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

FORM 10-K

(Mark one)

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

For the fiscal year ended December 31, 2003

[ ] 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 000-30941

AXCELIS TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**34-1818596**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*

108 Cherry Hill Drive
Beverly, Massachusetts 01915
(Address of principal executive offices, including zip code)

(978) 787-4000
(Registrant's telephone number, including area code)

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

Title of class	Name of each exchange on which registered
None	None

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

Common Stock, $0.001 par value
Preferred Share Purchase Rights

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 [X] 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 Rule 12b-2 of the Act). Yes [X] No [ ].

Aggregate market value of the voting stock held by nonaffiliates of the registrant as of June 30, 2003: **$602,990,041**

Number of shares outstanding of the registrant's Common Stock, $0.001 par value, as of January 31, 2004: **99,354,487**

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the definitive Proxy Statement for Axcelis Technologies, Inc.'s Annual Meeting of Stockholders to be held on April 29, 2004 are incorporated by reference into Part III of this Form 10-K.

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 Axcelis Technologies, Inc., other than statements of historical fact, are forward-looking statements. Examples of forward-looking statements include statements regarding Axcelis' future financial results, operating results, business strategies, projected costs, product development or future sales, competitive positions and plans and objectives of management for future operations. We use terminology such as "anticipates," "believes," "plans," "expects," "future," "intends," may," "will," "should," "estimates," "predicts," "potential," "continue," and similar expressions to identify such forward-looking statements. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of important factors, including those discussed in Exhibit 99 to this Form 10-K and elsewhere in this Form 10-K. This Form 10-K also contains forward-looking statements attributed to third parties relating to their estimates regarding the growth of our markets. Forward-looking statements are subject to known and unknown risks, uncertainties, and other factors that may cause our actual results, as well as those of the markets we serve, levels of activity, performance, achievements and prospects to be materially different from those expressed or implied by the forward-looking statements. The Company undertakes no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

PART I

Item 1: Business

Overview of Our Business

We are a worldwide producer of ion implantation, dry strip, thermal processing and curing equipment used in the fabrication of semiconductor chips in the United States, Europe and Asia Pacific. We are the market share leader in ion implantation, have been the market share leader, as reported by Gartner Dataquest, in the ion implantation market segment in 6 of the last 8 years (through 2002). We have been the market share leader in the photostabilization market since its inception in 1993. The ion implantation business comprised approximately 73.7% of our revenues in 2003 with the remaining 26.3% being the dry strip, thermal processing and photostabilization businesses. In addition to equipment, we provide extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. We sell to all the top 20 semiconductor chip manufacturers worldwide. We have a 50% owned joint venture with Sumitomo Heavy Industries, Ltd. in Japan. This joint venture, formed in 1982, is known as Sumitomo Eaton Nova Corporation, or SEN, and is the leading producer of ion implantation equipment in Japan. SEN licenses technology from us for ion implantation and has exclusive rights to market these products in the territory of Japan.

Axcelis was incorporated in the state of Delaware in December 1995 as a subsidiary of Eaton Corporation. Axcelis completed an initial public offering of approximately 18% of its shares in July 2000 and in December 2000, Eaton distributed the other 82% of its shares to its shareholders. Axcelis is headquartered in Beverly, Massachusetts. We maintain an Internet site at http://www.axcelis.com. We make available free of charge on and through this website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this Form 10-K.

Industry Overview

Semiconductor chips, also known as integrated circuits, are used in personal computers, telecommunication equipment, digital consumer electronics, wireless communication products and other applications. Types of semiconductor chips include memory chips (which store and retrieve information), microprocessors (general purpose logic devices programmable to take instructions from software) and "system on chip" devices (which have both logic and memory features). Most semiconductor chips are built on a wafer of silicon up to twelve inches in diameter. Each semiconductor chip is made up of millions of tiny transistors or "switches" to control the functions of the device. The transistors are created by forming electrically active regions beneath the silicon surface to inhibit or prohibit electrical current flow. Later, metal interconnections are formed on top of the silicon that connect the transistor components together.

