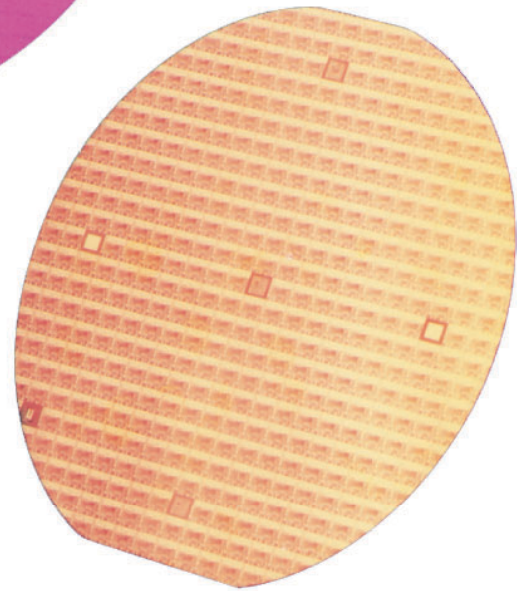
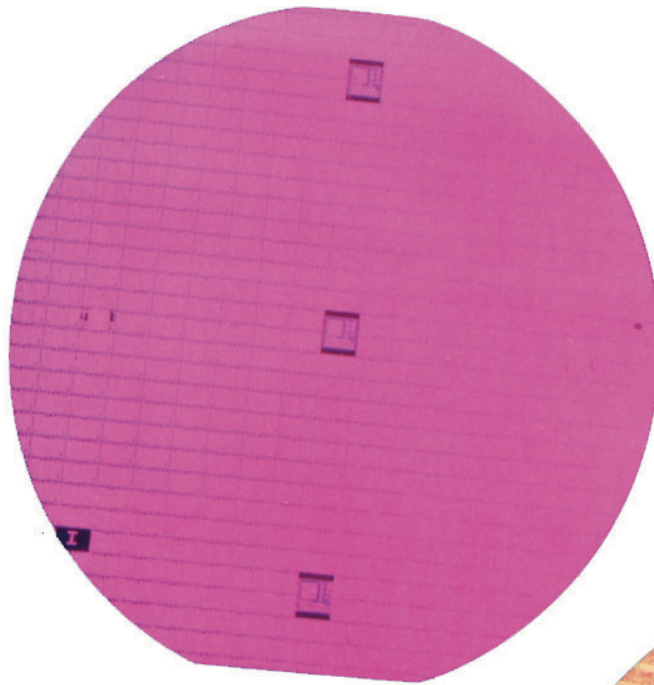
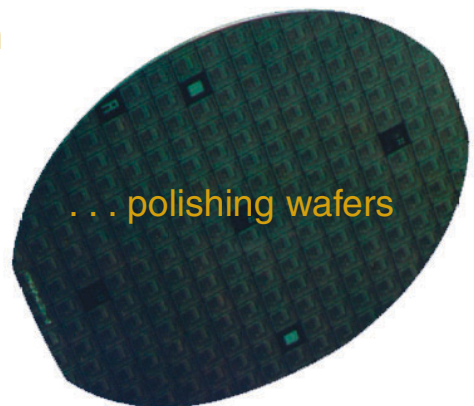


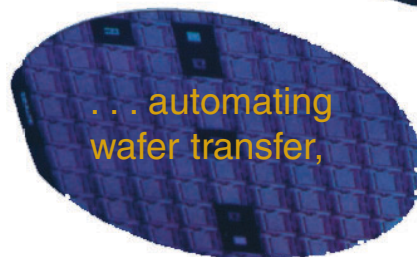
AMTECH SYSTEMS, INC.



Supplying the semiconductor,  
semiconductor wafer, MEMS and  
solar cell industries with quality production  
equipment and supplies for . . .



. . . polishing wafers



. . . automating  
wafer transfer,



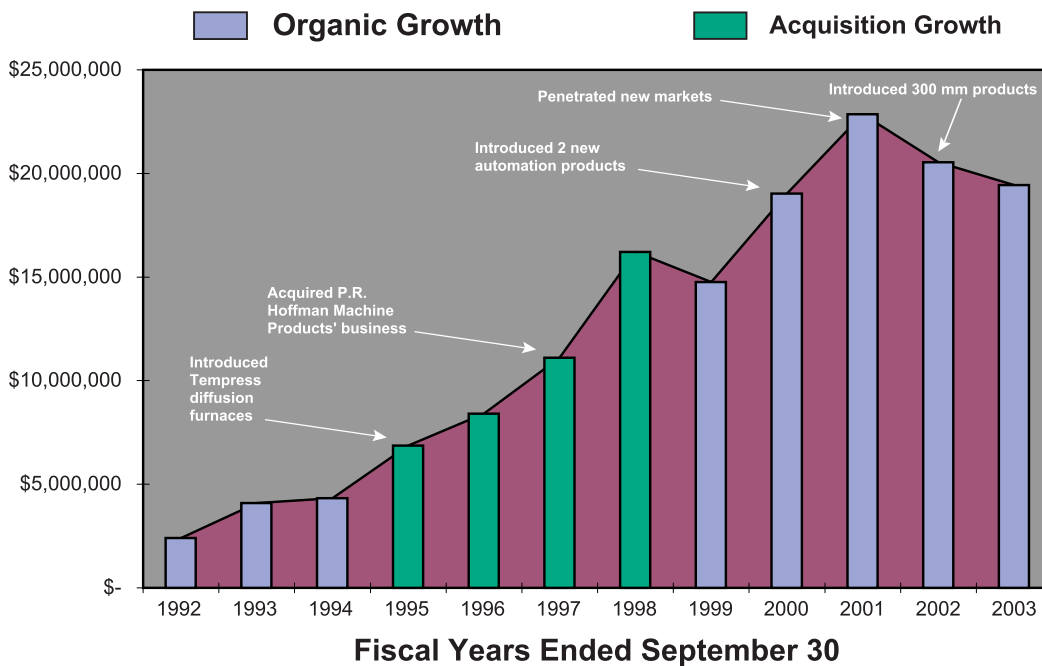
. . . and wafer  
processing.

FISCAL 2003 ANNUAL REPORT



The Company designs, manufactures and sells diffusion furnace systems such as the one above. These systems are sold to manufacturers of semiconductors, semiconductor wafers, MEMS components and solar cells.

**SUMMARY of NET REVENUES**  
**21% Compound Annual Growth Rate**



## TO OUR SHAREHOLDERS:

According to industry analysts, the market for semiconductors declined 31% in 2001 to \$140 billion, from \$204 billion in 2000, and then increased 1% to \$142 billion in 2002 and 15% to \$163 billion in 2003. However, the market would need to increase by another 25% to equal the last peak. Historically, the semiconductor equipment industry has lagged behind the market for semiconductors. This trend is supported by Morgan Stanley's estimates of the capital expenditures by the semiconductor industry, which reportedly declined 41% in 2001 and 28% in 2002, before increasing by 8% in 2003.

Relative to the market trend for semiconductor equipment, we have continued to perform well with new orders increasing for the first time in three years to \$19 million in fiscal 2003, an increase of 32% compared to new orders of \$14 million in fiscal 2002. During fiscal 2003, shipments also increased to \$19 million, a \$1 million increase over the prior year. However, fiscal year 2003 began with a lower backlog than either of the prior two fiscal years, causing net revenues to decline by 5% to \$19.4 million in 2003 from \$20.5 million in 2002, despite the increase in orders and shipments during 2003. This lower backlog resulted in a small loss in fiscal 2003, our first since the Asian financial crisis in fiscal 1998.

### FISCAL 2003 HIGHLIGHTS

During fiscal 2003, we.....

- Closed fiscal 2003 with \$19 million of revenue, a level that represents a 21% compounded average annual growth rate since 1992.
- Incurred only a small loss, our only fiscal year loss during the prolonged and most severe downturn experienced by the industry.
- Obtained an order for, and began development of, a small batch dual-chamber vertical diffusion furnace.
- Completed much of the development of a polishing machine capable of processing wafers of up to 300mm in size.
- Shipped our first 85T polishing machine.
- Engaged in discussions with multiple acquisition candidates, which have not yet resulted in a completed transaction.
- Completed ISO 9001 certification in one segment and took the first steps toward certification in the other.
- Received the fourth order for a 300mm diffusion furnace, a product developed in 2002.

### OUR GROWTH STRATEGY

Our growth strategy is composed of:...

- Internal or organic growth, i.e. increasing market share by developing new products or services within our existing product lines (e.g., see above) and adding or increasing penetration of emerging markets, e.g photovoltaic cells, compound semiconductor materials, and MEMS (microelectromechanical system) components;
- Acquisition growth, which involves acquiring new product lines or businesses that build on core competencies and that complement our business model; and
- Innovative growth, i.e. the development of new product lines or businesses using leading technologies through research and development.

### PLANS FOR FISCAL 2004

During fiscal 2004, we intend to continue to execute our growth strategy by seeking to increase our share of the markets in which we participate and hopefully by completing at least one acquisition. In fiscal 2003, we engaged in active discussions and sometimes negotiations with multiple acquisition candidates. We have focused on one of the largest of these companies and hope to enter into a definitive agreement in the near future. Whether or not those particular discussions are successful, we have received indications that other companies in which we have an interest in pursuing are also interested in continuing discussions. We believe that we are well positioned to take advantage of these opportunities.

We wish to thank our employees worldwide for their extraordinary efforts and loyalty during this severe downturn in the industry. With support from our customers, stockholders, suppliers, and employees, we are confident that Amtech Systems can resume its rapid and profitable growth as the industry recovers from the current downturn.

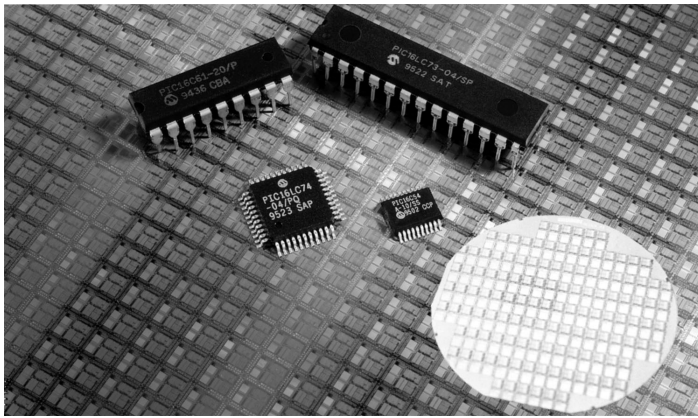
Sincerely,



J.S. Whang  
President and Chief Executive Officer

## WAFER PROCESSING AND AUTOMATED WAFER TRANSFER EQUIPMENT

Amtech designs, manufactures and sells products used in the fabrication of semiconductor devices, MEMS components and solar cells. Currently, this line of products is primarily comprised of horizontal diffusion and CVD (chemical vapor deposition) processing equipment used in repetitive silicon wafer process steps for growing or depositing layers of conducting and insulating materials to form integrated circuits on silicon wafer substrates. Pictured on the inside front cover and below are diffusion furnace systems designed, manufactured and sold by the Company under the Tempress® trade name. A silicon wafer substrate, which has gone through several process steps, is inset in the lower right hand corner of the picture below and enlarged to form the background. Such wafers are then cut into individual die that will be packaged as semiconductor devices or chips. The equipment Amtech manufactures can perform a number of process steps required to fabricate semiconductor devices, including microprocessors, logic devices, micro-controllers, memory chips, etc. These products are also used in the manufacture of MEMS components, a significant emerging market, and solar cells. These products are described below and shown on the next page.



*(Left) The background is the silicon wafer inset in the lower right hand corner, enlarged to show the integrated circuitry that has been fabricated on the wafer, before being cut into individual die. The die are then packaged to form semiconductor devices (top) for use in a number of consumer electronics or industrial products, such as automobiles, computers, microwaves, televisions, wireless telecommunications, etc. (photo courtesy of Microchip Technology, Inc.) The Company's products are also used in the production of MEMS components and solar cells.*

### ***DIFFUSION FURNACES***

Horizontal diffusion systems are manufactured in The Netherlands and marketed under the industry recognized Tempress® trade name. These systems are configured to customer specifications, with anywhere from two to four heating chambers, each with a controllable temperature zone length from 12 inches to 44 inches, for wafer sizes of up to 300mm. Other features of these systems include ultra clean gas delivery systems that precisely regulate the types and volume of gases introduced into each processing reactor chamber, controls to constantly maintain the desired temperature of each heating element and the capacity to simultaneously process anywhere from 25 to 300 wafers. Our diffusion furnace systems generally are sold with standard loadstations, as shown on the inside front cover and below, or loadstations automated with our S-300 model, as depicted on the next page.

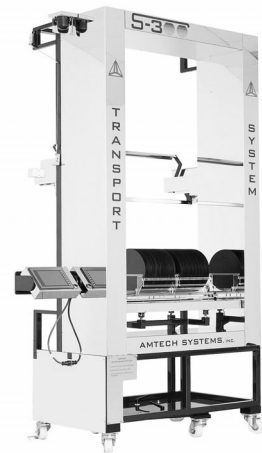


## AMTECH'S FAMILY OF AUTOMATION PRODUCTS

Amtech's family of automation products provides a safer and more efficient method of loading and unloading horizontal diffusion furnace systems with silicon wafers. Many semiconductor fabricators still use human operators to load horizontal diffusion furnace systems, where the top tube level can be as high as seven feet, and with internal heating chambers that can reach temperatures of 1300°C. The use of Amtech's automation products reduce the risk of scrap caused by human error and the exposure of wafers to contaminants. These products also improve the ergonomics and safety of loading and unloading wafers at the various tube levels and improve the economics of horizontal diffusion furnace systems. Such safety issues are particularly important due to the trend to larger wafer sizes because, as wafer sizes increase, each boat of wafers becomes heavier and more difficult to handle, and the diameter of the furnace chambers increases, causing an increase in the height of the upper tube level.

Amtech's most cost effective robotic product is the patented E-300. This product is most suitable for lower cost semiconductor devices, such as diodes and power management chips. The E-300 operates like an elevator and is generally used to raise boats loaded with up to 300 wafers to the upper reactor chambers of a diffusion furnace.

The S-300 model (at right), a patented product, 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. This product is suitable for the production of nearly all semiconductors fabricated in a horizontal furnace, but is not compatible with furnace reactor chambers where the process requires an Atmoscan®. During 2002, Amtech began shipping new S-300 models for 300mm wafers and other models with cassette-to-cassette capability and SECS II Gem interface to the customer's factory automation and an interface to third party SMIF pod openers. Amtech believes that customers will view the addition of the SECS II Gem interface to their factory automation as a means to reduce scrap caused by an operator loading wafers into the wrong process chamber.



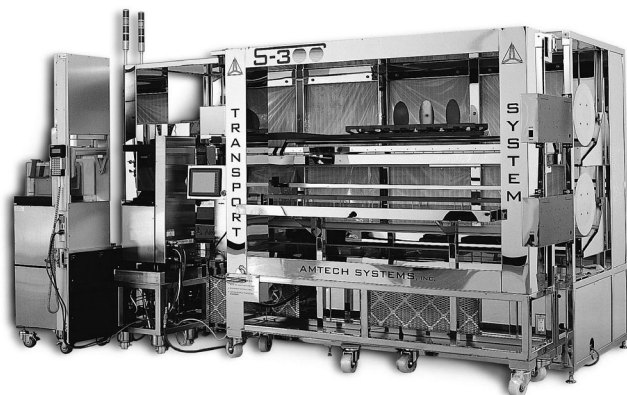
The L-300 system (at left), the latest addition to Amtech's automation line, was designed for fabrication houses with older diffusion equipment where a load station is not used. This system allows basic automation to be used on equipment that was entirely manually loaded in the past.

IBAL (Individual Boats with Automated Loading) is Amtech's first automation product, a patented integrated automation system capable of loading Atmoscan® process tubes and cassette-to-cassette furnace loading. The modularity of IBAL, along with the S-300, a mid-range product, and the L-300 and E-300, at a lower price break, mean that the Company can serve a broad range of customer automation needs and budgets.

The Company's initial entrée into diffusion equipment was the patented ATMOSCAN®, a specially designed cantilevered diffusion processing tube that is injected with an inert gas to protect the wafers from ambient oxygen, moisture, and particles. It further protects the wafers from sudden temperature change, as they are unloaded from the furnace chamber. The ATMOSCAN® was instrumental in the initial development of the Company's worldwide distribution channel.



*(Right) The products described above and on the preceding page are highly complementary and synergistic. They are sold to the same customers, through the same distribution channels, often as fully integrated systems. Pictured is an Amtech loadstation (background), S-300 automation system (right of center), a third-party SMIF pod cassette on a SMIF pod opener and wafer transfer machine (far left).*



## WAFER POLISHING PRODUCTS

Amtech also designs, manufactures and sells products used in the production of semiconductor silicon wafers and other flat substrate materials. At present, this line consists of consumable polishing supplies, such as wafer carriers, polishing templates and machine parts, and double-sided precision lapping and polishing machines sold under the P.R. Hoffman brand. Typical applications requiring these products include semiconductor silicon wafers, computer disk substrates, ceramic components of cellular phones, pagers and other wireless communication devices and optical lens and electro-optical components. The Company's wafer polishing products are designed to process flat substrate materials to exact tolerances of thickness, flatness, parallelism and surface finish.



### ***CARRIERS***

Carriers are work holders where wafers are nested during the lapping and polishing processes. The Company produces carriers for its line of lapping and polishing machines as well as for machines made by competitors. These custom carriers are sold in a variety of sizes, configurations and materials, and are generally customized for specific applications. Insert carriers, steel carriers with plastic inserts molded into the work-holes, account for a significant percentage of total carrier sales. Insert carriers provide the advantages of steel carriers, such as durability and rigidity, and can be manufactured to precise dimensions. The plastic insert reduces the potential for damage to the edges of sensitive materials, such as large silicon semiconductor wafers. Pictured: Model 3100 machine opened to show carriers holding multiple 95MM hard disk substrates.

### ***SEMICONDUCTOR POLISHING TEMPLATES***

Amtech's semiconductor polishing templates (at right) are used for single-sided polishing of semiconductor wafers. These templates are designed for single-sided applications on machines manufactured by competitors. Polishing templates are customized for specific applications and are manufactured to exacting tolerances. Growth in the use of alternative substrate materials used in the telecommunications industry have expanded the market for this product.



### ***PLATES, GEARS, WEAR ITEMS and OTHER PARTS***

The Company produces a wide assortment of plates, gears, parts and wear items for its own and competing machines. Approximately eighty percent (80%) of the machine parts used are fabricated by Amtech. In addition to producing standard off-the-shelf parts, the Company has the ability to produce highly customized parts.



