanged their eligible option awards for RSUs of an approximate equal fair value and, as such, no incremental compensation expense was recognized as a result of the exchange.

Stock Purchase Plans

The Company's Third Amended and Restated 1999 Employee Stock Purchase Plan (the "Purchase Plan") authorizes the issuance of up to an aggregate of 1,950,000 shares of Common Stock to participating employees. Offerings under the Purchase Plan commence on June 1 and December 1 and terminate, respectively, on November 30 and May 31. Under the Purchase Plan, eligible employees may purchase shares of Common Stock through payroll deductions of up to 10% of their compensation. The price at which an employee's option is exercised is the lower of (1) 85% of the closing price of the Common Stock on the NASDAQ Global Select Market on the day that each offering commences or (2) 85% of the closing price on the day that each offering terminates. During 2010 and 2009, the Company issued 67,132 and 106,841 shares, respectively, of Common Stock to employees who participated in the Purchase Plan at an exercise price of $16.19 per share in 2010 and $11.08 per share in 2009, respectively. As of December 31, 2010, there were 630,131 shares reserved for future issuance under the Purchase Plan. During 2009, the Company suspended the June 1 and December 1 Purchase Plan cycles and as a result, no shares were issued for these cycles. The Company reinstated the Purchase Plan on June 1, 2010.

The Company's Second Amended and Restated International Employee Stock Purchase Plan (the "Foreign Purchase Plan") authorizes the issuance of up to an aggregate of 400,000 shares of Common Stock to participating employees. Offerings under the Foreign Purchase Plan commence on June 1 and December 1 and terminate, respectively, on November 30 and May 31. Under the Foreign Purchase Plan, eligible employees may purchase shares of Common Stock through payroll deductions of up to 10% of their compensation. The price at which an employee's option is exercised is the lower of (1) 85% of the closing price of the Common Stock on the NASDAQ Global Select Market on the day that each offering commences or (2) 85% of the closing price on the day that each offering terminates. During 2010 and 2009, the Company issued 15,063 and 19,571 shares, respectively, of Common Stock to employees who participated in the Foreign Purchase Plan at an exercise price of $16.19 per share in 2010 and $11.08 per share in 2009, respectively. As of December 31, 2010, there were 256,392 shares reserved for future issuance under the Foreign Purchase Plan. During 2009, the Company suspended the June 1 and December 1 Foreign Purchase Plan cycles and as a result, no shares were issued for these cycles. The Company reinstated the Foreign Purchase Plan on June 1, 2010.

Equity Incentive Plans

The Company has granted options to employees under the 2004 Stock Incentive Plan (the "2004 Plan") and under the Second Restated 1995 Stock Incentive Plan (the "1995 Plan"), and to directors under the 1997 Director Stock Plan (the "1997 Director Plan") (collectively, the "Plans"). The Plans are administered by the Compensation Committee of the Company's board of directors.

The Company's equity incentive Plans are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in the long-term growth of the Company. Employees may be granted RSUs, options to purchase shares of the Company's stock and other equity incentives under the Plans.

The Company's 2004 Plan was adopted by the board of directors on March 4, 2004 and approved by the stockholders on May 13, 2004. As of December 31, 2010, there were 15,000,000 shares authorized for issuance under the 2004 Plan, which amount shall increase each year by an amount equal to 5% of the total outstanding shares of the Company's common stock outstanding on January 1 of such year, provided that the maximum aggregate number of shares of common stock which may be issued under the 2004 Plan is 15,000,000 shares (subject to adjustment for certain changes in MKS' capitalization). The Company may grant options, RSUs, stock appreciation rights and other stock-based awards to employees, officers, directors, consultants and advisors under the 2004 Plan. As of December 31, 2010, there were 12,650,169 shares available for future grants under the 2004 Plan.

(Tables in thousands, except share and per share data)

The Company's 1995 Plan expired in November 2005 and no further awards may be granted under the 1995 Plan, although there are still outstanding options which may be exercised under this plan.

The Company's 1997 Director Plan expired in February 2007 and no further awards may be granted under the 1997 Director Plan, although there are still outstanding options which may be exercised under this plan.

Stock options were granted at an exercise price equal to 100% of the fair value of the Company's common stock at the date of grant. Generally, stock options granted to employees under the Plans in 2001 and after, vested 25% after one year and 6.25% per quarter thereafter, and expire 10 years after the grant date. Generally, stock options granted under the Plans prior to 2001 vested 20% after one year and 5% per quarter thereafter, and expired 10 years after the grant date. Options granted to directors generally vested at the earliest of (1) one day prior to the next annual meeting, (2) 13 months from date of grant, or (3) the effective date of an acquisition. All stock options are fully vested as of December 31, 2010. RSUs generally vest three years from the date of grant. RSUs granted to employees who are at least 60 years old and have a combined years of age plus years of service (as defined) equal to 70 or more, are expensed immediately. RSUs granted to directors generally vest at the earliest of (1) one day prior to the next annual meeting, (2) 13 months from date of grant, or (3) the effective date of an acquisition. Certain equity incentive awards involve RSUs that are subject to performance conditions ("performance shares") under the Company's stock incentive plans. Such performance shares are available, subject to time-based vesting conditions if, and to the extent that, financial or operational performance criteria for the applicable period are achieved. Accordingly, the number of performance shares earned will vary based on the level of achievement of financial or operational performance objectives for the applicable period.

The following table presents the activity for RSUs under the Plans:

	Years Ended December 31,			
	2010		2009	
	Non-vested RSUs	Weighted Average Grant Date Fair Value	Non-vested RSUs	Weighted Average Grant Date Fair Value
Non-vested RSUs — beginning of period	1,581,883	$ 19.77	1,824,990	$ 21.87
Granted	555,995	$ 19.63	682,156	$ 15.27
Vested	(706,224)	$ 20.65	(666,247)	$ 21.91
Forfeited or expired	(104,348)	$ 18.32	(259,016)	$ 17.25
Non-vested RSUs — end of period	1,327,306	$ 18.34	1,581,883	$ 19.77

The following table presents the activity for options under the Plans:

	Years Ended December 31,					
	2010		2009		2008	
	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding — beginning of period	2,514,822	$ 21.67	4,558,838	$ 23.44	5,123,056	$ 22.74
Exercised	(568,464)	$ 16.49	(134,118)	$ 14.54	(425,256)	$ 14.32
Forfeited or expired	(153,144)	$ 32.51	(1,909,898)	$ 26.18	(138,962)	$ 25.58
Outstanding — end of period	1,793,214	$ 22.38	2,514,822	$ 21.67	4,558,838	$ 23.44
Exercisable at end of period	1,793,214	$ 22.38	2,514,197	$ 21.67	4,535,282	$ 23.46

The following table summarizes information with respect to options outstanding and exercisable under the Plans at December 31, 2010:

	Options Outstanding and Exercisable			
	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (In Years)	Aggregate Intrinsic Value (In thousands)
$13.54 – $18.44	549,306	$ 16.07	2.86	$ 4,628
$20.02 – $27.77	1,121,798	$ 24.47	1.68	637
$29.00 – $38.30	122,110	$ 31.51	2.18	—
	1,793,214			$ 5,265

The weighted average remaining contractual life of options exercisable was 2.1 years at December 31, 2010.

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value, based on the Company's closing stock price of $24.50 as of December 31, 2010, which would have been received by the option holders had all option holders exercised their options as of that date. The total number of in-the-money options exercisable as of December 31, 2010 was 907,834.

The total cash received from employees as a result of employee stock option exercises during the years 2010 and 2009 was approximately $9,375,000 and $1,950,000, respectively. In connection with these exercises, the tax benefits realized by the Company for the years 2010 and 2009 were approximately $1,262,000 and $93,000, respectively.

The Company settles employee stock option exercises and restricted stock vesting with newly issued common shares.

Accumulated Other Comprehensive Income

The balance of accumulated other comprehensive income (loss) was comprised of the following:

	Cumulative Translation Adjustments	Financial Instruments Designated as Cash Flow Hedges	Unrealized Gain (Loss) on Investments	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2008	$ 7,039	$ 303	$ (123)	$ 7,219
Foreign currency translation adjustment, net of taxes of $0	3,062	—	—	3,062
Changes in value of financial instruments designated as cash flow hedges, net of tax of $83	—	267	—	267
Change in unrealized gain on investments, net of tax of $29	—	—	92	92
Balance at December 31, 2009	$ 10,101	$ 570	$ (31)	$ 10,640
Foreign currency translation adjustment, net of taxes of $0	3,710	—	—	3,710
Changes in value of financial instruments designated as cash flow hedges, net of tax benefit of $1,576	—	(2,600)	—	(2,600)
Change in unrealized gain on investments, net of tax of $17	—	—	28	28
Balance at December 31, 2010	$ 13,811	$ (2,030)	$ (3)	$ 11,778

(Tables in thousands, except share and per share data)

19) Stock-Based Compensation

The Company recognized the full impact of its share-based payment plans in the consolidated statements of operations for the years 2010, 2009 and 2008. As of December 31, 2010 and 2009, the Company capitalized $471,000 of such cost on its consolidated balance sheet. The following table reflects the effect of recording stock-based compensation for the years 2010, 2009 and 2008:

	Years Ended December 31, 2010	2009	2008
Stock-based compensation expense by type of award:			
Employee stock options	$ —	$ 158	$ 1,936
Restricted stock	10,026	8,218	12,210
Employee stock purchase plan	578	469	1,128
Total stock-based compensation	10,604	8,845	15,274
Tax effect on stock-based compensation	(1,253)	1,258	(226)
Net effect on net income or net loss	$ 9,351	$ 10,103	$ 15,048
Effect on net earnings or loss per share:			
Basic	$ 0.19	$ 0.20	$ 0.30
Diluted	$ 0.18	$ 0.20	$ 0.30

The pre-tax effect within the consolidated statements of operations of recording stock-based compensation for the years 2010, 2009 and 2008 was as follows:

	Years Ended December 31, 2010	2009	2008
Cost of sales	$ 1,452	$ 1,298	$ 2,272
Research and development expense	2,391	2,026	3,698
Selling, general and administrative expense	6,761	5,521	9,304
Total pre-tax stock-based compensation expense	$ 10,604	$ 8,845	$ 15,274

Valuation Assumptions

The Company determines the fair value of restricted stock based on the number of shares granted and the closing market price of the Company’s common stock on the date of the award, and estimates the fair value of stock options and employee stock purchase rights using the Black-Scholes valuation model. Such values are recognized as expense on a straight-line basis over the requisite service periods, net of estimated forfeitures except for retirement eligible employees in which the Company expenses the fair value of the grant in the period the grant is issued. The estimation of stock-based awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards and historical experience. Actual results, and future changes in estimates, may differ substantially from the Company’s current estimates.

There were no options granted during 2010, 2009 and 2008. The total intrinsic value of options exercised during 2010, 2009 and 2008 was approximately $3,518,000, $327,000 and $3,802,000, respectively.

