AMTECH SYSTEMS INC
Form 10-K
December 10, 2008

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

FORM 10-K

(Mark One)

[X] **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended: September 30, 2008

OR

[ ] **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: 0-11412

AMTECH SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Arizona	**86-0411215**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
131 South Clark Drive, Tempe, Arizona	**85281**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **480-967-5146**

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

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

Common Stock, $0.01 Par Value
(Title of Class)

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

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

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. [X] Yes [ ] No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405) 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. [X]

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

Large accelerated filer [ ] Accelerated filer [X] Non-accelerated filer [ ]

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

As of March 31, 2008, the aggregate market value of the voting stock held by non-affiliates of the registrant was approximately $109,255,000, based upon the closing sales price reported by the NASDAQ Global Market on that date.

As of December 5, 2008, the registrant had outstanding 9,096,048 shares of Common Stock, $0.01 par value.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Definitive Proxy Statement related to the registrants 2008 Annual Meeting of Shareholders, which Proxy Statement will be filed under the Securities Exchange Act of 1934, as amended, within 120 days of the end of the registrant's fiscal year ended September 30, 2008, are incorporated by reference into Items 10-14 of Part III of this Form 10-K.

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Part IV

FORWARD-LOOKING STATEMENTS

Certain information contained or incorporated by reference in this Annual Report on Form 10-K is forward-looking in nature. All statements included or incorporated by reference in this Annual Report on Form 10-K, or made by management of Amtech Systems, Inc. and its subsidiaries (the Company or Amtech), other than statements of historical fact, are hereby identified as forward-looking statements (as such term is defined in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended). Examples of forward-looking statements include statements regarding Amtechs future financial results, operating results, business strategies, projected costs, products under development, competitive positions and plans and objectives of the Company and its management for future operations. In some cases, forward-looking statements can be identified by terminology such as may, will, should, would, expects, p anticipates, intends, believes, estimates, predicts, potential, continue, or the negative of these terms comparable terminology. Any expectations based on these forward-looking statements are subject to risks and uncertainties and other important factors, including those discussed in the section entitled ITEM 1A. RISK FACTORS. These and many other factors could affect Amtechs future operating results and financial condition, and could cause actual results to differ materially from expectations based on forward-looking statements made in this document or elsewhere by Amtech or on its behalf.

All references to we, our, us, or Amtech refer to Amtech Systems, Inc. and its subsidiaries.

PART I

ITEM 1. BUSINESS

Amtech (www.amtechsystems.com) was incorporated in Arizona in October 1981, under the name Quartz Engineering & Materials, Inc. We changed to our present name in 1987. We conduct operations through four wholly-owned subsidiaries: Tempress Systems, Inc., a Texas corporation with all of its operations in The Netherlands, acquired in 1994, also referred to herein as Tempress Systems or Tempress; P.R. Hoffman Machine Products, Inc. (PR Hoffman), an Arizona corporation based in Carlisle, Pennsylvania, acquired in July 1997, or PR Hoffman; Bruce Technologies, Inc. (Bruce Technologies), a Massachusetts corporation based in Billerica, Massachusetts, acquired in July 2004, or Bruce Technologies; and R2D Ingenierie SAS (R2D), a French corporation located near Montpellier, France, acquired in October 2007. See Exhibit 21 Subsidiaries for a complete list of our subsidiaries.

We are a leading supplier of horizontal diffusion furnace systems used for solar (photovoltaic) cell and semiconductor manufacturing, and are recognized in the markets we serve for our technology and our brands. We operate in two business segments: (i) solar and semiconductor equipment and (ii) polishing supplies. Our solar and semiconductor equipment is sold under the well-known and respected brand names of Tempress Systems and Bruce Technologies, which have customers in both the solar industry and the semiconductor industry. Within the solar industry, we provide diffusion and automation equipment to solar cell manufacturers. Within the semiconductor industry, we provide equipment to manufacturers of analog, power, automotive and microcontroller chips with geometries greater than 0.3 micron, denoted as µ, a strategy we believe minimizes direct competition with significantly larger suppliers of semiconductor equipment. Under the PR Hoffman brand, we believe we are also a leading supplier of insert carriers to manufacturers of silicon wafers, and we provide lapping and polishing consumable products as well as equipment used in various industries.

We have been providing manufacturing solutions to the semiconductor industry for over 30 years and are leveraging our semiconductor technology and industry presence in an effort to capitalize on growth opportunities in the solar industry. Our customers use our furnaces to manufacture solar cells, semiconductors, silicon wafers and microelectromechanical systems(MEMS), which are used in end markets such as telecommunications, consumer electronics, computers, automotive, hand-held devices and solar industry products. To complement our research and development efforts, we also sell our furnaces to research institutes and universities.

For fiscal 2008, we recognized net revenue of $80.3 million, which included $50.1 million of solar revenue or approximately 62% of our total revenue. These results compare to $46.0 million of net revenue for fiscal 2007,

which included $12.5 million of solar revenue or approximately 27% of our total revenue. Our order backlog as of

September 30, 2008 and 2007 was $46.7 million and $22.9 million, respectively, a 104% increase. Our backlog as of September 30, 2008 included approximately $36.7 million of orders from our solar industry customers compared to $17.4 million of orders from our solar industry customers as of September 30, 2007. Because our orders are typically subject to cancellation or delay by the customer, our backlog at any particular point in time is not necessarily representative of actual sales in subsequent periods, nor is backlog any assurance that we will realize revenue or profit from completing these orders.

Orders from the solar industry totaled $72.1 million during fiscal 2008, compared to $21.4 million and $8.0 million in fiscal 2007 and 2006, respectively.

For information regarding net revenue, operating income and identifiable assets attributable to each of our two business segments, see Note 10 of the Notes to Consolidated Financial Statements included herein and ITEM 7, MANAGEMENTS DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATION of this Annual Report. For information on the products of each segment, see Solar and Semiconductor Equipment Segment Products and Polishing Supplies Segment Products within this ITEM 1. BUSINESS section. For information regarding the impact of the worldwide economic downturn and other risks to our business, see ITEM 1A. RISK FACTORS.

COMPETITIVE STRENGTHS

We believe that we are a leader in the markets we serve as a result of the following competitive strengths:

Leading Market Share and Recognized Brand Names. The Tempress, Bruce Technologies and PR Hoffman brands have long been recognized in our industry and identified with high-quality products, innovative solutions and dependable service. We believe that our brand recognition and experience will continue to allow us to capitalize on current and future market opportunities in the solar industry.

We have been providing horizontal diffusion furnaces and polishing supplies and equipment to our customers for over 30 years. We have sold and installed over 900 horizontal furnaces worldwide and benefit from what we believe to be the largest installed customer base in the semiconductor industry, which we believe offers an opportunity for replacement and expansion demand. Customers that have purchased our furnaces can leverage their investment in training, spare parts inventory and other costs by acquiring additional equipment from us. We also have an extensive retrofit, parts and service business, which typically generates higher margins than our equipment business.

Experienced Management Team. We are led by a highly experienced management team. Our chief executive officer (CEO) has over 35 years of industry experience, including 27 years with our company. Our four general managers have an average of over 20 years of solar and semiconductor industry experience and an average of 18 years with our company (including our predecessor companies).

Established, Diversified Customer Base. We have long-standing relationships with many of our top customers, which we believe remain strong. We maintain a broad base of customers, including leading solar cell manufacturing companies, as well as semiconductor and wafer manufacturing companies. During fiscal 2008, our largest customer accounted for approximately 20% of our net revenue and our top 10 customers collectively represented approximately 62% of our net revenue. In fiscal 2007, our largest customer accounted for approximately 13% of our net revenue, and our top 10 customers collectively represented approximately 52% of our net revenue. In fiscal 2006, our largest customer accounted for approximately 17% of our net revenue, and our top 10 customers collectively represented approximately 58% of our net revenue. Our largest customer has been different in each of the last three fiscal years.

Proven Acquisition Track Record. Over the last thirteen years we have developed an acquisition program that has resulted in the acquisition of four significant businesses. In October 2007, we acquired R2D, a solar and semiconductor automation company located near Montpellier, France. We believe the acquisition of the technology and business of R2D enhances our growth strategy by allowing us to increase our sales by offering an integrated system under the Tempress brand to the solar industry. In July 2004, we acquired the Bruce

Technologies line of semiconductor horizontal furnace operations, product lines and other assets from Kokusai, a wholly-owned

subsidiary of Hitachi, Japan and its affiliate, Kokusai Electric Europe, GmbH. We continue to market the horizontal furnace product line under the name Bruce Technologies. Bruce Technologies has a large installed base, including several large semiconductor manufacturers. In July 1997, we acquired substantially all of the assets of PR Hoffman. This acquisition enabled us to offer new consumable products, including lapping and polishing carriers, polishing templates, lapping and polishing machines and related consumable and spare parts to our existing customer base as well as to target new customers. In 1994, we acquired certain assets of Tempress and hired Tempress's engineers to develop our first models of the Tempress horizontal diffusion furnaces for production in The Netherlands.

Technical Expertise. We have highly trained and experienced mechanical, chemical, environmental, electronic, hardware and software engineers and support personnel. Our engineering group possesses core competencies in product applications and support systems, automation, sophisticated controls, chemical vapor deposition, diffusion and pyrogenic processes, robotics, vacuum systems, ultra clean applications and software driven control packages. We believe this expertise enables us to design, develop and deliver high-quality, technically-advanced integrated product solutions for solar cell and semiconductor manufacturing customers.

Leading Technology Solutions and New Product Development. We pursue a partnering-based approach, in which our engineering and development teams work closely with our customers to ensure our products are tailored to meet our customers' specific requirements. We believe this approach enables us to more closely align ourselves with our customers and provide them with superior systems. We believe our line of horizontal diffusion furnaces, which allow high wafer-per-hour throughput, is more technologically advanced and reliable than most of our competitors' equipment. In addition, the processing and temperature control systems within the furnace provide diverse and proven process capabilities, which enable the application of high-quality films onto silicon wafers. We believe our recently acquired R2D solar automation technology will provide efficiencies in the manufacturing process that will allow our customers to be more competitive in their respective markets. We developed a small batch vertical furnace jointly with a major European customer and are currently developing five different thin film processes for use with this furnace. We retain full ownership of this technology. We shipped two of these systems in fiscal 2005 and one in 2006. In addition, in 2007, we shipped a small batch vertical furnace utilizing DSG Technologies (DSG) microwave technology to DSG. In 2007, we also began selling precision thickness wafer carriers. This is an internally developed product that we expect will increase our sales to the wafer carrier market.

Geographically Diverse Customer Base. We believe that our geographically diverse revenue stream helps to minimize our exposure to fluctuations in any one market, and to maximize our access to potential customers relative to our competitors with geographically concentrated operations. The geographic distribution of our net revenues from fiscal 2006 through 2008 is as follows:

	2008	2007	2006
Asia - Pacific	68%	52%	41%
North America	16%	28%	35%
Europe	16%	20%	24%

The figures set forth in the above table represent percentages of the net revenues for each of the last three fiscal years as such net revenues are reported in our financial statements at "ITEM 8 FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA."

GROWTH STRATEGY

We intend to leverage our competitive strengths through a combination of internal and external growth strategies.

Internal Growth. Our strategy for internal growth includes: capitalizing on growth opportunities in the solar industry and the Asia-Pacific market; accelerating new product and technology development; enhancing our sales and marketing capabilities; and leveraging our installed base.

Capitalizing on Growth Opportunities in the Solar Industry. We have had recent success in increasing our sales to the solar industry. Our fiscal 2008 solar orders totaled $72.1 million compared to $21.4 million and $8.0 million in fiscal 2007 and 2006, respectively. We believe the increase in orders from solar cell manufacturers is due to our focused product development and marketing efforts, as well as to

growing overall demand from the solar industry. We believe that long-term growth in the solar industry will be driven by rising energy demand, the increasing scarcity of traditional energy resources coupled with rising prices, the growing adoption of government incentives for solar energy due to increasing environmental awareness and concern about energy independence, the gradually decreasing cost of solar energy and the changing consumer preferences toward renewable energy sources.

Capitalizing on Growth Opportunities in the Asia-Pacific Market. With our extensive global knowledge and experience, particularly in Asia, we intend to further leverage our established sales channels in the Asia-Pacific market for current and future products. The Asia-Pacific region continues to be an important and expanding market for us, particularly because of the continuing migration of solar cell and semiconductor manufacturing to countries in that region. According to *Solar Plaza*, an independent solar energy information service, total solar cell production in China is expected to grow from 600 MWp in 2005 to 2,200 MWp in 2010 for a CAGR of 30%.

Accelerating New Product and Technology Development. We are focused on developing new products across our business in response to customer needs in various markets.

Small Batch Vertical Furnace. The vertical furnace market is much larger than the horizontal furnace market that we have served historically. Our entry product into the vertical furnace market is a two-tube small batch vertical furnace for wafer sizes of up to 200mm, with each tube having a small flat zone capable of processing 25-50 wafers per run. We are targeting small batch niche applications in the vertical furnace market first, since the competition in the large batch vertical furnace market is intense and our competitors are much larger and have substantially greater financial resources, processing knowledge and advanced technology. We believe our large installed customer base increases the market to which we can sell our small batch vertical furnaces and other new products.

Precision Thickness Wafer Carrier. Wafer carriers are work holders into which silicon wafers or other materials are inserted for the purpose of holding them securely in place during the lapping and polishing processes. Many customers thin their wafer carriers to precise tolerances to meet their various applications. We internally developed and began selling precision thickness wafer carriers in 2007.

Enhancing our Sales and Marketing Capabilities. In order to increase sales and improve customer service globally, we intend to continue integrating our Bruce Technologies and Tempress sales and marketing teams and transitioning them from being product oriented to being regionally focused. We also intend to hire additional senior management to expand our existing solar sales and marketing efforts.

Leveraging our Installed Base. We intend to continue leveraging our relationships with our customers to maximize parts, system, service and retrofit revenue from the large installed base of Bruce Technologies and Tempress brand horizontal diffusion furnaces. We intend to accomplish this by meeting these customers needs for replacement systems and additional capacity, including equipment and services in connection with any of our customers relocation to, or expansion efforts in, Asia.

External Growth. We intend to selectively seek strategic growth opportunities through acquisitions, joint ventures, geographic expansion and the development of additional manufacturing capacity.