### ***DOUBLE-SIDED LAPPING AND POLISHING MACHINES***

The polishing process is used to change the characteristics of the surface of substrate materials, e.g. silicon wafers. Polishing is a complex science, often involving multiple steps, each at a specified set of process parameters such as polishing speed, pressure, time and temperature. Polishing improves the flatness (planarity), smoothness and optical properties of the substrate's surfaces. Lapping processes are similar to polishing, except that no polishing pad is used and the work piece is pressed into a polishing liquid (slurry) that is applied to a cast-iron lapping wheel. Lapping results in higher removal rates than polishing, but produces rougher surface finishes. Dimensional tolerance, surface finish, quantity of material to be removed, along with production rates required and cost of operation are the primary variables considered in the determination of the best process for a specific application. Pictured: The Model 5400, Amtech's newest **Servo RS™** precision double-sided, planetary, lapping and polishing machine, capable of processing large diameter (such as 300 mm wafers) products to world class standards. The Company also produces the Model 4800, which is capable of processing 12" wafers, the Model 3100 and other smaller machines.

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
FORM 10-K**

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended: September 30, 2003

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, \$.01 Par Value

(Title of Class)

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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.

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12(b)(2)).  Yes  No

As of December 12, 2003, the aggregate market value of the voting stock held by non-affiliates of the registrant was approximately \$14,098,000, based upon the closing sales price reported by the NASDAQ National Market on that date.

As of December 12, 2003, the registrant had outstanding 2,700,671 shares of Common Stock, \$.01 par value.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the Definitive Proxy Statement related to the registrant's 2004 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, 2003, are incorporated by reference into Part III of this Form 10-K.

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## **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 (“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 Amtech’s 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,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” “continue,” or the negative of these terms or other 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 7. Management’s Discussion and Analysis – Trends, Risks and Uncertainties.” These and many other factors could affect Amtech’s 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. Unless noted otherwise, all references to a year apply to Amtech’s fiscal year, which ends on September 30th.

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

## **PART I**

### **ITEM 1. BUSINESS**

Amtech Systems, Inc. (“Amtech” or the “Company”) was incorporated in Arizona in October 1981, under the name Quartz Engineering & Materials, Inc., and changed to its present name in 1987. Amtech also conducts operations through two wholly-owned subsidiaries, Tempres Systems, Inc., a Texas corporation with all of its operations in the Netherlands (“Tempres Systems” or “Tempres”), and P.R. Hoffman Machine Products, Inc., an Arizona corporation based in Carlisle, Pennsylvania (“P.R. Hoffman”).

We develop, manufacture, market and service wafer and semiconductor fabrication equipment and related spare parts for the worldwide semiconductor industry. Customers for our products include semiconductor wafer manufacturers and semiconductor integrated circuit (or chip) manufacturers, who either use the chips they manufacture in their own products or sell them to other companies. These chips are key components in most electronic products for telecommunications (especially wireless communications), computers and consumer electronics and are also used to add functionality to, or improve the performance of, a wide range of existing products, such as automobiles. Other customers for our products include manufacturers of optical components and solar cells and research and development facilities.

Our business is divided into two business segments, semiconductor equipment and polishing supplies. The semiconductor equipment segment manufactures and sells horizontal diffusion furnaces, processing/robotic equipment for such diffusion furnaces and related spare parts and consumables used in certain processes of fabricating integrated circuits, or chips, on silicon wafers. In addition, our semiconductor equipment segment provides manufacturing support services, including wet and dry cleaning of semiconductor machine processing parts, to one of our Texas-based customers. Our polishing supplies segment produces and sells carriers and templates that are consumed in the final steps of fabricating silicon wafers (the raw material used in the production of semiconductors), double-sided precision lapping and polishing machines and related spare parts. For information regarding revenue, operating profit or loss and identifiable assets attributable to each of these two business segments, see Note 9 of the Notes to Consolidated Financial Statements included herein and Item 7 of this annual report.

We serve a niche market in an industry that experiences rapid technological advances, and which in the past has been very cyclical. As a result, our future profitability and growth depends on our ability to develop or acquire and market profitable new products, and on our ability to adapt to cyclical trends.

## GROWTH STRATEGY

Our strategy for growing revenue and operating profit is to develop new products and services that serve our targeted markets, to further penetrate these and new markets with existing and new products and to acquire additional products through strategic acquisitions. We categorize these growth strategies as internal growth and acquisition growth.

**Acquisition Growth.** In 1995, we completed a secondary offering of our common stock, yielding proceeds of \$3.6 million to be used to fund our acquisition strategy. That year, we acquired certain assets of the former Tempress, B.V. and hired Tempress, B.V.'s former engineers to develop our first models of the Tempress® horizontal diffusion furnaces and production in The Netherlands. On July 1, 1997, we acquired substantially all of the assets of P.R. Hoffman Machine Products Corporation, enabling us to offer new products, including lapping and polishing carriers, polishing templates and lapping and polishing machines and related consumable and spare parts, to our existing customer base and to target new customers. In September, 2000, we raised an additional \$4.6 million through a private placement of our common stock to further fund our acquisition strategy. While we have had difficulty identifying suitable acquisition candidates that are not over-valued based on our analysis, we continue to pursue acquisition candidates that will either increase our existing market share or expand the number of front-end semiconductor processes addressed by our products.

**Internal Growth.** Our strategy for internal growth, sometimes referred to as organic growth, includes adding new markets, new products and new services. We began providing a new service, contract semiconductor manufacturing support, in the fourth quarter of 1997. In 2000, we began obtaining orders for semiconductor production equipment from manufacturers of MEMS; and while these manufacturers are currently experiencing a downturn, this proved to be a significant new market for us in 2000 and 2001. In addition, one of the first new markets added by our semiconductor equipment segment was manufacturers of solar cells, which continues to be a source of potential growth for us.

Our new products have included the July, 2000 introduction of the S-300 and E-300 models of automation, which were a significant source of sales in 2001 and 2002. Other new products, which we began shipping in 2002, include 300mm diffusion furnaces and related automation and S-300 models with cassette-to-cassette capability, a SECS II Gem (semiconductor equipment communications standard with level II documentation and incorporating the general equipment model) interface to a customer's factory automation and an interface to third party SMIF (standard mechanical interface) pod openers. The introduction of new products in 2002 helped our semiconductor equipment segment avoid the severe revenue decline experienced by most of our peers in 2002. We expect these new products to generate increased sales and profits during the next industry upturn.

During 2003, our polishing supplies segment received a customer order for a double-sided lapping and polishing machine with a larger capacity, compared to our previous machines, and driven by servo motors, rather than the hydraulics used in our then existing product line. P.R. Hoffman has completed the design and manufacture of this machine, which is currently undergoing testing, and is expected to be delivered to the customer in January, 2004. We have designed this machine, Model 5400, with all new specifications, which will serve as a base for a new line of lapping and polishing machines. The Model 5400 is our first lapping and polishing machine capable of processing parts up to 19.5 inches in diameter, including 300mm wafers; has higher capacities for smaller parts; and is equipped with a Windows™ Touch-screen interface to a programmable controller for flexible multi-step control of speeds and pressure, optional thickness control, and crash protection. The 5400 model offers very high precision for a large double-sided planetary machine and is especially suited to thin and fragile substrates. This design uses servo motors to precisely control the smooth, quiet, three-way planetary motions as well as precise, completely variable control of downward force ranging from as little as 24 pounds to as much as 1-1/2 tons. This order remains subject to customer acceptance.

During 2003, after considerable consultation with a customer, our semiconductor equipment segment received an order for a new small batch vertical furnace, which is subject to customer acceptance. 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. This system is expected to have the same process capability of other vertical furnaces in the marketplace, but with less complex automation and a lower cost than that of our competitors. The market for vertical furnaces is much larger than any of the other markets we currently serve. However, we intend

to target research and development and other niche applications, since the competition in vertical furnaces is fierce and our competitors are much larger and have substantially greater financial resources, processing knowledge and advanced technology than we do. The development of this small batch vertical furnace is presently in the engineering design and software modification phase. Delivery is scheduled for the fourth quarter of 2004. There can be no assurance that when completed the customer will accept this small batch vertical furnace.

## **INDUSTRY**

The semiconductor industry has experienced significant growth since the early 1990s. This growth is primarily attributable to increased demand for personal computers and 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 and traditional products with more “intelligence,” which has led to an increased number of semiconductor devices in electronic and other consumer products, such as automobiles.

Although the semiconductor market has experienced significant growth over the past decade, it remains cyclical by nature, characterized by short-term periods of either under or over supply for most semiconductors, including microprocessors, memory, power management chips, DSP (digital signal processing) 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. Starting in the first half of 2001 and continuing through 2002, the semiconductor industry began experiencing a downturn, which resulted in a severe decline in revenue for both chip fabricators and most semiconductor equipment manufacturers. The industry began to rebound from this downturn during the later part of 2003.

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,” and optical components are fabricated on a silicon wafer substrate and are part of the circuitry or electronic components of many of the aforementioned products.

Most semiconductor chips are built on a base of silicon, called a wafer, and include multiple layers of wiring that connect a variety of circuit components, such as transistors and other structures. 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) pulling molten silicon to form an ingot; (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 or water vapor is introduced to cause a chemical reaction (oxidation) with the silicon wafer’s surface; (6) insulating or conducting layers are deposited on the wafer surface, which sometimes is accomplished in a diffusion furnace via a chemical reaction called chemical vapor deposition (“CVD”); (7) a photosensitive material, called photoresist, is spread over and then baked on the wafer; (8) the wafer is then exposed to light directed through a mask with circuit patterns; (9) the wafer is then placed in a chemical solution that removes the soluble portion of the photoresist, leaving only the desired pattern; (10) reactive gases then etch away the exposed areas to create a dimensional pattern on the wafer surface; (11) ions are driven into the exposed areas of the patterned wafer to create electrically charged conductive regions; and (12) the wafer then goes through a high temperature annealing process to relieve stress and drive the implanted ions deeper into the wafer.

The silicon wafer may be cycled several times through these wafer-processing steps, starting each time at step (5) or (6) 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 whatever end product in which the chip will be used. Depending on the device, our polishing supplies segment’s products may be used in step (3) and our semiconductor equipment segment’s products may be used in steps (5), (6) and (12).

## **SEMICONDUCTOR EQUIPMENT SEGMENT PRODUCTS**

The semiconductor manufacturing equipment products, used in the oxidation, CVD,  $\text{POLC}_3$  doping and annealing steps of fabricating integrated circuits on silicon wafers, are manufactured by our Arizona and Netherlands operations. The following paragraphs describe the products that comprise our semiconductor equipment segment:

### ***Horizontal Diffusion Furnaces***

Through our Tempress Systems subsidiary, we produce and sell horizontal diffusion and conveyor furnace systems, which generally include a Tempress® load station. Our diffusion furnaces currently address several deposition steps in the semiconductor manufacturing process, including oxidation/diffusion and low-pressure chemical vapor deposition (“LPCVD”),  $\text{POLC}_3$  doping and annealing. The LPCVD step consists of performing CVD under high temperature, low-pressure conditions to deposit insulating or conductive layers, primarily on wafers up to 200mm in size. Diffusion furnaces also are used in certain high and ultra-high temperature processes in the manufacture of optical components of high-speed switches used in broadband fiber optic telecommunications networks.

Our diffusion 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 are often customized to meet the requirements of a customer’s particular processes. The horizontal diffusion furnaces utilize existing industry technology and are sold primarily to customers who do not require the advanced automation of, or cannot justify the significantly higher expense of, vertical diffusion furnaces for some or all of their diffusion processes. In 2002, we began shipping models of the Tempress® diffusion furnace capable of processing 300mm wafers, with the initial customer being a semiconductor wafer manufacturer, and we now have models capable of processing all currently existing wafer sizes.

Tempress Systems also produces conveyor furnace systems used to produce thick films for the electronics industry. Conveyor furnace systems provide for precision thermal processing of electronic parts for thick film applications, annealing, sealing, soldering, silvering, curling, brazing, alloying, gloss-metal sealing and component packaging.

### ***Proposed New Small Batch Vertical Furnace***

During 2003, after considerable consultation with a customer, our semiconductor equipment segment received an order for a new small batch vertical furnace, which is subject to customer acceptance. 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. This system is expected to have the same process capability of other vertical furnaces in the marketplace, but with less complex automation and a lower cost than that of our competitors. The market for vertical furnaces is much larger than any of the other markets we currently serve. However, we intend to target research and development and other niche applications, since the competition in vertical furnaces is fierce and our competitors are much larger and have substantially greater financial resources, processing knowledge and advanced technology than we do. The development of this small batch vertical furnace is presently in the engineering design and software modification phase. Delivery is scheduled for the fourth quarter of 2004. There can be no assurance that when completed the customer will accept this small batch vertical furnace.

### ***Processing/Robotic Equipment***

Our processing and robotic equipment consists of several products that either automate the loading of horizontal diffusion furnaces or improve the processing characteristics of such furnaces. Wherever possible, our processing and robotic products are sold in various combinations of our Tempress® diffusion furnaces in order to expand the market for such furnaces. These products also are sold to customers that have chosen another brand of diffusion furnace and as retrofits to most all brands of horizontal diffusion furnaces.

## ***Automation Products***

Use of our automation products reduces human handling and, therefore, reduces exposure of wafers to contaminants during the loading and unloading of the process tubes. Since the top reactor chamber of a horizontal furnace is as much as nine feet from the floor on which the operator stands when manually loading wafer boats, and typical boats of 200mm or 300mm wafers weigh four to six pounds, automating the wafer loading and unloading of a diffusion furnace improves employee safety and ergonomics in semiconductor and solar cell manufacturing facilities. The following paragraphs describe our automation products.

***E-300.*** Our most cost effective robotic product is the E-300. This product is most suitable for lower cost semiconductor devices, such as diodes and power management chips. The E-300 operates like an elevator and generally is used to raise boats loaded with up to 300 wafers to one or both of the upper two reactor chambers of a diffusion furnace. There the operator uses a hand held tool to lift the wafer boat off the E-300 and to either place them directly on a cantilever paddle system, into an Amtech Atmoscan®, or onto an IBAL Trolley, which then places the wafers on the paddle or Atmoscan®. The E-300 can be used in conjunction with all wafer sizes, including 300mm wafers.

***S-300.*** The 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 fabricated in a horizontal furnace, but is not compatible with furnace reactor chambers where the process requires an Atmoscan®. During 2002, we began shipping S-300 models for 300mm wafers and other models with cassette-to-cassette capability, a SECS II Gem interface to the customer's factory automation and an interface to third party SMIF pod openers. We believe that customers will view the SECS II Gem interface to their factory automation as a means to reduce scrap that is sometimes caused by an operator loading wafers into the wrong process chamber. The S-300 can now be used in conjunction with all wafer sizes, including 300mm wafers.

***IBAL.*** IBAL is an acronym for "Individual Boats with Automated Loading." Our IBAL automation system is a patented integrated automation system composed of four modules comprised of hardware and software. The IBAL Shuttle transfers wafers between wafer transfer machines manufactured by third parties and the IBAL Queue, providing customers with the option of complete cassette-to-cassette wafer handling. The IBAL Queue provides a convenient staging area for the operator or the IBAL Shuttle to place boats on a load station and automates the loading of those boats onto the IBAL Butler. The IBAL Butler automatically transfers wafer carriers onto the IBAL Trolley of the appropriate furnace tube level for loading. The IBAL Trolley automatically places the quartz trays that hold silicon wafers ("boats") on a cantilever paddle system or into an Amtech Atmoscan® that then are inserted in the diffusion furnace. This sequence is reversed for unloading the furnace after the particular process step has been completed.

The automation products described above are sometimes sold as a complete system in conjunction with a load station module, which also includes an ultra-clean environment for wafer loading by filtering and controlling the flow of air. Selling the IBAL in conjunction with a load station makes the retrofitting of existing furnaces with such automation more efficient, since no further modifications are required at the customer's site.

## ***Atmoscan® and Other Cantilevered Processing Systems***

Atmoscan® is a patented controlled environment wafer processing system that includes a cantilever tube used to load silicon wafers into a horizontal diffusion furnace and through which a purging inert gas flows during the process of loading and unloading the reactor chamber. Among the major advantages afforded by the Atmoscan® product are increased control of the environment of the wafers during the gaseous and heating process, thereby increasing yields and decreasing manufacturing costs; a decreased need for the cleaning of diffusion furnace tubes, which ordinarily involves substantial expense and equipment down time; and significant economies in the manufacturing process.

We also have designed and sell an open cantilever paddle system, the type of loader which remains the most commonly used in the semiconductor industry for loading wafers into horizontal furnaces. Similar systems have been

used by the industry since prior to the introduction of the Atmoscan®, our alternative to the open cantilevered processing system.

## **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, between 55% and 65% of this segment's products are sold to either semiconductor wafer manufacturers or semiconductor fabricators. Most of 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. These products are manufactured by our P.R. Hoffman operation in Pennsylvania and are described below.

### ***Carriers***

Carriers are work holders into which silicon wafers or other materials are inserted for the purpose of holding them securely in place during lapping and polishing processes. We produce carriers for our line of lapping and polishing machines, as well as those machines sold by our competitors. Substantially all of the carriers we produce are customized for specific applications. A very significant category of our steel carriers, referred to as insert 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 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 such materials, because they provide the advantages of steel carriers while reducing the potential for damage to the edges of sensitive materials such as large semiconductor wafers, which are becoming more standard in the industry.

### ***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 all 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 LED's.

### ***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, our surface processing systems are priced lower than competing systems offered by our competitors and target the semiconductor, optics, quartz, ceramics, medical, computer disk and metal working markets.

Lapping machines process parts using an abrasive slurry and cast iron plates. The material to be processed is positioned in carriers, which are then driven with a planetary motion between the top and bottom plates. The planetary action of the lapping machines simultaneously removes equal amounts of material from both sides of the material being processed. While polishing machines are similar to the lapping machines, polishing is achieved by using a finer free abrasive slurry and plates equipped with a polishing pad material. Depending on the process, the wafers are held in place in the pockets of a carrier, for double-sided processing, or templates for or a wax mounting for single-sided processing. We do not manufacture or sell single-sided polishing machines or wax mountings. The polishing process is used to improve the characteristics of the surfaces of silicon wafers and similar materials. We also manufacture and sell repair parts for our line of lapping and polishing machines.

### ***New Large Capacity Servo Series of Lapping and Polishing Machines***

During 2003, our polishing supplies segment received a customer order for a double-sided lapping and polishing machine with a larger capacity, compared to our previous machines, and driven by servo motors, rather than the hydraulics used in our then existing product line. P.R. Hoffman has completed the design and manufacture of this

machine, which is currently undergoing testing, and is expected to be delivered to the customer in January, 2004. We have designed this machine, Model 5400, with all new specifications to address market requirements for precision parts processing of large diameter substrates. The Model 5400 is our first lapping and polishing machine capable of processing parts up to 19.5 inches in diameter, including 300mm wafers; has higher capacities for smaller parts; and is equipped with a Windows™ Touch-screen interface to a programmable controller for flexible multi-step control of speeds and pressure, optional thickness control, and crash protection. The 5400 model offers very high precision for a large double-sided planetary machine and is especially suited to thin and fragile substrates. This design uses servo motors to precisely control the smooth, quiet, three-way planetary motions as well as precise, completely variable control of downward force ranging from as little as 24 pounds to as much as 1-1/2 tons. This order remains subject to customer acceptance.