(Tables in thousands, except share and per share data)

The weighted average fair value per share of employee stock purchase rights granted in 2010, 2009 and 2008 was $5.48, $4.44 and $4.62, respectively. The fair value of the employees' purchase rights was estimated using the Black-Scholes option-pricing model with the following weighted average assumptions:

	Years Ended December 31,		
	2010	2009	2008
Employee stock purchase rights:			
Expected life (years)	0.5	0.5	0.5
Risk-free interest rate	0.2%	0.5%	2.6%
Expected volatility	48.7%	68.0%	47.3%
Dividend yield	0.0%	0.0%	0.0%

Expected volatilities for 2010, 2009 and 2008 are based on a combination of implied and historical volatilities of the Company's common stock; the expected life represents the weighted average period of time that options granted are expected to be outstanding giving consideration to vesting schedules and the Company's historical exercise patterns; and the risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected life of the option.

The total intrinsic value of options exercised and the total fair value of shares vested during 2010, 2009 and 2008 was approximately $16,846,000, $10,188,000 and $6,087,000, respectively. As of December 31, 2010, the unrecognized compensation cost related to non-vested stock options was zero. As of December 31, 2010, the unrecognized compensation cost related to restricted stock was approximately $10,306,000, and will be recognized over an estimated weighted average amortization period of 1.8 years.

20) Employee Benefit Plans

The Company has a 401(k) profit-sharing plan for U.S. employees meeting certain requirements in which eligible employees may contribute between 1% and 50% of their annual compensation to this plan, and, with respect to employees who are age 50 and older, certain specified additional amounts, limited by an annual maximum amount determined by the Internal Revenue Service. The Company, at its discretion, may provide a matching contribution of 50% of each participant's contributions up to 6% of eligible salary. At the discretion of the board of directors, the Company may also make additional contributions for the benefit of all eligible employees. The Company's contributions were $1,472,000, $929,000 and $2,755,000 for 2010, 2009 and 2008, respectively. The Company temporarily suspended the employer match portion of the 401(k) profit-sharing plan between April 2009 and March 2010 as a result of cost control measures.

The Company maintains a bonus plan which provides cash awards to key employees, at the discretion of the compensation committee of the board of directors, based upon operating results and employee performance. The bonus expense was $18,972,000, $881,000 and zero in 2010, 2009 and 2008, respectively.

The Company provides supplemental retirement benefits for certain of its officers and executive officers. The total cost of these benefits was $3,428,000, $3,138,000 and $2,054,000 for 2010, 2009 and 2008, respectively. The accumulated benefit obligation was $12,225,000 and $8,813,000 at December 31, 2010 and 2009, respectively and was included in other long-term liabilities.

21) Net Income (Loss) Per Share

Basic earnings per share ("EPS") is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of diluted EPS is similar to the computation of basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding (using the treasury stock method), if securities containing potentially dilutive common shares (stock options and restricted stock units) had been converted to such common shares, and if such assumed conversion is dilutive.

(Tables in thousands, except share and per share data)

The following is a reconciliation of basic to diluted net income (loss) per share:

	Years Ended December 31, 2010	2009	2008
Numerator:			
Income (loss) from continuing operations	$ 132,919	$ (149,361)	$ 40,010
Income (loss) from discontinued operations, net of tax	9,668	(63,298)	(9,893)
Net income (loss)	$ 142,587	$ (212,659)	$ 30,117
Denominator:			
Shares used in net income (loss) per common share — basic	50,077,000	49,318,000	49,717,000
Effect of dilutive securities:			
Stock options, restricted stock and employee stock purchase plan	850,000	—	1,037,000
Shares used in net income (loss) per common share — diluted	50,927,000	49,318,000	50,754,000
Basic income (loss) per common share:			
Continuing operations	$ 2.66	$ (3.03)	$ 0.81
Discontinued operations	0.19	(1.28)	(0.20)
Net income (loss)	$ 2.85	$ (4.31)	$ 0.61
Diluted income (loss) per common share:			
Continuing operations	$ 2.61	$ (3.03)	$ 0.79
Discontinued operations	0.19	(1.28)	(0.20)
Net income (loss)	$ 2.80	$ (4.31)	$ 0.59

As of December 31, 2010, 2009 and 2008, stock options and restricted stock units relating to an aggregate of approximately 3,120,520, 4,096,705 and 6,383,828 shares, respectively, were outstanding. For 2010, 1,255,679 shares were not included in the computation of diluted earnings per share because the exercise price exceeded the average price per share for the period and the effect would have been anti-dilutive. For 2009, all potentially dilutive common shares were excluded from the dilutive computation as the effect of including such securities in the computation would be anti-dilutive due to the Company’s net loss for the year. For 2008, 3,152,261 shares were not included in the computation of diluted earnings per share because the exercise price exceeded the average price per share for the period.

22) Geographic, Product and Significant Customer Information

The Company operates in one segment for the development, manufacturing, sales and servicing of products that measure, control, power and monitor critical parameters of advanced manufacturing processes. The Company’s chief operating decision-maker reviews consolidated operating results to make decisions about allocating resources and assessing performance for the entire Company.

(Tables in thousands, except share and per share data)

Information about the Company's operations in different geographic regions is presented in the tables below. Net sales to unaffiliated customers are based on the location in which the sale originated. Transfers between geographic areas are at negotiated transfer prices and have been eliminated from consolidated net sales.

	Years Ended December 31,		
	2010	2009	2008
Geographic net sales			
United States	$ 484,139	$ 212,639	$ 346,402
Japan	118,537	47,704	92,657
Europe	96,545	63,876	95,360
Asia	153,893	68,474	86,961
	$ 853,114	$ 392,693	$ 621,380

	Years Ended December 31,	
	2010	2009
Long — lived assets(1)		
United States	$ 54,840	$ 52,143
Japan	4,273	5,886
Europe	4,970	3,621
Asia	8,597	7,838
	$ 72,680	$ 69,488

(1) Long-lived assets include property, plant and equipment, net and other assets.

The Company groups its products into three product groups. Net sales for these product groups are as follows:

	Years Ended December 31,		
	2010	2009	2008
Instruments and Control Systems	$ 430,468	$ 205,877	$ 313,702
Power and Reactive Gas Products	343,827	148,191	243,789
Vacuum and Other Products	78,819	38,625	63,889
	$ 853,114	$ 392,693	$ 621,380

The Company had one customer comprising 16%, 13% and 19% of net sales for 2010, 2009 and 2008, respectively. During the years 2010, 2009 and 2008, the Company estimated that approximately 64%, 52% and 58% of its net sales, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers.

23) Commitments and Contingencies

Brooks Instrument, LLC filed two lawsuits, in one case along with their affiliate BI Products, LLC (collectively with Brooks Instrument, LLC, "Brooks"), against the Company in the United States District Court for the Eastern District of Texas, on April 29, 2010. Brooks also filed one lawsuit against the Company in the United States District Court for the District of Massachusetts on April 29, 2010. These suits were related to the Company's digital mass flow controllers and digital pressure sensors. Brooks sought injunctive relief and damages for alleged patent infringement, breach of contract and trade secret violations. None of the lawsuits specified a specific amount of damages. The Company responded to the allegations to deny any wrongdoing. In addition, the Company filed counterclaims against Brooks in the courts where they initially brought suit against the Company, seeking injunctive relief and damages for alleged patent infringement by Brooks, relating to their pressure transient insensitive mass flow controllers. On February 22, 2011, the parties entered into a settlement agreement, resolving all the issues in the cases, and on February 23, 2011, the parties filed stipulated dismissals with the appropriate courts.

(Tables in thousands, except share and per share data)

The Company is subject to various other legal proceedings and claims, which have arisen in the ordinary course of business.

In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on the Company's results of operations, financial condition or cash flows.

The Company leases certain of its facilities and machinery and equipment under operating leases expiring in various years through 2015 and thereafter. Generally, the facility leases require the Company to pay maintenance, insurance and real estate taxes. Rental expense under operating leases totaled $8,304,000, $8,974,000 and $9,952,000 for 2010, 2009 and 2008, respectively.

Minimum lease payments under operating leases are as follows:

	Operating Leases
Year ending December 31,	
2011	$ 7,447
2012	6,633
2013	5,182
2014	3,483
2015	2,760
Thereafter	3,653
Total minimum lease payments	$ 29,158

As of December 31, 2010, the Company has entered into purchase commitments for certain inventory components and other equipment and services used in its normal operations. The majority of these purchase commitments covered by these arrangements are for periods of less than one year and aggregate to approximately $141,609,000. Additionally, the Company has engaged multiple parties to provide certain computer equipment, IT network services and IT support. These contracts range for periods between two and five years and the obligation at December 31, 2010 of approximately $26,764,000 will be paid over the term of the multiple arrangements. Average annual payments are expected to be approximately $5,353,000.

To the extent permitted by Massachusetts law, the Company's Restated Articles of Organization, as amended, require the Company to indemnify any of its current or former officers or directors or any person who has served or is serving in any capacity with respect to any of the Company's employee benefit plans. The Company believes that the estimated exposure for these indemnification obligations is currently not material. Accordingly, the Company has no material liabilities recorded for these requirements as of December 31, 2010.

The Company also enters into agreements in the ordinary course of business which include indemnification provisions. Pursuant to these agreements, the Company indemnifies, holds harmless and agrees to reimburse the indemnified party, generally its customers, for losses suffered or incurred by the indemnified party in connection with certain patent or other intellectual property infringement claims, and, in some instances, other claims, by any third party with respect to the Company's products. The term of these indemnification obligations is generally perpetual after execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in some instances, not contractually limited. The

Company has never incurred costs to defend lawsuits or settle claims related to these indemnification obligations. As a result, the Company believes the estimated fair value of these obligations is minimal. Accordingly, the Company has no liabilities recorded for these obligations as of December 31, 2010.

As part of past acquisitions and divestitures of businesses or assets, the Company has provided a variety of indemnifications to the sellers and purchasers for certain events or occurrences that took place prior to the date of the acquisition or divestiture. Typically certain of the indemnifications expire after a defined period of time following the transaction, but certain indemnifications may survive indefinitely. The maximum potential amount of future payments the Company could be required to make for such obligations is undeterminable at this time. Other than obligations recorded as liabilities at the time of the acquisitions, historically the Company has not made significant payments for these indemnifications. Accordingly, no material liabilities have been recorded for these obligations.

In conjunction with certain asset sales, the Company may provide routine indemnifications whose terms range in duration and often are not explicitly defined. Where appropriate, an obligation for such indemnification is recorded as a liability. Because the amounts of liability under these types of indemnifications are not explicitly stated, the overall maximum amount of the obligation under such indemnifications cannot be reasonably estimated. Other than obligations recorded as liabilities at the time of the asset sale, historically the Company has not made significant payments for these indemnifications.