Pursuing Strategic Acquisitions that Complement our Strong Platform. Over the last twelve years, we have developed an acquisition program and have completed the acquisition of three significant businesses. Based on a

disciplined acquisition strategy, we continue to evaluate potential technology, product and business acquisitions or joint ventures that are intended to increase our existing market share in the solar industry and expand the number of front-end semiconductor processes addressed by our products. In evaluating these opportunities, our objectives include: enhancing our earnings and cash flows, adding complementary product offerings, expanding our geographic footprint, improving our production efficiency and growing our customer base.

SOLAR AND SEMICONDUCTOR INDUSTRIES

We provide products and services primarily to two industries: the solar industry and the semiconductor industry.

Solar Industry. Solar power has emerged as one of the most rapidly growing renewable energy sources. To date, various technologies have been developed to harness solar energy. The most significant technology is the use of interconnected photovoltaic, or PV, cells to generate electricity directly from sunlight. Most PV cells are constructed using specially processed silicon, which, when exposed to sunlight, generates direct current electricity. Solar energy has many advantages over other existing renewable energy sources and traditional non-renewable energy sources in the areas of environmental impact, delivery risk, distributed nature of generation and matching of peak generation with demand.

Semiconductor Industry. Semiconductors control and amplify electrical signals and are used in a broad range of electronic products, including: consumer electronic products, computers, wireless telecommunication devices, communications equipment, automotive electronic products, major home appliances, industrial automation and control systems, robotics, aircraft, space vehicles, automatic controls and high-speed switches for broadband fiber optic telecommunication networks. Semiconductors, or semiconductor chips, solar cells and optical components are manufactured primarily on a silicon wafer and are part of the circuitry or electronic components of many of the products listed above.

The semiconductor industry has experienced significant growth since the early 1990s. This growth has been primarily attributable to an increase in demand for personal computers, the growth of the Internet, the expansion of the telecommunications industry, especially wireless communications, and the emergence of new applications in consumer electronics. Further fueling this growth is the rapidly expanding end-user demand for smaller, less-expensive and better-performing electronic products as well as for traditional products with more intelligence. This growing demand has led to an increased number of semiconductor devices in electronic and other consumer products, including automobiles.

Although the semiconductor market has experienced significant growth over the past fifteen years, it remains cyclical by nature. The market is characterized by short-term periods of under or over supply for most semiconductors, including microprocessors, memory, power management chips and other logic devices. When demand decreases, semiconductor manufacturers typically slow their purchasing of capital equipment. Conversely, when demand increases, so does capital spending.

Industry Manufacturing Processes

Solar Cell Manufacturing Process Flow Chart

(*) Manufacturing process step which involves the use of our products.

A part of our growth strategy involves evaluating opportunities to increase the number of process steps we serve in both the solar cell and semiconductor manufacturing processes by acquiring additional product lines. The solar industry uses many of the same process steps used in semiconductor manufacturing in the high-volume production of solar cells including:

(1) inspecting for resistivity and mechanical integrity and splitting wafers;

(2) etching away saw damage with sodium hydroxide and rinsing the wafer with water and concentrated sulphuric acid;

(3) diffusing oxygen and nitrogen to form a thin-film layer of phosphorous oxychloride on the wafer;

(4) etching the wafer with fluoric acid to remove the undiffused, phosphorus-silica-glass layer;

(5) coating an antireflective layer through a chemical vapor deposition (CVD) or plasma enhanced CVD process;

(6) printing rear side contacts;

(7) drying to prevent condensation in the wafer area;

(8) printing aluminum and silver paste on the back surface field to prevent recombination of generated electrons and holes;

(9) drying;

(10) printing front side contacts;

(11) drying and then sintering the contact to form electrical conductive contacts; and

(12) testing and sorting the solar cells into electrical efficiency categories.

Most solar cell manufacturers sell their products to manufacturers of solar modules or solar panels. Others are vertically integrated and use their cells in the production of solar modules and panels. Solar cells are the critical component of solar modules and solar panels, which are sold to the end user and used in residential homes, industrial applications, remote pumping, lighting and heating uses and central power stations.

Semiconductor Front End Manufacturing Process Flow Chart

(*) Manufacturing process steps which are performed using our products.

Most semiconductor chips are built on a base of silicon, called a wafer, and include multiple layers of circuitry that connect a variety of circuit components, such as transistors, capacitors and other components. To build a chip, the transistors, capacitors and other circuit components are first created on the surface of the wafer by performing a series of processes to deposit and remove selected film layers, including insulators. Similar processes are then used to build the layers of wiring structures on the wafer. These are all referred to as "front-end" processes. A simplified sequence of front-end processes for fabricating typical chips involves:

(1) forming an ingot by pulling molten silicon;

(2) slicing the silicon ingot into wafers of uniform thickness with a wire saw;

(3) lapping and polishing the silicon wafer to a mirror-like finish;

(4) cleaning the wafer;

(5) forming a thin film-layer of silicon dioxide on the wafer in a diffusion furnace where oxygen, hydrogen or a combination of the two is introduced to cause a chemical reaction (oxidation) with the silicon

wafer□s surface;

(6) diffusing impurities (doping) in order to change the wafer□s electrical properties.

(7) depositing insulating or conducting layers on the wafer surface, which sometimes is accomplished in a diffusion furnace via a chemical reaction called chemical vapor deposition;

(8) coating and baking a photosensitive material, called photoresist, on the wafer;

(9) creating circuit patterns by exposing the wafer to light directed through a mask with circuit patterns;

(10) removing the soluble portion of the photoresist by placing the wafer in a chemical solution, leaving only the desired pattern;

(11) etching away the exposed areas to create a dimensional pattern on the wafer surface;

(12) creating electrically charged conductive regions by driving ions into the exposed areas of the patterned wafer; and

(13) annealing the wafer through a high temperature process to relieve stress and drive the implanted ions deeper into the wafer.

The silicon wafer may be cycled ten to twenty-five times through these wafer-processing steps, starting each time at step (5) or (7) to form a number of chips on the wafer. The front-end process steps are followed by a number of back-end steps in which the wafers are sliced into individual chips that are then packaged to add connectors that are compatible with the end product in which the chip will be used.

Depending on the device, our polishing supplies segment□s products may be used in lapping and polishing (step 3) and our solar and semiconductor equipment segment□s products may be used in forming silicon dioxide films (step 5), doping (step 6), depositing insulating and conducting layers (step 7) and the annealing processes (step 13).

SOLAR AND SEMICONDUCTOR EQUIPMENT SEGMENT PRODUCTS

Our furnace and automation equipment is manufactured in our facilities in The Netherlands, France, and Massachusetts. The following paragraphs describe the products that comprise our solar and semiconductor equipment segment:

Horizontal Diffusion Furnaces. Through our subsidiaries, Tempress and Bruce Technologies, we produce and sell horizontal diffusion furnaces. Our horizontal furnaces currently address several steps in the semiconductor manufacturing process, including diffusion (step 5 in the semiconductor manufacturing process previously described), phosphorus tetrachloride doping, or $POCl_3$ (step 6), low-pressure chemical vapor deposition, or LPCVD, (step 7), and annealing (step 13). Our horizontal furnaces also currently address diffusion and applying antireflective coating in the solar cell manufacturing process (steps 3 and 5).

Our horizontal furnaces generally consist of three large modules: the load station where the loading of the wafers occurs; the furnace section, which is comprised of one to four reactor chambers; and the gas distribution cabinet where the flow of gases into the reactor chambers is controlled, and often customized to meet the requirements of a customer□s particular processes. The horizontal furnaces utilize existing industry technology and are sold primarily to customers who do not require the advanced automation of, or cannot justify the higher expense of, vertical furnaces for some or all of their diffusion processes. Our models are capable of processing all currently existing wafer sizes.

Automation Products □ Solar. Our automation technology products are used in several of the semiconductor manufacturing steps and the diffusion processing step in solar cell manufacturing. Our automation equipment includes mass wafer transfer systems, sorters, long-boat transfer systems, load station elevators, buffers and conveyers. We use a vacuum technology for our solar wafer transfer systems designed to ensure high throughput.

Automation Products – Semiconductor. Use of our automation products reduces human handling and, therefore, reduces exposure of wafers to particle sources during the loading and unloading of the process tubes and protects operators from heat and chemical fumes. Since the top reactor chamber of a horizontal furnace is as much as eight feet from the floor on which the operator stands when manually loading wafer boats, and typical boats of 150mm to 300mm wafers weigh three to six pounds, automating the wafer loading and unloading of a diffusion furnace improves employee safety and ergonomics in silicon wafer, solar cell and semiconductor manufacturing facilities.

E-300. Our most cost effective automation product is the E-300. This product is most suitable for the lower cost semiconductor devices, such as diodes and power management chips. The E-300 operates like an elevator and

generally is used to raise wafer boats loaded with up to 300 wafers to one or both of the upper two reactor chambers of a diffusion furnace.

S-300. Our patented S-300 model provides a very efficient method of automatically transporting a full batch of up to 300 wafers to the designated tube level and automatically placing them directly onto the cantilever loader of a diffusion furnace at one time. This product is suitable for the production of nearly all semiconductors manufactured using a horizontal furnace. The S-300 can be used in conjunction with all current wafer sizes and is particularly well suited for manufacturers of 300mm wafers.

Small Batch Vertical Furnace. Our small batch, two-tube vertical furnace was developed internally with the active support from a large semiconductor manufacturer and long-term customer. The specifications for this furnace include a two-tube vertical furnace for wafer sizes of up to 200mm, with each tube having a small flat zone capable of processing 25-50 wafers per run. The market for vertical furnaces is much larger than the total of all the other markets we currently serve. We are initially targeting niche applications, including research and development, while we continue to develop additional processes, since the competition in the large batch vertical furnace market is intense and our competitors are much larger and have substantially greater financial resources, processing knowledge and advanced technology.

Conveyor Furnace. We produce conveyor furnaces used to manufacture thick films for the electronics industry. Conveyor furnaces provide for precision thermal processing of electronic parts for thick film applications, including annealing, sealing, soldering, silvering, curling, brazing, alloying, glass-metal sealing and component packaging.

POLISHING SUPPLIES SEGMENT PRODUCTS

The products of our polishing supplies segment are used primarily for lapping and polishing raw silicon wafers to a mirror-like finish. Depending on the cycle of the semiconductor industry, approximately two-thirds of this segment□s products are sold to either semiconductor wafer manufacturers or specialty semiconductor fabricators. The products of our polishing supplies segment are also sold to fabricators of optics, quartz, ceramics and metal parts, and to manufacturers of medical equipment components and computer disks. We manufacture the products described below in Pennsylvania and sell them under our PR Hoffman brand name.

Wafer Carriers*.* Carriers are work holders into which silicon wafers or other materials are inserted for the purpose of holding them securely in place during the lapping and polishing processes. We produce carriers for our line of lapping and polishing machines, as well as for those machines sold by our competitors. Substantially all of the carriers we produce are customized for specific applications. Insert carriers, our most significant category of carriers, contain plastic inserts molded onto the inside edge of the work-holes of the carrier, which hold the wafers in place during processing. Although our standard steel carriers are preferred in many applications because of their durability, rigidity and precise dimensions, they are typically not suited for applications involving softer materials or when metal contamination is an issue. Insert carriers, however, are well suited for processing large semiconductor wafers, up to 300mm in diameter, and other fragile materials or where contamination is an issue, because they provide the advantages of steel carriers while reducing the potential for damage to the edges of such sensitive materials. Our insert carriers are used for double-sided lapping or polishing of semiconductor wafers up to 300mm in diameter. We internally developed and began selling precision thickness wafer carriers in 2007.

Semiconductor Polishing Templates. Our polishing templates are used to securely hold silicon wafers in place during single-sided polishing processes. Polishing templates are customized for specific applications and are manufactured to exacting tolerances. We manufacture polishing templates for most brands of tools and various processes. In addition to silicon wafers, these products are used in polishing silicon carbide wafers and sapphire crystals used in LEDs.

Double-Sided Planetary Lapping and Polishing Machines. Double-sided lapping and polishing machines are designed to process thin and fragile materials, such as semiconductor silicon wafers, precision optics, computer disk media and ceramic components for wireless communication devices, to exact tolerances of thickness, flatness, parallelism and surface finish. On average, we believe that we offer our surface processing systems at a lower price than systems offered by our competitors and target the semiconductor, optics, quartz, ceramics, medical, computer

disk and metal working markets. During fiscal 2004, we introduced and delivered our first Model 5400 lapping and polishing machine, capable of processing parts up to 19.5 inches in diameter, including 300mm wafers and higher capacities of smaller parts. This machine is our largest and is superior to our previous model, because it uses servo motors rather than hydraulics and is equipped with a Windows touch-screen interface, for better control of speeds and pressure, optional thickness control, and crash protection. We believe our 5400 model is especially well-suited for thin and fragile materials. We also produce and sell a wide assortment of plates, gears, parts and wear items for our own machines and those sold by many of our competitors.

MANUFACTURING, RAW MATERIALS AND SUPPLIES

Our solar and semiconductor equipment manufacturing activities consist primarily of engineering design, procurement and assembly of various commercial and proprietary components into finished diffusion furnace systems in Vaassen, The Netherlands, France, and Billerica, Massachusetts.

Nearly all of our fabricated parts for the solar and semiconductor equipment segment are purchased from local suppliers. Our manufacturing activities in the polishing supplies and equipment segment include laser-cutting and other fabrication steps in producing lapping and polishing consumables, including carriers, templates, gears, wear items and spare parts in Carlisle, Pennsylvania, from raw materials manufactured to our specifications by our suppliers. Many items, such as proprietary components for our solar and semiconductor equipment and lapping plates, are also purchased from suppliers who manufacture these items to our specifications.

All final assembly and tests of our equipment and machines are performed within our manufacturing facilities. Quality control is maintained through inspection of incoming materials and components, in-process inspection during equipment assembly, testing of assemblies and final inspection and, when practical, operation of manufactured equipment prior to shipment.

Since much of our polishing supplies segment□s know-how relates to the manufacture of its products, this segment□s facility is equipped to perform a significantly higher percentage of the fabrication steps required in the production of its products. However, injection molding for our insert carriers and the manufacture of raw cast iron plates are subcontracted out to various third parties. Our polishing supplies segment relies on key suppliers for certain materials, including two steel mills in Germany and Japan, an injection molder, a single-sourced pad supplier from Japan and an adhesive manufacturer. Prior to the fourth quarter of fiscal 2004, we subcontracted the laser-cutting of carriers to third parties. Since then we have purchased an advanced laser-cutting tool which has increased our ability to compete based upon price, delivery lead-times and quality. To minimize the risk of production and service interruptions and/or shortages of key parts, we maintain appropriate inventories of key raw materials and parts. If for any reason we were unable to obtain a sufficient quantity of parts in a timely and cost-effective manner to meet our production requirements, our results of operations would be materially and adversely affected.