Semiconductor chip manufacturers utilize many different types of process tools in the making of integrated circuits. There are over 300 process steps utilizing over 50 different types of process tools required in the making of a single device like a microprocessor. Semiconductor chip manufacturers seek efficiency improvements through increased throughput, equipment utilization and higher manufacturing yields. Capacity is added by increasing the amount of manufacturing equipment in existing fabrication facilities and by constructing new fabrication facilities. During the period from early 1999 through 2000, semiconductor manufacturers met the increased demand for chips mostly by building new fabrication facilities, and by making additional equipment purchases to expand existing fabrication facilities. Periodic downturns in demand for electronic devices, such as that experienced from 2001 through most of 2003, have had a severe adverse impact on the semiconductor industry and on suppliers to the semiconductor industry.

Periodically, and historically every seven or eight years, the semiconductor industry adopts a larger silicon wafer size to achieve lower manufacturing costs. Semiconductor manufacturers can produce more chips on a larger wafer, thus reducing the overall manufacturing cost per chip. The majority of wafer fabrication facilities today are using wafers with a diameter of 200 mm (8 inches). Currently, the industry is in the midst of a transition to 300 mm (12 inches) wafers. New manufacturing equipment is required to handle these larger wafers. It is anticipated that manufacturers will add new 300 mm production capabilities over the next two to five years, which will lead to increased demand for 300 mm equipment.

The customer base is also changing. Given the magnitude of the investment needed to build a new wafer fabrication facility (often referred to as a "fab"), which today exceeds $1 billion and can be as high as $3 billion for a new 300 mm fab, and the very large volume of product each fab can produce, contract semiconductor manufacturers, or foundries, have emerged. Foundries provide out-sourced manufacturing of chips for chip designers and device manufacturers who may use foundries for all or part of their chip manufacturing requirements. Foundries, which are predominantly located in Taiwan and Singapore, have become significant purchasers of semiconductor manufacturing equipment. Recently, new foundries are being built in China to rival Taiwan and Singapore as more chip production is being outsourced. China is predicted to be one of the fastest growing regions for semiconductor manufacturing.

Axcelis' Strategy

Our mission is to be a worldwide supplier of semiconductor processing equipment and services. Our vision is to be one of the top 10 semiconductor equipment companies, ranked by sales revenue, and to have the largest or second largest market share in each of our product markets. In 2002, Gartner Dataquest ranked us, together with SEN, 12th among semiconductor equipment manufacturers based on aggregated system sales revenues of $291 million.

We seek to provide best-in-breed semiconductor manufacturing equipment for selected front-end-of-line (transistor formation) as well as back-end-of-line (interconnect) process steps. Our primary strength is in the front-end transistor sequence, given our more than 20-year history in ion implantation, an important front-end-of-line process step. Our growth strategy involves expanding our product offering beyond implant. Through acquisitions completed in 1996, 1997 and 2003, we added complementary tool sets for processes (cleaning, curing, and thermal processing) that are adjacent to the ion implant process sequence. By adding these complementary products to our ion implantation product base, the total available market for all of our products has tripled over the last ten years, based on Dataquest's forecast for 2005, to over $3.0 billion. Our revenues from these complementary products represented 26.3% of our total 2003 revenues. We intend to continue growing our complementary product businesses, while maintaining our leadership position in ion implantation. In addition to offering adjacent front-end-of-line process steps around ion implant, these complementary tools led us to the back-end-of-line as these cleaning, curing and thermal processing tools are also used in the formation of interconnect layers. We believe the use of new materials for interconnects, such as copper conductors and new insulating materials called low-k dielectrics, will increase the appeal of our cleaning and curing products for back-end-of-line applications.

Operationally, we manage our business based on three main tenets:

- technology leadership
- operational excellence, and
- customer partnerships.