24) Subsequent Event

On February 1, 2011, the Company's Board of Directors authorized a quarterly cash dividend of $0.15 per share, payable on March 18, 2011 to shareholders of record as of March 1, 2011. Future dividend declarations, as well as the record and payment dates for such dividends, are subject to the final determination of the Company's Board of Directors

MKS INSTRUMENTS, INC.
SUPPLEMENTAL FINANCIAL DATA

	Quarter Ended March 31	June 30	Sept. 30	Dec. 31
	(Table in thousands, except per share data) (Unaudited)			
2010				
Statement of Operations Data				
Net sales	$192,166	$ 220,647	$221,323	$218,978
Gross profit	85,495	97,319	98,503	97,321
Income from continuing operations	28,998	33,144	36,601	34,176
Income from discontinued operations, net of taxes(1)	227	5,633	2,035	1,773
Net income	$ 29,225	$ 38,777	$ 38,636	$ 35,949
Basic income per share:				
Continuing operations	$ 0.58	$ 0.66	$ 0.73	$ 0.68
Net income	$ 0.59	$ 0.77	$ 0.77	$ 0.71
Diluted income per share:				
Continuing operations	$ 0.57	$ 0.65	$ 0.72	$ 0.67
Net income	$ 0.58	$ 0.76	$ 0.76	$ 0.70
2009				
Statement of Operations Data				
Net sales	$ 72,265	$ 75,623	$102,028	$142,777
Gross profit	8,518	24,250	37,874	59,574
Income (loss) from continuing operations(2)	(14,973)	(146,348)	(2,446)	14,406
Income (loss) from discontinued operations, net of taxes(3)	(1,526)	(60,786)	(1,527)	541
Net income (loss)(4)	$ (16,499)	$(207,134)	$ (3,973)	$ 14,947
Basic income (loss) per share:				
Continuing operations	$ (0.31)	$ (2.97)	$ (0.05)	$ 0.29
Net income (loss)	$ (0.34)	$ (4.20)	$ (0.08)	$ 0.30
Diluted income (loss) per share:				
Continuing operations	$ (0.31)	$ (2.97)	$ (0.05)	$ 0.29
Net income (loss)	$ (0.34)	$ (4.20)	$ (0.08)	$ 0.30

(1) Income from discontinued operations, net of taxes for the quarter ended June 30, 2010 includes a $4.2 million gain on the sale of the Company's Ion product line.

(2) Loss from operations for the quarter ended March 31, 2009 includes $5.4 million of restructuring charges. Loss from operations for the quarter ended June 30, 2009 includes a write-down of goodwill, intangible and long-lived assets of $143.0 million.

(3) Loss from discontinued operations, net of taxes for the quarter ended June 30, 2009 includes charges related to the discontinued product lines of $53.8 million for the goodwill impairment and $7.3 million for the intangible asset impairment.

(4) Net (loss) for the quarter ended March 31, 2009 includes a benefit of $6.4 million attributable to the reversal of reserve items for uncertain tax positions, as a result of a U.S. federal tax audit close.

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

None.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2010. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer 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 an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer's management, including its principal executive and principal financial officers, or persons performing similar functions as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2010, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the Company's Chief Executive Officer and Chief Financial Officer or persons performing similar functions and effected by the Company's Board of Directors, management and other personnel, 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 and includes those policies and procedures that:

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2010. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control — Integrated Framework.*

Based on our assessment, management concluded that, as of December 31, 2010, our internal control over financial reporting was effective based on those criteria.

Our internal controls over financial reporting as of December 31, 2010 have been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their attestation report which appears on page 36.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during our fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. ***Other Information***

None.

PART III

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

The information required by this item will be set forth under the captions "Election of Directors," "Executive Officers," "Code of Ethics," "Directors — Audit Committee Financial Expert" and "Corporate Governance" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

We are also required under Item 405 of Regulation S-K to provide information concerning delinquent filers of reports under Section 16 of the Securities and Exchange Act of 1934, as amended. This information will be set forth under the caption "Section 16(a) Beneficial Ownership Reporting Compliance" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

Item 11. ***Executive Compensation***

The information required by this item will be set forth under the captions "Executive Officers — Executive Compensation" and "Executive Officers — Compensation Discussion and Analysis" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

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

The information required by Item 403 of Regulation S-K will be set forth under the caption "Security Ownership of Certain Beneficial Owners and Management" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

The information required by Item 201(d) of Regulation S-K will be set forth under the caption "Executive Officers — Equity Compensation Plan Information" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

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

The information required by this item will be set forth under the caption "Executive Officers — Certain Relationships and Related Transactions" and "Corporate Governance" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

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

The information required by this item will be set forth under the caption "Independent Registered Public Accounting Firm" in our definitive proxy statement for the 2011 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year, and is incorporated herein by reference.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a) The following documents are filed as a part of this Report:

1. *Financial Statements*. The following Consolidated Financial Statements are included under Item 8 on this Annual Report on Form 10-K.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Financial Statements:

2. *Financial Statement Schedules*

The following consolidated financial statement schedule is included in this Annual Report on Form 10-K:

Schedule II — Valuation and Qualifying Accounts

Schedules other than those listed above have been omitted since they are either not required or information is otherwise included.

3. *Exhibits.* The following exhibits are filed as part of this Annual Report on Form 10-K.

Exhibit No.	Title
+3.1(1)	Restated Articles of Organization
+3.2(2)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 18, 2001
+3.3(3)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 16, 2002
+3.4(4)	Amended and Restated By-Laws
+4.1(4)	Specimen certificate representing the common stock
+10.1(5)*	Second Amended and Restated 1997 Director Stock Option Plan, and forms of option agreements thereto
10.2*	2004 Stock Incentive Plan, as amended (the "2004 Plan")

Exhibit No.	Title
+10.3(6)*	Form of Nonstatutory Stock Option Agreement to be granted under the 2004 Plan
+10.4(7)*	Form of Restricted Stock Unit Agreement for Initial Grant to Non-Employee Directors under the 2004 Plan
+10.5(7)*	Form of Restricted Stock Unit Agreement for Annual Grant to Non-Employee Directors under the 2004 Plan
+10.6(7)*	Form of Performance-Based Restricted Stock Unit Agreement under the 2004 Plan
+10.7(7)*	Form of Time-Based Restricted Stock Unit Agreement under the 2004 Plan
10.8*	Form of Time-Based Restricted Stock Unit Agreement and Form of Performance-Based Restricted Stock Unit Agreement under the 2004 Plan (grants beginning in 2011)
+10.9(8)*	Second Restated 1995 Stock Incentive Plan (the “1995 Plan”)
+10.10(9)*	Form of Nonstatutory Stock Option Agreement under the 1995 Plan
+10.11(9)*	Employment Agreement dated as of July 30, 2004 between John Smith and the Registrant (the “Smith Employment Agreement”)
+10.12(10)*	Employment Agreement dated as of July 1, 2005 between John Bertucci and the Registrant
+10.13(10)*	Employment Agreement dated as of July 1, 2005 between William D. Stewart and the Registrant
+10.14(11)*	Employment Agreement dated July 1, 2005 between Leo Berlinghieri and the Registrant, as amended on November 13, 2007
+10.15(12)*	Employment Agreement dated as of April 25, 2005 between Gerald Colella and the Registrant
+10.16(13)*	2010 Management Incentive Bonus Plans for Named Executive Officers
+10.17(14)	Global Supply Agreement dated April 12, 2005 by and between the Registrant and Applied Materials, Inc.
+10.18(15)*	Amendment, dated October 19, 2009, to the Amended Berlinghieri Employment Agreement
+10.19(15)*	Amendment, dated October 19, 2009, to the Amended Colella Employment Agreement
+10.20(16)*	Amendment, dated November 10, 2008, to Employment Agreement between Leo Berlinghieri and the Registrant, dated July 1, 2005, as amended on November 13, 2007 (the “Amended Berlinghieri Employee Agreement”)
+10.21(16)*	Amendment, dated November 10, 2008, to the Smith Employment Agreement
+10.22(16)*	Amendment, dated November 10, 2008, to Employment Agreement between Gerald Colella and the Registrant, dated April 25, 2005 (the “Amended Colella Employment Agreement”)
10.23*	Employment Agreement dated as of January 6, 2006 between Seth Bagshaw and the Registrant
21.1	Subsidiaries of the Registrant
23.1	Consent of PricewaterhouseCoopers LLP
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	The following materials from MKS Instruments, Inc.’s Annual Report on Form 10-K for the year ended December 31, 2010, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Operations, (iii) the Consolidated Statements of Stockholders’ Equity, (iv) the Consolidated Statements of Cash Flows, (v) Notes to Consolidated Financial Statements, and (vi) Schedule II – Valuation and Qualifying Accounts, tagged as blocks of text

+ Previously filed

* Management contract or compensatory plan arrangement filed as an Exhibit to this Form 10-K pursuant to Item 15(b) of this report.

(1) Incorporated by reference to the Registration Statement on Form S-4 (File No. 333-49738) filed with the Securities and Exchange Commission on November 13, 2000.

(2) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001.

(3) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002.

(4) Incorporated by reference to the Registration Statement on Form S-1 filed with the Securities and Exchange Commission on March 2, 1999.

(5) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2004.

(6) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004.

(7) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2006.

(8) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002.

(9) Incorporated by reference to the Registrant's Current Report on Form 10-Q filed with the Securities and Exchange Commission on June 30, 2004.

(10) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on July 5, 2005.

(11) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2007.

(12) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on April 27, 2005.

(13) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on February 12, 2010.

(14) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on April 27, 2005.

(15) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on October 23, 2009.

(16) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2008.

(b) Exhibits

MKS hereby files as exhibits to our Annual Report on Form 10-K those exhibits listed in Item 15(a) above.

(c) Financial Statement Schedules

MKS INSTRUMENTS, INC.
SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS

Description	Balance at Beginning of Year	Additions: Charged to Costs and Expenses	Additions: Charged to Other Accounts	Deductions & Write-offs	Balance at End of Year
			(Dollars in thousands)		
Accounts receivable allowance					
Years ended December 31,					
2010	$2,415	$3,637	$—	$3,495	$2,557
2009	$2,148	$3,655	$—	$3,388	$2,415
2008	$2,379	$4,612	$—	$4,843	$2,148

Description	Balance at Beginning of Year	Additions: Charged to Costs and Expenses	Additions: Charged to Other Accounts	Deductions	Balance at End of Year
			(Dollars in thousands)		
Valuation allowance on deferred tax asset					
Years ended December 31,					
2010	$5,201	$ —	$20,833	$767	$25,267
2009	$4,653	$ —	$ 548	$ —	$ 5,201
2008	$ 534	$4,119	$ —	$ —	$ 4,653

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.

MKS INSTRUMENTS, INC.

By: /s/ LEO BERLINGHIERI

LEO BERLINGHIERI
Chief Executive Officer, President and Director
(Principal 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 date indicated.

SIGNATURES	TITLE	DATE
/s/ JOHN R. BERTUCCI John R. Bertucci	Chairman of the Board of Directors	February 22, 2011
/s/ LEO BERLINGHIERI Leo Berlinghieri	Chief Executive Officer, President and Director (Principal Executive Officer)	February 25, 2011
/s/ SETH H. BAGSHAW Seth H. Bagshaw	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 25, 2011
/s/ CRISTINA H. AMON Cristina H. Amon	Director	February 18, 2011
/s/ ROBERT R. ANDERSON Robert R. Anderson	Director	February 22, 2011
/s/ GREGORY R. BEECHER Gregory R. Beecher	Director	February 25, 2011
/s/ RICHARD S. CHUTE Richard S. Chute	Director	February 18, 2011
/s/ PETER R. HANLEY Peter R. Hanley	Director	February 18, 2011
/s/ HANS-JOCHEN KAHL Hans-Jochen Kahl	Director	February 19, 2011
/s/ LOUIS P. VALENTE Louis P. Valente	Director	February 22, 2011

Exhibit 10.2

MKS INSTRUMENTS, INC.