RESEARCH, DEVELOPMENT AND ENGINEERING

The markets we serve are characterized by evolving industry standards and rapid technological change. To compete effectively in our markets, we must continually keep up with the pace of such change by improving our products and our process technologies and developing new technologies and products that compete effectively on

the basis of price and performance and that adequately address current and future customer requirements. We continue to obtain as much customer cooperation and input as possible to increase the efficiency and effectiveness of our research and development efforts. While there can be no assurance that such relationships will continue or that others will be developed, such cooperative efforts are expected to remain a significant element in our future product and technology development projects.

In April 2007, we entered into a licensing and manufacturing agreement to develop and market an antireflective coating system for solar cells with PST Co., LTD., a South Korean producer of vertical thermal processing systems for high-end semiconductor applications. This plasma-enhanced chemical vapor deposition (PECVD) system is used in high-volume, solar cell manufacturing and is an important step in the solar cell manufacturing process. The licensing agreement allows us to market PST's existing PECVD system, and for PST to develop and manufacture a new PECVD model for us to market to high-volume solar cell manufacturers.

The 10-year licensing agreement will enable us to sell this product to our solar customer base through our extensive global sales and marketing network on an exclusive basis, with the exception of sales in Korea and to one existing customer of PST, for which PST retains exclusive rights. Additionally, we believe this product will enable us develop new customer relationships.

From time to time we add functionality to our products or develop new products during engineering and manufacturing to fulfill specifications in a customer's order, in which case the cost of development, along with other costs of the order, are charged to cost of sales. We periodically receive small research grants for research and development of products in The Netherlands, which are netted against our research and development costs. Our approach to such expenditures has allowed us to produce a number of new products while spending amounts that we believe are generally modest in relation to most semiconductor equipment manufacturers. Our expenditures that have been accounted for as research and development were $1.1 million (1.4% of net revenue) for fiscal 2008, $0.6 million (1.2% of net revenue) for fiscal 2007 and $0.4 million (1.1% of net revenue) in fiscal 2006. These amounts exclude those expenses incurred in connection with customer orders or supported by government grants.

PATENTS

The following table shows our material patents, the patents licensed by us, and the expiration date of each patent and license:

Product	Country	Expiration Date or Pending Approval
IBAL Model S-300	France,	Pending
	Germany,	Pending
	Italy,	Pending
	The Netherlands,	Pending
	United Kingdom	Pending
Heating Element Wire Spacer	Europe	Pending
Photo CVD	United States	November 15, 2011
Potential Damage-free Asher	United States	September 8, 2018
IBAL Model S-300	United States	July 7, 2019
IBAL Model S-300	United States	July 26, 2019
IBAL Model E-300	United States	July 13, 2021
Fast, Safe, Pyrogenic External Torch Assembly (*)	United States	December 17, 2011

(*) Patent is licensed from the patent holder or co-owner on a non-exclusive basis.

To the best of our knowledge, there are no pending lawsuits against us regarding infringement of any existing patents or other intellectual property rights or any unresolved claims made by third parties that we are infringing the intellectual property rights of such third parties.

SALES AND MARKETING

Because of the highly technical nature of our products, we market our products primarily by direct customer contact through our sales personnel and through a network of domestic and international independent sales representatives and distributors that specialize in semiconductor equipment and supplies. Our promotional activities include direct sales contacts, participation in trade shows, an Internet website, advertising in trade magazines and the distribution of product brochures.

Sales to distributors of both segments are generally on terms comparable to sales to end user customers, as our distributors generally quote their customers after first obtaining a quote from us and have an order from the end-user before placing an order with us. Our sales to distributors are not contingent on their future sales and do not include a general right of return. Historically, returns have been rare. Distributors of our solar and semiconductor equipment segment products do not stock a significant amount of our products, as the inventory they do hold is primarily limited to parts needed to provide timely repairs to the customer.

Payment terms of our parts, service and retrofit sales, which usually comprise approximately 50-60% of consolidated net revenue, are generally net 30 days, F.O.B. shipping point or equivalent terms. The payment terms of equipment or systems sales vary depending on the size of the order and the size, reputation and creditworthiness of the customer. As a result, the financial terms of equipment sales can range from 80% due 30 days after shipment and 20% due 30 days after acceptance, to requiring a 30% customer deposit 30 days after order placement, 60% due 30 days after shipment and 10% net due 30 days after acceptance. Letters of credit are required of certain customers depending on the size of the order, creditworthiness of the customer and the customers country of domicile.

During fiscal 2008, 84% of our net revenue came from customers outside of North America. This group represented 72% of revenues in fiscal 2007. In fiscal 2008, net revenue was distributed among customers in different geographic regions as follows: North America 16% (15% of which is in the United States), Asia 68% (including 46% to China and 14% to Taiwan) and Europe 16%. During fiscal 2008, 2007 and 2006, one customer accounted for approximately 20%, 13%, and 17% of our net revenue, respectively. Our largest customer has been different in each of the last three fiscal years. Our business is not seasonal in nature, but is cyclical based on the capital equipment investment patterns of solar cell and semiconductor manufacturers. These expenditure patterns are based on many factors, including anticipated demand for integrated circuits, the development of new technologies and global and regional economic conditions.

COMPETITION

We compete in several distinct markets including semiconductor devices, semiconductor wafer, solar cell, MEMS and the market for general industrial lapping and polishing machines and supplies. Each of these markets is highly competitive. Our ability to compete depends on our ability to continually improve our products, processes and services, as well as our ability to develop new products that meet constantly evolving customer requirements. Significant competitive factors for succeeding in the semiconductor manufacturing equipment market include the equipments technical capability, productivity and cost-effectiveness, overall reliability, ease of use and maintenance, contamination and defect control and the level of technical service and support provided by the vendor. The importance of each of these factors varies depending on the specific customers needs and criteria, including considerations such as the customers process application, product requirements, timing of the purchase and particular circumstances of the purchasing decision.

The Solar Cell Semiconductor Devices, Semiconductor Wafer, and MEMS Markets. Our diffusion furnaces and automation processing equipment primarily compete with those produced by other domestic and foreign original equipment manufacturers, some of which are well-established firms that are much larger and have substantially greater financial resources than us. Some of our competitors have a diversified product line, making it difficult to quantify their sales of products that compete directly with our products. Competitors of our horizontal diffusion furnaces include Centrotherm GmbH, Koyo Systems Co. Ltd., MRL Industries, Inc., a subsidiary of Sandvik AB, CVD Equipment, Inc., Semco Engineering S.A., Expertech, Inc. and Tystar Corporation. Competitors of our lapping and polishing machines and supplies include Lapmaster International, LLC, Hamai Co., Ltd., Speedfam Co., Ltd., Onse, Inc. and Eminess Technologies, Inc. Such competition could intensify in the future if the industry trend to produce smaller chips on larger wafers accelerates, or the newer technology represented by vertical furnaces results in a material shift in the purchasing habits of our targeted customers.

Our furnaces and lapping and polishing machines also face, to a limited, but increasing extent, competition from used equipment on the low-end of the price spectrum.

General Industrial Lapping and Polishing Machines and Supplies Market. We experience price competition for wafer carriers produced by foreign manufacturers for which there is very little publicly available information. As a result, we are intensifying our efforts to reduce the cost of our carriers and will continue to compete with other manufacturers of carriers by continuing to update our product line to keep pace with the rapid changes in our customers requirements and by providing a high level of quality and customer service. During September 2004, we completed the installation and began producing steel carriers, including insert carriers, on a newly acquired advanced laser-cutting tool, which has reduced the costs and lead times of these products and increased our control over quality. Competitors of our lapping and polishing machines and carriers, other than insert carriers, include Speedfam-PW, a division of Novellus, among others. We have been able to capture a small share of the semiconductor polishing template market, which we believe to be dominated by Rodel, a division of Rohm and

Haas. Our strategy to enhance our sales of wafer carriers includes developing additional niche markets for templates and providing a high level of customer support and products at a lower cost than our competitors.

EMPLOYEES

As of September 30, 2008, we employed approximately 210 people. Of these employees, approximately 10 were based at our corporate offices in Tempe, Arizona, 35 at our manufacturing plant in Carlisle, Pennsylvania, 20 at our manufacturing plant in Billerica, Massachusetts, 80 at our facilities in The Netherlands, 40 at our facilities in France and 25 in our contract semiconductor manufacturing support services business located in Austin, Texas. Of the approximately 35 people employed at our Carlisle, Pennsylvania facility, about 20 were represented by the United Auto Workers Union - Local 1443. We have never experienced a work stoppage or strike. We consider our employee relations to be good.

AVAILABLE INFORMATION

Our annual, quarterly and current reports, proxy statements and other information, including the amendments to those reports, are available, without charge, on our website, www.amtechsystems.com, as soon as reasonably practicable after they are filed electronically with the Securities and Exchange Commission (SEC). In addition, our SEC filings are available over the internet at the SEC s website at http://www.sec.gov.

You may also read and copy any document that we file at the SEC s public reference room at:

Public Reference Room
100 F Street, N.E.
Washington, D.C. 20549
1-800-SEC-0330

Please call the SEC at 1-800-SEC-0330 for more information on the public reference room and their copy charges. Copies of our key governance documents, code of ethics, and charters of our audit, compensation and corporate governance committees are also available on our website.

Information contained on our website is not part of this Annual Report and is not incorporated in this Annual Report by reference.

ITEM 1A. RISK FACTORS

Because of the following factors, as well as other variables affecting our operating results and financial condition, past performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods.

Risks Related to our Business and Industry.

Recent deterioration in the global economy and credit markets may materially and adversely affect our future results of operations.

Our operations may be adversely affected by the recent deterioration in the global economy causing our customers to delay or cease spending on our products. The recent tightening of the credit markets may negatively impact our operations by affecting the liquidity and/or solvency of our customers and key suppliers and the ability of our customers to obtain credit to finance purchases of our products. If the global economy and credit markets continue to deteriorate, our financial condition and results of operations will likely be adversely impacted. We have no way of determining how long the global economic crisis, including the tightening of credit markets, will last.

If demand declines for horizontal diffusion furnaces and related equipment, or for solar industry products, our financial position and results of operations could be materially and adversely affected.

The revenue of our solar and semiconductor equipment segment, which accounted for approximately 90% of our consolidated net revenue as of September 30, 2008, is comprised primarily of sales of horizontal diffusion furnaces and our automation products. Our automation products are useable only with horizontal diffusion furnaces. There is a trend in the semiconductor industry, related to the trend to produce smaller chips on larger wafers, towards the use in semiconductor manufacturing facilities of newer technology, such as vertical diffusion furnaces. Vertical diffusion furnaces are more efficient than the horizontal diffusion furnaces in certain manufacturing processes for smaller chips on larger wafers. As early as 1994, we had expected that demand for our horizontal diffusion furnaces would decline as a result of this trend. We believe this trend has not yet adversely affected us to the extent originally expected. However, to the extent that the trend to use vertical diffusion furnaces over horizontal diffusion furnaces continues, our revenue may decline and our corresponding ability to generate income may be adversely affected. A significant part of our growth strategy involves expanding our sales to the solar industry. The solar industry is subject to risks relating to industry shortages of polysilicon, (which we discuss further below), the continuation of government incentives, the availability of specialized capital equipment, global energy prices and rapidly changing technologies offering alternative energy sources. If the demand for solar industry products declines, the demand by the solar industry for our products would also decline and our financial position and results of operations would be harmed.

We may not be able to increase or sustain our recent growth rate, and we may not be able to manage our future growth effectively.

We may be unable to continue to expand our business or manage future growth. Our recent expansion has placed, and our planned expansion and any other future expansion will continue to place, a significant strain on our management, personnel, systems and resources. We have recently purchased additional equipment and real estate to significantly expand our manufacturing capacity and expect to hire additional employees to support an increase in manufacturing, research and development and sales and marketing efforts. To successfully manage our growth, we believe we must effectively:

- hire, train, integrate and manage additional field service engineers, sales and marketing personnel, and financial and information technology personnel;
- retain key management and augment our management team, particularly if we lose key members;
- continue to enhance our customer resource management and manufacturing management systems;
- implement and improve additional and existing administrative, financial and operations systems, procedures and controls;
- expand and upgrade our technological capabilities; and
- manage multiple relationships with our customers, suppliers and other third parties.

We may encounter difficulties in effectively managing the budgeting, forecasting and other process control issues presented by rapid growth. If we are unable to manage our growth effectively, we may not be able to take advantage of market opportunities, develop new solar cells and other products, satisfy customer requirements,

execute our business plan or respond to competitive pressures.

The ongoing volatility of the solar and semiconductor equipment industry may negatively impact our business and results of operations and our corresponding ability to efficiently budget our expenses.

The solar and semiconductor equipment industries are highly cyclical. As such, demand for and the profitability of our products can change significantly from period to period as a result of numerous factors, including, but not limited to, changes in:

- global and regional economic conditions;
- changes in capacity utilization and production volume of manufacturers of semiconductors, silicon wafers, solar cells and MEMS;

- the shift of semiconductor production to Asia, where there often is increased price competition; and
- the profitability and capital resources of those manufacturers.

For these and other reasons, our results of operations for past periods may not necessarily be indicative of future operating results.

Since our business has historically been subject to cyclical industry conditions, we have experienced significant fluctuations in our quarterly new orders and net revenue, both within and across years. Demand for solar semiconductor and silicon wafer manufacturing equipment and related consumable products has also been volatile as a result of sudden changes in solar and semiconductor supply and demand and other factors in both semiconductor devices and wafer fabrication processes. Our orders tend to be more volatile than our revenue, as any change in demand is reflected immediately in orders booked, which are net of cancellations, while revenue tends to be recognized over multiple quarters as a result of procurement and production lead times and the deferral of certain revenue under our revenue recognition policies. Customer delivery schedules on large system orders can also add to this volatility since we generally recognize revenue for new product sales on the date of customer acceptance or the date the contractual customer acceptance provisions lapse. As a result, the fiscal period in which we are able to recognize new products revenue is typically subject to the length of time that our customers require to evaluate the performance of our equipment after shipment and installation, which could cause our quarterly operating results to fluctuate.

The purchasing decisions of our customers are highly dependent on the economies of both their domestic markets and the worldwide semiconductor industry. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. The cyclical nature of our marketplace affects our ability to accurately budget our expense levels, which are based in part on our projections of future revenue.