#### ***Plates, Gears, Wear Items and Other Parts***

Since lapping machinery involves abrasive slurries, the plates, gears and carriers are often exposed to a high degree of abrasion and wear. Accordingly, we produce a wide assortment of plates, gears, parts and wear items for our own machines as well as for machines manufactured by our competitors. In addition to producing standard off-the-shelf parts, we have the ability to produce highly customized parts.

#### **MANUFACTURING, RAW MATERIALS AND SUPPLIERS**

Our manufacturing activities consist primarily of assembling various commercial and proprietary components into finished systems in Heerde, The Netherlands (diffusion furnaces), Tempe, Arizona (processing and robotic systems) and Carlisle, Pennsylvania (lapping and polishing machines). Polishing consumables, including carriers, templates, gears, wear items and spare parts, are fabricated from various materials in Carlisle, Pennsylvania, from raw materials manufactured to our specifications by our suppliers. Many of the items, such as proprietary components for systems and lapping plates, are also purchased from suppliers who manufacture these items to our specifications. In addition, certain parts for our automation products are fabricated in our machine shop. All final assembly and system tests 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 the majority of the products in the polishing supplies segment are designed to specific customers' specifications, this segment's facility is equipped to perform a significantly higher percentage of the fabrication processes required in the manufacturer of its products and certain of the manufacturing processes are subcontracted out to various third parties. In addition, this segment relies on key suppliers for certain materials, including two steel mills, an injection molder, pad supplier (sole sourced from a Japanese company) and an adhesive manufacturer. 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 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.

#### **BACKLOG**

Our order backlog decreased to \$7.6 million as of September 30, 2003, from \$7.9 million at the same date of the previous year. The orders included in our backlog are generally credit approved customer purchase orders usually scheduled to ship in the next twelve months. The 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 recognition. We schedule production of our systems based on order backlog and customer commitments. However, customers may delay delivery of products or cancel orders suddenly and without sufficient notice, subject to possible cancellation penalties. Due to possible customer changes in delivery schedules and cancellations of orders, our backlog at any particular date is not necessarily indicative of actual sales for any succeeding period. Delays in delivery schedules and/or a reduction of backlog during any particular reporting period could have a material adverse effect on our business, financial position and results of operations. In addition, our backlog does not provide any assurance that we will realize a profit from those orders or indicate in which period revenue will be recognized. See the disclosure under the caption "Results of Operations – Revenues" in Item 7 of this report for a breakdown of the backlog by segment.

## 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. Historically, our product development efforts have been accomplished primarily through cooperative efforts with two key customers. While there can be no assurance that such relationships will continue or that others will be developed, such cooperative efforts are expected to continue to be a significant element in our future development projects. Generally, our relationships in such projects are substantially dependent on the personal relations established by our President, Mr. Jong S. Whang.

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 research and development costs. Our approach to such expenditures has allowed us to produce a number of new products while spending amounts that are generally modest in relation to most semiconductor equipment manufacturers. Our expenditures that have been accounted for as research and development were \$0.7 million (3.4% of revenues) in 2003, \$0.5 million (2.4% of revenues) in 2002 and \$0.6 million (2.6% of revenues) in 2001. These amounts exclude those expenses incurred in connection with customer orders or supported by government grants. In order to more accurately reflect research and development expenditures, we have reclassified \$0.2 million of expenses previously reflected as cost of sales to research and development in both 2002 and 2001. The reclassified costs primarily relate to the development engineering personnel at Tempress, which were not separately tracked until 2001.

During the past few years, the most significant project included in research and development expenses has been the development of a new technology asher pursuant to a joint product development agreement with PSK Tech. The results of the feasibility work on the new technology asher were encouraging. However, continued improvements in existing technologies have delayed our customers' potential requirements for this product and thus further development has been delayed.

During 2003, our polishing supplies segment received a customer order for a double-sided lapping and polishing machine with a larger capacity, compared to our previous machines, and driven by servo motors, rather than the hydraulics used in our then existing product line. P.R. Hoffman has completed the design and manufacture of this machine, which is currently undergoing testing, and is expected to be delivered to the customer in January, 2004. We have designed this machine, Model 5400, with all new specifications to address market requirements for precision parts processing of large diameter substrates. The Model 5400 is our first lapping and polishing machine capable of processing parts up to 19.5 inches in diameter, including 300mm wafers; has higher capacities for smaller parts; and is equipped with a Windows™ Touch-screen interface to a programmable controller for flexible multi-step control of speeds and pressure, optional thickness control, and crash protection. The 5400 model offers very high precision for a large double-sided planetary machine and is especially suited to thin and fragile substrates. This design uses servo motors to precisely control the smooth, quiet, three-way planetary motions as well as precise, completely variable control of downward force ranging from as little as 24 pounds to as much as 1-1/2 tons. This order remains subject to customer acceptance.

During 2003, after considerable consultation with a customer, our semiconductor equipment segment received an order for a new small batch vertical furnace, which is subject to customer acceptance. 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. This system is expected to have the same process capability of other vertical furnaces in the marketplace, but with less complex automation and a lower cost than that of our competitors. The market for vertical furnaces is much larger than any of the other markets we currently serve. However, we intend to target research and development and other niche applications, since the competition in vertical furnaces is fierce and our competitors are much larger and have substantially greater financial resources, processing knowledge and advanced technology than we do. The development of this small batch vertical furnace is presently in the engineering design and software modification phase. Delivery is scheduled for the fourth quarter of 2004. There can be no assurance that when completed the customer will accept this small batch vertical furnace.



## PATENTS

The following table shows the patents granted or licensed and the expiration date thereof, and the material patents pending, for our products in each of the countries listed below:

<u>Product</u>	<u>Country</u>	<u>Expiration Date or Pending Approval</u>
Atmoscan <sup>®</sup>	United States	August 30, 2005
IBAL Cantilever Trolley	United States	July 10, 2015
IBAL Cantilever Trolley	United States	June 12, 2018
Photo CVD	United States	June 1, 2010
Photo CVD	United States	November 15, 2011
Proposed 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
IBAL Model S-300	France, Germany, Italy, The Netherlands, United Kingdom	Pending Approval
P. R. Hoffman Insert Carriers <sup>(**)</sup>	United States	July 2, 2006

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

There can be no assurance that our pending patent applications will be allowed or that the issued or pending patents will not be challenged or circumvented by competitors. There can be no assurance that any of these rights held by us will not be challenged, invalidated or circumvented, or that such rights will provide competitive advantages to us.

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. There can be no assurance that third parties will not assert infringement claims in the future. Our involvement in any patent dispute or other intellectual property dispute could have a material adverse effect on our business. Adverse determinations in any litigation relating to intellectual property could possibly subject us to significant liabilities to third parties, require us to seek licenses from third parties and prevent us from manufacturing and selling one or more of our products. There also can be no assurance in the event of successful claims of infringement that we will be able to obtain licenses on reasonable terms, if at all. Any of these events could have a material adverse effect on our business, financial position and results of operations.

## SALES AND MARKETING

Because of the highly technical nature of our products, we market our products 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, an internet website, advertising in trade magazines and the distribution of product brochures. We also participate in trade shows, including Semicon West, Semicon Europa, Diskcon and one large optics show each year. Our sales and marketing activities in Asia are largely dependent on our President, Jong S. Whang, and our sales are enhanced by his active involvement with the accounts of certain other key customers.

In 2003, net revenues were to customers in the following geographic regions: North America 26%, Asia 44% and Europe 30%. Two customers represented 15% and 12% of net revenues, respectively, during 2003. No customer accounted for 10% or more of net revenues during 2002. One customer represented 14% of net revenues during 2001. For a more complete analysis of significant customers and sales to customers by geographic region, see Note 8 of the Notes to Consolidated Financial Statements included herein and Item 7 of this annual report. For information regarding revenue, operating profit or loss and identifiable assets attributable to each of our industry segments and

financial information about foreign and domestic operations, see Note 9 of the Notes to Consolidated Financial Statements included herein and Item 7 of this annual report.

Our business is not seasonal in nature, but is cyclical based on the capital equipment investment patterns of 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 the semiconductor devices equipment market, the semiconductor wafer market, the solar cell and optical component equipment markets 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 equipment's 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 customer's needs and criteria, including considerations such as the customer's process application, product requirements, timing of the purchase and particular circumstances of the purchasing decision.

Our diffusion furnaces, robotic/processing equipment and double-sided lapping and polishing machines primarily compete with those produced by other domestic and foreign original equipment manufacturers, several of which are well-established firms that are larger and have substantially greater financial resources than we do. To a much lesser extent, our diffusion furnaces compete against vertical furnaces on the high-end of the price spectrum. Such competition could intensify in the future, if the industry trend to produce smaller chips on larger wafers, 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 extent, competition from used equipment on the low-end of the price spectrum. We intend to maintain or improve our competitive position for orders for our diffusion furnaces and automation products by focusing our sales and marketing efforts on the very large and growing middle market, designing products to meet the customer's specific process requirements and providing competitive prices and product support service levels. See 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Trends, Risks and Uncertainties' for a discussion regarding the impact on our diffusion furnace sales of the industry trend of producing smaller chips on larger wafers.

We believe our automation products are generally superior to those of our primary competitors. We believe that patents on the key features of our automation products provide a competitive advantage. We expect our automation product competitors to seek to continually improve the design and performance of their products. There can be no assurance that our automation competitors will not develop enhancements or acquire new technologies that will offer price or performance features superior to those that we offer. We believe that our S-300 and E-300 automation products require less of the expensive clean room floor space and are generally less expensive and easier to operate than those of our competitors. The target market for our automation products is customers who want to improve employee safety and reduce scrap. We are not aware of any products comparable to our IBAL automation products that are capable of loading Atmoscan® systems, thus providing us with a competitive advantage.

We are not aware of any significant product that directly competes with the Atmoscan®; however, there are several processing systems and various configurations of existing manufacturing products that provide advantages similar to those that we believe the Atmoscan® provides to semiconductor manufacturers. Notwithstanding this competition, we believe that Atmoscan® provides better results in terms of more uniform wafer temperature and dispersion of heated gases in the semiconductor manufacturing process, less exposure of semiconductor wafers to contaminants and other technical advantages that afford to its users a higher yield.

We believe that we are much larger and financially stronger than most of the other domestic manufacturers of lapping and polishing carriers, which tend to be family-owned businesses. However, we are currently also experiencing price competition from 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 continually updating our product line to keep pace with the rapid

changes in our customers' requirements and by providing a higher level of customer service. We have been able to capture a small yet meaningful share of the semiconductor polishing template market, which Rodel, a division of Rohm and Haas, dominates with an estimated 90% market share. Our strategy for competing for template orders is to seek out niche markets and to provide the highest level of customer support and reduced total cost of ownership.

## **EMPLOYEES**

At September 30, 2003, we employed 106 people. Of these employees, 17 were based at our corporate offices and manufacturing facility in Tempe, Arizona; 26 were employed at our manufacturing plant in Carlisle, Pennsylvania; 52 at our facilities in and near Heerde, The Netherlands; and 11 in our contract semiconductor manufacturing support services business located in Austin, Texas. Of the 26 people employed at our Carlisle, Pennsylvania facility, 15 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.

## **ITEM 2. PROPERTIES**

Our semiconductor processing/robotic equipment business and corporate offices are located in 15,700 square feet of office and manufacturing space in Tempe, Arizona. These facilities are leased at a current rate of \$8,096 per month, on a triple net basis, for a term to expire on February 29, 2004. Manufacturing support services are performed in customer facilities.

Our diffusion furnace business is conducted primarily in a 9,900 square foot building that we own, which is located in Heerde, The Netherlands. We also lease an additional 10,000 square feet of manufacturing space in locations near our Heerde plant. These additional facilities are leased at a current rate of \$4,200 per month, for varying terms, the last of which expires on July 31, 2008.

Our polishing supplies business is located in a 21,740 square foot building located in Carlisle, Pennsylvania. These facilities are leased at a current rate of \$10,860 per month, on a triple net basis, for a term that expires on June 30, 2004. We have the option to renew the lease for five successive terms of one year each.

We consider the above facilities suitable and adequate to meet our current requirements.

## **ITEM 3. LEGAL PROCEEDINGS**

On or about August 31, 2000, a "P.R. Hoffman Machine Products" was one of 11 companies named in a legal action being brought by North Middleton Township in Carlisle, Pennsylvania, in the Court of Common Pleas, Cumberland County, Pennsylvania, the owner of a landfill allegedly found to be contaminated. No detailed allegations have been filed as part of this legal action, which appears to have been filed to preserve the right to file claims for contributions to the clean up of the landfill at a later date. We acquired the assets of P.R. Hoffman Machine Products Corporation in an asset transaction consummated on July 1, 1997. The landfill was closed and has not been used by P.R. Hoffman since sometime prior to completion of our acquisition transaction. Therefore, we believe that the named company is the prior owner of the acquired assets. Under the terms of the Asset Purchase Agreement governing the acquisition, the prior owner is obligated to indemnify us for any breaches of its representations and warranties in the Asset Purchase Agreement, including representations relating to environmental matters. In accordance with the terms of the Asset Purchase Agreement, we have provided notice to the prior owner of P.R. Hoffman of our intent to seek indemnification from such owner for any liabilities resulting from this legal action. Based on information available to us as of the date of this report, we believe our costs, if any, to resolve this matter will not be material to our financial position or results of operations.

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

**None.**

## PART II

### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

#### MARKET INFORMATION

Our common stock, par value \$.01 per share ("Common Stock"), began trading on the Nasdaq National Market®, under the symbol "ASYS," on April 18, 2001. Prior to that time, our Common Stock was traded on the Nasdaq SmallCap Market. The following table sets forth the high and low bid price at which the shares of our Common Stock traded for each quarter of 2003 and 2002, as reported by the NASDAQ National Market.

	Fiscal 2003		Fiscal 2002	
	High	Low	High	Low
First quarter	\$ 3.95	\$ 2.75	\$ 8.90	\$ 4.58
Second quarter	3.25	2.95	7.25	5.55
Third quarter	4.30	2.90	7.35	4.15
Fourth quarter	5.67	3.32	6.05	3.11

#### HOLDERS

As of December 12, 2003, there were 1,037 stockholders of record of our Common Stock. Based upon a recent survey of brokers, we estimate there were approximately an additional 2,857 beneficial stockholders who held shares in brokerage or other investment accounts as of that date.

#### DIVIDENDS

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

## 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. Effective October 1, 2000, we changed our revenue recognition policy. See Note 1 in the Notes to Consolidated Financial Statements and the pro forma information contain herein. Since revenue is not reported on a consistent basis between years, certain data contained in this report may not be comparable between years.

	<b>FISCAL YEAR ENDED SEPTEMBER 30,</b>				
	<b>2003</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>	<b>1999</b>
	(in thousands, except per share data)				
<b><u>Operating Data:</u></b>					
Net revenues	\$19,434	\$20,533	\$22,852	\$19,027	\$14,766
Operating income (loss)	(245)	77	1,577	1,982	568
Income (loss) before cumulative effect of change in accounting principle	(100)	118	1,153	1,325	362
Cumulative effect of change in accounting principle, net of tax <sup>(2)</sup>	--	--	(690)	--	--
Net income (loss)	(100)	118	463	1,325	362
<b><u>Earnings (loss) per share<sup>(1)</sup>:</u></b>					
<b><u>Basic:</u></b>					
Income (loss) before cumulative effect of change in accounting principle	\$(.04)	\$.04	\$.43	\$.61	\$.17
Cumulative effect of change in accounting principle, net of tax <sup>(2)</sup>	--	--	(.26)	--	--
Basic earnings (loss) per share	\$(.04)	\$.04	\$.17	\$.61	\$.17
<b><u>Diluted:</u></b>					
Income (loss) before cumulative effect of change in accounting principle	\$(.04)	\$.04	\$.41	\$.56	\$.17
Cumulative effect of change in accounting principle, net of tax <sup>(2)</sup>	--	--	(.25)	--	--
Diluted earnings (loss) per share	\$(.04)	\$.04	\$.16	\$.56	\$.17
<b><u>Pro forma amounts with the change in accounting principle applied retroactively (unaudited):</u></b>					
Net revenues	\$19,434	\$20,533	\$22,852	\$18,908	\$15,678
Net income (loss)	(100)	118	1,153	1,061	481
Net income (loss) per share:					
Basic:	\$(.04)	\$.04	\$.43	\$.49	\$.23
Diluted:	\$(.04)	\$.04	\$.41	\$.45	\$.22
<b><u>Balance Sheet Data:</u></b>					
Cash and cash equivalents	\$ 7,453	\$ 8,046	\$ 5,998	\$ 5,785	\$1,125
Working capital	12,727	12,166	11,620	10,934	5,374
Total assets	18,399	17,393	18,571	17,483	8,745
Total current liabilities	3,259	2,722	4,575	4,667	1,748
Long-term obligations	640	459	411	237	287
Stockholders' equity	14,499	14,212	13,584	12,580	6,710

(1) The results shown have been restated to reflect the one-for-two reverse split of Common Stock that was effective March 15, 1999.

(2) Amount gives effect to a non-cash charge of \$690,211, after reduction for income tax benefits of \$410,000, or (\$0.26) per basic share, recorded to reflect the cumulative effect of the accounting change as of October 1, 2000, related to the adoption of Securities and Exchange Commission ("SEC") Staff Accounting Bulletin No. 101, "Revenue Recognition in Financial Statements."

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

**RESULTS OF OPERATIONS**

We develop, manufacture, market and service wafer and semiconductor fabrication equipment and related parts, supplies and services on a worldwide basis. The products offered are grouped into two business segments: the semiconductor equipment segment, which offers horizontal diffusion furnaces, processing/robotic equipment for diffusion furnaces, related spare parts and manufacturing support services to semiconductor fabricators and silicon wafer manufacturers; and the polishing supplies segment, which offers supplies, including carriers and templates, and equipment for lapping and polishing, which are some of the last steps in the fabrication of silicon wafers. Demand for our products can change significantly from period to period as a result of numerous factors, including, but not limited to, changes in: 1) global and regional economic conditions; 2) supply and demand for semiconductors or, more specifically, capacity utilization and production volume of manufacturers of semiconductors, silicon wafers, solar cells and optical components; and 3) the profitability of semiconductor manufacturers and their silicon wafer suppliers. For this and other reasons, our results of operations for 2003, 2002 and 2001 may not necessarily be indicative of future operating results.