2004 STOCK INCENTIVE PLAN

(amended and restated as of February 24, 2011)

1. Purpose

The purpose of this 2004 Stock Incentive Plan (the “Plan”) of MKS Instruments, Inc., a Massachusetts corporation (the “Company”), is to advance the interests of the Company’s stockholders by enhancing the Company’s ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align their interests with those of the Company’s stockholders. Except where the context otherwise requires, the term “Company” shall include any of the Company’s present or future subsidiary corporations as defined in Section 424(f) of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the “Code”) and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the “Board”).

2. Eligibility

All of the Company’s employees, officers, directors, consultants and advisors are eligible to receive options, restricted stock awards, stock appreciation rights and other stock-based awards (each, an “Award”) under the Plan. Each person who receives an Award under the Plan is deemed a “Participant”.

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board’s sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under the Plan made in good faith.

(b) Appointment of Committees.

(1) To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a “Committee”). During such time as the common stock, no par value per share, of the Company (the “Common Stock”) is registered under the Securities Exchange Act of 1934 (the “Exchange Act”), the Board shall appoint one such Committee of not less than two members, each member

of which shall be an "outside director" within the meaning of Section 162(m) of the Code and a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act.

(2) To the extent permitted by applicable law, the Board may delegate to one or more officers of the Company, who, if required by law, are also members of the Board, the power to make Awards and exercise such other powers under the Plan as the Board shall determine, provided that the Board shall fix the maximum number of shares subject to Awards to be made by any such person and such other terms as the Board may determine are appropriate.

(3) All references in the Plan to the "Board" shall mean the Board, a Committee of the Board or any person described in subsection (2) above, to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or person.

4. Stock Available for Awards

(a) Number of Shares. Subject to adjustment under Section 9, the number of shares of Common Stock available for Awards under the Plan: (i) shall annually increase by 5% of the total shares of the Company's outstanding Common Stock on January 1 of each year; and (ii) in the event of an increase in the total shares of the Company's Common Stock after January 1 of any such year in connection with the acquisition of any corporation, partnership or other business entity by the Company (whether by merger, stock purchase or otherwise), shall increase by 5% of such increased amount. Such increases shall occur until such time as the aggregate number of shares of Common Stock which may be issued under the Plan is 15,000,000 shares, subject to adjustment under Section 9. If any Award expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or results in any Common Stock not being issued, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan, subject, however, in the case of Incentive Stock Options (as hereinafter defined), to any limitations under the Code. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(b) Per-Participant Limit. Subject to adjustment under Section 9, the maximum number of shares of Common Stock with respect to which Awards may be granted to any Participant under the Plan shall be 900,000 per calendar year. The per-Participant limit described in this Section 4(b) shall be construed and applied consistently with Section 162(m) of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "Option") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable. An Option which is not intended to be an Incentive Stock Option (as hereinafter defined) shall be designated a "Nonstatutory Stock Option".

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "Incentive Stock Option") shall only be granted to employees of MKS Instruments, Inc., any of MKS Instruments, Inc.'s present or future subsidiary corporations as defined in Section 424(f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or for any action taken by the Board pursuant to Section 10(f), including without limitation the conversion of an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify such exercise price in the applicable option agreement.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; provided, however, that no Option will be granted for a term in excess of 10 years.

(e) Exercise of Option. Options may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board together with payment in full as specified in Section 5(f) for the number of shares for which the Option is exercised.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as the Board may otherwise provide in an option agreement, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) to the extent permitted by applicable law and by the Board, by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(4) by any combination of the above permitted forms of payment.

(g) Option Exchange. The Board may authorize a one-time option exchange program (the "Exchange Offer") to be completed prior to November 4, 2009. Under the Exchange Offer, employee holders (who are not members of the Board or executive officers (as such term is defined under Rule 3b-7 of the Securities Exchange Act of 1934, as amended)) (the "Exchange Act") of outstanding stock options having an exercise price in excess of the highest closing price for the Common Stock on the Nasdaq Global Select Market in the 52 week period preceding the commencement of the Exchange Offer (the "Old Options") would have the right to elect to exchange such Old Options for a lesser number of restricted stock units (the "New RSUs"). The number of New RSUs to be granted in exchange for each Old Option would be that number of

RSUs (rounded down to the nearest whole) that would be derived by dividing the fair value of such Old Option by the closing sale price of the Common Stock at the close of the Exchange Offer. The New RSUs would have a new vesting period of one year (provided that if the Old Option is still subject to vesting at the time of surrender, the vesting period shall be one year plus such remaining vesting period) and would be granted promptly after cancellation of the Old Options.

6. Stock Appreciation Rights.

(a) Nature of Stock Appreciation Rights. A Stock Appreciation Right, or SAR, is an Award entitling the holder on exercise to receive an amount in cash or Common Stock or a combination thereof (such form to be determined by the Board) determined in whole or in part by reference to appreciation, from and after the date of grant, in the fair market value of a share of Common Stock. SARs may be based solely on appreciation in the fair market value of Common Stock or on a comparison of such appreciation with some other measure of market growth such as (but not limited to) appreciation in a recognized market index. The date as of which such appreciation or other measure is determined shall be the exercise date unless another date is specified by the Board in the SAR Award.

(b) Grants. Stock Appreciation Rights may be granted in tandem with, or independently of, Options granted under the Plan.

(c) Exercise. Any exercise of a Stock Appreciation Right must be in writing, signed by the proper person and delivered or mailed to the Company, accompanied by any other documents required by the Board.

7. Restricted Stock.

(a) Grants. The Board may grant Awards entitling recipients to acquire shares of Common Stock, subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award (each, a “Restricted Stock Award”).

(b) Terms and Conditions. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for repurchase (or forfeiture) and the issue price, if any.

(c) Stock Certificates. Any stock certificates issued in respect of a Restricted Stock Award shall be registered in the name of the Participant and, unless otherwise determined by the Board, deposited by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant’s death (the “Designated Beneficiary”). In the absence of an effective designation by a Participant, “Designated Beneficiary” shall mean the Participant’s estate.

(d) Deferred Delivery of Shares. The Board may, at the time any Restricted Stock Award is granted, provide that, at the time Common Stock would otherwise be delivered pursuant to the Award, the Participant shall instead receive an instrument evidencing the right to future delivery of Common Stock at such time or times, and on such conditions, as the Board shall specify. The Board may at any time accelerate the time at which delivery of all or any part of the Common Stock shall take place.

8. Other Stock-Based Awards.

Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("Other Stock Unit Awards"), including without limitation Awards entitling recipients to receive shares of Common Stock to be delivered in the future. Such Other Stock Unit Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock Unit Awards may be paid in shares of Common Stock or cash, as the Board shall determine. Subject to the provisions of the Plan, the Board shall determine the conditions of each Other Stock Unit Award, including any purchase price applicable thereto. At the time any Award is granted, the Board may provide that, at the time Common Stock would otherwise be delivered pursuant to the Award, the Participant will instead receive an instrument evidencing the Participant's right to future delivery of the Common Stock.

9. Adjustments for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the per-Participant limit set forth in Section 4(b), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the repurchase price per share subject to each outstanding Restricted Stock Award and (v) the share- and per-share-related provisions of each outstanding Stock Appreciation Right and Other Stock Unit Award, shall be appropriately adjusted by the Company (or substituted Awards may be made, if applicable) to prevent enlargement or dilution of rights to the extent determined by the Board.

(b) Reorganization Events.

(1) Definition. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property, (b) any exchange of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock Awards. In connection with a Reorganization Event, the Board shall take any one or more

of the following actions as to all or any outstanding Awards on such terms as the Board determines: (i) provide that Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that the Participant's unexercised Options or other unexercised Awards shall become exercisable in full and will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become realizable or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), make or provide for a cash payment to a Participant equal to (A) the Acquisition Price times the number of shares of Common Stock subject to the Participant's Options or other Awards (to the extent the exercise price does not exceed the Acquisition Price) minus (B) the aggregate exercise price of all such outstanding Options or other Awards, in exchange for the termination of such Options or other Awards, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise price thereof) and (vi) any combination of the foregoing.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of common stock of the acquiring or succeeding corporation (or an affiliate thereof) equivalent in fair market value to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

To the extent all or any portion of an Option becomes exercisable solely as a result of clause (ii) above, the Board may provide that upon exercise of such Option the Participant shall receive shares subject to a right of repurchase by the Company or its successor at the Option exercise price; such repurchase right (x) shall lapse at the same rate as the Option would have become exercisable under its terms and (y) shall not apply to any shares subject to the Option that were exercisable under its terms without regard to clause (ii) above.

(3) Consequences of a Reorganization Event on Restricted Stock Awards. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company under each outstanding Restricted Stock Award shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied

to the Common Stock subject to such Restricted Stock Award. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock Award or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock Awards then outstanding shall automatically be deemed terminated or satisfied.

10. General Provisions Applicable to Awards

(a) Transferability of Awards. Except as the Board may otherwise determine or provide in an Award, Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, retirement, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant’s legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. Each Participant shall pay to the Company, or make provision satisfactory to the Company for payment of, any taxes required by law to be withheld in connection with an Award to such Participant. The Company may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind otherwise due to a Participant.

(f) Amendment of Award. Subject to Section (g) below, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option, provided that the Participant’s consent to such action shall be required unless the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant.

(g) Limitation on Repricing and Cash Buyouts. Unless such action is approved by the Company’s stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current Fair Market Value, other than pursuant to Section 9, or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of the NASDAQ Stock Market.

(h) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(i) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. Notwithstanding the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to such Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board, but no Award may be granted unless and until the Plan has been approved by the Company's stockholders. No Awards shall be granted under the Plan after the completion of 10 years from the earlier of (i) the date on which the Plan was adopted by the

Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; provided that, to the extent determined by the Board, no amendment requiring stockholder approval under any applicable legal, regulatory or listing requirement shall become effective until such stockholder approval is obtained. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan.

(e) Provisions for Foreign Participants. The Board may modify Awards or Options granted to Participants who are foreign nationals or employed outside the United States or establish subplans or procedures under the Plan to recognize differences in laws, rules, regulations or customs of such foreign jurisdictions with respect to tax, securities, currency, employee benefit or other matters.

(f) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the Commonwealth of Massachusetts, without regard to any applicable conflicts of law.

As approved by the Board of Directors on March 4, 2004 and by the stockholders on May 13, 2004; amended by the Board of Directors on October 25, 2006; amended by the Board of Directors on February 9, 2009 and by the stockholders on May 4, 2009; and amended by the Compensation Committee of the Board of Directors on February 24, 2011

Exhibit 10.8

MKS INSTRUMENTS, INC.

Restricted Stock Unit Agreement

Granted Under the 2004 Stock Incentive Plan

AGREEMENT made __________ (the "Grant Date"), between MKS Instruments, Inc., a Massachusetts corporation (the "Company"), and **«First_Name» «Last_Name»** (the "Participant").