When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be able to make timely adjustments to our cost and expense structure to correspond to the prevailing market conditions. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand, which may require additional liquidity. We can provide no assurance that these objectives can be met in a timely manner in response to changes within the industry cycles. If we fail to respond to these cyclical changes, our business could be seriously harmed.

During the most recent down cycle, beginning in the first half of 2001, the semiconductor industry experienced excess production capacity that caused semiconductor manufacturers to decrease capital spending. We do not have long-term volume production contracts with our customers and we do not control the timing or volume of orders placed by our customers. Whether and to what extent our customers place orders for any specific products and the mix and quantities of products included in those orders are factors beyond our control. Insufficient orders would result in under-utilization of our manufacturing facilities and infrastructure and will negatively affect our financial position and results of operations.

The semiconductor equipment industry is competitive and we are relatively small in size and have fewer resources in comparison with our competitors.

Our industry includes large manufacturers with substantial resources to support customers worldwide. Our future performance depends, in part, upon our ability to continue to compete successfully worldwide. Some of our competitors are diversified companies having substantially greater financial resources and more extensive research, engineering, manufacturing, marketing and customer service and support capabilities than we can provide. We face competition from companies whose strategy is to provide a broad array of products, some of which compete with the products and services that we offer. These competitors may bundle their products in a manner that may discourage customers from purchasing our products. In addition, we face competition from smaller emerging semiconductor equipment companies whose strategy is to provide a portion of the products and services that we offer at often a lower price than ours, using innovative technology to sell products into specialized markets. Loss of competitive

position could impair our prices, customer orders, revenue, gross margin and market share, any of which would negatively affect our financial position and results of operations. Our failure to compete successfully with these other companies would seriously harm our business. There is a risk that larger, better-financed competitors will develop and market more advanced products than those that we currently offer, or that competitors with greater financial resources may decrease prices thereby putting us under financial pressure. The occurrence of any of these events could have a negative impact on our revenue.

We are dependent on key personnel for our business and product development and sales, and any loss of our key personnel to competitors or other industries could dramatically impact our ability to continue operations.

Historically, our product development has been accomplished through cooperative efforts with key customers. Our relationship with some customers is substantially dependent on personal relations established by our President and Chief Executive Officer. Furthermore, our relationship with a major European customer that has been instrumental in the development of our small batch vertical furnace is substantially dependent upon our European General Manager. We are also dependent upon our Technical Director of R2D for the development of our automation technology. While there can be no assurance that such relationships will continue, such cooperation is expected to continue to be a significant element in our future development efforts thereby continuing our reliance on certain of our key personnel.

We are the beneficiary of life insurance policies on the life of our President and Chief Executive Officer, Mr. J. S. Whang, in the amount of $2,000,000, but there is no assurance that such amount will be sufficient to cover the cost of finding and hiring a suitable replacement for Mr. Whang. It may not be feasible for any successor to maintain the same business relationships that Mr. Whang has established. If we were to lose the services of Mr. Whang for any reason, it could have a material adverse affect on our business.

We also depend on the management efforts of our officers and other key personnel and on our ability to attract and retain key personnel. During times of strong economic growth, competition is intense for highly skilled employees. There can be no assurance that we will be successful in attracting and retaining such personnel or that we can avoid increased costs in order to do so. There can be no assurance that employees will not leave Amtech or compete against us. Our failure to attract additional qualified employees, or to retain the services of key personnel, could negatively impact our financial position and results of operations.

We may not be able to keep pace with the rapid change in the technology we use in our products.

Success in the semiconductor equipment industry depends, in part, on continual improvement of existing technologies and rapid innovation of new solutions. For example, the semiconductor industry continues to shrink the size of semiconductor devices. These and other evolving customer needs require us to respond with continued development programs.

Technical innovations are inherently complex and require long development cycles and appropriate professional staffing. Our future business success depends on our ability to develop and introduce new products, or new uses for existing products, that successfully address changing customer needs, win market acceptance of these new products or uses and manufacture any new products in a timely and cost-effective manner. If we do not develop

and introduce new products, technologies or uses for existing products in a timely manner and continually find ways of reducing the cost to produce them in response to changing market conditions or customer requirements, our business could be seriously harmed.

Acquisitions can result in an increase in our operating costs, divert management's attention away from other operational matters and expose us to other risks associated with acquisitions.

We continually evaluate potential acquisitions and consider acquisitions an important part of our future growth strategy. In the past, we have made acquisitions of, or significant investments in, other businesses with synergistic products, services and technologies and plan to continue to do so in the future. Acquisitions, including our recent acquisition of R2D, involve numerous risks, including, but not limited to:

- difficulties and increased costs in connection with integration of geographically diverse personnel, operations, technologies and products of acquired companies;

- diversion of management's attention from other operational matters;
- the potential loss of key employees of acquired companies;
- lack of synergy, or inability to realize expected synergies, resulting from the acquisition;
- the risk that the issuance of our common stock, if any, in an acquisition or merger could be dilutive to our shareholders, if anticipated synergies are not realized; and
- acquired assets becoming impaired as a result of technological advancements or worse-than-expected performance of the acquired company.

Our financial position and results of operations may be materially harmed if we are unable to recoup our investment in research and development.

The rapid change in technology in our industry requires that we continue to make investments in research and development in order to enhance the performance and functionality of our products, to keep pace with competitive products and to satisfy customer demands for improved performance, features and functionality. There can be no assurance that revenue from future products or enhancements will be sufficient to recover the development costs associated with such products or enhancements, or that we will be able to secure the financial resources necessary to fund future development. Research and development costs are typically incurred before we confirm the technical feasibility and commercial viability of a product, and not all development activities result in commercially viable products. In addition, we cannot ensure that products or enhancements will receive market acceptance, or that we will be able to sell these products at prices that are favorable to us. Our business could be seriously harmed if we are unable to sell our products at favorable prices, or if our products are not accepted by the markets in which we operate.

If third parties violate our proprietary rights, in which we have made significant investments, such events could result in a loss of value of some of our intellectual property or costly litigation.

Our success is dependent in part on our technology and other proprietary rights. We own various United States and international patents and have additional pending patent applications relating to some of our products and technologies. The process of seeking patent protection is lengthy and expensive, and we cannot be certain that pending or future applications will actually result in issued patents, or that issued patents will be of sufficient scope or strength to provide meaningful protection or commercial advantage to us. Other companies and individuals, including our larger competitors, may develop technologies that are similar or superior to our technology or design around the patents we own or license. We also maintain trademarks on certain of our products and claim copyright protection for certain proprietary software and documentation. However, we can give no assurance that our trademarks and copyrights will be upheld or successfully deter infringement by third parties. Recently, the patent covering technology that we license and use in our manufacture of insert carriers has expired, which may have the effect of diminishing or eliminating any competitive advantage we may have

with respect to this manufacturing process.

While patent, copyright and trademark protection for our intellectual property is important, we believe our future success in highly dynamic markets is most dependent upon the technical competence and creative skills of our personnel. We attempt to protect our trade secrets and other proprietary information through confidentiality agreements with our customers, suppliers, employees and consultants and through other security measures. We also maintain exclusive and non-exclusive licenses with third parties for the technology used in certain products. However, these employees, consultants and third parties may breach these agreements, and we may not have adequate remedies for wrongdoing. In addition, the laws of certain territories in which we develop, manufacture or sell our products may not protect our intellectual property rights to the same extent as do the laws of the United States.

We may face intellectual property infringement claims that could be time-consuming and costly to defend and could result in our loss of significant rights and the assessment of treble damages.

From time to time, we have received communications from other parties asserting the existence of patent rights or other intellectual property rights that they believe cover certain of our products, processes, technologies or information. In such cases, we evaluate our position and consider the available alternatives, which may include seeking licenses to use the technology in question on commercially reasonable terms or defending our position. We cannot ensure that licenses can be obtained, or if obtained will be on acceptable terms, or that litigation or other administrative proceedings will not occur.

Some of these claims may lead to litigation. We cannot assure you that we will prevail in these actions, or that other actions alleging misappropriation or misuse by us of third-party trade secrets, infringement by us of third-party patents and trademarks or the validity of our patents, will not be asserted or prosecuted against us. Intellectual property litigation, regardless of outcome, is expensive and time-consuming, could divert management□s attention from our business and have a material negative effect on our business, operating results or financial condition. If there is a successful claim of infringement against us, we may be required to pay substantial damages (including treble damages if we were to be found to have willfully infringed a third party□s patent) to the party claiming infringement, develop non-infringing technology, stop selling or using technology that contains the allegedly infringing intellectual property or enter into royalty or license agreements that may not be available on acceptable or commercially practical terms, if at all. Our failure to develop non-infringing technologies or license the proprietary rights on a timely basis could harm our business. Parties making infringement claims on future issued patents may be able to obtain an injunction that would prevent us from selling or using our technology that contains the allegedly infringing intellectual property, which could harm our business.

Our reliance on sales to a few major customers and granting credit to those customers places us at financial risk.

We currently sell to a relatively small number of customers, and we expect our operating results will likely continue to depend on sales to a relatively small number of customers for the foreseeable future, as well as the ability of these customers to sell products that require our products in their manufacture. During fiscal 2008 we had one customer that individually represented 20% of revenue. Many of our customer relationships have been developed over a short period of time and certain customers are in their preliminary stages of development. The loss of sales to any of these customers would have a significant negative impact on our business. Our agreements with these customers may be cancelled if we fail to meet certain product specifications, materially breach the agreement or in the event of bankruptcy, and our customers may seek to renegotiate the terms of current agreements or renewals. We cannot be certain that these customers will generate significant revenue for us in the future nor that these customer relationships will continue to develop. If our relationships with our other customers do not continue to develop, we may not be able to expand our customer base or maintain or increase our revenue.

As of September 30, 2008, accounts receivable from two customers each exceeded 10% of accounts receivable; these two customers accounted for 22% and 20% of total accounts receivable, respectively. A concentration of our receivables from one or a small number of customers places us at risk. If any one or more of our major customers does not pay us it could adversely affect our financial position and results of operations. We attempt to manage this credit risk by performing credit checks, by requiring significant partial payments prior to shipment

where appropriate and by actively monitoring collections. We also require letters of credit of certain customers depending on the size of the order, type of customer or its creditworthiness and its country of domicile.

If any of our customers cancels or fails to accept a large system order, our financial position and results of operations could be materially and adversely affected.

Our backlog includes orders for large systems, such as our diffusion furnaces, with system prices of up to and in excess of $1.0 million depending on the system configuration, options included and any special requirements of the customer. Because our orders are typically subject to cancellation or delay by the customer, our backlog at any particular point in time is not necessarily representative of actual sales for succeeding periods, nor is backlog any assurance that we will realize revenue or profit from completing these orders. Our financial position and results of operations could be materially and adversely affected should any large systems order be cancelled prior to shipment,

or not be accepted by the customer. We have experienced significant cancellations in the past, including $1.2 million in fiscal 1999, $3.5 million in 2001, and $1.2 million in 2002. We have not experienced any significant cancellations since 2002. Likewise, a significant change in the liquidity or financial position of any of our customers that purchase large systems could have a material impact on the collectability of our accounts receivable and our future operating results. Our backlog does not provide any assurance that we will realize revenue or profit from those orders or indicate in which period net revenue will be recognized, if ever.

Our business might be adversely affected by a decline in our sales to foreign customers.

During fiscal 2007, 72% of our net revenue came from customers outside of North America. During fiscal 2008, 84% of our net revenue came from customers outside of North America as follows:

- Asia 68% (includes 46% to China and 14% to Taiwan); and
- Europe 16%.

Because of our significant dependence on revenue from international customers, our operating results could be negatively affected by a decline in the economies of any of the countries or regions in which we do business. Each region in the global semiconductor equipment market exhibits unique characteristics that can cause capital equipment investment patterns to vary significantly from period to period. Periodic local or international economic downturns, trade balance issues, political instability and fluctuations in interest and currency exchange rates could negatively affect our business and results of operations.

We recorded foreign currency transaction losses of $0.01 million during fiscal 2008, 2007 and 2006. While our business has not been materially affected in the past by currency fluctuations, there is a risk that it may be materially adversely affected in the future. Such risk includes possible losses due to currency exchange rate fluctuations, possible future prohibitions against repatriation of earnings, or proceeds from disposition of investments, and from possible social and military instability in the case of India, South Korea, Taiwan and possibly elsewhere. Our wholly-owned subsidiary, Tempress Systems, has conducted its operations in The Netherlands since 1995 and during 2005 we established a subsidiary in Germany to conduct the European sales of our Bruce Technologies product line. In October 2007 we completed our acquisition of R2D, a French company. As a result, such operations are subject to the taxation policies, employment and labor laws, transportation regulations, import and export regulations and tariffs, possible foreign exchange restrictions, international monetary fluctuations, and other political, economic and legal policies of that nation, the European Economic Union and the other European nations in which it conducts business. Consequently, we might encounter unforeseen or unfamiliar difficulties in conducting our European operations. Changes in such laws and regulations may have a material adverse effect on our revenue and costs.

If our critical suppliers fail to deliver sufficient quantities of quality product in a timely and cost-effective manner, it could negatively affect our business.

We use a wide range of materials and services in the production of our products including custom electronic and mechanical components, and we use numerous suppliers of materials. We generally do not have guaranteed supply arrangements with our suppliers. Because of the variability and uniqueness of customer orders, we try to

avoid maintaining an extensive inventory of materials for manufacturing. Key suppliers include two steel mills capable of producing the types of steel to the tolerances needed for our wafer carriers, an injection molder that molds plastic inserts into our steel carriers, an adhesive manufacturer that supplies the critical glue used in the production of the semiconductor polishing templates and a pad supplier that produces a unique material used to attach semiconductor wafers to the polishing template. We also rely on third parties for certain machined parts, steel frames and metal panels and other components used particularly in the assembly of semiconductor production equipment.

Although we make what we believe are reasonable efforts to ensure that parts are available from multiple suppliers, this is not always practical or even possible; accordingly, some key parts are being procured from a single supplier or a limited group of suppliers. During the semiconductor industry peak years, increases in demand for capital equipment resulted in longer lead-times for many important system components. Future increases in demand could cause delays in meeting shipments to our customers. Because the selling price of some of our systems exceeds $1.0

million, the delay in the shipment of even a single system could cause significant variations in our quarterly revenue. There can be no assurance that our financial position and results of operations will not be materially and adversely affected if, in the future, we do not receive in a timely and cost-effective manner a sufficient quantity and quality of parts to meet our production requirements.