The following discussion and analysis should be read in conjunction with the Selected Financial Data and the Consolidated Financial Statements and Notes appearing elsewhere in this report.

**Net Revenues.** Our net revenues for 2003 were \$19.4 million, compared to \$20.5 million in 2002 and \$22.9 million in 2001, representing decreases of 5% in 2003 and 10% in 2002. Our Netherlands operation accounted for approximately 57% of consolidated net revenues and 78% of the net revenues of the semiconductor equipment segment. Our Netherlands operation records all transactions in Euros, its functional currency, which in turn are translated into United States ("U.S.") dollars, our reporting currency. The U.S. dollar decreased in value relative to the Euro in both 2003 and 2002. As a result of these decreases, consolidated net revenues, and those of the semiconductor equipment segment, were approximately \$2.0 million and \$0.4 million higher in 2003 and 2002, respectively, than they would have been had the exchange rates remained the same as the weighted average exchange rates for 2001.

The following table reflects new orders (net of cancellations), shipments and net revenues for each quarter and year during the three years in the period ended September 30, 2003, and the backlog as of the end those periods, on a consolidated basis, as well as for each of our two business segments.

	Fiscal Quarter				Fiscal Year	Semi-conductor Equipment Segment	Polishing Supplies Segment
	First	Second	Third	Fourth			
(dollars in thousands)							
<b>2003:</b>							
New orders <sup>(1)</sup>	\$ 2,165	\$ 6,477	\$ 7,498	\$ 3,027	\$ 19,167	\$ 13,495	\$ 5,672
Shipments	4,165	4,785	3,396	6,267	18,613	13,313	5,300
Net revenues	4,329	5,448	3,622	6,035	19,434	14,134	5,300
Ending backlog	5,748	6,777	10,653	7,645	7,645	6,473	1,172
<b>2002:</b>							
New orders <sup>(1)</sup>	\$ 2,213	\$ 519	\$ 6,132	\$ 5,626	\$ 14,490	\$ 9,404	\$ 5,086
Shipments	4,373	3,983	4,189	4,925	17,470	12,348	5,122
Net revenues	5,457	5,577	4,447	5,052	20,533	15,411	5,122
Ending backlog	10,711	5,653	7,338	7,912	7,912	7,112	800
<b>2001:</b>							
New orders <sup>(1)</sup>	\$ 4,361	\$ 7,783	\$ 2,750	\$ 3,788	\$ 18,682	\$ 12,012	\$ 6,670
Shipments	6,882	7,025	6,053	3,742	23,702	16,296	7,406
Net revenues	3,603	6,803	8,023	4,423	22,852	15,446	7,406
Ending backlog	18,883	19,863	14,590	13,955	13,955	13,119	836

(1) New orders are net of cancellations.

Our business has historically been subject to cyclical industry conditions, and 2003, 2002 and 2001 were no exception. As a result, there were significant fluctuations in our quarterly new orders and net revenues, both within and across years. An example of these significant fluctuations is the large swing in revenues and income between the third and fourth quarters of 2003. Demand for semiconductor and silicon wafer manufacturing equipment and related consumable products has also been volatile as a result of sudden changes in semiconductor supply and demand and other factors in both semiconductor devices and wafer fabrication processes. Customers' delivery schedules on large system orders, and the timing of revenue recognition under our accounting policies, can also add to this volatility.

In 2003, our new orders were \$19.2 million, the highest since the record level achieved in 2000, and 32% higher than in 2002. Shipments in 2003 were \$1.1 million higher than in 2002. Despite this increase in orders and shipments during 2003, net revenues declined by 5% to \$19.4 million in 2003 from \$20.5 million in 2002. The decrease in net revenues is primarily attributable to the much larger backlog at the beginning of both of the prior two years that we worked-off, until the backlog reached its low point in 2002.

During 2001, slowing worldwide demand for semiconductors resulted in a rapid decrease in demand for manufacturing equipment and caused new orders for our products to decline, particularly during the second half of that year. This decline in demand, as measured by new orders, reached its lowest level during the second half of 2001 and the first half of 2002, resulting from the severe industry downturn and weakness in the macro-economic climate and consumption of electronic goods, which translated into further capital spending cutbacks by semiconductor manufacturers.

Within the global semiconductor equipment market, which is served by both of our business segments, each geographic region exhibits unique characteristics that can cause, and in the past have caused, capital equipment investment patterns to vary significantly from period to period. In 2003, 2002 and 2001, 44%, 20% and 8%, respectively, of our total revenue was attributable to sales in Asia, principally China, Korea and Taiwan. Our 2003 revenue from Asia represents the highest proportion of net revenues since 1995, and is a record level from that region. The increase in sales in Asia is partially due to the fact that China's economy has been very strong. Another factor is that significant portions of the semiconductor industry's operations have moved to Asia. This is a trend of increasing importance to us and to other suppliers to the industry. One example of this trend is that many semiconductor fabricators have gone fabless, out-sourcing the manufacturing operations to foundries in Taiwan or elsewhere in Asia. As a result, silicon wafer manufacturing in Asia has also increased. For a more complete analysis of sales to customers by geographic region, see Note 8 of the accompanying consolidated financial statements.

Our semiconductor equipment segment accounted for 73%, 75% and 68% of net revenues in 2003, 2002 and 2001, respectively. This segment also accounted for 79% of the operating loss in 2003 and 255% and 59% of operating income in 2002 and 2001, respectively. The semiconductor and optical component industries' cycles peaked during 2000. In 2001, as a result of the rapid decline in the demand for semiconductor devices, inventory buildups in telecommunications products, slower than expected personal computer sales and overall slower global economic growth, many semiconductor manufacturers re-evaluated their capital spending plans. As a result, we experienced cancellation orders and rescheduling of deliveries by customers in 2001, and a significant decline in new orders during 2001 and 2002. This trend was reversed in 2003, with new orders (net of cancellations) reaching \$13.5 million, the second highest in the history of our semiconductor segment and a \$4.1 million, or 44%, increase compared to 2002. Much of the increase in new orders came from Asia, which is a particularly active region now.

The semiconductor equipment segment's net revenues for 2003 were \$14.1 million, representing a decrease of 8% from the \$15.4 million of revenue reported for this segment in 2002 and 2001. The semiconductor equipment segment's total shipments for 2003 were \$13.3 million, compared to \$12.3 million in 2002 and \$16.3 million in 2001, representing an increase of 8% in 2003 and a 24% decrease in 2002. The changes in net revenues did not parallel the changes in shipments because of much larger reductions in backlog in 2001 and 2002 compared to 2003, particularly within the deferred revenue portion of the backlog. See the components of deferred profit under "Revenue Recognition" in Note 1 of the accompanying consolidated financial statements.

Revenues of the polishing supplies segment reached a record \$8.2 million in 2000, as the semiconductor industry reached the peak of its business cycle. By March 2001, orders in the polishing supplies segment began a steep decline, reflecting excess supply inventories and capacity of that segment's customers. The polishing supplies

segment suffered a dramatic decrease in revenues, declining to \$7.4 million in 2001 and \$5.1 million in 2002, before increasing slightly to \$5.3 million in 2003. These revenues represent a decrease of 9% in 2001 and 31% in 2002 and an increase of 3% in 2003. While sales of consumables, which represent the majority of this segment's revenues, increased during 2003, this increase was partially offset by the continued decline in machine sales. Machine sales, like other capital items, have been negatively impacted by the slow recovery in the manufacturing sector and the transfer of manufacturing to Asia.

The following table sets forth certain operational data as a percentage of net revenues for each of the three years in the period ended September 30, 2003:

	Year Ended September 30,		
	2003	2002	2001
Net revenues	100.0%	100.0%	100.0%
Cost of sales	<u>75.1</u>	<u>75.7</u>	<u>69.0</u>
Gross margin	24.9	24.3	31.0
Selling, general and administrative expenses	22.8	21.5	21.5
Research and development	<u>3.4</u>	<u>2.4</u>	<u>2.6</u>
Operating income (loss)	<u>(1.3)%</u>	<u>0.4%</u>	<u>6.9%</u>

**Gross Margin.** Consolidated gross margin for 2003 was \$4.8 million, compared to \$5.0 million in 2002 and \$7.1 million in 2001, representing a decrease of \$0.2 million, or 3%, in 2003, and a decrease of \$2.1 million, or 30%, in 2002. In 2003, the gross margin of the semiconductor equipment segment decreased by \$0.2 million, or 6%, primarily due to the decline in revenues, described above. The gross margin of the polishing supplies segment increased by \$0.1 million, or 7%, in 2003 due to our fixed costs being covered by increased revenues.

In 2002, the gross margin of the semiconductor equipment segment decreased by \$1.1 million, or 22%, primarily due to \$0.5 million in inventory write-offs taken in response to a decline in the worldwide semiconductor industry and a customer's decision to sell a plant from which future orders had been expected. Other factors contributing to the 2002 decline in the gross margin of the semiconductor equipment segment included learning curve and development costs incurred on customer orders for new products (i.e., 300mm diffusion furnace and related automation and S-300 models with cassette-to-cassette capability and interfaces to SMIF pod openers and factory automation with SECS II Gem) and \$0.2 million in increased labor costs. The gross margin of the polishing supplies segment declined by \$1.0 million, or 49%, in 2002 due to the 31% decrease in sales volume.

As a percentage of net revenues, the consolidated gross margin was 24.9% in 2003 and 24.3% in 2002, compared to 31.0% in 2001. Write-downs of excess or obsolete inventory of \$0.6 million in 2002, compared to \$0.3 million in 2001, contributed to the decline in gross margin as a percentage of revenues in 2002 compared to 2001. Other factors contributing to the decline in gross margin as a percentage of revenues in 2002 were product mix and learning curve costs in 2002 of the semiconductor segment, underabsorption of factory expenses in the polishing supplies segment and competitive pricing pressure in both segments. Our gross margin has significantly fluctuated in the past and will continue to fluctuate in the future based on several factors including, but not limited to, the severity and duration of industry cycles, the timing of revenue recognition under evolving accounting principles, product mix and overhead absorption levels. During 2003, increased efficiencies from the higher level of plant utilization was offset by price compression, resulting from Asian sales by our Netherlands operation, which are typically transacted in U.S. dollars, as is general practice of Asian customers when importing equipment. This price compression is attributable to the declining value of the U.S. dollar relative to the Euro, which is difficult to recover through higher U.S. dollar prices.

**Selling, General and Administrative Expenses.** Consolidated selling, general and administrative expenses were \$4.4 million in 2003 and 2002, compared to \$4.9 million in 2001. In 2003, general and administrative costs declined by \$0.4 million primarily due to a reduction in provisions for doubtful accounts, but this reduction was offset by increased selling costs, including commissions (\$0.2 million), personnel costs (\$0.1 million) and other costs, such as tradeshows and advertising (\$0.1 million). The increase in commissions is attributable to increased sales in



territories where we use sales representatives, such as Asia. The decline in selling, general and administrative expenses in 2002 compared to 2001 is due to decreased commissions of \$0.2 million in 2002 due to the decrease in shipments in both segments. Costs associated with implementing new data processing systems were higher in 2001 than in 2002, further contributing to the decrease in general and administrative expenses in 2002. Selling, general and administrative expenses as a percentage of net revenues remained relatively constant during the three-year period, ranging from 21.5% in 2001 and 2002 and increasing to 22.8% in 2003, as the increase in sales from Asia resulted in higher commissions expense.

**Research and Development Expenses.** During 2003, 2002 and 2001, expenditures accounted for as research and development were \$0.7 million, \$0.5 million and \$0.6 million, respectively. In order to more accurately reflect research and development expenditures, we have reclassified \$0.2 million of expenses previously reflected as cost of sales to research and development in both 2002 and 2001. The reclassified costs primarily relate to the development engineering personnel at Tempress, which were not separately tracked until 2001. During 2001 and 2002, the most significant project included in research and development expenses was the development of a new technology asher pursuant to a joint product development agreement with PSK Tech. In 2003, development of a new model for our diffusion furnace product line became the most significant project. The results of the feasibility work on the new technology asher were encouraging. However, continued improvements in existing technologies have delayed our customers' potential requirements for this product and thus further development has been postponed for an indeterminate length of time.

In 2002, we completed the development of a 300mm horizontal diffusion furnace and related automation and S-300 models with cassette-to-cassette capability and interfaces to SMIF pod openers and factory automation with SECS II Gem. However, a portion of these costs were incurred while completing customer orders and were charged, along with other costs of the order, to cost of sales and are therefore not included in research and development expenses.

**Operating Income (Loss).** Reduced revenues and gross margins and increased selling, general and administrative costs in 2003 resulted in an operating loss of \$0.2 million, compared to operating income of \$0.1 million, or less than 1% of revenue, and \$1.6 million, or 7% of revenue, in 2002 and 2001, respectively. Operating income declined in 2002 due primarily to a decline in revenues and related gross margin in the polishing supplies segment and the lower gross margin of the semiconductor equipment segment, as discussed above.

**Interest Income, net.** Net interest income was less than \$0.1 million in 2003 and 2002, compared to \$0.2 million in 2001. The decrease in net interest income in 2003 and 2002 is primarily the result of a decline in interest rates since 2001 and, to a lesser degree, fluctuations in excess cash available for investment.

**Income Tax Provision.** During 2003, we recorded an income tax benefit of \$0.1 million, compared to the income tax provision recorded in 2002 and 2001 of \$0.1 million and \$0.7 million, respectively. The effective rate stated as a percentage of income (loss) before income taxes and cumulative effect of the change in revenue recognition accounting principle was 52%, 30% and 37% in 2003, 2002 and 2001, respectively. The significantly higher effective tax rate in 2003 is primarily due to the impact of permanent differences between financial reporting and taxable income. The significantly lower effective tax rate in 2002 is a result of the fact that more than all of the consolidated operating profit was earned in The Netherlands where there is no state income taxes. In addition, a state income tax benefit arose from operating losses in the U.S. during 2002. Our future effective income tax rate depends on various factors, such as tax legislation, the geographic composition of the pre-tax income, non-tax deductible expenses and the effectiveness of our tax planning strategies.

**Net Income (Loss).** As a result of the operating results described above, 2003 resulted in a net loss of \$0.1 million, compared to the net income reported for 2002 and 2001 of \$0.1 million and \$0.5 million, respectively. Net income (loss) per diluted share was \$(.04), \$.04 and \$.16 in 2003, 2002 and 2001, respectively. Excluding the cumulative effect of a change in accounting principle in 2001, with the change in the revenue recognition accounting principle being applied retroactively, net income (loss) per diluted share was \$(.04), \$.04 and \$.41 in 2003, 2002 and 2001, respectively.

## **LIQUIDITY AND CAPITAL RESOURCES**

As of September 30, 2003 and 2002, cash and cash equivalents were \$7.5 million and \$8.0 million, respectively. Our ratio of current assets to current liabilities was 4.9:1 and 5.5:1 at September 30, 2003 and 2002, respectively.

In 2003, net cash used in operating activities was \$0.8 million, compared to cash provided by operations of \$2.4 million in 2002 and \$0.4 million in 2001. The 2003 net loss (\$0.1 million) was more than offset by \$0.8 million of non-cash adjustments for depreciation (\$0.5 million) and the write-down of inventory (\$0.3 million). However, the increase in inventories (\$0.9 million), accounts receivable (\$0.1 million) and income taxes receivable (\$0.5 million) contributed to the use of operating cash in 2003.

In 2002, net cash provided by operating activities resulted primarily from net income adjusted for non-cash items of \$1.9 million, decreases in accounts receivable of \$0.9 million and in inventories of \$1.4 million, which were partially offset by reductions in accrued liabilities of \$0.6 million and in deferred profit of \$1.0 million.

Investing activities consisted of software, computer and equipment purchases and building improvements, which totaled \$0.2 million, \$0.5 million and \$0.7 million in 2003, 2002 and 2001, respectively. Financing activities provided \$0.3 million, \$-0- and \$0.4 million in 2003, 2002 and 2001, respectively. In 2003, financing activities consisted mainly of the proceeds from an increase in the mortgage on the building in the Netherlands, while in 2001 they consisted primarily of the issuance of common stock pursuant to the earn-out provisions of the P.R. Hoffman acquisition transaction.

At September 30, 2003, our principal sources of liquidity consisted of \$7.5 million of cash and cash equivalents. Since the only lien on our assets is a \$0.5 million mortgage loan, we believe that significant amounts of additional liquidity are available from various financing sources. We believe that we have sufficient liquidity for our current operations and for at least certain elements of our growth strategy. One element of that strategy is the acquisition of product lines or businesses that complement our existing product lines and business. Another element of that strategy is the development of new products, such as the proposed new technology asher. Our currently available cash and cash equivalents are expected to be sufficient for existing operations, planned research and development and at least one acquisition, depending on the size of the acquisition target. However, significant unplanned development of new products or the completion of larger acquisitions may require additional capital resources that are expected to be obtained from one or more sources of financing, such as a private placement, a public offering, working capital loans or term loans from banks or other financial institutions, equipment leasing, mortgage financing and internally generated cash flow from operations. There can be no assurance of the availability or sufficiency of these or any other source of funding for those purposes.

## **COMMITMENTS**

Key suppliers include two steel mills, one domestic and one German, capable of meeting the material specifications we require. As of September 30, 2003, we had unconditional commitments to purchase \$0.6 million of steel, with delivery dates to be determined in the future. Due to minimum order quantities for this steel and long lead times, we have made purchase commitments that may be in excess of future production requirements, and it could take several years to use all of the steel commitments in production of our products. These purchase commitments are not expected to result in any significant losses.

We lease buildings, vehicles and equipment under operating leases. As of September 30, 2003, future minimum rental commitments under non-cancelable operating leases with initial or remaining terms of one year or more totaled \$406,000, of which \$227,000, \$68,000, \$52,000, \$33,000 and \$26,000 is payable in 2004, 2005, 2006, 2007 and 2008, respectively.

## **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 financial statements requires us to make estimates and assumptions

that affect the reported amount of assets and liabilities at the date of the financial statements, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period.

On an on-going basis, we evaluate our estimates and judgments, including those related to revenue recognition, inventory valuation, accounts receivable collectibility, 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 portrayal of our financial position and results of operations, and also 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 the section below entitled "Trends, Risks and Uncertainties." 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 fair market 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 collectibility is reasonably assured. For us, this policy generally results in revenue recognition at the following points: 1) For the 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 fair market 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 are deferred and recognized into income when the tasks are completed. 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 recognized into income at the time of customer acceptance or when this criteria has been met. We have, on occasion, experienced longer than expected delays in receiving cash from certain customers pending system acceptance or final installation. If some of our customers were to refuse to pay the remaining holdback, or otherwise delay final acceptance or installation, the deferred revenue would not be recognized, adversely affecting our future operating results.