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. General.

The Company has granted to the Participant restricted stock units ("RSUs") with respect to the number of shares set forth in Exhibit A hereto (the "Shares") of common stock, no par value, of the Company ("Common Stock"), subject to the terms and conditions set forth in this Agreement and in the Company's 2004 Stock Incentive Plan (the "Plan"). The RSUs represent a promise by the Company to deliver Shares upon vesting.

(a) Definitions. "Forfeiture" shall mean any forfeiture of RSUs pursuant to Section 2. "Vesting Date" is defined on Exhibit A hereto. "Determination Date" (if applicable) is defined on Exhibit A hereto. For purposes of this Agreement, "employ" or "employment" with the Company shall include employment with a parent or subsidiary of the Company as defined in Sections 424(e) or (f) of the Internal Revenue Code.

(b) Vesting Period. Subject to the terms and conditions of this Agreement (including the Forfeiture provisions described in Section 2 below), the RSUs shall vest according to the terms set forth in Exhibit A. As soon as practicable after each applicable Vesting Date, but in any event, within the period ending on the later to occur of the date that is 2 1/2 months from the end of (i) the Participant's tax year that includes the Vesting Date or (ii) the Company's tax year that includes the Vesting Date, the Company shall instruct its transfer agent to deposit the Shares subject to the RSUs into the Participant's existing equity account at Fidelity Stock Plan Services, LLC, or such other broker with which the Company has established a relationship ("Broker"), subject to payment in accordance with Section 6 of all applicable withholding taxes.

2. Forfeiture.

(a) Cessation of Employment. In the event that the Participant ceases to be employed by the Company for any reason or no reason (except for death, disability or retirement), with or without cause, prior to a Vesting Date, all of the Participant's unvested RSUs shall automatically be forfeited as of such cessation. In the event that the Participant ceases to be employed by the Company by reason of death, disability or retirement prior to a Vesting Date, then 100% of the Participant's RSUs shall become immediately and fully vested and shall no longer be subject to the Forfeiture provisions under this Agreement.

For the purpose of this Section 2, “disability” shall mean disability as defined in Section 216(i)(1) of the U.S. Social Security Act.

“Retirement” means a voluntary termination of employment by the Participant after he or she is at least age sixty (60) and has a combination of years of age plus Years of Service with the Company equal to seventy (70) or more. “Years of Service” means the total number of days of employment since Participant’s original hire with the Company (or subsidiary of the Company, provided that service with a subsidiary shall only be counted towards Years of Service during the time in which such subsidiary is owned (directly or indirectly) by the Company) and provided that in the event the employee left or was terminated and then rehired by the Company, the Company shall include previous employment period in the calculation of the Years of Service provided that the absence from the Company or subsidiary has been five (5) years or less and only if the total number of days employed by the Company (or its subsidiary, as provided above) exceeds the total number of days that the employee was not employed by the Company (or its subsidiary, as provided above).

(b) Change in Control. Notwithstanding the foregoing, if, prior to any Vesting Date, and within two years after the effectiveness of a Change in Control (as defined below), the Participant is (i) terminated by the Company without Cause (as defined below) or (ii) terminates his employment for Good Reason (as defined below), then, 100% of the Participant’s RSUs shall become immediately and fully vested and shall no longer be subject to the Forfeiture provisions under this Agreement. For purposes of this section “Change in Control” means the first to occur of any of the following events: (I) any “person” (as that term is used in Section 13 and 14(d)(2) of the Securities Exchange Act of 1934 (“Exchange Act”)) becomes the beneficial owner (as that term is used in Section 13(d) of the Exchange Act), directly or indirectly, of fifty percent (50%) or more of the Company’s capital stock entitled to vote in the election of directors; (II) the shareholders of the Company approve any consolidation or merger of the Company, other than a consolidation or merger of the Company in which the holders of the common stock of the Company immediately prior to the consolidation or merger hold more than fifty percent (50%) of the common stock of the surviving corporation immediately after the consolidation or merger; or (III) the shareholders of the Company approve the sale or transfer of all or substantially all of the assets of the Company to parties that are not within a “controlled group of corporations” (as defined in Code Section 1563) in which the Company is a member. For purposes of this Agreement, “Cause” shall mean conviction for the commission of a felony, willful failure by the Participant to perform his responsibilities to the Company, or willful misconduct by the Participant. For purposes of this section, “Good Reason” shall mean termination of the Participant’s employment by the Participant within 90 days following (I) a material diminution in the Participant’s positions, duties and responsibilities from those described in the Participant’s Employment Agreement, (II) a material reduction in the Participant’s base salary (other than a reduction which is part of a general salary reduction program affecting senior executives of the Company), (III) a material reduction in the aggregate value of the pension and welfare benefits provided to the Participant from those in effect prior to the Change in Control (other than a reduction which is proportionate to the reductions applicable to other senior executives pursuant to a cost-saving plan that includes all senior executives), (IV) a material breach of any provision of the Participant’s Employment Agreement by the Company or (V) the Company’s requiring the Participant to be based at a location that creates for the Participant a one way commute in excess of 60 miles from his primary residence, except for required travel on the Company’s business to an extent substantially consistent with the business travel obligations of the

Participant under the Participant's Employment Agreement. Notwithstanding the foregoing, a termination shall not be treated as a termination for Good Reason (I) if the Participant shall have consented in writing to the occurrence of the event giving rise to the claim of termination for Good Reason or (II) unless the Participant shall have delivered a written notice to the Company within 30 days of his having actual knowledge of the occurrence of one of such events stating that he intends to terminate his employment for Good Reason and specifying the factual basis for such termination, and such event, if capable of being cured, shall not have been cured within 30 days of the receipt of such notice.

3. Restrictions on Transfer.

The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any RSUs, or any interest therein, except that the Participant may transfer such RSUs (i) to or for the benefit of any spouse, children, parents, uncles, aunts, siblings, grandchildren and any other relatives approved by the Board of Directors (collectively, "Approved Relatives") or to a trust established solely for the benefit of the Participant and/or Approved Relatives, provided that such RSUs shall remain subject to this Agreement (including without limitation the terms of Forfeiture and the restrictions on transfer set forth in this Section 3) and such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

4. Provisions of the Plan.

This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

5. No Compensation Deferral. Neither the Plan nor this Agreement is intended to provide for an elective deferral of compensation that would be subject to Section 409A ("Section 409A") of the U.S. Internal Revenue Code of 1986, as amended. The Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Agreement to ensure that no awards (including without limitation, the RSUs) become subject to the requirements of Section 409A.

6. Withholding Taxes.

(a) The Company's obligation to deliver Shares to the Participant upon the vesting of RSUs shall be subject to the satisfaction of all income tax (including federal, state and local taxes), social insurance, payroll tax, payment on account or other tax related withholding requirements ("Withholding Taxes"). In order to satisfy all Withholding Taxes due upon vesting of the Participant's RSUs, the Participant agrees to the following:

(b) As a condition to receiving any Shares upon vesting of the RSUs, on the date of this Agreement, the Participant hereby irrevocably instructs the Company to take the actions described in this subsection 6(b). On each Vesting Date, the Participant hereby elects to satisfy all Withholding Taxes obligation then due through the retention by the Company of Shares. Accordingly, the Participant hereby instructs the Company, with no further action by the

Participant, on each Vesting Date to deduct and retain from the number of Shares to which the Participant is entitled from the RSUs then scheduled to vest such number of Shares as is equal to the value of the Withholding Taxes. The Participant understands that the fair market value of the surrendered Shares will be based on the closing price of the Company's Common Stock on the trading day preceding the Vesting Date.

(c) Participant has reviewed with the Participant's own tax advisors the federal, state, local and foreign tax consequences of this grant and the transactions contemplated by this Agreement. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's own tax liability that may arise as a result of this grant or the transactions contemplated by this Agreement.

(d) The Participant represents to the Company that, as of the date hereof, he/she is not aware of any material nonpublic information about the Company or the Common Stock. The Participant and the Company have structured this Agreement to constitute a "binding contract" relating to the retention by the Company of Common Stock pursuant to this Section 6, consistent with the affirmative defense to liability under Section 10(b) of the Securities Exchange Act of 1934 under Rule 10b5-1(c) promulgated under such Act.

7. Nature of the Grant**.** In signing this Agreement, the Participant acknowledges that:

(a) the Plan is established voluntarily by the Company, it is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan and this Agreement;

(b) the grant of RSUs is voluntary and occasional and does not create any contractual or other right to receive future awards of RSUs, or benefits in lieu of RSUs even if RSUs have been awarded repeatedly in the past;

(c) all decisions with respect to future grants of RSUs, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan is voluntary;

(e) RSUs are an extraordinary item that do not constitute compensation of any kind for services of any kind rendered to the Company or to the Participant's employer, and RSUs are outside the scope of the Participant's employment contract, if any;

(f) RSUs are not part of normal or expected compensation or salary for any purpose, including, but not limited to, calculation of any severance, resignation, termination, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company or the Participant's employer;

(g) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(h) if the Participant receives Shares upon vesting, the value of such Shares acquired on vesting of RSUs may increase or decrease in value;

(i) in consideration of the grant of RSUs, no claim or entitlement to compensation or damages arises from termination of the RSUs or diminution in value of the RSUs or Shares received upon vesting of RSUs resulting from termination of the Participant's employment by the Company or the Participant's employer (for any reason whatsoever and whether or not in breach of local labor laws) and the Participant irrevocably releases the Company and his or her employer from any such claim that may arise; if, notwithstanding the foregoing, any such claim is found by a court of competent jurisdiction to have arisen, then, by signing this Agreement, the Participant shall be deemed irrevocably to have waived his or her entitlement to pursue such claim; and

(j) further, if the Participant ceases to be a employee (whether or not in breach of local labor laws), the Participant's right to receive RSUs and vest under the Plan, if any, will terminate effective as of the date that the Participant is no longer actively employed by the Company and will not be extended by any notice period mandated under local law (*e.g.*, active employment would not include a period of "garden leave" or similar period pursuant to local law); the Committee shall have the exclusive discretion to determine when the Participant is no longer actively employed for purposes of the Plan.

8. Data Privacy Notice and Consent. The Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in this paragraph, by and among, as applicable, the Participant's employer and the Company and its subsidiaries and affiliates for, among other purposes, implementing, administering and managing the Participant's participation in the Plan. The Participant understands that the Company and its subsidiaries hold certain personal information about the Participant, including the Participant's name, home address and telephone number, date of birth, social security number or identification number, salary, nationality, job title, any Shares or directorships held in the Company, details of all options or any other entitlement to Shares awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor, for the purpose of managing and administering the Plan ("Data"). The Participant further understands that the Company and/or its subsidiaries will transfer Data amongst themselves as necessary for employment purposes, including implementation, administration and management of the Participant's participation in the Plan, and that the Company and/or any of its subsidiaries may each further transfer Data to Broker or such other stock plan service provider or other third parties assisting the Company with processing of Data. The Participant understands that these recipients may be located in the United States, and that the recipient's country may have different data privacy laws and protections than in the Participant's country. The Participant authorizes them to receive, possess, use, retain and transfer the Data, in electronic or other form, for the purposes described in this section, including any requisite transfer to Broker or such other stock plan service provider or other third party as may be required for the administration of the Plan and/or the subsequent holding of Shares of stock on the Participant's behalf. The Participant understands that he or she may, at any time, request access to the Data, request any necessary amendments to it or refuse or withdraw the consents herein, in any case without cost, by contacting in writing his or her local human

resources representative. The Participant understands, however, that withdrawal of consent may affect the Participant's ability participate in or realize benefits from the Plan. For more information on the consequences of refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.