The solar power industry is currently experiencing an industry-wide shortage of polysilicon. This shortage poses several risks to our business, including possible constraints on revenue growth and possible decreases in our gross margins and profitability.

Many of our customers are solar cell manufacturers. Polysilicon is an essential raw material in the production of solar cells. There is currently an industry-wide shortage of polysilicon, which has resulted in significant price increases. We expect that the average spot price of polysilicon will continue to increase and we expect that polysilicon demand will continue to outstrip supply throughout 2009 and potentially for a longer period. The inability of our solar industry customers to obtain sufficient polysilicon at commercially reasonable prices, or at all, would adversely affect future customer demand for our products and could cause us to make fewer shipments and generate lower than anticipated revenue, thereby seriously harming our business, financial condition and results of operations.

We might require additional financing to expand our operations.

We believe that current cash balances, our existing line of credit, cash flows generated from our operations and additional available financing will provide adequate working capital for at least the next twelve months. However, we may require additional financing for further implementation of our growth plans. There is no assurance that any additional financing will be available if and when required, or, even if available, that it would not materially dilute the ownership percentage of the then existing shareholders, result in increased expenses or result in covenants or special rights that would restrict our operations.

We are exposed to risks from legislation requiring companies to evaluate their internal control over financial reporting.

Section 404 of the Sarbanes-Oxley Act of 2002 requires our management to report on the effectiveness of our internal control over financial reporting beginning with this report. Our independent registered public accounting firm is required to attest to the effectiveness of our internal control over financial reporting beginning in fiscal 2008. We have an ongoing program to perform the system and process evaluation and testing necessary to comply with these requirements. We have incurred increased expense and have devoted additional management resources to Section 404 compliance and we expect that some increased expense and use of management resources will continue in the future. If, in the future, our CEO, chief financial officer or independent registered public accounting firm determine that our internal control over financial reporting is not effective as defined under Section 404, investor perceptions of our company may be adversely affected and could cause a decline in the market price of our stock.

Terrorist attacks and threats or actual war may negatively impact all aspects of our operations, revenue, costs and stock price.

The 2001 terrorist attacks in the United States, as well as events occurring in response or connection to them, including future terrorist attacks against United States targets, rumors or threats of war, actual conflicts involving the United States or its allies or military or trade disruptions impacting our domestic or foreign suppliers of parts, components and subassemblies, may impact our operations, including, among other things, by causing delays or losses in the delivery of supplies or finished goods and decreased sales of our products. More generally, any of these events could cause consumer confidence and spending to decrease or result in increased volatility in the United States and worldwide financial markets and economy. They could also result in economic recession in the United States or abroad. Any of these occurrences could have a significant adverse impact on our financial position and results of operations.

We face the risk of product liability claims or other litigation, which could be expensive and divert management from running our business.

The manufacture and sale of our products, which in operation involve toxic materials, involve the risk of product liability claims. In addition, a failure of one of our products at a customer site could interrupt the business operations of our customer. Our existing insurance coverage limits may not be adequate to protect us from all liabilities that we might incur in connection with the manufacture and sale of our products if a successful product liability claim or series of product liability claims were brought against us. We may also be involved in other legal proceedings or claims and experience threats of legal action from time to time in the ordinary course of our business.

Where appropriate, we intend to vigorously defend all claims. However, any actual or threatened claims, even if not meritorious or material, could result in the expenditure of significant financial and managerial resources. The continued defense of these claims and other types of lawsuits could divert management s attention away from running our business. In addition, required amounts to be paid in settlement of any claims, and the legal fees and other costs associated with such settlement, cannot be estimated and could, individually or in the aggregate, materially harm our financial condition.

We are subject to environmental regulations, and our inability or failure to comply with these regulations could result in significant costs or the suspension of our ability to operate segments of our business.

We are subject to environmental regulations in connection with our business operations, including regulations related to manufacturing and our customers use of our products. From time to time, we receive notices regarding these regulations. It is our policy to respond promptly to these notices and to take any necessary corrective action. Our failure or inability to comply with existing or future environmental regulations could result in significant remediation liabilities, the imposition of fines and/or the suspension or termination of development, manufacturing or use of certain of our products, each of which could damage our financial position and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We believe that our properties are adequate for our current needs. In addition, we believe that adequate space can be obtained to meet our foreseeable business needs. The following chart identifies the principal properties which we own or lease.

Location	Use	Size	Monthly Rent	Lease Expir
Solar and Semiconductor Equipment Segment				
Tempe, AZ	Corporate	15,000 sf	$ 12,000	(1)

Austin, TX	Mfg Support	(2)	(2)	(2)
Billerica, MA	Office, Mfg. &Warehouse	30,000 sf	$ 18,000	8/31/201
Heerde, The Netherlands	Office & Mfg.	10,000 sf	Owned	N/A
Vaassen, The Netherlands	Office, Mfg. &Warehouse	54,000 sf	Owned	N/A
Vaassen, The Netherlands	Warehouse	5,000 sf	$ 4,000	12/31/20
Vaassen, The Netherlands	Warehouse	11,000 sf	$ 5,000	10/31/20
Clapiers, France	Office, Mfg. &Warehouse	12,000 sf	$ 9,000	9/30/2016
Clapiers, France	Manufacturing	3,000 sf	$ 3,000	3/30/201
Le Cres, France	Warehouse	3,000 sf	$ 2,000	8/31/200
Polishing Supplies Segment				
Carlisle, PA	Office & Mfg.	22,000 sf	$ 13,000	6/30/200

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(1) We are currently leasing this property on a month to month basis.

(2) Services are performed in customer's facilities.

(3) This lease can be cancelled by the company with six months notice beginning October 1, 2010.

ITEM 3. LEGAL PROCEEDINGS

None.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.

PART II

ITEM 5. MARKET FOR REGISTRANT□S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

MARKET INFORMATION

Our common stock, par value $0.01 per share (□Common Stock□), began trading on the NASDAQ Global Market (formerly the NASDAQ National Market), under the symbol □ASYS,□ on April 18, 2001. From 1983 to 2001, our Common Stock was traded on the NASDAQ SmallCap Market. On December 5, 2008, the closing price of our Common Stock as reported on the NASDAQ Global Market was $3.48 per share. The following table sets forth the high and low bid price at which the shares of our Common Stock traded for each quarter of fiscal 2008 and 2007, as reported by the NASDAQ Global Market.

	Fiscal 2008		Fiscal 2007	
	High	Low	High	Low
First quarter	$ 17.74	$ 10.82	$ 8.00	$ 5.95
Second quarter	13.80	8.75	8.10	6.65
Third quarter	13.29	9.11	9.21	7.25
Fourth quarter	11.54	8.69	14.26	8.48

COMPARISON OF STOCK PERFORMANCE

The following line graph compares cumulative total shareholder return, assuming reinvestment of dividends, for: the Company's Common Stock, the NASDAQ Composite Index and the NASDAQ Industrial Index. Because the Company did not pay dividends on its Common Stock during the measurement period, the calculation of the cumulative total shareholder return on the Company's Common Stock did not include dividends. The following graph assumes that $100 was invested on October 1, 2003.

HOLDERS

As of December 4, 2008, there were 91 shareholders of record of our Common Stock. Based upon a recent survey of brokers, we estimate there were approximately an additional 3,753 beneficial shareholders who held shares in brokerage or other investment accounts as of that date.

DIVIDENDS

We have never paid dividends on our Common Stock. Our present policy is to apply cash to investment in product development, acquisition or expansion; consequently, we do not expect to pay dividends on Common Stock in the foreseeable future.

SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS

The following table sets forth certain information, as of September 30, 2008, concerning outstanding options and rights to purchase Common Stock granted to participants in all of the Company's equity compensation plans and the number of shares of Common Stock remaining available for issuance under such equity compensation plans.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders (1)	487,053	8.39	440,787
Equity compensation plans not approved by security holders	-		-
Total	487,053		440,787

(1) Represents the 1998 Employee Stock Option Plan, the 2007 Employee Stock Incentive Plan and the Non-Employee Director Stock Option Plan and any respective amendments thereto.

ITEM 6. SELECTED FINANCIAL DATA

This selected financial data should be read in conjunction with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our consolidated financial statements (including the related notes thereto) contained elsewhere in this report.

	Years Ended September 30,			
	2008[1]	2007	2006	2005
Operating Data:				
Net revenue	$ 80,296	$ 45,984	$ 40,445	$ 27,899
Gross profit	$ 22,961	$ 12,810	$ 10,575	$ 7,668
Gross profit %	28.6%	27.9%	26.1%	27.5%
Operating income (loss)	$ 3,802	$ 1,741	$ 1,635	$ (244)
Net income (loss)	$ 2,857	$ 2,417	$ 1,318	$ (259)
Dividends on convertible preferred stock	$ -	$ -	$ (81)	$ (76)
Net income (loss) attributable to common	$ 2,857	$ 2,417	$ 1,237	$ (335)
Earnings (loss) per share:				
Basic earnings (loss) per share	$ 0.33	$ 0.45	$ 0.40	$ (0.12)
Diluted earnings (loss) per share	$ 0.32	$ 0.44	$ 0.38	$ (0.12)
Order backlog[3]	$ 46,719	$ 22,866	$ 13,600	$ 14,388
Balance Sheet Data:				
Cash and cash equivalents	$ 37,501	$ 18,370	$ 6,433	$ 3,309
Working capital	$ 57,240	$ 30,492	$ 11,883	$ 9,968
Current ratio	3.2:1	3.6:1	2.6:1	3.7:1
Total assets	$ 102,355	$ 50,666	$ 23,563	$ 17,701
Total current liabilities	$ 26,159	$ 11,718	$ 7,337	$ 3,752
Long-term obligations	$ 1,663	$ 744	$ 617	$ 741
Convertible preferred stock	$ -	$ -	$ -	$ 1,935
Total stockholders' equity	$ 74,533	$ 38,204	$ 15,609	$ 13,208

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(1) Effective October 1, 2007, the Company acquired 100% of the equity of R2D Ingenierie.

(2) On July 1, 2004, the Company acquired the Bruce Technologies horizontal furnace product line from Kokusai.

(3) The backlog as of September 30, 2008, 2007, 2006, 2005 and 2004 includes $1.3 million, $0.9 million, $0.9 million, $1.0 million, and $0.7 million, respectively, of open orders or deferred revenue on which we anticipate no gross margin.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read in conjunction with our Consolidated Financial Statements and the related notes included in Item 8, "Financial Statements and Supplementary Data" in this Annual Report on Form 10-K. This discussion contains forward-looking statements, which involve risk and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of certain factors including, but not limited to, those discussed in "Risk Factors" and elsewhere in this Annual Report on Form 10-K.

Introduction

Management's Discussion and Analysis ("MD&A") is intended to facilitate an understanding of our business and results of operations. MD&A consists of the following sections:

- Overview: a summary of our business.
- Results of Operations: a discussion of operating results.
- Liquidity and Capital Resources: an analysis of cash flows, sources and uses of cash and financial position.
- Contractual Obligations and Commercial Commitments

- Critical Accounting Policies: a discussion of critical accounting policies that require the exercise of judgments and estimates.
- Impact of Recently Issued Accounting Pronouncements: a discussion of how we are affected by recent pronouncements.

Overview

We operate in two segments: solar and semiconductor equipment and polishing supplies. Our solar and semiconductor equipment segment is a leading supplier of thermal processing systems, including related automation, parts and services, to the solar/photovoltaic, semiconductor, silicon wafer and MEMS industries.

Our polishing supplies segment is a leading supplier of wafer carriers to manufacturers of silicon wafers. The polishing segment also manufacturers polishing templates, steel carriers and double-sided polishing and lapping machines to fabricators of optics, quartz, ceramics and metal parts, and to manufacturers of medical equipment components.

Our customers are primarily manufacturers of solar cells and integrated circuits. The solar cell and semiconductor industries are cyclical and historically have experienced significant fluctuations. Our revenue is impacted by these broad industry trends.

In October 2007, we acquired 100% of the equity of R2D Ingenierie (R2D), a solar cell and semiconductor automation equipment manufacturing company. The purpose of the acquisition was to expand our automation products which are used in solar diffusion and semiconductor manufacturing processes. The acquisition of the technology and business of R2D enhances the growth strategy by allowing us to increase revenue by offering to the solar industry an integrated system under the Tempress® brand.

In June 2008, we reorganized the Bruce Technologies® operations to better position the company for profitability in light of lower plant utilization resulting from a slowdown in the semiconductor industry. As a result of this reorganization, we reduced the number of personnel and recorded a charge of $0.4 million in the third quarter of fiscal 2008.

In June 2006, we adopted a plan to consolidate the manufacturing of our automation product line into facilities already used to manufacture diffusion furnaces. Our automation products are often sold in conjunction with new diffusion furnaces. As a result of this decision, we recorded approximately $0.2 million of restructuring charges in fiscal 2006.

In July 2004, we completed the acquisition of the Bruce Technologies® horizontal diffusion furnace product line from Kokusai Semiconductor Equipment Corporation, which we believe makes us a leading manufacturer of horizontal diffusion furnaces.

Results of Operations

The following table sets forth certain operational data as a percentage of net revenue for the periods indicated:

Years Ended September 30,

	2008	2007	2006
Net revenue	100.0%	100.0%	100.0%
Cost of sales	71.4%	72.1%	73.9%
Gross margin	28.6%	27.9%	26.1%
Selling, general and administrative	22.1%	22.9%	20.5%
Restructuring charge	0.4%	0.0%	0.5%
Research and development	1.4%	1.2%	1.1%
Operating income	4.7%	3.8%	4.0%
Interest and other income (expense), net	1.0%	0.7%	0.0%
Income before income taxes	5.7%	4.5%	4.0%
Income tax provision (benefit)	2.1%	(0.8%)	0.7%
Net income	3.6%	5.3%	3.3%

Fiscal 2008 compared to Fiscal 2007

Net Revenue

Net revenue consists of revenue recognized upon shipment or installation of products using proven technology and upon acceptance of products using new technology. In addition, spare parts sales are recognized upon shipment. Service revenue is recognized upon completion of the service activity or ratably over the term of the service contract. The majority of our revenue is generated from large furnace systems sales which, depending on the timing of shipment and installation, can have a significant impact on our revenue, gross margins and earnings in any given period. *See* Critical Accounting Policies Revenue Recognition.