Equipment sold by the polishing supplies segment does not include process guarantees or acceptance criteria; therefore, the related revenue is recorded upon shipment. Our shipping terms for both segments are customarily FOB our shipping point or equivalent terms. For all segments, sales of spare parts and consumables are recognized upon shipment, as there are no post shipment obligations other than standard warranties. Service revenues are recognized upon performance of the services requested by the customer. Revenue related to service contracts is recognized ratably over the period of the contract, which generally coincides with the performance of the services requested by the customer.

During the fourth quarter of 2001, we changed our revenue recognition policy retroactively to effective October 1, 2000, based on guidance provided in Securities and Exchange Commission ("SEC") Staff Accounting Bulletin No. 101 ("SAB 101"), "Revenue Recognition in Financial Statements." In accordance with guidance provided in SAB 101, we recorded a non-cash charge of \$690,211 (after reduction for income taxes of \$410,000), or \$0.26 per basic share, to reflect the cumulative effect of the accounting change as of the beginning of 2001.

The deferred profit balance as of the beginning of 2001 was \$1,125,211. This amount is the deferred revenue, net of the related cost of sales, for equipment that was shipped and previously recorded as sales, but that had not been accepted or did not qualify for multiple-element accounting as of September 30, 2000. Of the \$1,125,211 in deferred profit as of the beginning of 2001, \$46,377, \$122,640 and \$936,994 was recognized in 2003, 2002 and 2001,

respectively. The pro forma amounts presented in Item 6 “Selected Financial Data” were calculated assuming the accounting change was retroactively adopted as of October 1, 1998.

***Inventory Valuation.*** We value our inventory at the lower of cost (first-in, first-out method) or net realizable value. We regularly review inventory quantities and record a write-down for excess and obsolete inventory. The write-down is primarily based on our estimated forecast of 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. During 2001 and 2002, there was a significant decrease in worldwide demand for semiconductor capital equipment. Demand for our products has fluctuated significantly in the past, and may do so in the future, which could result in an increase in the cost of inventory or an increase in excess inventory quantities. While inventory turns have returned to a level that is within historic norms on a consolidated basis, certain portions of the inventory are at higher levels than what are needed for related operating activities, a condition that may not change until there is further improvement in capital spending by our customers. There can be no assurance that future developments will not necessitate further write-downs.

***Allowance for Doubtful Accounts.*** We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. This allowance is based on historical experience, credit evaluations and specific customer collection issues we have identified. Since a significant portion of our revenues are 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 collectibility of our accounts receivable and our future operating results.

***Warranty.*** We provide a limited warranty, generally for 12 to 24 months, to all purchasers of our new products and systems. A provision for the estimated cost of providing warranty coverage is recorded upon shipment 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, 2003, 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 have a material adverse impact on our operating results for the periods in which such additional costs materialize.

***Impairment of Long-lived Assets.*** We 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. Goodwill is also tested for impairment at least annually. When factors indicate that an asset 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 2003 or 2002. 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.

## **IMPACT OF RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS**

On October 1, 2002, we adopted SFAS No. 142, “Goodwill and Other Intangible Assets.” Under SFAS No. 142, goodwill and intangible assets with indefinite lives are no longer subject to amortization, but are tested for impairment at least annually. Accordingly, we review goodwill for impairment on an annual basis, or more frequently if circumstances dictate. We have completed both the initial impairment testing required by SFAS No. 142 and our updated annual impairment testing, noting no indication of impairment associated with the recorded goodwill balance of \$728,000. Goodwill amortization was \$-0-, \$74,000 and \$67,000 for 2003, 2002 and 2001, respectively.

In November, 2002, the EITF reached a consensus on issue 00-21, "Revenue Arrangements with Multiple Deliverables" ("EITF 00-21"). EITF 00-21 addresses how to account for arrangements that may involve the delivery or performance of multiple products, services and/or rights to use assets. The consensus mandates how to identify whether goods or services or both that are to be delivered separately in a bundled sales arrangement should be accounted for separately. The guidance can affect the timing of revenue recognition for such arrangements, even though it does not change rules governing the timing or patterns of revenue recognition of individual items accounted for separately. The final consensus was applicable to agreements entered into in fiscal periods beginning after June 15, 2003. The adoption of EITF 00-21 did not have a material impact on our financial position or results of operations; however, depending on the circumstances and contract terms of large multi-system orders, EITF 00-21 may cause us to experience significant quarterly fluctuations in revenues, profits and cash flows.

In January, 2003, the FASB issued Interpretation No. 46, "Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51." This Interpretation addresses the consolidation by business enterprises of variable interest entities when the equity investors do not have the characteristics of a controlling financial interest (as defined in the Interpretation). In October, 2003, the FASB deferred the effective date for implementation of this Interpretation until December 31, 2003. We believe that we currently have no contractual or other business relationship with a variable interest entity, and therefore, do not believe that the adoption of this Interpretation will have a material effect on our financial position or results of operations.

In December, 2002, the FASB issued SFAS No. 148, "Accounting for Stock-Based Compensation – Transition and Disclosure." SFAS No. 148 requires certain pro forma disclosures related to employee stock-based compensation, and also amended the transition provisions of SFAS No. 123. We adopted the pro forma disclosures required by SFAS No. 148 in the second quarter of 2003, and the remaining disclosure requirements are implemented within the accompanying consolidated financial statements.

In May, 2003, the FASB issued SFAS No. 150, "Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity." SFAS No. 150 establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity. It requires that an issuer classify a financial instrument that is within its scope as a liability (or an asset in some circumstances). For public entities, SFAS No. 150 was effective for financial instruments entered into or modified after May 31, 2003, and otherwise was effective at the beginning of the first interim period beginning after June 15, 2003. The adoption of SFAS No. 150 did not have a material effect on our financial position or results of operations.

## **TRENDS, RISKS AND UNCERTAINTIES**

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

The revenues of our semiconductor equipment segment, which accounts for approximately three quarters of our consolidated revenues, is comprised of sales of horizontal diffusion furnaces and our processing/robotic product line. Our processing/robotic product line is 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 to use than the horizontal diffusion furnaces in certain manufacturing processes of smaller chips on larger wafers. Because of this trend, we had expected that demand for our horizontal diffusion furnaces would decline. We believe this trend has not adversely affected us yet primarily because:

- we have experienced continued demand from manufacturers that do not require the more expensive vertical furnaces, such as from manufacturers of analog, power management, DSP and MEMS chips and micro-controllers used in a number of consumer applications, including wireless phones;
- China's significant investments in its semiconductor industry have resulted in increased sales of our horizontal furnaces there;

- certain larger equipment manufacturers have decided to de-emphasize their horizontal product line, thereby allowing us to increase our market share;
- we are pursuing alternative markets, such as solar cell manufacturers and certain research and development facilities; and
- we believe that because of improvements in automation for horizontal diffusion furnaces, such as our robotic product line, horizontal diffusion furnaces may be becoming a more acceptable alternative to the vertical furnaces than they previously had been for certain devices.

However, to the extent that the trend to use vertical diffusion furnaces over horizontal diffusion furnaces continues, our revenues may decline and our corresponding ability to generate income may be adversely affected.

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

The semiconductor equipment industry is highly cyclical. 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 revenues.

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. 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.

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

We are the beneficiary of a life insurance policy on the life of our President and Chief Executive Officer, Mr. J.S. Whang, in the amount of \$1,000,000, 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.

In addition, historically, our product development has been accomplished through cooperative efforts with two key customers. Our relationship with one of these customers as well as with our joint development partner for the new technology asher, are substantially dependent on personal relations established by Mr. Whang. 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.

We also depend on the management efforts of our officers and other key personnel and on the ability to attract and retain key personnel. Most of our products, other than the Atmoscan® and products acquired in the P.R. Hoffman acquisition, were developed by our own personnel. We presently employ two engineers at our Tempe, Arizona plant, including one with a Ph.D. We employ ten engineers, including two with Ph.D.'s, in our Netherlands operation. These employees design and support the horizontal diffusion furnace and conveyor furnace product lines manufactured in the Netherlands and the related Process/Robotic products manufactured in Tempe. Two engineers are employed in our Carlisle, Pennsylvania operation. They design wafer lapping machines and carriers to meet customers' processing requirements. 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 in response to changing market conditions or customer requirements, our business could be seriously harmed.

***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 revenues 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.

***Our current capital structure could delay, defer or prevent a change of control.***

We are authorized to issue up to 100,000,000 shares of common stock and up to 100,000,000 shares of preferred stock. As of December 12, 2003, there were 2,700,671 shares outstanding. Authorized but unissued common stock may be issued for such consideration as the board of directors determines to be adequate. The board of directors may issue preferred stock with such rights, preferences, privileges and restrictions as they determine, without shareholder vote. Although we do not currently intend to issue any shares of our preferred stock, there can be no assurance that we will not do so in the future. Shareholders may or may not be given the opportunity to vote thereon, depending upon the nature of any such transactions, applicable law, the rules and policies of the national securities exchange on which the common stock or preferred stock, as the case may be, is then trading, if any, and the judgment of the board of directors. Shareholders have no preemptive rights to subscribe for newly issued shares of our capital stock.

On May 17, 1999, we declared a dividend distribution of one preferred share purchase right for each outstanding share of common stock. The dividend was payable on June 9, 1999 to stockholders of record as of the close of business on that date. Each right entitles the registered holder to purchase one one-hundredth of a share of Series A Participating Preferred Stock, subject to adjustment, at a price of \$8.50 per one one-hundredth of a share of Preferred Stock, subject to adjustment. The rights issuance was adopted as protection against a takeover by a third party.

Mr. Whang and certain other key employees have severance arrangements that require us to make significant lump sum payments in the event of a change of control in ownership.

Having the outstanding rights, and a substantial number of authorized and unreserved shares of common stock, preferred stock and severance arrangements with key employees could have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. Management could use the additional shares to resist a takeover effort even if the terms of the takeover offer are favored by a majority of the independent shareholders. This could delay, defer or prevent a change in control.

***If third parties violate our proprietary rights, in which we have made significant investments, or accuse us of infringing upon their proprietary rights, such events could result in a loss of the 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; have additional pending patent applications relating to some of our products and technologies; and license the non-exclusive right to manufacture products under a patent owned by a third party. 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. The owner of the patent from whom we license the right to manufacture certain products may grant licenses to our competitors, diminishing or eliminating any competitive advantage we may have. 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.

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 agreements with our customers, suppliers, employees and consultants and through other security measures. We also rely on trade secret protection for our technology, in part through confidentiality agreements with employees, consultants and third parties. 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.

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. Based on industry practice and prior experience, we believe that licenses or other rights, if necessary, will be available on commercially reasonable terms for existing or future claims. Nevertheless, 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. Defending our intellectual property rights through litigation could be very costly. If we are not able to negotiate the necessary licenses on commercially reasonable terms or successfully defend our position, our financial position and results of operations could be materially and adversely affected.



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

As of September 30, 2003, receivables from three customers comprised 43% of our accounts receivable. A concentration of our receivables from a small number of customers places us at risk. If any one or more of our major customers is unable to 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.

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

Our backlog includes orders for large systems, such as our diffusion furnaces, with system prices of up to \$1.0 million depending on the system configuration, options included and any special requirements of the customer. In light of the significant dollars associated with larger system sales, should any of these orders be cancelled prior to shipment, or not be accepted by the customer, our financial position and results of operations could be materially adversely affected.

***Our business might be adversely affected by our dependence on foreign business.***

During 2003, 74% of our sales were made to customers outside the United States as follows:

- Asia (including Singapore, Indonesia, Malaysia and India) – 44%
- Europe (including 1% or less to Israel and Africa) – 30%

Because of our significant dependence on international revenues, 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 gains of \$0.1 million and \$0.2 million during 2003 and 2002, respectively, and a loss of \$0.1 million in 2001, as a result of foreign currency transactions. 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, Tempres Systems, has conducted its operations in the Netherlands since 1995. 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 revenues and costs.

***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, using innovative technology to sell products into specialized markets. Loss of competitive position could impair our prices, customer orders, revenues, 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 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 revenues.

***If we make additional acquisitions, it could 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 potential acquisitions.***

We continually evaluate potential acquisitions. We might make acquisitions of, or significant investments in, other businesses with synergistic products, services and technologies. Acquisitions involve numerous risks, including, but not limited to:

- difficulties and increased costs in connection with integration of the 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 in an acquisition or merger could be dilutive to our stockholders, 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.

***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 to supply materials. We generally do not have guaranteed supply arrangements with our suppliers. Because of the variability and uniqueness of customer orders, we do not maintain an extensive inventory of materials for manufacturing. Key suppliers include two steel mills capable of producing the types of steel needed for carriers to the tolerances that we require, 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 laser cutting, machined parts, steel frames and metal panels and other components used particularly in the assembly of semiconductor production equipment.

Although we make 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 has resulted in longer lead-times for many important system components, which could cause delays in meeting shipments to our customers. Because the selling price of some systems exceeds \$1 million, the delay in the shipment of even a single system could cause significant variations in quarterly revenues, operating results and the market value of our common stock. We have sought, and will continue to seek, to minimize the risk of production and service interruptions and shortages of key parts by:

- selecting and qualifying alternative suppliers for key parts;
- monitoring the financial stability of key suppliers; and
- maintaining appropriate inventories of key parts.

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.

***We might require additional financing to expand our operations.***

On September 13, 2000, we issued 383,000 shares of common stock, and warrants to purchase an aggregate of up to 59,300 shares of common stock, in a private placement pursuant to a Stock and Warrant Purchase Agreement. We received net proceeds of \$4.6 million, after deducting placement agents', legal, accounting and registration fees. The proceeds will be used to fund our growth initiatives. While we believe that revenues generated from our operations, as well as the proceeds received from this private placement, are sufficient to provide adequate working capital for the foreseeable future and for a limited number of growth initiatives, additional financing is expected to be required for further implementation of our plans for expansion. 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.

***If our securities become ineligible for trading on the Nasdaq system, they might be subject to Rule 15c-2 of the Securities Exchange Act of 1934, which imposes additional sales practice requirements on broker-dealers who sell such securities to persons other than established customers and accredited investors.***

While our common stock is now included on the Nasdaq National Market, continued inclusion will depend on our ability to meet certain eligibility requirements established from time to time by the Nasdaq National Market. Loss of Nasdaq eligibility could result if we sustain material operating losses, or if the market price of our common stock falls below \$1.00 per share. For transactions covered by the rule, the broker-dealer must make a special suitability determination for the purchaser and receive the purchaser's written consent to the transaction prior to the sale. The rule may adversely affect the ability of broker-dealers to sell our securities, and consequently may limit the public market for, and the trading price of, our common stock.

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

Recent terrorist attacks in the United States, as well as future events occurring in response or connection to them, including, without limitation, 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 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 are subject to environmental regulations, and our inability or failure to comply with these regulations could adversely affect our business.*

We are subject to environmental regulations in connection with our business operations, including, but not limited to, 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 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

We are exposed to financial market risks, including changes in foreign currency exchange rates and interest rates. Our operations in the United States are conducted in U.S. dollars. Our operation in The Netherlands, a component of the semiconductor equipment segment, conducts business primarily in the Euro and the U.S. dollar. The functional currency of our Netherlands operation is the Euro. The functional currency for all other operating units is the U.S. dollar.

During 2003, approximately 16% of our net revenues were transacted in a currency other than the functional currency of the operating unit generating that revenue. That exposure to the risk of changing foreign currency exchange rates was partially offset by transacting purchases during the year equal to approximately 11% of our cost of sales in a currency other than the functional currency of the operating unit making the purchase. As of September 30, 2003, we did not hold any stand-alone or separate derivative instruments. We recorded gains of \$0.1 million and \$0.2 million during 2003 and 2002, respectively, and a loss of \$0.1 million in 2001, as a result of foreign currency transactions. Our investment in and advances to our Netherlands operation totals \$3.8 million. A 10% change in the value of the Euro relative to the U.S. dollar would cause a \$0.4 million foreign currency translation adjustment, a type of other comprehensive income (loss), which would be a direct adjustment to our stockholders' equity.

When the value of the Euro increases relative to the value of the U.S. dollar, our operation in The Netherlands becomes less competitive outside the European market, as it must raise prices to those customers that normally make purchases in U.S. dollars, in order to maintain the same profit margins. When this occurs, this operation attempts to have transactions denominated in the Euro and to increase its purchases denominated in U.S. dollars, which become less expensive. When the value of the Euro declines relative to the value of the U.S. dollar, our operation in The Netherlands can be more competitive against United States based equipment suppliers, as the cost of purchases denominated in U.S. dollars becomes more expensive. In 2003, the purchases and sales of this foreign operation that were denominated in currencies not linked to its functional currency, including U.S. dollars, were approximately \$3.2 million and \$1.6 million, respectively. In 2002, the purchases and sales of this foreign operation that were denominated in currencies not linked to its functional currency, including U.S. dollars, were approximately \$0.8 million and \$0.2 million, respectively. Most of those purchases were denominated in U.S. dollars and provide a partial hedge against fluctuations in exchange rates on sales denominated in that currency. Because it is difficult to predict the volume of U.S. dollar denominated transactions arising from our Netherlands operation, we do not hedge against the effects of exchange rate changes on future transactions. The Euro was at a relatively high value relative to the U.S. dollar at the end of 2003, leaving our Netherlands operation at a competitive disadvantage compared to other suppliers based in the United States.

## **ITEM 8: FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

(a)	The following documents are filed as part of this Annual Report on Form 10-K:	<u>PAGE</u>
(1)	Financial Statements:	
	Independent Auditors' Reports .....	31
	Consolidated Balance Sheets: September 30, 2003 and 2002 .....	33
	Consolidated Statements of Operations: Years ended September 30, 2003, 2002 and 2001 .....	34
	Consolidated Statements of Stockholders' Equity: Years ended September 30, 2003, 2002 and 2001 .....	35
	Consolidated Statements of Cash Flows: Years ended September 30, 2003, 2002 and 2001 .....	36
	Notes to Consolidated Financial Statements .....	37

## INDEPENDENT AUDITORS' REPORT

The Board of Directors  
Amtech Systems, Inc.:

We have audited the accompanying consolidated balance sheets of Amtech Systems, Inc. and subsidiaries as of September 30, 2003 and 2002, and the related consolidated statements of operations, stockholders' equity and cash flows for each of the two years ended September 30, 2003. 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 audit. The consolidated financial statements of Amtech Systems, Inc. and subsidiaries as of September 30, 2001 and for the year then ended were audited by other auditors who have ceased operations. Those auditors expressed an unqualified opinion on those consolidated financial statements and financial statement schedule in their report dated January 9, 2002.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. 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 audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Amtech Systems, Inc. and subsidiaries as of September 30, 2003 and 2002, and the results of their operations and their cash flows for each of the two years ended September 30, 2003, in conformity with accounting principles generally accepted in the United States of America.