9. Miscellaneous.

(a) No Rights to Employment. The Participant acknowledges and agrees that the vesting of the RSUs pursuant to Section 1 and Exhibit A hereof is earned only in accordance with the terms of such sections. The Participant further acknowledges and agrees that the transactions contemplated hereunder and the vesting schedule set forth herein do not constitute an express or implied promise of continued engagement as an employee for the vesting period, for any period, or at all.

(b) Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, and each other provision of this Agreement shall be severable and enforceable to the extent permitted by law.

(c) Waiver. Any provision for the benefit of the Company contained in this Agreement may be waived, either generally or in any particular instance, by the Board of Directors of the Company.

(d) Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Company and the Participant and their respective heirs, executors, administrators, legal representatives, successors and assigns, subject to the restrictions on transfer set forth in Section 3 of this Agreement.

(e) Notice. All notices required or permitted hereunder shall be in writing and deemed effectively given upon personal delivery or five days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party hereto at the address shown beneath his or its respective signature to this Agreement, or at such other address or addresses as either party shall designate to the other in accordance with this Section 9(e).

(f) Pronouns. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural, and vice versa.

(g) Language. If the Participant has received this Agreement or any other document related to the Plan translated into a language other than English and if the translated version is different than the English version, the English version will control.

(h) Electronic Delivery. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan, RSUs granted under the Plan or future RSUs that may be granted under the Plan by electronic means or to request the Participant's consent to participate in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and, if requested, to agree to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

(i) Entire Agreement. This Agreement and the Plan constitute the entire agreement between the parties, and supersedes all prior agreements and understandings, relating to the subject matter of this Agreement.

(j) Amendment. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Participant.

(k) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the Commonwealth of Massachusetts without regard to any applicable conflicts of laws.

(l) The Participant's Acknowledgments. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily declined to seek such counsel; and (iii) understands the terms and consequences of this Agreement; and (iv) is fully aware of the legal and binding effect of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

MKS INSTRUMENTS, INC.

By: /s/ Leo Berlinghieri
Title: Chief Executive Officer & President
2 Tech Drive, Suite 201
Andover, MA 01810

«First_Name» «Last_Name»

Participants Signature

Exhibit A

Participant: **«First_Name» «Last_Name»**
Grant Date: **__________**
Restricted Stock Units Granted: **<<NumShares>>**

Subject to the terms and conditions of this Agreement (including the Forfeiture provisions described in Section 2 above), the RSUs shall vest in three (3) equal installments as follows: (a) the first third will vest upon the the first anniversary of the Grant Date; (b) an additional one third will vest on the second anniversary of the Grant Date, and (c) the final one third will vest on the third anniversary of the Grant Date. The date upon which each such installment vests shall be considered a “Vesting Date” for the portion of the RSUs vesting on that date.

MKS INSTRUMENTS, INC.

Restricted Stock Unit Agreement

Granted Under the 2004 Stock Incentive Plan

AGREEMENT made this X day of March 2011 (the “Grant Date”), between MKS Instruments, Inc., a Massachusetts corporation (the “Company”), and **«First_Name» «Last_Name»** (the “Participant”).

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. General.

The Company has granted to the Participant restricted stock units (“RSUs”) with respect to the number of shares set forth in Exhibit A hereto (the “Shares”) of common stock, no par value, of the Company (“Common Stock”), subject to the terms and conditions set forth in this Agreement and in the Company’s 2004 Stock Incentive Plan (the “Plan”). The RSUs represent a promise by the Company to deliver Shares upon vesting.

(a) Definitions. “Forfeiture” shall mean any forfeiture of RSUs pursuant to Section 2. “Vesting Date” is defined on Exhibit A hereto. “Determination Date” (if applicable) is defined on Exhibit A hereto. For purposes of this Agreement, “employ” or “employment” with the Company shall include employment with a parent or subsidiary of the Company as defined in Sections 424(e) or (f) of the Internal Revenue Code.

(b) Vesting Period. Subject to the terms and conditions of this Agreement (including the Forfeiture provisions described in Section 2 below), the RSUs shall vest according to the terms set forth in Exhibit A. As soon as practicable after each applicable Vesting Date, but in any event, within the period ending on the later to occur of the date that is 2 $^{1}/_{2}$ months from the end of (i) the Participant’s tax year that includes the Vesting Date or (ii) the Company’s tax year that includes the Vesting Date, the Company shall instruct its transfer agent to deposit the Shares subject to the RSUs into the Participant’s existing equity account at Fidelity Stock Plan Services, LLC, or such other broker with which the Company has established a relationship (“Broker”), subject to payment in accordance with Section 6 of all applicable withholding taxes.

2. Forfeiture.

(a) Cessation of Employment. In the event that the Participant ceases to be employed by the Company for any reason or no reason (except for death, disability or retirement), with or without cause, prior to a Vesting Date, all of the Participant’s unvested RSUs shall automatically be forfeited as of such cessation. In the event that the Participant ceases to be employed by the Company by reason of death, disability or retirement prior to a Vesting Date, then 100% of the

Participant's RSUs shall become immediately and fully vested and shall no longer be subject to the Forfeiture provisions under this Agreement.

For the purpose of this Section 2, "disability" shall mean disability as defined in Section 216(i)(1) of the U.S. Social Security Act.

Retirement" means a voluntary termination of employment by the Participant after he or she is at least age sixty (60) and has a combination of years of age plus Years of Service with the Company equal to seventy (70) or more. "Years of Service" means the total number of days of employment since Participant's original hire with the Company (or subsidiary of the Company, provided that service with a subsidiary shall only be counted towards Years of Service during the time in which such subsidiary is owned (directly or indirectly) by the Company) and provided that in the event the employee left or was terminated and then rehired by the Company, the Company shall include previous employment period in the calculation of the Years of Service provided that the absence from the Company or subsidiary has been five (5) years or less and only if the total number of days employed by the Company (or its subsidiary, as provided above) exceeds the total number of days that the employee was not employed by the Company (or its subsidiary, as provided above).

(b) Change in Control. Notwithstanding the foregoing, if, prior to any Vesting Date, and within two years after the effectiveness of a Change in Control (as defined below), the Participant is (i) terminated by the Company without Cause (as defined below) or (ii) terminates his employment for Good Reason (as defined below), then, 100% of the Participant's RSUs shall become immediately and fully vested and shall no longer be subject to the Forfeiture provisions under this Agreement. For purposes of this section "Change in Control" means the first to occur of any of the following events: (I) any "person" (as that term is used in Section 13 and 14(d)(2) of the Securities Exchange Act of 1934 ("Exchange Act")) becomes the beneficial owner (as that term is used in Section 13(d) of the Exchange Act), directly or indirectly, of fifty percent (50%) or more of the Company's capital stock entitled to vote in the election of directors; (II) the shareholders of the Company approve any consolidation or merger of the Company, other than a consolidation or merger of the Company in which the holders of the common stock of the Company immediately prior to the consolidation or merger hold more than fifty percent (50%) of the common stock of the surviving corporation immediately after the consolidation or merger; or (III) the shareholders of the Company approve the sale or transfer of all or substantially all of the assets of the Company to parties that are not within a "controlled group of corporations" (as defined in Code Section 1563) in which the Company is a member. For purposes of this Agreement, "Cause" shall mean conviction for the commission of a felony, willful failure by the Participant to perform his responsibilities to the Company, or willful misconduct by the Participant. For purposes of this section, "Good Reason" shall mean termination of the Participant's employment by the Participant within 90 days following (I) a material diminution in the Participant's positions, duties and responsibilities from those described in the Participant's Employment Agreement, (II) a material reduction in the Participant's base salary (other than a reduction which is part of a general salary reduction program affecting senior executives of the Company), (III) a material reduction in the aggregate value of the pension and welfare benefits provided to the Participant from those in effect prior to the Change in Control (other than a reduction which is proportionate to the reductions applicable to other senior executives pursuant to a cost-saving plan that includes all senior executives), (IV) a material breach of any provision of the Participant's Employment Agreement by the Company or (V) the

Company's requiring the Participant to be based at a location that creates for the Participant a one way commute in excess of 60 miles from his primary residence, except for required travel on the Company's business to an extent substantially consistent with the business travel obligations of the Participant under the Participant's Employment Agreement. Notwithstanding the foregoing, a termination shall not be treated as a termination for Good Reason (I) if the Participant shall have consented in writing to the occurrence of the event giving rise to the claim of termination for Good Reason or (II) unless the Participant shall have delivered a written notice to the Company within 30 days of his having actual knowledge of the occurrence of one of such events stating that he intends to terminate his employment for Good Reason and specifying the factual basis for such termination, and such event, if capable of being cured, shall not have been cured within 30 days of the receipt of such notice.

3. Restrictions on Transfer.

The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any RSUs, or any interest therein, except that the Participant may transfer such RSUs (i) to or for the benefit of any spouse, children, parents, uncles, aunts, siblings, grandchildren and any other relatives approved by the Board of Directors (collectively, "Approved Relatives") or to a trust established solely for the benefit of the Participant and/or Approved Relatives, provided that such RSUs shall remain subject to this Agreement (including without limitation the terms of Forfeiture and the restrictions on transfer set forth in this Section 3) and such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

4. Provisions of the Plan.

This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

5. No Compensation Deferral. Neither the Plan nor this Agreement is intended to provide for an elective deferral of compensation that would be subject to Section 409A ("Section 409A") of the U.S. Internal Revenue Code of 1986, as amended. The Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Agreement to ensure that no awards (including without limitation, the RSUs) become subject to the requirements of Section 409A.

6. Withholding Taxes.

(a) The Company's obligation to deliver Shares to the Participant upon the vesting of RSUs shall be subject to the satisfaction of all income tax (including federal, state and local taxes), social insurance, payroll tax, payment on account or other tax related withholding requirements ("Withholding Taxes"). In order to satisfy all Withholding Taxes due upon vesting of the Participant's RSUs, the Participant agrees to the following:

(b) As a condition to receiving any Shares upon vesting of the RSUs, on the date of this Agreement, the Participant hereby irrevocably instructs the Company to take the actions described in this subsection 6(b). On each Vesting Date, the Participant hereby elects to satisfy all Withholding Taxes obligation then due through the retention by the Company of Shares. Accordingly, the Participant hereby instructs the Company, with no further action by the Participant, on each Vesting Date to deduct and retain from the number of Shares to which the Participant is entitled from the RSUs then scheduled to vest such number of Shares as is equal to the value of the Withholding Taxes. The Participant understands that the fair market value of the surrendered Shares will be based on the closing price of the Company's Common Stock on the trading day preceding the Vesting Date.