We have continued to invest in research and development through the industry cycles to assure our products meet the needs of our customers. We continue to add to our portfolio of patents and unpatented proprietary technology to ensure that our investment in technology leadership is translated into unique product advantages. We take pride in our staff of scientists and engineers that comprise over one-third of our workforce. We strive for operational excellence by focusing on ways to lower our manufacturing and design cost and to improve our delivery times to our customers. Finally, we have invested to improve our customer support infrastructure and have established Global Customer Teams, a very focused account management structure, to improve our customer relationships and increase customer satisfaction.

Ion Implantation Systems

Ion implantation is a principal step in the transistor formation cycle of the semiconductor manufacturing process. An ion implanter is a large, technically advanced machine that injects charged particles, or dopants, such as arsenic, boron or phosphorus, into a silicon wafer through an accurately controlled electric and magnetic field, with a precisely defined amount of energy ranging between several hundred and three million volts. Certain areas of the silicon wafer are blocked off by a polymer material known as photoresist which acts as a "stencil" to pattern devices so that the dopants will only enter the wafer where needed. The dopants change the electrical properties of the silicon wafer to create the active components of a chip called the transistors. The amount of energy used to implant the ions determines the depth to which the dopant penetrates the wafer, and the amount of dopant or dose determines how much the electrical properties of the silicon wafer are changed.

There are three types of ion implantation machines: high energy, high current and high tilt/medium current. Each type injects ions either at greater dose, creating more ions per area (such as in high current tools), or with more energy, driving the ions deeper into the silicon (such as in high energy tools). The manufacturing processes for virtually all types of chips require the use of all three types of ion implanters. Typically, a wafer will receive from 10 to 35 ion implant steps as it is manufactured, depending on the complexity of the device. The industry trend is to design and build more complex, highly integrated chips that require more implants. An embedded memory device or system on chip is an example of a highly complex chip with multiple functions that will replace stand-alone chips in certain applications. We have designed our products to enhance the manufacturers' flexibility during the implant process, thus reducing the cost of production.

A high-energy implanter is typically used to implant dopants deep in the wafer, which allows improved isolation of adjoining transistors on the same chip. The high-energy segment is relatively new, with mainstream application being adopted in the mid to late 1990's. The use of high-energy implanters has expanded into the manufacture of virtually all types of chips. They are used in the manufacture of smaller, more complex chips, such as those used in cellular phones and other hand held devices, because they enable more functionality with less power consumption. They are also used for non-volatile memory applications such as FLASH memories and embedded technologies like system on chip to allow for multiple voltages on the same chip. These devices are typically manufactured using multi-wafer or "batch" implanters which process up to 13 wafers at one time, leading to increased productivity. Trends in this segment include the use of the high energy implanter for shallower implants that have typically been processed by a medium current implanter, which increases the capacity utilization of the machine, thus reducing its cost of ownership. In 2003 we introduced a new tool in our high energy family called the Paradigm. This machine offers better performance for lower energy medium current applications allowing customers to minimize the number of tools per fab lowering their capital cost. The Paradigm and Paradigm XE, high energy version, is the standard tool offering for 300 mm wafers.

For implants that require high concentration of dopants at medium to very shallow depths, a high current/low energy implanter is most often used. These implants are used to enable the electrical connections from the silicon to the metal lines for the subsequent interconnect cycle. In some applications, very shallow, high-dose implants result in faster chips, an important feature for certain microprocessors, digital signal processors and other types of logic chips. Machines with very low energy are required to make very shallow implants. These low energy systems typically require multi-wafer or "batch" end stations which allow for a shorter beam line length, minimizing beam dispersion problems that arise from the low energy. As the demand for these faster chips requiring very shallow implants grows, we expect the number of implanter tools per fab to increase, since productivity is greatly reduced at these lower energy levels. As a result, industry analysts predict the high current market to be the fastest growing implant segment over the next few years. During 2002, we introduced our Ultra High Current / Low Energy line of ion implanters as an extension of our existing high current products. These implanters use proprietary technology to increase the throughput of the machine thus lowering its cost of ownership.