As discussed above, the consolidated financial statements of Amtech Systems, Inc. as of September 30, 2001 and for the year then ended were audited by auditors who have ceased operations. As described in Note 1, these consolidated financial statements have been revised to include the transitional disclosures required by Statement of Financial Accounting Standards (SFAS) No. 142, *Goodwill and Other Intangible Assets*, which was adopted by the Company as of October 1, 2002. In our opinion, the disclosures for fiscal year 2001 in Note 1 are appropriate. Also, as described in Note 1, the Company reclassified certain identifiable research and development costs from costs of sales to research and development expenses during the year ended September 30, 2003, and accordingly, the amounts relating to the fiscal years ending 2002 and 2001 were restated to conform to the fiscal year 2003 presentation. We audited the adjustments that were applied to restate the research and development expenses reflected in the fiscal year 2001 consolidated financial statements. In our opinion, such adjustments are appropriate and have been properly applied. However, we were not engaged to audit, review, or apply any procedures to the fiscal year 2001 consolidated financial statements of Amtech Systems, Inc. and subsidiaries other than with respect to such adjustments and, accordingly, we do not express an opinion or any other form of assurance on the fiscal year 2001 consolidated financial statements taken as a whole.

/s/ KPMG LLP

Phoenix, Arizona  
December 12, 2003

**THE REPORT PRESENTED BELOW IS A COPY OF THE INDEPENDENT AUDITORS' REPORT OF ARTHUR ANDERSEN LLP, THE FORMER AUDITOR OF AMTECH SYSTEMS, INC., ISSUED ON JANUARY 9, 2002. ARTHUR ANDERSEN LLP HAS BEEN UNABLE TO ISSUE AN UPDATED REPORT. ADDITIONALLY, THE OPINION PRESENTED BELOW COVERS THE BALANCE SHEETS AS OF SEPTEMBER 30, 2001 AND 2000 AND THE STATEMENTS OF OPERATIONS, STOCKHOLDERS' EQUITY AND CASH FLOWS FOR THE YEARS ENDED SEPTEMBER 30, 2000 AND 1999, WHICH STATEMENTS ARE NOT INCLUDED IN THIS ANNUAL REPORT ON FORM 10-K.**

#### **REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS**

To Amtech Systems, Inc.:

We have audited the accompanying consolidated balance sheets of AMTECH SYSTEMS, INC. (an Arizona corporation) and subsidiaries (the "Company") as of September 30, 2001 and 2000, and the related consolidated statements of operations, stockholders' equity and cash flows for each of the three years ended September 30, 2001. 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 auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. 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 financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 30, 2001 and 2000, and the results of its operations and its cash flows for each of the three years ended September 30, 2001, in conformity with accounting principles generally accepted in the United States.

As explained in Note 1 to the financial statements, effective October 1, 2000, the Company changed its method of accounting for revenue recognition.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The schedule listed in the index of financial statements is presented for purposes of complying with the Securities and Exchange Commission's rules and is not part of the basic financial statements. This schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, fairly states in all material respects the financial data required to be set forth therein in relation to the basic financial statements taken as a whole.

/s/ ARTHUR ANDERSEN LLP

Phoenix, Arizona  
January 9, 2002

**AMTECH SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**

	September 30,	
	2003	2002
<b>ASSETS</b>		
CURRENT ASSETS:		
Cash and cash equivalents	\$ 7,453,069	\$ 8,045,663
Accounts receivable (less allowance for doubtful accounts of \$176,000 and \$152,000, at September 30, 2003 and 2002, respectively)	3,005,128	2,695,323
Inventories	3,893,886	3,020,890
Deferred income taxes	980,000	1,044,000
Income taxes receivable	460,000	-
Prepaid expenses	193,615	82,291
Total current assets	15,985,698	14,888,167
PROPERTY, PLANT AND EQUIPMENT - net	1,503,074	1,642,084
DEFERRED INCOME TAXES - LONG TERM	150,000	88,000
GOODWILL AND OTHER ASSETS - net	760,270	774,849
TOTAL ASSETS	\$ 18,399,042	\$ 17,393,100
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
CURRENT LIABILITIES:		
Accounts payable	\$ 1,221,327	\$ 891,640
Accrued compensation and related taxes	626,426	653,045
Accrued warranty expense	321,300	262,573
Deferred profit	534,082	479,964
Customer deposits	226,959	91,417
Income taxes payable	-	37,000
Other accrued liabilities	329,061	306,601
Total current liabilities	3,259,155	2,722,240
DEFERRED PROFIT - LONG TERM	-	199,966
LONG-TERM OBLIGATIONS	640,490	259,217
COMMITMENTS AND CONTINGENCIES (Note 7)		
STOCKHOLDERS' EQUITY:		
Preferred stock; no specified terms; 100,000,000 shares authorized; none issued	-	-
Common stock; \$0.01 par value; 100,000,000 shares authorized; shares issued and outstanding: 2,698,421 in 2003 and 2,688,571 in 2002	26,984	26,886
Additional paid-in capital	12,873,039	12,859,715
Accumulated other comprehensive income (loss)	194,338	(179,639)
Retained earnings	1,405,036	1,504,715
Total stockholders' equity	14,499,397	14,211,677
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 18,399,042	\$ 17,393,100

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

**AMTECH SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	<b>Year Ended September 30,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
Net revenues	\$ 19,433,534	\$ 20,532,768	\$ 22,851,920
Cost of sales	14,598,488	15,536,264	15,767,058
Gross margin	4,835,046	4,996,504	7,084,862
Selling, general and administrative	4,430,418	4,422,352	4,918,902
Research and development	650,051	497,020	589,388
Operating income (loss)	(245,423)	77,132	1,576,572
Interest income, net	35,744	91,039	246,720
Income (loss) before income taxes and cumulative effect of change in accounting principle	(209,679)	168,171	1,823,292
Income tax provision (benefit)	(110,000)	50,000	670,000
Income (loss) before cumulative effect of change in accounting principle	(99,679)	118,171	1,153,292
Cumulative effect of change in accounting principle, net of tax benefit of \$410,000	-	-	(690,211)
<b>NET INCOME (LOSS)</b>	<b>\$ (99,679)</b>	<b>\$ 118,171</b>	<b>\$ 463,081</b>
 <b>EARNINGS (LOSS) PER SHARE:</b>			
Basic:			
Income (loss) before cumulative effect of change in accounting principle	\$ (.04)	\$ .04	\$ .43
Cumulative effect of change in accounting principle, net of tax	-	-	(.26)
Basic earnings (loss) per share	<u>\$ (.04)</u>	<u>\$ .04</u>	<u>\$ .17</u>
 Diluted:			
Income (loss) before cumulative effect of change in accounting principle	\$ (.04)	\$ .04	\$ .41
Cumulative effect of change in accounting principle, net of tax	-	-	(.25)
Diluted earnings (loss) per share	<u>\$ (.04)</u>	<u>\$ .04</u>	<u>\$ .16</u>
 Number of shares used in per share calculations:			
Basic	2,692,222	2,683,030	2,661,001
Diluted	2,692,222	2,765,553	2,821,583

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



**AMTECH SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**

	<u>Common Stock</u>		<u>Additional Paid-In Capital</u>	<u>Accumulated Other Comprehensive</u>	<u>Retained Earnings</u>	<u>Total Stockholders' Equity</u>
	<u>Number of Shares</u>	<u>Amount</u>		<u>Income (Loss)</u>		
<b>BALANCE AT SEPTEMBER 30, 2000</b>	2,571,808	\$25,718	\$ 12,133,058	\$ (502,356)	\$ 923,463	\$ 12,579,883
Net income	-	-	-	-	463,081	463,081
Translation adjustment	-	-	-	134,114	-	134,114
Comprehensive income						597,195
Warrants and stock options exercised	77,363	774	405,982	-	-	406,756
<b>BALANCE AT SEPTEMBER 30, 2001</b>	<u>2,649,171</u>	<u>26,492</u>	<u>12,539,040</u>	<u>(368,242)</u>	<u>1,386,544</u>	<u>13,583,834</u>
Net income	-	-	-	-	118,171	118,171
Translation adjustment	-	-	-	188,603	-	188,603
Comprehensive income						306,774
Common Stock issued pursuant to P.R. Hoffman earn-out	30,600	306	309,523	-	-	309,829
Stock options exercised	8,800	88	11,152	-	-	11,240
<b>BALANCE AT SEPTEMBER 30, 2002</b>	<u>2,688,571</u>	<u>26,886</u>	<u>12,859,715</u>	<u>(179,639)</u>	<u>1,504,715</u>	<u>14,211,677</u>
Net loss	-	-	-	-	(99,679)	(99,679)
Translation adjustment	-	-	-	493,963	-	493,963
Minimum pension liability adjustment	-	-	-	(119,986)	-	(119,986)
Comprehensive income						274,298
Stock options exercised	9,850	98	13,324	-	-	13,422
<b>BALANCE AT SEPTEMBER 30, 2003</b>	<u>2,698,421</u>	<u>\$26,984</u>	<u>\$ 12,873,039</u>	<u>\$ 194,338</u>	<u>\$ 1,405,036</u>	<u>\$ 14,499,397</u>

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

**AMTECH SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	<b>Year Ended September 30,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
<b>OPERATING ACTIVITIES</b>			
Net income (loss)	\$ (99,679)	\$ 118,171	\$ 463,081
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Cumulative effect of change in accounting principle, net of tax	-	-	690,211
Depreciation and amortization	483,997	447,321	376,308
Write-down of inventory	297,052	528,153	336,806
Provision for doubtful accounts	47,514	372,058	496,548
Loss on disposals of long-lived assets	9,029	-	1,660
Deferred income taxes	2,000	393,000	(538,000)
Changes in operating assets and liabilities:			
Accounts receivable	(78,603)	881,332	691,529
Inventories	(865,808)	1,382,943	(848,402)
Prepaid expenses and other assets	(93,740)	(14,645)	(139,745)
Accounts payable	223,815	(24,675)	(1,293,612)
Accrued liabilities and customer deposits	20,430	(556,595)	59,015
Deferred profit	(209,263)	(973,010)	676,962
Income taxes receivable/payable	(508,575)	(114,629)	(532,273)
Net cash provided by (used in) operating activities	(771,831)	2,439,424	440,088
<b>INVESTING ACTIVITIES</b>			
Purchases of property, plant and equipment	(206,307)	(464,322)	(664,733)
Net cash used in investing activities	(206,307)	(464,322)	(664,733)
<b>FINANCING ACTIVITIES</b>			
Common stock issued	13,422	11,240	406,756
Borrowings on mortgage loan	255,713	-	931
Net cash provided by financing activities	269,135	11,240	407,687
EFFECT OF EXCHANGE RATE CHANGES ON CASH	116,409	61,201	30,578
NET INCREASE IN CASH AND CASH EQUIVALENTS	(592,594)	2,047,543	213,620
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	8,045,663	5,998,120	5,784,500
CASH AND CASH EQUIVALENTS, END OF YEAR	\$ 7,453,069	\$ 8,045,663	\$ 5,998,120
Supplemental Cash Flow Information:			
Cash paid (received) during the year for:			
Interest expense	\$ 34,414	\$ 16,926	\$ 29,816
Income taxes paid (refunded) - net	383,000	(209,000)	1,743,000
Non-Cash Items:			
Common stock issued pursuant to PR Hoffman acquisition	\$ -	\$ 309,829	\$ -
Minimum pension liability adjustment	(119,986)	-	-

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

**AMTECH SYSTEMS, INC. AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
**FOR THE YEARS ENDED SEPTEMBER 30, 2003, 2002 AND 2001**

**(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Nature of Operations and Basis of Presentation** - Amtech Systems, Inc., an Arizona corporation (“Amtech”), and its wholly-owned subsidiaries, P. R. Hoffman Machine Products, Inc. (“P. R. Hoffman”) based in the United States, and Tempres Systems, Inc. (“Tempres”) based in The Netherlands, comprise the “Company.” Amtech designs, assembles, sells and installs capital equipment and related consumables used in the manufacture of wafers of various materials, primarily silicon wafers for the semiconductor industry, and in certain semiconductor fabrication processes. These products are sold to manufacturers of silicon wafers and semiconductors worldwide, particularly in the United States, Asia and northern Europe. In addition, Amtech provides semiconductor manufacturing support services.

Amtech serves a niche market in an industry that experiences rapid technological advances, and which in the past has been very cyclical. Therefore, Amtech’s future profitability and growth depend on its ability to develop or acquire and market profitable new products, and on its ability to adapt to cyclical trends.

The accompanying consolidated financial statements include the accounts of Amtech and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. Unless otherwise noted, all references to a year refer to Amtech’s fiscal year, which ends on September 30th.

**Use of Estimates** - The preparation of financial statements in conformity with accounting principles generally accepted in the United States 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 revenues and expenses during the year. Actual results could differ from those estimates.

**Reclassifications** - In order to more accurately reflect research and development expenditures, the Company reclassified \$180,000 and \$207,000 of expenses previously reflected as cost of sales to research and development in 2002 and 2001, respectively.

**Revenue Recognition** – The Company reviews 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 fair market value of the undelivered items, and (2) all contingent portions of the sales arrangement.

The Company recognizes revenue when persuasive evidence of an arrangement exists; the product has been delivered and title has transferred; the seller’s price is fixed or determinable and collectibility is reasonably assured. Certain of the Company’s product sales are accounted for as multiple-element arrangements. For the semiconductor equipment segment, if the Company has met defined customer specifications with similarly situated customers and the specific equipment and process involved, the Company recognizes equipment revenue upon shipment and transfer of title, and the remainder when it becomes due, generally upon customer acceptance. Product sales that are shipped, but which do not meet these criteria, are deferred and recognized upon customer acceptance.

Equipment sold by the polishing supplies segment does not include process guarantees or acceptance criteria; therefore, the related revenue is recorded upon shipment. For all segments, sales of spare parts and consumables are recognized upon shipment, as there are no post shipment obligations other than standard warranties. Service revenues are recognized as services are performed. Revenue

related to service contracts is recognized ratably over the period of the contract, which generally coincides with the performance of the services requested by the customer.

During the fourth quarter of 2001, the Company changed its revenue recognition policy retroactively to effective October 1, 2000, based on guidance provided in Securities and Exchange Commission (“SEC”) Staff Accounting Bulletin No. 101 (“SAB 101”), “Revenue Recognition in Financial Statements.” In accordance with guidance provided in SAB 101, the Company recorded a non-cash charge of \$690,211 (after reduction for income taxes of \$410,000), or \$0.26 per basic share, to reflect the cumulative effect of the accounting change as of the beginning of 2001.

The deferred profit balance as of the beginning of 2001 was \$1,125,211. This amount represents the revenue, net of the related cost of sales, for systems that were shipped and previously recorded as sales, but that had not been accepted or did not qualify for multiple-element accounting as of September 30, 2000. Of the \$1,125,211 in deferred profit as of the beginning of 2001, \$46,377, \$122,640 and \$936,994 was recognized in 2003, 2002 and 2001, respectively.

The components of deferred profit are as follows:

	September 30,		
	2003	2002	2001
Deferred Revenues	\$ 626,265	\$1,442,215	\$4,477,062
Deferred Costs	92,183	762,285	2,699,889
	<u>\$ 534,082</u>	<u>\$ 679,930</u>	<u>\$1,777,173</u>

**Cash Equivalents** - Cash equivalents consist of money market mutual funds, time certificates of deposit and U.S. treasury bills. The Company considers certificates of deposit and treasury bills to be cash equivalents if their original maturity is 90 days or less.

**Concentrations of Credit Risk** – Financial instruments that potentially subject Amtech to significant concentrations of credit risk consist principally of cash equivalents and trade accounts receivable. The Company invests in a variety of financial instruments with high quality financial institutions, such as, money market mutual funds, certificates of deposit and U.S. treasury bills. Amtech’s customers consist of semiconductor manufacturers located throughout the world. The Company manages credit risk by performing ongoing credit evaluations of its customers’ financial condition, by requiring significant partial payments or letters of credit prior to shipment where appropriate and by actively monitoring collections. Amtech maintains a reserve for potentially uncollectible receivables based on its assessment of collectibility. In addition, the Company utilizes letters of credit to mitigate credit risk when appropriate.

The following is a summary of the activity in the Company’s allowance for doubtful accounts during the years ended September 30, 2003, 2002 and 2001:

	Year Ended September 30,		
	2003	2002	2001
Balance at Beginning of Year	\$ 152,000	\$ 630,000	\$ 149,000
Charged to Expense	47,514	372,058	496,548
Deductions	(23,514)	(850,058)	(15,548)
Balance at End of Year	<u>\$ 176,000</u>	<u>\$ 152,000</u>	<u>\$ 630,000</u>

As of September 30, 2003, receivables from three customers comprised 18%, 15% and 10%, respectively, of accounts receivable. As of September 30, 2002, receivables from two customers comprised 23% and 12%, respectively, of accounts receivable. Management believes the amounts outstanding at September 30, 2003 are fully collectible.

**Inventories** - Inventories are stated at the lower of cost (first-in, first-out method) or net realizable value. The components of inventories are as follows:

	September 30,	
	2003	2002
Purchased parts and raw materials	\$2,391,270	\$1,720,728
Work-in-process	1,011,717	534,057
Finished goods	490,899	766,105
	<u>\$3,893,886</u>	<u>\$3,020,890</u>

**Property, Plant and Equipment** - Maintenance and repairs are charged to expense as incurred. The costs of additions and improvements are capitalized. The cost of property retired or sold and the related accumulated depreciation are removed from the applicable accounts when disposition occurs and any gain or loss is recognized. Depreciation is computed using the straight-line method. Useful lives for equipment, machinery and leasehold improvements range from three to seven years; for furniture and fixtures from five to ten years; and for buildings twenty years. Depreciation and amortization expense was \$467,000, \$361,000 and \$296,000 in 2003, 2002 and 2001, respectively.

In accordance with Financial Accounting Standards Board (“FASB”) Statement of Financial Accounting Standards (“SFAS”) No. 144, “Accounting for the Impairment or Disposal of Long-Lived Assets,” long-lived assets are reviewed for impairment whenever events or circumstances indicate that the carrying amount of the asset may not be recoverable. If the sum of the undiscounted expected cash flows from an asset to be held and used in operations is less than the carrying value of the asset, an impairment loss is recognized. The Company has not recognized any impairment losses on its long-lived assets during 2003, 2002 or 2001.

The following is a summary of property, plant and equipment:

	September 30,	
	2003	2002
Building and leasehold improvements	\$ 817,651	\$ 732,739
Equipment and machinery	1,702,913	1,622,640
Furniture and fixtures	1,428,191	1,156,932
	<u>3,948,755</u>	<u>3,512,311</u>
Accumulated depreciation and amortization	<u>(2,445,681)</u>	<u>(1,870,227)</u>
	<u>\$1,503,074</u>	<u>\$1,642,084</u>

**Goodwill** – On October 1, 2002, the Company adopted SFAS No. 142, “Goodwill and Other Intangible Assets.” Under SFAS No. 142, goodwill and intangible assets with indefinite lives are no longer subject to amortization, but are tested for impairment at least annually. Accordingly, the Company reviews goodwill for impairment on an annual basis, or more frequently if circumstances dictate. The Company has completed both the initial impairment testing required by SFAS No. 142 and its updated annual impairment testing, noting no indication of impairment associated with the recorded goodwill balance of \$728,000.