(c) Participant has reviewed with the Participant's own tax advisors the federal, state, local and foreign tax consequences of this grant and the transactions contemplated by this Agreement. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's own tax liability that may arise as a result of this grant or the transactions contemplated by this Agreement.

(d) The Participant represents to the Company that, as of the date hereof, he/she is not aware of any material nonpublic information about the Company or the Common Stock. The Participant and the Company have structured this Agreement to constitute a "binding contract" relating to the retention by the Company of Common Stock pursuant to this Section 6, consistent with the affirmative defense to liability under Section 10(b) of the Securities Exchange Act of 1934 under Rule 10b5-1(c) promulgated under such Act.

7. Nature of the Grant**.** In signing this Agreement, the Participant acknowledges that:

(a) the Plan is established voluntarily by the Company, it is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan and this Agreement;

(b) the grant of RSUs is voluntary and occasional and does not create any contractual or other right to receive future awards of RSUs, or benefits in lieu of RSUs even if RSUs have been awarded repeatedly in the past;

(c) all decisions with respect to future grants of RSUs, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan is voluntary;

(e) RSUs are an extraordinary item that do not constitute compensation of any kind for services of any kind rendered to the Company or to the Participant's employer, and RSUs are outside the scope of the Participant's employment contract, if any;

(f) RSUs are not part of normal or expected compensation or salary for any purpose, including, but not limited to, calculation of any severance, resignation, termination, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company or the Participant's employer;

(g) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(h) if the Participant receives Shares upon vesting, the value of such Shares acquired on vesting of RSUs may increase or decrease in value;

(i) in consideration of the grant of RSUs, no claim or entitlement to compensation or damages arises from termination of the RSUs or diminution in value of the RSUs or Shares received upon vesting of RSUs resulting from termination of the Participant's employment by the Company or the Participant's employer (for any reason whatsoever and whether or not in breach of local labor laws) and the Participant irrevocably releases the Company and his or her employer from any such claim that may arise; if, notwithstanding the foregoing, any such claim is found by a court of competent jurisdiction to have arisen, then, by signing this Agreement, the Participant shall be deemed irrevocably to have waived his or her entitlement to pursue such claim; and

(j) further, if the Participant ceases to be a employee (whether or not in breach of local labor laws), the Participant's right to receive RSUs and vest under the Plan, if any, will terminate effective as of the date that the Participant is no longer actively employed by the Company and will not be extended by any notice period mandated under local law (*e.g.*, active employment would not include a period of "garden leave" or similar period pursuant to local law); the Committee shall have the exclusive discretion to determine when the Participant is no longer actively employed for purposes of the Plan.

8. Data Privacy Notice and Consent. The Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in this paragraph, by and among, as applicable, the Participant's employer and the Company and its subsidiaries and affiliates for, among other purposes, implementing, administering and managing the Participant's participation in the Plan. The Participant understands that the Company and its subsidiaries hold certain personal information about the Participant, including the Participant's name, home address and telephone number, date of birth, social security number or identification number, salary, nationality, job title, any Shares or directorships held in the Company, details of all options or any other entitlement to Shares awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor, for the purpose of managing and administering the Plan ("Data"). The Participant further understands that the Company and/or its subsidiaries will transfer Data amongst themselves as necessary for employment purposes, including implementation, administration and management of the Participant's participation in the Plan, and that the Company and/or any of its subsidiaries may each further transfer Data to Broker or such other stock plan service provider or other third parties assisting the Company with processing of Data. The Participant understands that these recipients may be located in the United States, and that the recipient's country may have different data privacy laws and protections than in the Participant's country. The Participant authorizes them to receive, possess, use, retain and transfer the Data, in electronic or other form, for the purposes described in this section, including any requisite transfer to Broker or such other stock plan service provider or other third party as may be required for the administration of the Plan and/or the subsequent holding

of Shares of stock on the Participant's behalf. The Participant understands that he or she may, at any time, request access to the Data, request any necessary amendments to it or refuse or withdraw the consents herein, in any case without cost, by contacting in writing his or her local human resources representative. The Participant understands, however, that withdrawal of consent may affect the Participant's ability participate in or realize benefits from the Plan. For more information on the consequences of refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.

9. Miscellaneous.

(a) No Rights to Employment. The Participant acknowledges and agrees that the vesting of the RSUs pursuant to Section 1 and Exhibit A hereof is earned only in accordance with the terms of such sections. The Participant further acknowledges and agrees that the transactions contemplated hereunder and the vesting schedule set forth herein do not constitute an express or implied promise of continued engagement as an employee for the vesting period, for any period, or at all.

(b) Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, and each other provision of this Agreement shall be severable and enforceable to the extent permitted by law.

(c) Waiver. Any provision for the benefit of the Company contained in this Agreement may be waived, either generally or in any particular instance, by the Board of Directors of the Company.

(d) Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Company and the Participant and their respective heirs, executors, administrators, legal representatives, successors and assigns, subject to the restrictions on transfer set forth in Section 3 of this Agreement.

(e) Notice. All notices required or permitted hereunder shall be in writing and deemed effectively given upon personal delivery or five days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party hereto at the address shown beneath his or its respective signature to this Agreement, or at such other address or addresses as either party shall designate to the other in accordance with this Section 9(e).

(f) Pronouns. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural, and vice versa.

(g) Language. If the Participant has received this Agreement or any other document related to the Plan translated into a language other than English and if the translated version is different than the English version, the English version will control.

(h) Electronic Delivery. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan, RSUs granted under the Plan or future

RSUs that may be granted under the Plan by electronic means or to request the Participant's consent to participate in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and, if requested, to agree to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

(i) Entire Agreement. This Agreement and the Plan constitute the entire agreement between the parties, and supersedes all prior agreements and understandings, relating to the subject matter of this Agreement.

(j) Amendment. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Participant.

(k) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the Commonwealth of Massachusetts without regard to any applicable conflicts of laws.

(l) The Participant's Acknowledgments. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily declined to seek such counsel; and (iii) understands the terms and consequences of this Agreement; and (iv) is fully aware of the legal and binding effect of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

MKS INSTRUMENTS, INC.

By: /s/ Leo Berlinghieri
Title: Chief Executive Officer & President
2 Technology Drive
Andover, MA 01810

«First_Name» «Last_Name»

Participants Signature

Exhibit A

EMPLOYMENT AGREEMENT

EMPLOYMENT AGREEMENT dated January 5, 2006,(“Employment Agreement”), by and between MKS Instruments, Inc., a Massachusetts Corporation (“the Corporation”), and of, Seth H. Bagshaw , (the “Employee”).

WHEREAS, the Corporation and the Employee desire to provide for the employment of the Employee by the Corporation:

NOW, THEREFORE, in consideration of the premises and the mutual premises contained herein, the Corporation and the Employee hereby agree as follows:

(1) Term of Employment

(a) The Corporation hereby employs the Employee, and the Employee hereby accepts employment with the Corporation, for a period commencing as of (start date) and continuing thereafter until terminated as provided in this Section (1) or Section (5).

(b) The Corporation may terminate Employee’s employment at any time for any reason, or no reason, by notifying Employee of such termination. The employment of the Employee under this Employment Agreement shall terminate thirty (30) days after the date of such notice; provided, however, that the employment of the Employee under this Employment Agreement is subject to prior termination as hereinafter provided in Section (5)(b) and (c). Notwithstanding the above, the Corporation shall be entitled, at its sole discretion, to waive its obligation to continue active employment of the Employee during the 30 day notice period. In the event the Corporation elects at any time to waive its obligation to continue active employment of the Employee during the 30 day notice period, the Corporation shall continue to pay the Employee his customary Base Salary (as defined in Section (4)) and will reimburse Employee for the premiums (if any) he pays for continuation of life insurance should he elect to exercise the conversion feature (if any) of the Corporation’s group life policy then in effect and for the premiums (if any) for the continuation under the federal COBRA program of such medical/dental insurance as Employee may then receive through the balance of the 30 day notice period.

(c) Employee may terminate employment by delivering notice of resignation no later than thirty (30) days prior to the intended date of termination of employment (“Resignation Date”); provided, however, that the Corporation may at any time and for any reason, or no reason, accelerate the Resignation Date to any date prior thereto up to and including the date Employee delivers such notice of resignation, which such acceleration shall not, in any event, be deemed a termination by Corporation of Employee’s employment. Unless the employment is terminated pursuant to Section (5), the Corporation shall, if it terminates the employment prior to the Resignation Date, continue to pay Employee his customary Base Salary (as defined in Section 4)) and will reimburse Employee for the premiums (if any) he pays for continuation of life insurance should he elect to exercise the conversion feature (if any) of the Corporation's group life policy then in effect and for the premiums (if any) for continuation under the federal COBRA program of such medical/dental insurance as Employee may then receive, through the balance of the 30 day notice period.

(2) Capacity: Employee is being paid to perform such duties and exercise such powers, authorities and discretions in relation to the Corporation as are customary and incidental to Employee's position and such other services that are delegated or assigned to him by the CEO & President of the Corporation or his designee, including any authorized manager or supervisor of the Employee. It shall be a condition to Employee's employment hereunder that Employee execute and deliver to the Corporation that Confidential Information Agreement of MKS Instruments, Inc. ("Confidential Information Agreement") attached hereto as Attachment 1, and by execution of this Employment Agreement, Employee (i) acknowledges receipt of the Confidential Information Agreement and (ii) agrees to be bound by all of the terms of the Confidential Information Agreement.

(3) Extent of Services: During the term of employment of the Employee under this Employment Agreement, the Employee shall devote his full time to, and use his best efforts in the furtherance of, the business of the Corporation and shall not perform similar duties in any other capacity for any other person or engage in any other business activity which interferes in any way with the Employee performance of his duties to the Corporation, whether or not such business activity is pursued for gain or any other pecuniary advantage, without the prior written consent of the Corporation. Employee agrees and understands that Employee owes the Corporation fidelity and loyalty during his term of employment with the Corporation.

(4) Compensation: In consideration of the services to be rendered by the Employee under this Employment Agreement, the Corporation agrees to pay, and the Employee agrees to accept, the following compensation:

(a) Base Salary: A base salary at the rate of two-hundred thousand dollars ($200,000) per year for the term of employment of the Employee under this Employment Agreement. The base salary shall be payable in equal biweekly installments subject to usual withholding requirements. This salary will be reviewed regularly according to the practices of the Corporation and will be subject to any changes in pay policies implemented by the Corporation from time to time. As an exempt employee, the Employee shall not be entitled to receive any overtime pay from the Corporation.

(b) MKS Instruments, Inc. Profit Sharing and 401-K Plan: The Employee shall be eligible to become a participant under the profit sharing plan of the Corporation on fulfilling the conditions set forth in the MKS Instruments, Inc. Profit Sharing and 401-K Plan, subject to any changes thereto that may be implemented from time to time.

(c) Vacation: The Employee shall be entitled to an annual vacation leave of 15 days at full pay during each year of this Employment Agreement, subject to the Employee arranging such vacation so as not to affect adversely the ability of the

Corporation to transact its business. Such vacation leave shall accrue and be administered according to the policies and practices of the Corporation.