Most ion implant steps occur with the ion beam perpendicular to the wafer. A high tilt/medium current implanter, however, is primarily used for the implant step that requires the ion beam to be positioned at less than a 90 degree angle to the wafer to implant dopants below preexisting features. The use of the high tilt/medium current implanter extends into some high-energy applications to allow customers greater flexibility in selecting the optimal combination of implanters for their needs. These systems are typically single wafer machines to allow for the high tilt capability. We are also seeing an increasing need for high tilt lower energy implants for advanced devices, as chips become more complex.

Together with SEN, we offer a complete line of high energy, high current and high tilt/medium current implanters for all chips and for all implant steps. We have sold over 2,500 implanters worldwide. The following chart lists our principal products:

Product Category	Axcelis Product Name	Description
High Energy	**GSD/HE**	• 200mm high energy implantation for logic and memory chips

	GSD/VHE	• 200mm very high energy implantation for logic, memory chips and FLASH memory chips
	Paradigm	• 300mm high energy implantation with medium current process capability
	Paradigm XE (HE3)	• 300mm high energy implantation for all types of chips (Logic, DRAM and FLASH)
High Current	**GSDIII/LED**	• First generation 200mm high current implanter for low energy applications
	HC3 Ultra	• Second generation 300mm high current implanter with low energy capability introduced in April 2002
	GSD Ultra	• Second generation 200mm low energy implanter with higher throughput for advanced devices introduced in April 2002
High Tilt/Medium Current	**8250HT**	• 200mm high tilt and medium current applications for all chips
	MC3	• 300mm high tilt and medium current applications for all chips

All of our ion implantation systems share modular subsystems for efficiency and convenience. The subsystems for wafer handling robot, ion source, vacuum system and operator interface are common among our three implanter types. This common platform reduces our design, production time and costs, as well as overall cost of ownership for our customers by minimizing training, spare parts inventory and maintenance.

Curing and Cleaning Systems

Dry Strip and Photostabilization Systems.We entered the dry strip and photostabilization product markets through our acquisition of Fusion Systems Corporation in August 1997. Fusion pioneered the development of photostabilization in 1993. In the process steps prior to ion implantation, a light sensitive, polymer-based liquid, called photoresist, is spread in a uniformly thin film on the wafer in a pattern creating a "stencil" effect. Photostabilization uses ultraviolet light to harden, or "cure," the photoresist so that it is more effective in maintaining the desired pattern during the subsequent implant processes and etch steps (in which the top layer of the surface of the wafer not covered by photoresist is removed). After these steps, the photoresist is no longer necessary and must be removed. The primary means of removing photoresist and residue is a process called "dry strip" or "ashing." Our dry strip machines, also called ashers, use microwave and rf energy to turn process gases into plasma, which then acts to "clean" the surface of the wafer by removing the photoresist and unwanted residue.

In addition to the use of photoresist prior to the front-end-of-line implant and etch processes, photoresist is also applied and removed during back-end-of-line processes. Stripping photoresist during the front-end of line transistor sequence is relatively simple and, therefore, the equipment required is characterized by high throughput and low cost. Stripping photoresist in the back-end of line interconnect sequence requires more complicated tools and cleaning chemistries due to the advanced materials being used at smaller geometries. One key process is the stripping of the photoresist lying on top of the low-k dielectric film used for copper lines. Since the low-k materials are easily damaged during the photoresist removal process, tools must be designed to minimize this damage. Because of these differing requirements for the front-end and back-end-of-line tools, we believe that over the next several years, the market for dry-strip tools will divide into two segments of equal market size, addressing these two different applications. In July of 2003 we acquired Matrix Integrated Systems, a privately held company that specialized in front-end of line dry strip tools and processes. The Matrix tool technology for front-end photo resist removal coupled with our in-house technology for back-end photo resist removal provides a complete solution for our customers.