For comparative purposes, pro forma net income (loss) assuming SFAS No. 142 had been adopted in 2001 is as follows:

	Year Ended September 30,		
	2003	2002	2001
Net income (loss), as reported	\$ (99,679)	\$118,171	\$463,081
Amortization expense, net of tax	-	51,800	42,210
Net income (loss), pro forma	<u>\$ (99,679)</u>	<u>\$169,971</u>	<u>\$505,291</u>
<b>Basic Earnings (Loss) Per Share:</b>			
As reported	\$(.04)	\$.04	\$.17
Pro forma	(.04)	.06	.19
<b>Diluted Earnings (Loss) Per Share:</b>			
As reported	\$(.04)	\$.04	\$.16
Pro forma	(.04)	.06	.18

Goodwill amortization was \$-0-, \$74,000 and \$67,000 for 2003, 2002 and 2001, respectively.

**Proprietary Product Rights** - Through the acquisition of the net assets of P. R. Hoffman, the Company acquired the license for the design of its steel carriers with plastic inserts for abrasive machining of silicon wafers. In 1995, P. R. Hoffman licensed the patent rights from the patent holder, and pays a royalty to the patent holder for the use of such patent rights. Royalty expense for all licenses is included in cost of sales and totaled \$84,000, \$66,000 and \$74,000 in 2003, 2002 and 2001, respectively.

**Warranty** - The Company provides free of charge a limited warranty, generally for periods of 12 to 24 months, to all purchasers of its new products and systems. The Company records accruals for estimated warranty costs at the time revenue is recognized. Warranty expense was \$173,000, \$210,000 and \$370,000 in 2003, 2002 and 2001, respectively. Management believes the amounts accrued for future warranty expenditures are sufficient for all warranty costs on systems sold through September 30, 2003.

**Research and Development Expenses** - Product development costs are expensed as incurred.

**Foreign Currency Transactions and Translation** - Financial information relating to the Company's foreign subsidiary is reported in accordance with SFAS No. 52, "Foreign Currency Translation." The functional currency of Tempress is the Euro. Net income (loss) includes pretax gains from foreign currency transactions of \$55,000 and \$157,000 in 2003 and 2002, respectively, and a loss of \$118,000 in 2001. The gains or losses resulting from the translation of Tempress' financial statements have been included in other comprehensive income (loss).

**Income Taxes** - The Company files consolidated federal income tax returns and computes deferred income tax assets and liabilities based upon cumulative temporary differences between financial reporting and taxable income, carryforwards available and enacted tax laws (See Note 10).

**Stock-Based Compensation** - The Company accounts for its employee stock-based compensation plans under SFAS No. 123, "Accounting for Stock-Based Compensation." SFAS No. 123 permits companies to record employee stock-based transactions using the intrinsic value method in accordance with Accounting Principles Board ("APB") Opinion No. 25, "Accounting for Stock Issues to Employees," under which no compensation cost is recognized and the pro forma effects on earnings and earnings per share are disclosed as if the fair value approach had been adopted.

No compensation expense has been recognized by the Company, as all options have been granted with an exercise price equal to, or greater than, the fair value of the common stock on the date of grant. No adjustment has been made for the non-transferability of the options, or for the risk of forfeiture at the time of issuance. Forfeitures of unvested options are instead recorded as incurred. The fair value of each option grant has been estimated as of the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	Year Ended September 30,		
	2003	2002	2001
Risk free interest rate	3.65% to 3.71%	4.6% to 5.3%	4.5% to 5.5%
Expected life	4 years	4 to 6 years	4 to 6 years
Dividend rate	0%	0%	0%
Expected volatility	32% to 44%	61%	92% to 110%

The following table illustrates the pro-forma effect on net income (loss) and earnings (loss) per share, as if the Company had applied the fair value recognition provisions of SFAS No. 123:

	Year Ended September 30,		
	2003	2002	2001
Net income (loss), as reported	\$ (99,679)	\$ 118,171	\$ 463,081
Compensation expense, net of tax	192,205	196,171	173,081
Net income (loss), pro forma	<u>(291,884)</u>	<u>(78,000)</u>	<u>290,000</u>
Basic Earnings (Loss) Per Share:			
As reported	\$(.04)	\$.04	\$.17
Pro forma	(.11)	(.03)	.11
Diluted Earnings (Loss) Per Share:			
As reported	\$(.04)	\$.04	\$.16
Pro forma	(.11)	(.03)	.10

**Fair Value of Financial Instruments** – The carrying values of the Company’s current financial instruments approximate fair value due to the short term in which these instruments mature. The carrying values of the Company’s line of credit (see Note 4) and long-term debt (see Note 5) approximate fair value because their variable interest rates approximate the prevailing interest rates for similar debt instruments.

**Impact of Recently Issued Accounting Pronouncements** – In November, 2002, the EITF reached a consensus on issue 00-21, “Revenue Arrangements with Multiple Deliverables” (“EITF 00-21”). EITF 00-21 addresses how to account for arrangements that may involve the delivery or performance of multiple products, services and/or rights to use assets. The consensus mandates how to identify whether goods or services or both that are to be delivered separately in a bundled sales arrangement should be accounted for separately. The guidance can affect the timing of revenue recognition for such arrangements, even though it does not change rules governing the timing or patterns of revenue recognition of individual items accounted for separately. The final consensus was applicable to agreements entered into in fiscal periods beginning after June 15, 2003. The adoption of EITF 00-21 did not have a material impact on Amtech’s financial position or results of operations; however, depending on the circumstances and contract terms of large multi-system orders, EITF 00-21 may cause the Company to experience significant quarterly fluctuations in revenues, profits and cash flows.

In January, 2003, the FASB issued Interpretation No. 46, "Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51." This Interpretation addresses the consolidation by business enterprises of variable interest entities when the equity investors do not have the characteristics of a controlling financial interest (as defined in the Interpretation). In October, 2003, the FASB deferred the effective date for implementation of this Interpretation until December 31, 2003. Amtech believes it currently has no contractual or other business relationship with a variable interest entity, and therefore, does not believe that the adoption of this Interpretation will have a material effect on its financial position or results of operations.

In December, 2002, the FASB issued SFAS No. 148, "Accounting for Stock-Based Compensation – Transition and Disclosure." SFAS No. 148 requires certain pro forma disclosures related to employee stock-based compensation, and also amended the transition provisions of SFAS No. 123. Amtech adopted the pro forma disclosures required by SFAS No. 148 in the second quarter of 2003.

In May, 2003, the FASB issued SFAS No. 150, "Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity." SFAS No. 150 establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity. It requires that an issuer classify a financial instrument that is within its scope as a liability (or an asset in some circumstances). For public entities, SFAS No. 150 was effective for financial instruments entered into or modified after May 31, 2003, and otherwise was effective at the beginning of the first interim period beginning after June 15, 2003. The adoption of SFAS No. 150 did not have a material effect on Amtech's financial position or results of operations.

## (2) STOCK-BASED COMPENSATION

**Stock Warrants** – On September 8, 2000 the Company issued 59,300 warrants to purchase one share each of \$.01 par value common stock in connection with the issuance of 383,000 shares of common stock. The warrants are exercisable at a price per share of \$15.12 and expire on September 8, 2005.

**Stock Option Plans** – The Board of Directors has reserved 10,000 shares of common stock for issuance upon exercise of the outstanding options granted to directors under Director Stock Purchase Agreements prior to 1996. The Non-Employee Directors Stock Option Plan was approved by the shareholders in 1996 for the issuance of up to 100,000 shares of common stock to Directors. The Amended and Restated 1995 Stock Option Plan and the 1995 Stock Bonus Plan were also approved by stockholders in 1996 under which a combined total of 160,000 shares were authorized. The 1998 Employee Stock Option Plan (the "1998 Plan"), under which 50,000 shares could be granted, was adopted by the Board of Directors on January 31, 1998 and approved by shareholders on March 20, 1998. On October 13, 2000, the Board of Directors authorized an increase in the number of options available under the 1998 Plan to 300,000. The amendment was approved by the shareholders at the annual meeting on March 15, 2001. On December 14, 2001, the Board of Directors authorized an increase in the number of options available under the 1998 Plan to 500,000. The amendment was approved by the shareholders at the annual meeting on March 29, 2002. All of the plans expire in 2006, except the 1998 Plan, which expires in 2008.

Qualified stock options issued under the terms of the plans have, or will have, an exercise price equal to, or greater than, the fair market value of the common stock at the date of the option grant, and expire no later than 10 years from the date of grant, with the most recent grant expiring in 2013. Under the terms of the 1995 Stock Option Plan, nonqualified stock options may also be issued. Options issued in 2003, 2002 and 2001 vest at the rate of 20% - 33% per year. As of September 30, 2003, the Company had 228,000 options available for issuance under the plans.



The stock option transactions and the options outstanding are summarized as follows:

	Year Ended September 30,					
	2003		2002		2001	
	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding at beginning of year	434,567	\$ 4.78	386,617	\$ 4.56	163,017	\$ 1.74
Granted	16,000	3.11	60,000	5.64	258,750	5.88
Exercised	(9,850)	1.36	(8,800)	1.28	(9,950)	1.32
Forfeited	(35,500)	5.87	(3,250)	5.10	(25,200)	1.13
Outstanding at end of year	<u>405,217</u>	4.70	<u>434,567</u>	4.78	<u>386,617</u>	4.56
Exercisable at end of year	202,467	\$ 4.01	147,568	\$ 3.20	60,049	\$ 1.58
Weighted average fair value of options granted		\$ 1.03		\$ 3.27		\$ 4.64

The following summarizes information about stock options outstanding at September 30, 2003:

Options Outstanding			Options Exercisable		
Range of Exercise Prices	Number Outstanding	Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
\$1.13 – 1.49	71,767	3.38	\$1.13	69,767	\$1.13
1.50 – 1.99	11,500	5.41	1.50	8,400	1.50
2.00 – 3.24	11,700	8.92	2.88	500	2.00
3.25 – 4.24	11,000	8.27	3.25	3,000	3.25
4.25 – 5.49	90,250	7.88	4.43	31,600	4.42
5.50 – 6.49	43,000	7.40	5.82	19,866	5.83
6.50 – 6.99	166,000	7.48	6.54	69,334	6.55
	<u>405,217</u>			<u>202,467</u>	

### (3) EARNINGS (LOSS) PER SHARE

Earnings (loss) per share (EPS) are calculated as follows:

	2003	2002	2001
Net income (loss)	<u>\$ (99,679)</u>	<u>\$ 118,171</u>	<u>\$ 463,081</u>
Weighted average shares outstanding:			
Common stock	2,692,222	2,683,030	2,661,001
Common stock warrants and stock options (1)	-	82,523	160,582
Diluted shares	<u>2,692,222</u>	<u>2,765,553</u>	<u>2,821,583</u>
Earnings (Loss) Per Share:			
Basic	\$(.04)	\$ .04	\$ .17
Diluted	\$(.04)	\$ .04	\$ .16

- (1) Number of common stock equivalents are calculated using the treasury stock method and the average market price during the year. Options and warrants on 450,917 shares, 234,700 shares and 45,700 shares are excluded from the EPS calculations as they are either antidilutive due to the net loss for the year or had an exercise price greater than the average market price during the years ended September 30, 2003, 2002 and 2001, respectively.

#### **(4) LINE OF CREDIT**

The Company has a line of credit in the amount of Euro 250,000, approximately \$291,000 as of September 30, 2003. The line of credit accrues interest at a rate of 1.75% over a Netherlands bank's basic interest rate (2.75% and 4.0% at September 30, 2003 and 2002, respectively). The line of credit has no fixed expiration date, and requires minimum principal payments of Euro 4,000 per quarter. The line of credit is secured by a lien on the Company's land and buildings in The Netherlands and on certain accounts receivable. As of September 30, 2003 and 2002, there were no borrowings on the line of credit.

#### **(5) LONG-TERM OBLIGATIONS**

Long-term obligations include a 26-year mortgage, secured by a lien on the Company's land and buildings in The Netherlands and on certain accounts receivable. The principal amount of the mortgage was \$466,000 and \$161,000 as of September 30, 2003 and 2002, respectively. The mortgage matures on July 31, 2029, and no principal payments are due until October 1, 2004. Interest is paid monthly at a fixed rate of 3.6% until August 1, 2004, at which time a new fixed rate will be set based on prevailing market conditions. There is no penalty for prepayment of the mortgage, as long as the prepayment is made at the end of a fixed rate period as defined in the mortgage agreement.

The Company maintains a defined benefit pension plan for the hourly employees of P.R. Hoffman. Long-term obligations include pension liabilities of \$174,000 and \$98,000 at September 30, 2003 and 2002, respectively. In 2003, the Company recorded a minimum pension liability adjustment of \$120,000, which is reflected as a reduction of stockholders' equity (other comprehensive loss).

#### **(6) STOCKHOLDERS' EQUITY**

The Company's stockholder rights plan authorizes the distribution of one right for each outstanding common share. Each right entitles the holder to purchase one one-hundredth of a share of Series A Participating Preferred Stock, at a purchase price of \$8.50, subject to certain antidilution adjustments. The rights will expire 10 years after issuance and will be exercisable if (a) a person or group becomes the beneficial owner of 15% or more of the Company's common stock or (b) a person or group commences a tender or exchange offer that would result in the offeror beneficially owning 15% or more of the Company's common stock (a "Stock Acquisition Date"). If a Stock Acquisition Date occurs, each right, unless redeemed by the Company at \$.01 per right, entitles the holder to purchase an amount of the Company's common stock, or in certain circumstances a combination of securities and/or assets or the common stock of the acquirer, having an equivalent market value of \$17.00 per right at a purchase price of \$8.50. Rights held by the acquiring person or group will become void and will not be exercisable.

In 2002, the Company issued 30,600 shares of common stock as contingent consideration in accordance with the terms of its 1997 acquisition of substantially all of the assets and operating liabilities of P.R. Hoffman. This additional consideration was treated as part of the purchase price. In 2001, 67,050 warrants were exercised, which were warrants issued in the acquisition of P.R. Hoffman.

#### **(7) COMMITMENTS AND CONTINGENCIES**

**Purchase Obligations** - Key suppliers include two steel mills, one domestic and one German, capable of meeting the material specifications the Company requires. As of September 30, 2003, the Company had unconditional commitments to purchase \$0.6 million of steel, with delivery dates to be determined in the future. Due to minimum order quantities for this steel and long lead times, the Company has made purchase commitments that may be in excess of future production requirements, and it could take several years to use all of the steel commitments in production of the Company's products. These purchase commitments are not expected to result in any significant losses.

**Legal Proceedings** - On or about August 31, 2000, a "P.R. Hoffman Machine Products" was one of 11 companies named in a legal action being brought by North Middleton Township in Carlisle, Pennsylvania, the owner of a landfill allegedly found to be contaminated. No detailed allegations have been filed as part of this legal action, which appears to have been filed to preserve the right to file claims for contributions to the clean-up of the landfill at a later date. The Company acquired the assets of P.R. Hoffman in an asset transaction consummated on July 1, 1997. The landfill was closed and has not been used by P.R. Hoffman since sometime prior to completion of the Company's acquisition. Therefore, the Company believes that the named company is the prior owner of the acquired assets. Under the terms of the Asset Purchase Agreement governing the acquisition, the prior owner is obligated to indemnify the Company for any breaches of P.R. Hoffman's representations and warranties in the Asset Purchase Agreement, including representations relating to environmental matters. In accordance with the terms of the Asset Purchase Agreement, the Company has provided notice to the prior owner of the Company's intent to seek indemnification from such owner for any liabilities resulting from this legal action. Based on information available to the Company as of the date of this report, management believes the Company's costs, if any, to resolve this matter will not be material to its financial position or results of operations.

**Operating Leases** - The Company leases buildings, vehicles and equipment under operating leases. Rental expense under such operating leases was \$361,000, \$308,000 and \$277,000 in 2003, 2002 and 2001, respectively. As of September 30, 2003, future minimum rental commitments under non-cancelable operating leases with initial or remaining terms of one year or more totaled \$406,000, of which \$227,000, \$68,000, \$52,000, \$33,000 and \$26,000 is payable in 2004, 2005, 2006, 2007 and 2008, respectively.

**(8) MAJOR CUSTOMERS AND FOREIGN SALES**

Two customers represented 15% and 12% of net revenues, respectively, during 2003. No customer accounted for 10% or more of net revenues during 2002. One customer represented 14% of net revenues during 2001.

The Company's net revenues were to customers in the following geographic regions:

	Year Ended September 30,		
	2003	2002	2001
North America	26%	47%	55%
Asia (Korea, People's Republic of China, Taiwan, Japan, Singapore, Indonesia, Malaysia, Australia and India)	44	20	8
Europe (including 1% or less to Israel and Africa)	30	33	37
	<u>100%</u>	<u>100%</u>	<u>100%</u>

**(9) BUSINESS SEGMENT INFORMATION**

The Company classifies its products into two core business segments. The semiconductor equipment segment designs, manufactures and markets semiconductor wafer processing and handling equipment used in the fabrication of integrated circuits. Also aggregated in the semiconductor equipment segment are the manufacturing support service business and any difference between the planned corporate expenses, which are allocated to the segments based upon their revenue and the Company's investment in each, and actual corporate expenses. The polishing supplies segment designs, manufactures and markets carriers, templates and equipment used in the lapping and polishing of wafer thin materials, including silicon wafers used in the production of semiconductors.