	Years Ended September 30,			
Segment	2008	2007	Inc (Dec)	%
		(dollars in thousands)		
Solar and Semiconductor Equipment Segment	72,029	37,657	34,372	91%
Polishing Supplies Segment	8,267	8,327	(60)	(1%)
Total Net Revenue	$ 80,296	$ 45,984	$ 34,312	75%

Net revenue for the year ended September 30, 2008 increased $34.3 million or 75% compared to the year ended September 30, 2007. Overall growth in net revenue in fiscal 2008 was driven primarily by our continued penetration of the solar market where revenue increased $37.6 million or more than 300% compared to fiscal 2007. Within the solar and semiconductor equipment segment, net revenue from the solar market was $50.1 million and $12.5 million in fiscal 2008 and 2007, respectively, while net revenue from the semiconductor market was $21.9 million in fiscal 2008 compared to $25.2 million in fiscal 2007 a decrease of 14% due primarily to the downturn in the semiconductor industry. R2D generated $3.2 million of semiconductor equipment revenue in fiscal 2008 for which there were no comparable revenues in fiscal 2007. Revenue in the polishing supplies segment was $8.3 million for the fiscal years ended September 30, 2008 and 2007. Increased demand for our polishing machines was offset by lower shipments of insert carriers caused by increased competition in the insert carrier market as well as the downturn in the semiconductor industry. The recent global credit crisis and related downturn in the global economy has caused many of our customers to delay or suspend their capacity expansion plans. Some of customers have and other may request delays in the shipment of their orders. As a result, future revenues from both the solar and semiconductor markets are likely to be negatively impacted by these recent events.

Backlog

Our backlog as of September 30, 2008 and 2007 was $46.7 million and $22.9 million, respectively, a 104% increase. Our backlog as of September 30, 2008 included approximately $36.7 million of orders from our solar industry

customers compared to $17.4 million of orders from solar industry customers as of September 30, 2007. The orders included in our backlog are generally credit approved customer purchase orders expected to ship within the next twelve months. Because our orders are typically subject to cancellation or delay by the customer, our backlog at any particular point in time is not necessarily representative of actual sales for succeeding periods, nor is backlog any assurance that we will realize revenue or profit from completing these orders. The recent global credit crisis and related downturn in the global economy has caused many of our customers to delay or suspend their capacity expansion plans. As a result, the delivery times of many of the orders in our backlog may be delayed or even cancelled by our customers. Our backlog also includes revenue deferred pursuant to our revenue recognition policy, derived from orders that have already been shipped, but which have not met the criteria for revenue recognition. The backlog as of September 30, 2008 and 2007 includes $1.3 million and $0.9 million, respectively, of open orders or deferred revenue on which we anticipate no gross margin.

Gross Profit

Gross profit is the difference between net revenue and cost of goods sold. Cost of goods sold consists of purchased material, labor and overhead to manufacture equipment or spare parts and the cost of service and support to customers for warranty, installation and paid service calls. Gross margin is gross profit as a percentage of net revenue.

	Years Ended September 30,			
Segment	**2008**	**2007**	**Inc (Dec)**	%
	(dollars in thousands)			
Solar and Semiconductor Equipment Segment	20,500	9,995	10,505	105%
Polishing Supplies Segment	2,461	2,815	(354)	(13%)
Total Gross Profit	$ 22,961	$ 12,810	$ 10,151	79%
Gross Margin	29%	28%		

Gross profit increased in fiscal 2008 by $10.2 million, or 79%, over fiscal 2007. The increase was driven by higher shipments during the year as well as improved margin percentage. Gross margin improved to 29% in fiscal 2008 from 28% in fiscal 2007. Gross margin in the solar and semiconductor equipment segment improved primarily due to realizing economies of scale. Increased volume resulted in improved capacity utilization, increased purchasing power and improved labor efficiencies in the solar and semiconductor equipment segment. Increases in gross margin were partially offset by higher warranty costs and higher deferred profit. We deferred $2.9 million of profit in fiscal 2008, net of acceptances, compared to a net deferral of $1.0 million in fiscal 2007. Gross profit and gross margin in the polishing supplies segment were lower in fiscal 2008 as compared to fiscal 2007 due mainly to changes in product mix. We sold higher volumes of polishing machines at a relatively low margin as compared to margins on insert carriers. Increased competition in the insert carrier market resulted in lower volumes in this market.

The timing of revenue recognition can have a particularly significant effect on gross margin when the equipment revenue of an order is recognized in one period and the remainder of the revenue attributed to holdbacks is recognized in a later period. The portion of revenue attributed to the holdbacks generally comprises 10-20% of an order and has a significantly higher gross margin percentage.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of the cost of employees, consultants and contractors, as well as facility costs, sales commissions, legal and accounting fees and promotional marketing expenses.

Years Ended September 30,

Segment	2008	2007	Inc (Dec)	%
		(dollars in thousands)		
Solar and Semiconductor Equipment Segment	$ 16,267	$ 9,091	$ 7,176	79%
Polishing Supplies Segment	1,442	1,414	28	2%
Total SG&A	$ 17,709	$ 10,505	$ 7,204	69%
Percent of net revenue	22%	23%		

Total selling, general and administrative (SG&A) expenses increased $7.2 million or 69% in fiscal 2008 from fiscal 2007. SG&A expenses include $0.5 million and $0.3 million of stock-based compensation expense for fiscal 2008 and 2007, respectively. SG&A expenses for fiscal 2008 include $0.3 million of costs related to compliance with the provisions of the Sarbanes-Oxley Act and a $0.5 million provision was recorded in fiscal 2008 as an allowance for doubtful accounts for which there were no comparable expenses in fiscal 2007. The increased SG&A also reflects $1.4 million of costs incurred by R2D in fiscal 2008 for which there were no comparable expenses in fiscal 2007. Commissions on sales increased approximately $2.0 million due to increased revenue generated in geographic regions, primarily Asia, where third-party sales representatives are utilized. Other selling costs increased $1.2 million in fiscal 2008 due to increased shipping volumes and increased marketing activities. The remainder of the increase in SG&A expenses resulted from increased depreciation and operating costs for the new building in The Netherlands and increased personnel, travel and consulting costs. The increased personnel and consulting costs include increased incentive compensation costs and administrative costs incurred to improve internal financial and operational reporting and implement improvements in operational efficiencies.

Restructuring Charges

In June 2008, we recorded a charge of $0.4 million resulting from the reorganization of the Bruce Technologies operations. The charge consisted mainly of severance and placement costs for personnel affected by the reduction in workforce. We incurred no comparable costs in fiscal 2007.

Research and Development

Research and development expenses consist of the cost of employees, consultants and contractors who design, engineer and develop new products and processes; materials used in those processes and producing prototypes.

Segment	Years Ended September 30, 2008	2007	Inc (Dec)	%
		(dollars in thousands)		
Semiconductor and Solar Equipment Segment	$ 1,094	$ 564	$ 530	94%
Polishing Supplies Segment	-	-	-	0%
Total Research and Development	$ 1,094	$ 564	$ 530	94%
Percent of net revenue	1%	1%		

Increased investment in research and development resulted mainly from activity in the development of products and processes to meet the needs of the solar market. Reimbursements of research and development costs in the form of governmental research and development grants amounted to $0.1 million in fiscal 2008 and 2007, respectively, and are netted against these expenses.

Income Tax Provision

Our effective tax rate was 37.1% in fiscal 2008 and 17.5% in 2006. Between September 30, 2004 and September 30, 2006, we maintained a valuation allowance equal to the total of our deferred tax assets. Our effective tax rate was reduced by sixteen percentage points in fiscal 2007, as a result of the reduction in our valuation allowance.

During fiscal year 2008, 2007 and 2006, we recorded reductions in the valuation allowance on deferred tax assets of $0.2 million, $1.2 million, and $0.2 million, respectively. The reduction in fiscal years 2008 and 2007 were based upon the profitability in the three most recent fiscal years, as well as our projected future profitability, strong cash position and strong order backlog. Because of this, we determined that it is more likely than not that we would realize the future tax benefit of a significant portion of our deferred tax assets. In fiscal 2006, the reduction in our valuation allowance resulted from a decline in our deferred tax assets. These changes in our valuation allowance had a favorable effect on our effective tax rates.

Our future effective income tax rate depends on various factors, such as the geographic composition of worldwide earnings, tax regulations governing each region, non-tax deductible expenses incurred and the effectiveness of our tax planning strategies.

Fiscal 2007 compared to Fiscal 2006

Net Revenue

Net revenue consists of revenue recognized upon shipment or installation of products using proven technology and upon acceptance of products using new technology. In addition, spare parts sales are recognized upon shipment. Service revenue is recognized upon completion of the service activity or ratably over the term of the service contract. The majority of our revenue is generated from large furnace systems sales which, depending on the timing of shipment and installation, can have a significant impact on our revenue and earnings in any given period. *See* Critical Accounting Policies Revenue Recognition.

Net Revenue	Years Ended September 30, 2007	2006	Increase (Decrease)	%
	(dollars in thousands)			
Semiconductor and Solar Equipment Segment	$ 37,657	$ 33,363	$ 4,294	13%
Polishing Supplies Segment	8,327	7,082	1,245	18%
Total	$ 45,984	$ 40,445	$ 5,539	14%

Overall growth in net revenue in fiscal 2007 was driven primarily by our increased penetration into the solar market where revenue increased $9.7 million or more than 300% compared to fiscal 2006. Within the solar and semiconductor equipment segment, net revenue from the solar market was $12.5 million and $2.8 million in fiscal 2007 and 2006, respectively, while net revenue from the semiconductor market was $25.2 million in fiscal 2007 compared to $30.6 million in fiscal 2006. Net revenue within the semiconductor market in fiscal 2006 was positively impacted by the shipment of a $5.2 million multi-furnace order for which there was no corresponding order of similar magnitude in fiscal 2007. Revenue in the polishing supplies segment increased $1.2 million or 18% due to increased demand for our polishing machines and polishing templates.

Backlog

Our backlog as of September 30, 2007 and 2006 was $22.9 million and $13.6 million, respectively, a 68% increase. Our backlog as of September 30, 2007 included approximately $17.4 million of orders from our solar industry customers compared to $7.6 million of orders from solar industry customers as of September 30, 2006. The orders included in our backlog are generally credit approved customer purchase orders expected to ship within the next twelve months. Because our orders are typically subject to cancellation or delay by the customer, our backlog at any particular point in time is not necessarily representative of actual sales for succeeding periods, nor is backlog any assurance that we will realize revenue or profit from completing these orders. Our backlog also includes revenue deferred pursuant to our revenue recognition policy, derived from orders that have already been shipped, but which

have not met the criteria for revenue recognition. The backlog as of September 30, 2007 and 2006 includes $0.9 million of open orders or deferred revenue on which we anticipate no gross margin.

Gross Profit

Gross profit is the difference between net revenue and cost of goods sold. Cost of goods sold consists of purchased material, labor and overhead to manufacture equipment or spare parts and the cost of service and support to customers for warranty, installation and paid service calls. Gross margin is gross profit as a percentage of net revenue.

Gross Profit	Years Ended September 30, 2007	2006	Increase (Decrease)	%
	(dollars in thousands)			
Semiconductor and Solar Equipment Segment	$ 9,995	$ 8,461	$ 1,534	18%
Polishing Supplies Segment	2,815	2,114	701	33%
Total	$ 12,810	$ 10,575	$ 2,235	21%
Gross Margin	28%	26%		

Gross profit increased in fiscal 2007 by $2.2 million, or 21%, over fiscal 2006. The increase was driven by higher shipments during the year as well as improved margin percentage. Gross margin was 28% in fiscal 2007 compared to 26% in fiscal 2006. A major factor that contributed to the increase in margin percentage was improved capacity utilization in both segments. Additionally, in the solar and semiconductor equipment segment, margins were negatively impacted in fiscal 2006 by approximately $0.7 million of revenue and an equal amount of costs related to customer acceptance of one of our first small batch vertical furnace systems and lower margins on the multi-furnace order shipped during fiscal 2006.

The timing of revenue recognition can have a particularly significant effect on gross margin when the equipment revenue of an order is recognized in one period and the remainder of the revenue attributed to holdbacks is recognized in a later period. The portion of revenue attributed to the holdbacks generally comprises 10-20% of an order and has a significantly higher gross margin percentage.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of the cost of employees, consultants and contractors, as well as facility costs, sales commissions, legal and accounting fees and promotional marketing expenses.

Selling, general and administrative	Years Ended September 30, 2007	2006	Increase (Decrease)	%
	(dollars in thousands)			
Semiconductor and Solar Equipment Segment	$ 9,091	$ 7,111	$ 1,980	28%
Polishing Supplies Segment	1,414	1,202	212	18%
Total	$ 10,505	$ 8,313	$ 2,192	26%
Percent of net revenue	23%	21%		

Total selling, general and administrative expenses increased $2.2 million or 26% in fiscal 2007 from fiscal 2006. Commissions on sales increased approximately $0.9 million due to increased revenue generated in geographic regions, primarily Asia, where third-party sales representatives are utilized. Other selling costs increased $0.2 million in fiscal 2007 due to increased marketing activities. General and administrative personnel and consulting costs increased in fiscal 2007 as a result of the need to (i) improve internal financial and operational reporting, (ii) identify potential improvements in operational efficiencies, (iii) assist in developing and executing our growth

strategies and (iv) manage the increasing compliance obligations of a growing multi-national public company. Stock option expense increased $0.2 million in fiscal 2007.

Restructuring Charges

In June 2006, we adopted a plan to consolidate the manufacturing of our automation product line into facilities already used to manufacture diffusion furnaces. Our automation products are often sold in conjunction with the sale of new diffusion furnaces. As a result of this decision, we recorded $0.2 million of restructuring charges in fiscal 2006. We incurred no comparable costs in fiscal 2007.

Research and Development

Research and development expenses consist of the cost of employees, consultants and contractors who design, engineer and develop new products and processes; materials used in those processes and producing prototypes.

Research and Development	Years Ended September 30, 2007	2006	Increase (Decrease)	%
	(dollars in thousands)			
Semiconductor and Solar Equipment Segment	$ 564	$ 437	$ 127	29%
Polishing Supplies Segment	-	-	-	0%
Total	$ 564	$ 437	$ 127	29%
Percent of net revenue	1%	1%		

Increased investment in research and development resulted mainly from activity in the development of products and processes to meet the needs of the solar market. Reimbursements of research and development costs in the form of governmental research and development grants amounted to $0.1 million in fiscal 2007 and 2006, respectively, and are netted against these expenses.