(d) Life Insurance: The Corporation shall provide and pay such premiums for such term life insurance for the Employee during the term of employment of the Employee under this Employment Agreement as may be applicable to the Employee, subject to any changes in the term life insurance policies that may be implemented by the Corporation from time to time.

(e) Medical/Dental Insurance: The Corporation shall provide and pay such premiums for such group medical/dental insurance for the Employee during the term of employment of the Employee under this Employment Agreement as may be applicable to the Employee, subject to any changes in the medical/dental insurance policies that may be implemented by the Corporation from time to time.

(f) Other Benefits: The Corporation shall provide other benefits for the employee under the Plans of the Corporation applicable to the Employee during the term of employment of the Employee under this Employment Agreement.

(5) Termination: The employment of the Employee under this Employment Agreement shall terminate:

(a) On the expiration of the period of employment as provided in Section (1).

(b) Upon the death of the Employee, or the disability of the Employee as defined in Section (6) (e) below.

(c) Upon Corporation's delivery of notice of the existence of Cause. "Cause" shall mean: (i) Employee's refusal to follow directions from the CEO & President of the Corporation or his designee that are not inconsistent with Employee's position, (ii) Employee's failure to perform his duties other than as a result of Disability or death, (iii) Employee's disregard of or failure to comply with the Corporation's directives, policies or procedures other than as a result of Disability or death, (iv) Employee's engaging in negligent, reckless or intentional conduct injurious to the Corporation, any of its subsidiaries or affiliates or any of its directors or officers, (v) Employee's conviction of a felony or a serious misdemeanor or plea of other than "not guilty" to any felony or serious misdemeanor charge, (vi) Employee's engaging in conduct that is injurious to the Corporation's name or reputation or (vii) Employee's breach of this Employment Agreement or the Confidential Information Agreement.

(6) Payment Upon Termination:

(a) Upon the termination of employment as provided in Section (1), the Employee shall not be entitled to any further compensation or benefits, and the Corporation shall have no obligation to provide the Employee any further compensation or benefits, except as provided in this Employment Agreement.

(b) If the employment of the Employee is terminated by death, the Corporation shall pay to the estate of the Employee the compensation which would otherwise be payable to the Employee at the end of the month in which his death occurs and other unpaid amounts to which Employee would have been at that time entitled as an Employee under any applicable compensation or benefit plan or program.

(c) In the event the employment of the Employee is terminated by the Corporation for Cause pursuant to Section (5) (c) hereof, the Corporation shall have no obligation to pay the Employee any amounts, except for Base Salary through the last full day of actual work for the Corporation.

(d) In the event the Employee voluntarily resigns, the Corporation shall have no obligation to pay the Employee any amounts, except for Base Salary through the last full day of actual work for the Corporation, or, if applicable, amounts payable in accordance with Section (1.c), and other unpaid amounts to which Employee is at that time entitled under any applicable compensation or benefit plan or program.

(e) If Employee is incapacitated by a physical or mental condition, illness, or injury that prevents Employee from being able to perform his duties under this Employment Agreement in a satisfactory manner for substantially all of a twelve (12) consecutive week period (or such longer period as may be required by law or that the CEO & President of the Corporation or his designee may, in his discretion, determine) with any reasonable accommodation that may be required by law, then Employee shall be deemed to be unable to perform his job (any such physical or mental condition, illness, or injury, a “Disability”). In such event, the Corporation may terminate Employee’s employment, in which case Employee shall receive (i) any accrued but unpaid Base Salary and other unpaid amounts to which Employee is at that time entitled under any applicable compensation or benefit plan or program and (ii) al applicable disability benefits consistent with any applicable benefits program. The Corporation shall have no further obligations to Employee. Nothing in this paragraph is intended to or shall operate to excuse the Corporation from any legal obligations it may have under applicable laws.

(f) The Corporation shall deduct from the amounts payable to Employee pursuant to this Agreement all required withholding amounts and deductions, including but not limited to federal, state and local withholding amounts in accordance all applicable laws and regulations and deductions authorized by Employee. Employee shall be solely responsible for and shall pay all taxes associated with the amounts payable under this Agreement

(7) Noncompetition Agreement: Employee shall not, without the written consent of the Corporation, during the term of employment with the Corporation and for the period of one year thereafter (the “Non-Compete Period”), engage in or otherwise carry on, directly or indirectly anywhere in the world (either as principal, agent, employee, employer, investor, shareholder (except for holdings of no great than 1% of the total outstanding shares in a publicly-traded

company), consultant, partner, member, financier or in any other individual or representative capacity of any kind whatsoever), any business or activity competitive with the Corporation but solely to the extent such business or activity is related to, similar to or competitive with the activities of the business unit(s), division(s), laborator(y)(ies), facilit(y)(ies) and other operational unit(s) in or for which Employee performed work for the Corporation or about which Employee acquired Proprietary Information (as defined in the Confidential Information Agreement). The Non-Compete Period shall be extended for any period during which Employee is in breach of this Agreement or the Confidential Information Agreement.

(8) Notice: Any and all notices under this Employment Agreement shall be in writing and, if to the Corporation, shall be duly given if sent to the Corporation by registered or certified mail, postage prepaid, return receipt requested, at the address of the Corporation set forth under its name below or at such other address as the Corporation may hereafter designate to the Employee in writing for the purpose, and if to the Employee, shall be duly given if delivered to the Employee by hand or if sent to the Employee by registered or certified mail, postage prepaid, return receipt requested, at the address of the Employee set forth under his name below or at such other address as the Employee may hereafter designate to the Corporation in writing for the purpose.

(9) Assignment: The rights and obligations of the Corporation under this Employment Agreement shall inure to the benefit of, and shall be binding upon, the successors and assigns of the Corporation. The rights and obligations of the Employee under this Employment Agreement shall inure to the benefit of, and shall be binding upon, the heirs, executors and legal representatives of the Employee.

(10) Entire Agreement and Severability:

(a) This Employment Agreement and the Confidential Information Agreement supersede any and all other agreements, either oral or in writing, between the parties hereto with respect to the employment of the Employee by the Corporation and contains all of the covenants and agreements between the parties with respect to such employment. Each party to this Employment Agreement acknowledges that no representations, inducements, promises or agreement, oral or otherwise, have been made by any party, or any one acting on behalf of any party, which are not embodied herein, and that no other agreement, statement or promise not contained in this Employment Agreement shall be valid and binding. Any modification of this Employment Agreement will be effective only if it is in writing signed by both parties to this Employment Agreement.

(b) If any provision in this Employment Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions shall nevertheless continue in full force and effect without being impaired or invalidated in any way.

(c) All pronouns used herein shall include the masculine, feminine, and neuter gender as the context requires.

(11) Miscellaneous: This Agreement and the rights and obligations of the parties hereunder shall be governed by, and construed in accordance with, the laws of the Commonwealth of Massachusetts, excluding (but only to the extent permitted by law) its conflict of laws and choice of law rules, and jurisdiction over any action to enforce this Agreement, or any dispute arising from or relating to this Agreement shall subsist solely in the state and/or federal courts located within the Commonwealth of Massachusetts. The parties hereto further agree that service of any process, summons, notice or document by U.S. certified mail or overnight delivery by a generally recognized commercial courier service to Employee's last known address (or any mode of service recognized to be effective by applicable law) will be effective service of process for any action, suit or proceeding brought against Employee in any such court. This Agreement may be executed in any number of counterparts, each of which, when executed by both parties to this Agreement shall be deemed to be an original, and all of which counterparts together shall constitute one and the same instrument. The failure of either party hereto to enforce any right under this Agreement shall not be construed to be a waiver of that right, or of damages caused thereby, or of any other rights under this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed, in the Commonwealth of Massachusetts, this Employment Agreement as a sealed instrument, all as of the day, month and year first written above.

MKS INSTRUMENTS, INC.

By: /s/ Leo Berlinghieri
CEO & President

90 Industrial Way
Wilmington, MA 01887

/s/ Seth H. Bagshaw Legal Signature
Seth Bagshaw
5 Bayns Hill Road
Boxford, MA 01921

EXHIBIT 21.1

SUBSIDIARIES OF THE REGISTRANT

SUBSIDIARY	JURISDICTION OF INCORPORATION
ASTeX GmbH	Germany
MKS (Bermuda) Ltd.	Bermuda
MKS Denmark APS	Denmark
MKS Germany Holding GmbH	Germany
MKS Instruments (Asia) Ltd.	Bermuda
MKS Instruments (China) Company Ltd.	China
MKS Instruments Deutschland GmbH	Germany
MKS Instruments France S.A.S.	France
MKS Instruments (Hong Kong) Ltd.	Hong Kong
MKS Instruments (Shanghai) Ltd.	Shanghai
MKS Instruments (Singapore) Pte. Ltd.	Singapore
MKS Instruments U.K. Limited	United Kingdom
MKS Japan, Inc.	Japan
MKS Korea Co., Ltd.	Korea
MKS Luxembourg S.A.R.L.	Luxembourg
MKS MSC, Inc.	Massachusetts
MKS Taiwan Technology Ltd.	Taiwan
MKS Technology Limited	United Kingdom
MKS Tega Ltd.	Israel
MKS Tenta Products Ltd.	Israel
MKS Umetrics AB	Sweden
Orion Metrology, Inc.	California
Spectra Sensortech, Ltd.	United Kingdom
Telvac Engineering Limited	United Kingdom
Tianjin Yield Co, Ltd.	China
Umetrics, Inc.	New Jersey
Umetrics (UK) Ltd.	UK
Yield Dynamics, LLC	California

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-78069, 333-78071, 333-78073, 333-31224, 333-54486, 333-54488, 333-54490, 333-90498, 333-90500, 333-90502, 333-116385, 333-116387, 333-116389, and 333-127221) and Form S-3 (No. 333-34450 and 333-109753) of MKS Instruments, Inc. of our report dated February 25, 2011 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
February 25, 2011

EXHIBIT 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Leo Berlinghieri, certify that:

1. I have reviewed this annual report on Form 10-K of MKS Instruments, Inc.;

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

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

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

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

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Dated: February 25, 2011

/s/ Leo Berlinghieri
Leo Berlinghieri
Chief Executive Officer and President (Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Seth H. Bagshaw, certify that:

1. I have reviewed this annual report on Form 10-K of MKS Instruments, Inc.;

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

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

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

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

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Dated: February 25, 2011

/s/ Seth H. Bagshaw
Seth H. Bagshaw
Vice President and Chief Financial Officer (Principal Financial Officer)

EXHIBIT 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER

PURSUANT TO 18 U.S.C. SECTION 1350,

AS ADOPTED PURSUANT TO

SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of MKS Instruments, Inc. (the “Company”) for the period ended December 31, 2010 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Leo Berlinghieri, Chief Executive Officer and President of the Company, and Seth H. Bagshaw, Vice President and Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based on his knowledge:

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

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

Dated: February 25, 2011	/s/ Leo Berlinghieri Leo Berlinghieri Chief Executive Officer and President
Dated: February 25, 2011	/s/ Seth H. Bagshaw Seth H. Bagshaw Vice President and Chief Financial Officer