Information concerning the Company's business segments is as follows:

	Year Ended September 30,		
	2003	2002	2001
<u>Net revenues:</u>			
Semiconductor equipment	\$ 14,133,370	\$ 15,410,513	\$ 15,445,469
Polishing supplies	5,300,164	5,122,255	7,406,451
	<u>\$ 19,433,534</u>	<u>\$ 20,532,768</u>	<u>\$ 22,851,920</u>
<u>Operating income (loss):</u>			
Semiconductor equipment	\$ (192,790)	\$ 196,509	\$ 930,915
Polishing supplies	(52,633)	(119,377)	645,657
Total operating income (loss)	(245,423)	77,132	1,576,572
Interest income, net	35,744	91,039	246,720
Income (loss) before taxes and cumulative effect of change in accounting principle	<u>\$ (209,679)</u>	<u>\$ 168,171</u>	<u>\$ 1,823,292</u>
<u>Capital expenditures:</u>			
Semiconductor equipment	\$ 153,735	\$ 464,322	\$ 664,733
Polishing supplies	52,572	-	-
	<u>\$ 206,307</u>	<u>\$ 464,322</u>	<u>\$ 664,733</u>
<u>Depreciation and amortization expense:</u>			
Semiconductor equipment	\$ 398,118	\$ 286,696	\$ 218,903
Polishing supplies	85,879	160,625	157,405
	<u>\$ 483,997</u>	<u>\$ 447,321</u>	<u>\$ 376,308</u>
	<u>September 30,</u>		
	2003	2002	
<u>Identifiable assets:</u>			
Semiconductor equipment	\$ 15,390,632	\$ 14,575,365	
Polishing supplies	3,008,410	2,817,735	
	<u>\$ 18,399,042</u>	<u>\$ 17,393,100</u>	

The Company has manufacturing operations in the United States and The Netherlands. Revenues, operating income (loss) and identifiable assets by geographic region are as follows:

	Year Ended September 30,		
	2003	2002	2001
<u>Net revenues:</u>			
United States	\$ 8,450,156	\$ 9,948,296	\$ 11,148,373
The Netherlands	10,983,378	10,584,472	11,703,547
	<u>\$ 19,433,534</u>	<u>\$ 20,532,768</u>	<u>\$ 22,851,920</u>
<u>Operating income (loss):</u>			
United States	\$ (454,924)	\$ (756,023)	\$ (76,979)
The Netherlands	209,501	833,155	1,653,551
	<u>\$ (245,423)</u>	<u>\$ 77,132</u>	<u>\$ 1,576,572</u>
<u>Identifiable assets:</u>			
United States	\$ 12,060,463	\$ 12,945,689	
The Netherlands	6,338,579	4,447,411	
	<u>\$ 18,399,042</u>	<u>\$ 17,393,100</u>	

**(10) INCOME TAXES**

The provision for (benefit from) income taxes consists of:

	Year Ended September 30,		
	2003	2002	2001
<u>Current:</u>			
Domestic federal	\$ (236,000)	\$ (439,000)	\$ 494,000
Foreign	86,000	117,000	606,000
Domestic state	38,000	(21,000)	108,000
	<u>(112,000)</u>	<u>(343,000)</u>	<u>1,208,000</u>
<u>Deferred:</u>			
Domestic federal	39,000	210,000	(275,000)
Foreign	--	175,000	(187,000)
Domestic state	(37,000)	8,000	(76,000)
	<u>2,000</u>	<u>393,000</u>	<u>(538,000)</u>
	<u>\$ (110,000)</u>	<u>\$ 50,000</u>	<u>\$ 670,000</u>

The provision for (benefit from) income taxes before the cumulative effect of a change in accounting principle differs from the amount that would be computed by applying the U.S. corporate income tax rate of 34% to the income (loss) before income taxes as follows:

	Year Ended September 30,		
	2003	2002	2001
Provision (benefit) at the statutory federal rate	\$ (71,000)	\$ 57,000	\$ 620,000
Effect of permanent book-tax differences	(19,000)	22,000	13,000
State tax provision	(20,000)	(29,000)	32,000
Other items	--	--	5,000
	<u>\$ (110,000)</u>	<u>\$ 50,000</u>	<u>\$ 670,000</u>

Deferred income taxes reflect the tax effects of temporary differences between the carrying value of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The components of the Company's net deferred tax asset are as follows:

	September 30,	
	2003	2002
Allowance for doubtful accounts	\$ 63,000	\$ 57,000
Uniform capitalization of inventory costs	154,000	100,000
Inventory write-downs not currently deductible	340,000	387,000
State net operating losses	127,000	45,000
Book vs. tax depreciation	(9,000)	8,000
Unrealized currency losses (gains)	(1,000)	(2,000)
Deferred profit	175,000	267,000
Liabilities not currently deductible	281,000	270,000
	<u>\$ 1,130,000</u>	<u>\$ 1,132,000</u>

The Company has \$1,360,000 of Arizona state net operating loss carryforwards at September 30, 2003 that expire in 2007. The Company believes that it is more likely than not that all deferred tax assets will be realized.

**(11) SELECTED QUARTERLY DATA (UNAUDITED)**

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
<u>Fiscal Year 2003:</u>				
Revenue	\$4,329,197	\$5,447,628	\$3,621,596	\$6,035,113
Gross margin	\$ 891,902	\$ 933,837	\$ 985,109	\$2,024,198
Net income (loss)	\$ (116,568)	\$ (267,764)	\$ (120,991)	\$ 405,644
Net income (loss) per share:				
Basic	\$(.04)	\$(.10)	\$(.04)	\$.15
Diluted	\$(.04)	\$(.10)	\$(.04)	\$.15
<u>Fiscal Year 2002:</u>				
Revenue	\$5,456,916	\$5,577,314	\$4,446,385	\$5,052,153
Gross margin	\$1,319,483	\$1,359,671	\$1,267,114	\$ 870,591
Net income (loss)	\$ 166,862	\$ (38,607)	\$ 134,441	\$ (144,525)
Net income (loss) per share:				
Basic	\$.06	\$(.01)	\$.05	\$(.05)
Diluted	\$.06	\$(.01)	\$.05	\$(.05)

## **ITEM 9: CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

As previously reported in our Current Report on Form 8-K filed on July 11, 2002, on July 3, 2002 we dismissed our independent auditor, Arthur Andersen LLP, and appointed KPMG LLP (“KPMG”) as our new independent auditor, effective immediately. Our Board of Directors, upon the recommendation of the Audit Committee, approved these actions. KPMG has audited our consolidated financial statements for the years ending September 30, 2003 and 2002.

### **ITEM 9A: CONTROLS AND PROCEDURES**

Our management, including our Chief Executive Officer (“CEO”) and Chief Financial Officer (“CFO”), has carried out an evaluation of the effectiveness of our disclosure controls and procedures as of September 30, 2003, pursuant to Exchange Act Rules 13a-15(e) and 15(d)-15(e). Based upon that evaluation, our CEO and CFO have concluded that as of such date, our disclosure controls and procedures in place are adequate to ensure material information, and other information requiring disclosure, is identified and communicated on a timely basis.

There have been no significant changes in our internal controls over financial reporting or in other factors that have materially affected, or are reasonably likely to materially affect, those controls subsequent to the date this evaluation was carried out, including any corrective actions with regard to significant deficiencies and material weaknesses.

## **PART III**

Pursuant to Paragraph G(3) of the General Instructions to Form 10-K, portions of the information required by Part III of Form 10-K are incorporated by reference to Amtech’s Definitive Proxy Statement to be filed with the Securities and Exchange Commission in connection with its 2004 Annual Meeting of Stockholders (the “Proxy Statement”).

### **ITEM 10: DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT**

The information required by this item is incorporated herein by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission within 120 days of the end of our fiscal year.

### **ITEM 11: EXECUTIVE COMPENSATION**

The information required by this item is incorporated herein by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission within 120 days of the end of our fiscal year.

### **ITEM 12: SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The information required by this item is incorporated herein by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission within 120 days of the end of our fiscal year.

### **ITEM 13: CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS**

The information required by this item is incorporated herein by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission within 120 days of the end of our fiscal year.

### **ITEM 14: PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information required by this item is incorporated herein by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission within 120 days of the end of our fiscal year.

**PART IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K**

- (a)(1) The consolidated financial statements required by this item are set forth on the pages indicated at Item 8.
- (2) All financial statement schedules are omitted because they are either not applicable, or because the required information is shown in the consolidated financial statements or notes thereto.
- (3) Exhibits:

The exhibits listed in the accompanying index to exhibits are filed or incorporated by reference as part of this Annual Report on Form 10-K.

- (b) Amtech did not file a Current Report on Form 8-K during the fourth quarter of 2003.

<u>EXHIBIT</u>		<u>METHOD</u>
<u>NO.</u>	<u>DESCRIPTION</u>	<u>OF FILING</u>
3.1	Articles of Incorporation	A
3.2	Articles of Amendment to Articles of Incorporation, dated April 27, 1983	A
3.3	Articles of Amendment to Articles of Incorporation, dated May 19, 1987	B
3.4	Articles of Amendment to Articles of Incorporation, dated May 2, 1988	C
3.5	Articles of Amendment to Articles of Incorporation, dated May 28, 1993	D
3.6	Articles of Amendment to Articles of Incorporation, dated March 14, 1999	E
3.7	Amended and Restated Bylaws	F
4.1	Rights Agreement dated May 17, 1999	G
10.1	Amended and Restated 1995 Stock Option Plan	H
10.2	Non-Employee Director Stock Option Plan	I
10.3	Employment Agreement with Robert T. Hass, dated May 19, 1992	J
10.4	Registration Rights Agreement with J.S. Whang, dated January 24, 1994	F
10.5	1998 Employee Stock Option Plan (Amended as of March 29, 2002)	K
10.6	Warrant to Purchase Common Stock, dated September 8, 2000	L
10.7	Stock and Warrant Purchase Agreement, dated September 8, 2000	L
10.8	Employment Agreement, dated March 15, 2001, between the Registrant and Jong S. Whang	M
21	Subsidiaries of the Registrant	N
23	Independent Auditors' Consent	*
24	Powers of Attorney	**
31.1	Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended	*
31.2	Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended	*
32.1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	*
32.2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	*

\* Filed herewith.

\*\* See signature page.

A Incorporated by reference to Amtech's Form S-1 Registration Statement No. 2-83934-LA.

B Incorporated by reference to Amtech's Annual Report on Form 10-K for the year ended September 30, 1987.



- C Incorporated by reference to Amtech's Annual Report on Form 10-K for the year ended September 30, 1988.
- D Incorporated by reference to Amtech's Form S-1 Registration Statement (File No. 33-77368).
- E Incorporated by reference to Amtech's Annual Report on Form 10-K for the year ended September 30, 1999.
- F Incorporated by reference to Amtech's Annual Report on Form 10-K for the year ended September 30, 1991.
- G Incorporated by reference to Amtech's Current Report on Form 8-K, filed with the Securities and Exchange Commission on May 17, 1999.
- H Incorporated by reference to Amtech's Form S-8 Registration Statement (related to the Amended and Restated 1995 Stock Option Plan), filed with the Securities and Exchange Commission on August 9, 1996.
- I Incorporated by reference to Amtech's Form S-8 Registration Statement (related to the Non-Employee Director Stock Option Plan), filed with the Securities and Exchange Commission on August 9, 1996.
- J Incorporated by reference to Amtech's Annual Report on Form 10-K for the year ended September 30, 1993.
- K Incorporated by reference to Amtech's Form S-8 Registration Statement (related to the 1998 Employee Stock Option Plan), filed with the Securities and Exchange Commission on February 11, 2003.
- L Incorporated by reference to Amtech's Current Report on Form 8-K, filed with the Securities and Exchange Commission on September 22, 2000.
- M Incorporated by reference to Amtech's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2001.
- N Incorporated by reference to Amtech's Annual Report on Form 10-K for the year ended September 30, 1997.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AMTECH SYSTEMS, INC.

December 22, 2003

By: /s/ Jong S. Whang

-----  
 Jong S. Whang, President  
 and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints JONG S. WHANG and ROBERT T. HASS, and each of them, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully and to all intents and purposes as he might or could do in person hereby ratifying and confirming all that said attorneys-in-fact and agents, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
/s/ Jong S. Whang ----- Jong S. Whang	Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer)	December 22, 2003 -----
/s/ Robert T. Hass ----- Robert T. Hass	Vice President – Finance, Chief Financial Officer and Director (Principal Financial & Accounting Officer)	December 22, 2003 -----
/s/ Alvin L. Katz ----- Alvin L. Katz	Director	December 22, 2003 -----
/s/ Robert F. King ----- Robert F. King	Director	December 22, 2003 -----
/s/ Bruce R. Thaw ----- Bruce R. Thaw	Director	December 22, 2003 -----

# AMTECH SYSTEMS, INC.

## EXECUTIVE OFFICERS

**J.S. WHANG**  
PRESIDENT,  
CHIEF EXECUTIVE OFFICER  
AND DIRECTOR

**ROBERT T. HASS**  
VICE PRESIDENT – FINANCE,  
CORPORATE SECRETARY  
AND DIRECTOR

## INDEPENDENT DIRECTORS

**ALVIN L. KATZ**  
DIRECTOR AND ADJUNCT PROFESSOR  
OF BUSINESS MANAGEMENT  
FLORIDA ATLANTIC UNIVERSITY  
BOCA RATON, FLORIDA

**ROBERT F. KING**  
DIRECTOR AND PRESIDENT  
OF KING ASSOCIATES  
SURPRISE, ARIZONA

**BRUCE R. THAW**  
DIRECTOR AND  
ATTORNEY AT LAW  
FARMINGDALE, NEW YORK

## CORPORATE INFORMATION

### **CORPORATE OFFICES**

131 SOUTH CLARK DRIVE  
TEMPE, ARIZONA 85281  
TEL: (480) 967-5146  
FAX: (480) 968-3763

E-MAIL: [Corporate@AmtechSystems.com](mailto:Corporate@AmtechSystems.com)

### **LEGAL COUNSEL**

SQUIRE, SANDERS & DEMPSEY LLP  
TWO RENAISSANCE SQUARE  
400 NORTH CENTRAL AVE., SUITE 2700  
PHOENIX, ARIZONA 85004

### **TRANSFER AGENT & REGISTRAR**

COMPUTERSHARE TRUST COMPANY  
350 INDIANA STREET, SUITE 800  
GOLDEN, CO 80401  
TEL: (303) 262-0600  
FAX: (303) 262-0603

E-MAIL: [inquire@computershare.com](mailto:inquire@computershare.com)

WEBSITE: <http://www-us.computershare.com/>

### **INDEPENDENT AUDITORS**

KPMG LLP  
ONE ARIZONA CENTER  
400 E. VAN BUREN STREET, SUITE 1100  
PHOENIX, ARIZONA 85004-2207  
TEL: (602) 253-2000  
FAX: (602) 252-0011

### **STOCK MARKET INFORMATION**

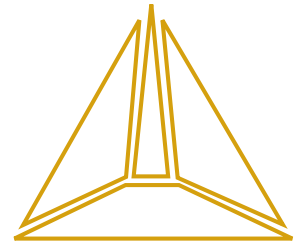
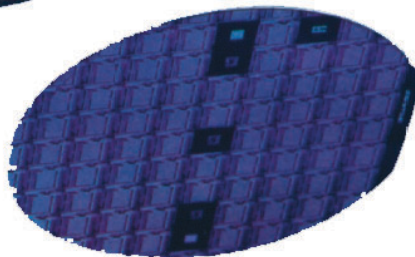
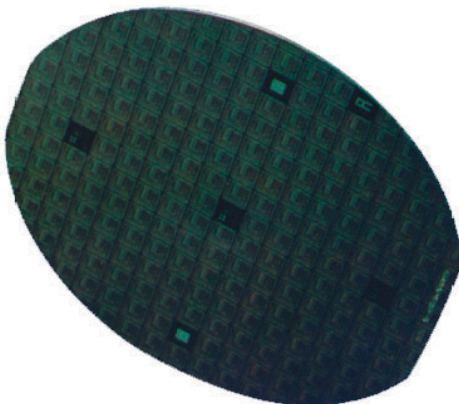
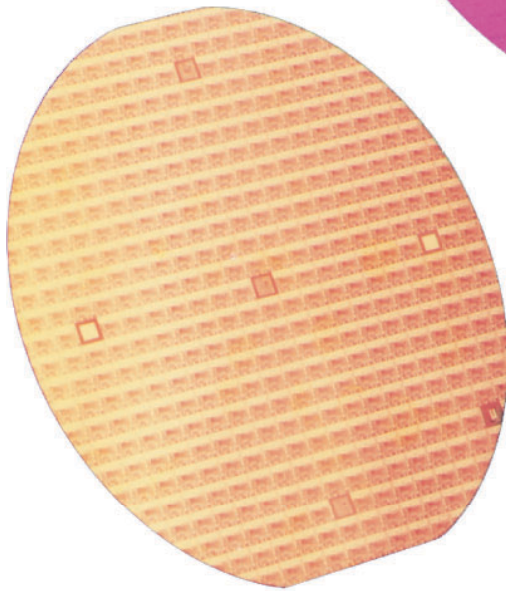
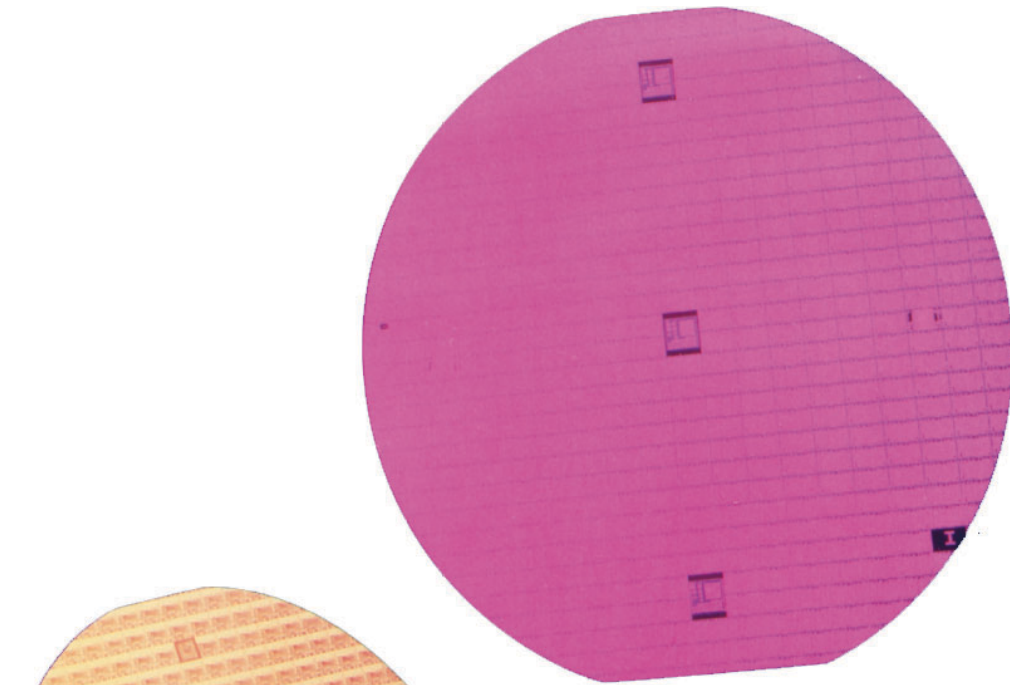
LISTED ON NASDAQ NATIONAL MARKET  
COMMON STOCK SYMBOL: ASYS

WEBSITE: [WWW.NASDAQ.COM](http://WWW.NASDAQ.COM)

## SUBSIDIARIES

**P.R. HOFFMAN MACHINE  
PRODUCTS, INC.**  
CARLISLE, PENNSYLVANIA

**TEMPRESS SYSTEMS, INC.**  
HEERDE, THE NETHERLANDS



AMTECH SYSTEMS, INC.

131 SOUTH CLARK DRIVE  
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