Income Tax Provision

In fiscal 2004 we recorded a valuation allowance for the total of our deferred tax assets. The company, at that time, had incurred substantial book and tax losses and was in a cumulative loss position as defined under SFAS No. 109. During fiscal years 2004 through 2006, we recorded additional tax provisions or benefits as deferred tax assets increased or decreased so that the valuation allowance remained equal to total deferred tax assets. During fiscal 2006, our deferred tax assets declined by $0.2 million, resulting in a decline in our valuation allowance and an equal amount of tax benefit. This resulted in an effective tax rate for fiscal 2006 of 17.5%.

Based upon profitability in fiscal years 2006 and 2007, as well as our strong cash position and strong order backlog, we believe it is more likely than not that we will realize the future tax benefit of a significant portion of our deferred tax assets. Therefore, during fiscal 2007 we recorded reductions in the valuation allowance on deferred tax assets of $1.2 million. Our future effective income tax rate depends on various factors, such as tax legislation, the geographic composition of our pre-tax income, the level of expenses that are not deductible for tax purposes, changes in our deferred tax assets and the effectiveness of our tax planning strategies.

Liquidity and Capital Resources

In November 2007 (fiscal 2008), we completed the sale of 2.5 million shares of Common Stock in a public offering for $14.41 per share. The net proceeds of the sale of Common Stock after offering expenses and underwriting fees was approximately $33.6 million. In February 2007 (fiscal 2007), we completed the sale of approximately 3 million shares of Common Stock in a public offering for $7.05 per share. The net proceeds of the sale of Common Stock after offering expenses and underwriting fees was approximately $19.4 million.

As of September 30, 2008, and 2007, cash, cash equivalents and restricted cash were $38.5 million and $18.8 million, respectively. Our working capital increased $26.7 million to $57.2 million as of September 30, 2008, compared to $30.5 million as of September 30, 2007. Our ratio of current assets to current liabilities decreased to 3.2:1 as of September 30, 2008 from 3.6:1 as of September 30, 2007. The increase in cash and working capital resulted primarily from the $33.6 million raised from the public offering of Common Stock in November 2007. We utilized approximately $7.4 million for the purchase of R2D and $3.1 million of capital expenditures, primarily building improvements and machinery and equipment in The Netherlands increasing the capacity of our solar and

semiconductor equipment segment.

As of September 30, 2008, our principal sources of liquidity consisted of $37.5 million of cash and cash equivalents and $1.0 million of restricted cash. Restricted cash consists of bank guarantees in excess of our European overdraft facility. The bank guarantees are required by certain customers from whom deposits have been received in advance of shipment. Effective April 2007, our $2.0 million credit facility with Silicon Valley Bank expired and was not renewed as it was no longer needed.

The table below provides selected consolidated cash flow information for the periods indicated:

	Fiscal Years Ended September 30,		
	2008	2007	2006
	(dollars in thousands)		
Net cash provided by (used in) operating activities	($2,050)	($2,276)	$3,335
Net cash used in investing activities	($12,196)	($4,878)	($956)
Net cash provided by financing activities	$33,316	$19,554	$782

Cash Flows from Operating Activities

Cash used in our operating activities was $2.1 million and $2.3 million in fiscal 2008 and 2007, respectively, compared to the $3.3 million of cash provided from such activities during fiscal 2006. During fiscal 2008 and 2007, cash was primarily used to finance business growth, including increases in accounts receivable and inventory. This use of cash was partially offset each fiscal year by increases in accrued liabilities and customer deposits, deferred profit and accounts payable.

Cash Flows from Investing Activities

Our investing activities for fiscal 2008, 2007 and 2006 used cash of $12.2 million, $4.9 million and $1.0 million, respectively. During fiscal 2008 and 2007, the most significant investments were the fiscal 2008 acquisition of R2D ($7.4 million), approximately $3.7 million in fiscal 2007 for the purchase of and improvements to a 54,000 sq. ft. manufacturing facility located in Vaassen, The Netherlands and $1.5 million for additional improvements in fiscal 2008 to the manufacturing facility in The Netherlands. Another significant investment in fiscal 2007 and 2008 was $0.3 million and $0.4 million, respectively, paid for a license to certain solar PECVD technology from the licensor. Other investments in fiscal 2008, 2007 and 2006 consisted primarily of purchases of manufacturing equipment and research and development equipment and upgrades to information systems.

Cash Flows from Financing Activities

Cash provided by our financing activities for fiscal 2008 and 2007 was $33.3 million and $19.6 million, respectively, which primarily consists of the $33.6 million and $19.4 million raised in our Common Stock offerings, net of expenses. Other financing activities during fiscal 2008 and 2007 were mainly payments on debt of $0.8 million and $0.3 million, respectively. Fiscal 2006 cash provided from financing activities consists primarily of $0.8 million from the exercise of warrants and stock options, $0.1 million of net short-term bank borrowings and $0.1 million excess tax benefit of stock options. This was partially offset by $0.1 million of net payments on long-term obligations and $0.1 million in cash dividends paid on preferred stock.

We currently anticipate that our existing cash balances will be sufficient to meet our anticipated cash needs for current operations for at least the next 12 months.

Off-Balance Sheet Arrangements

As of September 30, 2008, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K promulgated by the Securities and Exchange Commission.

Contractual Obligations and Commercial Commitments

We had the following contractual obligations and commercial commitments as of September 30, 2008:

Contractual obligations	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
		(dollars in thousands)			
Debt obligations	$ 432	$ 148	$ 248	$ 36	$ -
Operating lease obligations:					
Buildings	1,556	570	828	73	85
Office equipment	104	27	63	14	-
Vehicles	265	93	133	39	-
Total operating lease obligations	1,925	690	1,024	126	85
Purchase obligations	8,505	8,505	-	-	-
Total	$ 10,862	$ 9,343	$ 1,272	$ 162	$ 85
Other commerical obligations:					
Bank guarantees	$ 1,185	$ 1,185	$ -	-	-

As of September 30, 2008, we had $8.5 million in purchase obligations compared to $7.2 million and $5.7 million as of September 30, 2007 and 2006, respectively. The increase in purchase obligations is mainly a result of increasing backlog which requires higher inventories and purchase commitments due to higher volume. We have also increased our volume purchasing to reduce costs, and experienced longer lead-times required by our suppliers.

Critical Accounting Policies

"Management's Discussion and Analysis of Financial Condition and Results of Operations" discusses our consolidated financial statements that have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of the consolidated financial statements, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period.

On an on-going basis, we evaluate our estimates and judgments, including those related to revenue recognition, inventory valuation, accounts receivable collectability, warranty and impairment of long-lived assets. We base our estimates and judgments on historical experience and on various other factors that we believe to be reasonable under the circumstances. The results of these estimates and judgments form the basis for making conclusions about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

A critical accounting policy is one that is both important to the presentation of our financial position and results of operations, and requires management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. These uncertainties are discussed in "ITEM 1A. RISK FACTORS." We believe the following critical accounting policies affect the more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition. We review product and service sales contracts with multiple deliverables to determine if separate units of accounting are present in the arrangements. Where separate units of accounting exist, revenue is allocated to delivered items equal to the total sales price less the greater of (1) the relative fair value of the undelivered items, and (2) all contingent portions of the sales arrangement.

We recognize revenue when persuasive evidence of an arrangement exists; the product has been delivered and title has transferred, or services have been rendered; the seller's price to the buyer is fixed or determinable and collectability is reasonably assured. For us, this policy generally results in revenue recognition at the following points:

(1) For the solar and semiconductor equipment segment, transactions where legal title passes to the customer upon shipment, we recognize revenue upon shipment for those products where the customer's defined specifications have been met with at least two similarly configured systems and processes for a comparably situated customer. However, a portion of the revenue associated with certain installation-related tasks, equal to the greater of the relative fair value of those tasks or the portion of the contract price contingent upon their completion, generally 10%-20% of the system's selling price (the "holdback"), and directly related costs, if any, are deferred and recognized into income when the tasks are completed. Since we defer only those costs directly related to installation or other unit of accounting not yet delivered and the portion of the contract price is often considerably greater than the fair market value of those items, our policy at times will result in deferral of profit that is disproportionate in relation to the deferred revenue. When this is the case, the gross margin recognized in one period will be lower and the gross margin reported in a subsequent period will improve.

(2) For products where the customer's defined specifications have not been met with at least two similarly configured systems and processes, the revenue and directly related costs are deferred at the time of shipment and later recognized at the time of customer acceptance or when this criterion has been met. We have, on occasion, experienced longer than expected delays in receiving cash from certain customers pending final installation or system acceptance. If some of our customers refuse to pay the final payment, or otherwise delay final acceptance or installation, the deferred revenue would not be recognized, adversely affecting our future operating results.

(3) Equipment sold by the polishing supplies segment generally does not include process guarantees, acceptance criteria or holdbacks; therefore, the related revenue is generally recorded upon transfer of title which is generally at time of shipment.

(4) For all segments, sales of spare parts and consumables are recognized upon shipment, as there are no post shipment obligations other than standard warranties.

(5) Service revenue is recognized upon performance of the services requested by the customer. Revenue related to service contracts is recognized ratably over the period of the contract or in accordance with the terms of the contract, which generally coincides with the performance of the services requested by the customer.

Income taxes. The calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. Resolution of these uncertainties in a manner inconsistent with our expectations could have a material impact on our operations and financial condition.

We adopted the provisions of FIN 48, "Accounting for Uncertainty in Income Taxes – an Interpretation of FASB Statement No. 109," (FIN 48) as of the beginning of fiscal 2008. FIN 48 requires application of a more likely than not threshold to the recognition and derecognition of uncertain tax positions. FIN 48 requires us to recognize the amount of tax benefit that has a greater than 50 percent likelihood of being ultimately realized upon settlement. It further requires that a change in judgment related to the expected ultimate resolution of uncertain tax positions be recognized in earnings in the quarter of such change. Prior to adoption, our policy was to establish

reserves that reflected the probable outcome of known tax contingencies.

Inventory Valuation. We value our inventory at the lower of cost or net realizable value. Costs for approximately 80% of inventory are determined on an average cost basis with the remainder determined on a first-in, first-out (FIFO) basis. We regularly review inventory quantities and record a write-down for excess and obsolete inventory. The write-down is primarily based on historical inventory usage adjusted for expected changes in product demand and production requirements. However, our industry is characterized by customers in highly cyclical industries, rapid technological changes, frequent new product developments and rapid product obsolescence. Changes in demand for our products and product mix could result in further write-downs.

Allowance for Doubtful Accounts. We maintain an allowance for doubtful accounts for estimated losses resulting from the inability or unwillingness of our customers to make required payments. This allowance is based on historical experience, credit evaluations, specific customer collection history and any customer-specific issues we have identified. Since a significant portion of our revenue is derived from the sale of high-value systems, our accounts receivable are often concentrated in a relatively few number of customers. A significant change in the liquidity or financial position of any one of these customers could have a material adverse impact on the collectability of our accounts receivable and our future operating results.

Warranty. We provide a limited warranty, generally for 12 to 24 months, to our customers. A provision for the estimated cost of providing warranty coverage is recorded upon acceptance of all systems. On occasion, we have been required and may be required in the future to provide additional warranty coverage to ensure that the systems are ultimately accepted or to maintain customer goodwill. While our warranty costs have historically been within our expectations and we believe that the amounts accrued for warranty expenditures are sufficient for all systems sold through September 30, 2008, we cannot guarantee that we will continue to experience a similar level of predictability with regard to warranty costs. In addition, technological changes or previously unknown defects in raw materials or components may result in more extensive and frequent warranty service than anticipated, which could result in an increase in our warranty expense.

Impairment of Long-lived Assets. Goodwill and other intangibles not subject to amortization are tested for impairment at least annually by comparing the carrying value to the recognized measures of fair value. We periodically evaluate whether events and circumstances have occurred that indicate the estimated useful lives of long-lived assets or intangible assets may warrant revision or that the remaining balance may not be recoverable. When factors indicate that an asset that is being amortized or depreciated should be evaluated for possible impairment, we use an estimate of the related undiscounted net cash flows generated by the asset over the remaining estimated life of the asset in measuring whether the asset is recoverable. We make judgments and estimates used in establishing the carrying value of long-lived or intangible assets. Those judgments and estimates could be modified if adverse changes occurred in the future resulting in an inability to recover the carrying value of these assets. We have not experienced any impairment to long-lived assets during fiscal 2008 or 2007. Future adverse changes could be caused by, among other factors, a downturn in the semiconductor industry, a general economic slowdown, reduced demand for our products in the marketplace, poor operating results, the inability to protect intellectual property or changing technologies and product obsolescence.

Stock-Based Compensation. On October 1, 2005, the Company adopted Statement of Financial Accounting Standards No. 123(R), Share-Based Payment (SFAS 123(R)) and Staff Accounting Bulletin 107, Share-Based Payment. SFAS 123(R) requires the recognition of compensation costs relating to share-based payment transactions in the financial statements. Under the fair value method, the estimated fair value of awards is charged to income on a straight-line basis over the requisite service period, which is generally the vesting period. The Company has elected the modified prospective application method of reporting; therefore, prior periods were not restated. Under the modified prospective method, this statement was applied to new awards granted after the time of adoption, as well as to the unvested portion of previously granted awards for which the requisite service had not been rendered as of October 1, 2005. SFAS 123(R) also requires the benefits of tax deductions in excess of recognized compensation cost to be reported as cash flow from financing activities rather than as cash flow from operating activities.

Impact of Recently Issued Accounting Pronouncements

For discussion of the impact of recently issued accounting pronouncements, see Item 8: Financial Statements and Supplementary Data under Footnote 1 Summary of Significant Accounting Policies under Impact of Recently Issued Accounting Pronouncements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Risk

We are exposed to foreign currency exchange rates to the extent sales contracts, purchase contracts, assets or liabilities of our European operations are denominated in currencies other than their functional currency, Our operations in Europe, a component of the solar and semiconductor equipment segment, conduct business primarily in their functional currency, the Euro, and the U.S. dollar. Nearly all of the transactions, assets and liabilities of all other operating units are denominated in the U.S. dollar, their functional currency. In fiscal 2008, the U.S. dollar, on average, weakened relative to the Euro by 13.0% and, in fiscal 2007, weakened relative to the Euro by 8.1%. It is highly uncertain how currency exchange rates will fluctuate in the future. Actual changes in foreign exchange rates could adversely affect our operating results or financial condition.

As of September 30, 2008, we did not hold any stand-alone or separate derivative instruments. We incurred net foreign currency transaction losses of $0.1 million in fiscal 2008 and fiscal 2007. As of September 30, 2008, our foreign subsidiaries had $3.6 million of assets (cash and receivables) denominated in U.S. dollars, rather than Euros, which is their functional currency. A 10% change in the value of the functional currency relative to the nonfunctional currency would result in a gain or loss of $0.4 million. As of the end of fiscal 2008, we had $3.4 million of accounts payable, consisting primarily of amounts owed by foreign subsidiaries to our U.S. companies, denominated in U.S. dollars. Even though the intercompany accounts are eliminated in consolidation, a 10% change in the value of the Euro relative to the U.S. dollar would result in a gain or loss of $0.3 million. Our net investment in and long-term advances to our foreign operations totaled $35.0 million as of September 30, 2008. A 10% change in the value of the Euro relative to the U.S. dollar would cause an approximately $3.5 million foreign currency translation adjustment, a type of other comprehensive income (loss), which would be a direct adjustment to our stockholders equity. In fiscal 2008, we incurred a net other comprehensive loss of $0.8 million from translation adjustments.

During fiscal 2008 and 2007, U.S. dollar denominated sales of our European operations were $4.1 million and $9.9 million, respectively. As of September 30, 2008, sales commitments denominated in a currency other than the functional currency of our transacting operation totaled $3.4 million. Our lead-times range between 16 and 24 weeks. A 10% change in the relevant exchange rates between the time the order was taken and the time of shipment would cause our gross profit on such orders to be approximately $0.1 million less than expected on the date the order was taken.

All operations become less competitive relative to foreign suppliers when their functional currency strengthens relative to that of the foreign supplier. Our European operations are particularly affected when selling to customers in Asia when such customers require a purchase price in U.S. dollars. If the value of the U.S. dollar has strengthened or weakened relative to the Euro our gross margin will be reduced or increased, respectively, relative to prior transactions unless we and our customers agree to a commensurate increase or decrease, respectively, in our selling price.

Interest Rate Risk

Our exposure to changes in interest rates is limited to interest earned on cash and short-term investments of $38.5 million and interest expense on $0.3 million of long term obligations and intermittent short-term borrowings. A one percentage point change in interest rates would have a $0.4 million impact on interest income.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The following documents are filed as part of this Annual Report on Form 10-K:

Financial Statements

Report of Independent Registered Public Accounting Firm

To the Stockholders of
Amtech Systems, Inc.:

We have audited the accompanying consolidated balance sheets of Amtech Systems, Inc. as of September 30, 2008 and 2007, and the related consolidated statements of operations, stockholders equity and comprehensive income and cash flows for each of the years in the three year period ended September 30, 2008. These consolidated financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Amtech Systems, Inc. as of September 30, 2008 and 2007, and the results of their operations and their cash flows for each of the three years ended September 30, 2008, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of Amtech Systems, Inc. internal control over financial reporting as of September 30, 2008, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated December 10, 2008 expressed an unqualified opinion thereon.

/s/ Mayer Hoffman McCann P.C.

Phoenix, Arizona
December 10, 2008

PART I FINANCIAL INFORMATION

ITEM 1. Consolidated Financial Statements

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Consolidated Balance Sheets
(in thousands except share data)

	September 30, 2008	September 30, 2007
Assets		
Current Assets		
Cash and cash equivalents	$ 37,501	$ 18,370
Restricted cash	970	443
Accounts receivable		
Trade (less allowance for doubtful accounts of $588 and $126 at September 30, 2008 and September 30, 2007, respectively)	17,639	9,952
Unbilled and other	5,376	3,127
Inventories	15,902	7,289
Deferred income taxes	4,500	1,690
Other	1,511	1,339
Total current assets	83,399	42,210
Property, Plant and Equipment - Net	8,409	6,245
Deferred Income Taxes - Long Term	-	30
Intangible Assets - Net	4,384	1,364
Goodwill	4,450	817
Restricted cash - non-current	1,713	-
Total Assets	$ 102,355	$ 50,666
Liabilities and Stockholders' Equity		
Current Liabilities		
Accounts payable	$ 6,529	$ 4,150
Bank loans and current maturities of long-term debt	148	224
Accrued compensation and related taxes	4,553	2,139
Accrued warranty expense	1,155	256
Deferred profit	5,352	2,144
Customer deposits	4,859	1,824
Other accrued liabilities	2,503	562
Income taxes payable	1,060	419
Total current liabilities	26,159	11,718
Income Taxes Payable Long-term	440	-
Deferred Income Taxes Long-term	940	-
Other Long-Term Obligations	283	744
Total liabilities	27,822	12,462
Commitments and Contingencies		
Stockholders' Equity		
Preferred stock; 100,000,000 shares authorized; none issued	-	-
Common stock; $0.01 par value; 100,000,000 shares authorized; shares issued and outstanding: 9,096,048 and 6,517,923 at September 30, 2008 and September 30, 2007, respectively	91	65
Additional paid-in capital	70,135	35,610
Accumulated other comprehensive income	67	813
Retained earnings	4,240	1,716

Total stockholders' equity	74,533	38,204
Total Liabilities and Stockholders' Equity	$ 102,355	$ 50,666

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Consolidated Statements of Operations
(in thousands, except per share data)

	Years Ended September 30,		
	2008	2007	2006
Revenues, net of returns and allowances	$ 80,296	$ 45,984	$ 40,445
Cost of sales	57,335	33,174	29,870
Gross profit	22,961	12,810	10,575
Selling, general and administrative	17,709	10,505	8,313
Restructuring charge	356	-	190
Research and development	1,094	564	437
Operating income	3,802	1,741	1,635
Interest and other income (expense), net	745	336	(37)
Income before income taxes	4,547	2,077	1,598
Income tax provision (benefit)	1,690	(340)	280
Net income	$ 2,857	$ 2,417	$ 1,318
Income Per Share:			
Basic income per share	$ 0.33	$ 0.45	$ 0.40
Weighted average shares outstanding	8,719	5,419	3,126
Diluted income per share	$ 0.32	$ 0.44	$ 0.38
Weighted average shares outstanding	8,846	5,498	3,484

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Consolidated Statements Of Stockholders' Equity
And Comprehensive Income (Loss)

	Common Stock		Preferred Stock		Additional	Accumulated Other	Retain
(in thousands)	Number of Shares	Amount	Number of Shares	Amount	Paid-In Capital	Comprehensive Income (Loss)	Earnin (Accumu Defici
Balance at September 30, 2005	2,705	$ 27	540	$ 1,935	$ 12,861	$ 404	($2
Net income							1
Translation adjustment						97	
Comprehensive income							
Conversion of preferred stock	540	$ 5	(540)	(1,859)	1,854		
Dividends on preferred stock				81	(81)		
Preferred cash dividend paid				(83)			
Preferred dividend paid in common stock	9	-		(74)	74		
Warrants exercised	60	1			252		

Tax benefit of stock options					134		
Stock options expense					176		
Stock options exercised	162	2			504		
Balance at September 30, 2006	3,476	$ 35	-	$ -	$ 15,774	$ 501	(
Net income							2
Translation adjustment						312	
Comprehensive income							
Issuance of common stock	3,019	30			19,380		
Stock options expense					347		
Stock options exercised	23	-			109		
Balance at September 30, 2007	6,518	$ 65	-	$ -	$ 35,610	$ 813	$ 1
Net income							2
Effect of the adoption of FIN 48							
Translation adjustment						(746)	
Comprehensive income							
Issuance of common stock	2,500	25			33,549		
Tax benefit of stock options					84		
Stock options expense					473		
Stock options exercised	78	1			419		
Balance at September 30, 2008	9,096	$ 91	-	$ -	$ 70,135	$ 67	$ 4

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

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AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Consolidated Statements Of Cash Flows
(in thousands)

	Year Ended September 30,		
	2008	**2007**	**2006**
Operating Activities			
Net income	$ 2,857	$ 2,417	$ 1,318
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	1,339	706	642
Write-down of inventory	130	210	114
Provision for (reversal of) allowance for doubtful accounts	468	(95)	36
Deferred income taxes	(2,328)	(1,720)	-
Non-cash share based compensation expense	473	347	176
Other	-	(16)	-
Changes in operating assets and liabilities:			
Accounts receivable	(8,432)	(4,718)	(2,281)
Inventories	(7,288)	(2,146)	(676)
Accrued income taxes	421	70	735
Prepaid expenses and other assets	125	(891)	281
Accounts payable	1,264	206	2,383
Accrued liabilities and customer deposits	5,976	2,427	181
Deferred profit	2,945	927	426
Net cash provided by (used in) operating activities	(2,050)	(2,276)	3,335
Investing Activities			
Purchases of property, plant and equipment	(3,136)	(4,161)	(956)
Proceeds from the sale of property, plant and equiment	-	26	-
Increase in restricted cash	(546)	(443)	-

Increase in restricted cash - non-current	(678)	-	-
Investment in R2D	(7,436)	-	-
Payment for licensing agreement	(400)	(300)	-
Net cash used in investing activities	(12,196)	(4,878)	(956)
Financing Activities			
Proceeds from issuance of common stock, net	33,994	19,519	759
Preferred stock cash dividends paid	-	-	(84)
Payments on long-term obligations	(762)	(209)	(138)
Borrowings on long-term obligations	-	355	-
Net short-term borrowings (payments)	-	(111)	111
Excess tax benefit of stock options	84	-	134
Net cash provided by financing activities	33,316	19,554	782
Effect of Exchange Rate Changes on Cash	61	(463)	(37)
Net Increase in Cash and Cash Equivalents	19,131	11,937	3,124
Cash and Cash Equivalents, Beginning of Year	18,370	6,433	3,309
Cash and Cash Equivalents, End of Year	$ 37,501	$ 18,370	$ 6,433
Supplemental Cash Flow Information:			
Interest paid	$ 244	$ 301	$ 131
Income tax refunds	96	159	617
Income tax payments	3,463	1,309	24
Supplemental Non-cash Financing Activities:			
Stock issued for preferred stock dividend	-	-	74
Preferred stock dividend accrual	-	-	81
Preferred stock converted to common stock	-	-	1,859

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

Notes to Consolidated Financial Statements
For the Years Ended September 30, 2008, 2007 and 2006

1. Summary of Significant Accounting Policies

Nature of Operations and Basis of Presentation Amtech Systems, Inc. (the Company) designs, assembles, sells and installs capital equipment and related consumables used in the manufacture of wafers, primarily for the solar and semiconductor industries. The Company sells these products to manufacturers of solar cells, silicon wafers, and semiconductors worldwide, particularly in the Asia, United States and northern Europe. In addition, the Company provides semiconductor manufacturing support services.

The Company serves niche markets in industries that are experiencing rapid technological advances, and which historically have been very cyclical. Therefore, future profitability and growth depend on the Company s ability to develop or acquire and market profitable new products, and on its ability to adapt to cyclical trends.

Principles of Consolidation The consolidated financial statements include the accounts of Amtech and its wholly owned subsidiaries. All material intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect

the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Revenue Recognition Revenue is recognized upon shipment of the Company's proven technology equal to the sales price less the greater of (i) the fair value of undelivered services or (ii) the contingent portion of the sales price, which is generally 10-20% of the total contract price. The entire cost of the equipment relating to proven technology is recorded upon shipment. The remaining contractual revenue, deferred costs, and installation costs are recorded upon successful installation of the product.

For purposes of revenue recognition, proven technology means that the Company has a history of at least two successful installations. New technology systems are those systems with respect to which the Company cannot demonstrate that it can meet the provisions of customer acceptance at the time of shipment.

Revenue on new technology is deferred until installation and acceptance at the customer's premises is completed, as these sales do not meet the provisions of customer acceptance at the time of shipment. Cost of the equipment relating to new technology is recorded against deferred profit and then recorded in cost of sales upon customer acceptance.

Revenue from services is recognized as the services are performed. Revenue from prepaid service contracts is recognized ratably over the life of the contract. Revenue from spare parts is recorded upon shipment.

Deferred Profit Revenue deferred pursuant to our revenue policy, net of the related deferred costs, if any, is recorded as deferred profit in current liabilities. The components of deferred profit are as follows:

	September 30,		
	2008	2007	2006
	(dollars in thousands)		
Deferred revenues	$ 6,934	$ 3,894	$ 2,493
Deferred costs	1,582	1,750	1,422
Deferred profit	$ 5,352	$ 2,144	$ 1,071

Cash Equivalents Cash equivalents consist of mutual funds invested in securities issued by the U.S. Government and its agencies and time certificates of deposit.

Restricted Cash Restricted cash of $1.0 million and $0.4 million as of September 30, 2008 and 2007, respectively, consists of bank guarantees in excess of our European overdraft facility. The bank guarantees are required by certain customers from whom amounts have been received in advance of shipment.

Accounts receivable and allowance for doubtful accounts Accounts receivable are recorded at the gross sales price of products sold to customers on trade credit terms. Accounts receivable are considered past due when payment has not been received from the customer within the normal credit terms extended to that customer. A valuation allowance is established for accounts when collection is no longer probable. Accounts are written off against the allowance when the probability of collection is remote.

The following is a summary of the activity in the Company's allowance for doubtful accounts:

	Years Ended September 30,		
	2008	2007	2006
	(dollars in thousands)		
Balance at beginning of year	$ 126	$ 223	$ 223
Provision / (adjustment)	468	(81)	43
Write offs	(50)	(16)	(43)

Acquired through business acquisitions	44	-	-
Balance at end of year	$ 588	$ 126	$ 223

Accounts Receivable - Unbilled and Other Unbilled and other accounts receivable consist mainly of the contingent portion of the sales price that is not collectible until successful installation of the product. These amounts are generally billed upon final acceptance by our customers. The majority of these amounts are offset by balances included in deferred profit.

Concentrations of Credit Risk Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of trade accounts receivable. The Company's customers consist of manufacturers of solar cells, semiconductors, semiconductor wafers, and MEMS located throughout the world. Credit risk is managed by performing ongoing credit evaluations of the customers' financial condition, by requiring significant deposits where appropriate, and by actively monitoring collections. Letters of credit are required of certain customers depending on the size of the order, type of customer or its creditworthiness, and its country of domicile. Reserves for potentially uncollectible receivables are maintained based on an assessment of collectability.

As of September 30, 2008, receivables from two customers individually represented 22% and 20% of accounts receivable. As of September 30, 2007, receivables from three customers individually represented 22%, 13%, and 10% of accounts receivable, respectively.

Refer to Note 10, Business Segment Information, for information regarding revenue and assets in other countries subject