The following chart lists our principal products in each category:

Product Category	Axcelis Product Name	Description
Dry Strip	**Rapid Strip 220/320**	• 300mm/200mm photoresist strip system for front-end of line strip applications
	Radiant Strip 220/320 LK	• Second generation 200mm and 300mm photoresist strip system for back-end of line stripping of photo resist over low-k dielectrics
Curing (Photostabilizers)	**Gemini PS**	• 200mm photostabilization system for photoresist curing
	RapidCure	• 300mm/200mm photostabilization system for photoresist curing
	RapidErase	• Charge erasure applications

Fusion pioneered photostabilization technology, and we believe that our products remain the industry standard. Our dry strip tools are capable of removing bulk photoresist from the wafer, as well as the residue left behind after bulk strip. This reduces or eliminates the need for further wet chemical stripping by eliminating the use of hazardous chemicals traditionally used for this step. Manufacturing cost is further reduced by the fact that our ashers do not require side access, conserving expensive cleanroom space.

Our photostabilizers are used by integrated circuit manufacturers worldwide because of our proprietary ultraviolet light source and the high throughput of the Gemini dual chamber platform. Through several joint development efforts with third parties our photostabilizers also have been used for several applications in the interconnect processes such as for hardening and drying low-k dielectric materials.

Thermal Processing Systems

At a number of points during the manufacturing process, silicon wafers need to be heated rapidly, often to 900 degrees centigrade or higher, in order to complete chemical or electronic reactions. This heating process is referred to as rapid thermal processing, or RTP. This step is used in both the transistor formation and interconnect formation processes of semiconductor manufacturing.

We acquired key technology in the area of rapid thermal processing through our 1996 acquisition of High Temperature Engineering Corporation. In 1999, we introduced our first rapid thermal processing products. Our RTP machine employs a patented design to process a single wafer in a hot wall vertical reactor. The reactor has three zones that are heated by resistive coils, as well as an actively cooled base, which create a uniform temperature gradient from top to bottom. Rapid heating and cooling of the wafer is achieved by simply adjusting the vertical position of the wafer within the reactor through the use of a lifter. The technology in our RTP system differs from most other RTP equipment, which regulates temperature though a lamp-based system.

The following chart lists our principal RTP products:

Product Category	Axcelis Product Name	Description
RTP	**Summit 200**	• 200mm thermal processing system
	Summit 300XT	• Second generation 300mm thermal processing system used for front end and back end of line applications

Our Summit series of RTP systems has a flexible design, offering both single and dual chamber systems. Its engineering incorporates recent developments in furnace design, temperature measurement, emission correction techniques and wafer handling. The machine is suited particularly well for lower temperature processing where lamp-based systems may have difficulty controlling the temperature. One of the trends in this market segment is the migration to lower temperature nickel silicide formation for advanced devices at 90 nanometers and below. Most logic customer's now are looking to migrate to nickel silicide processes from standard cobalt silicide processes over the next couple of years.

Post Sales Support and Services

We offer our customers extensive post sales service and support throughout the lifecycle of the equipment we manufacture. We believe that more than 3,500 of our products, including products shipped by SEN, are in use in 50 countries worldwide. The service and support that we provide include spare parts, equipment upgrades, and maintenance services. We offer service out of 38 field offices in eleven countries. Revenues generated through our service and support business represented about 39.5% of net revenues in 2003 and 37.8% of net revenues in 2002.

Our customer support network includes over 500 sales and marketing personnel and service engineers, including field service engineers, spare parts support staff and applications engineers. An additional 100 persons located at our manufacturing facilities work with our customers to provide advanced equipment support, applications support, customer training and documentation.

Most of our customers maintain spare parts inventories for our machines. We use a web-based spare parts management and replenishment tracking program, or SMART, to facilitate internet communication and e-commerce with our customers. The implementation of our SMART program has helped us to achieve reduced order fulfillment costs and cycle times resulting in an expanded customer base for this service offering. Our Productivity Plus program launched in 2001 provides equipment optimization capabilities through on-site networking and internet technology.

Sales and Marketing

We primarily sell our equipment and services through our direct sales force. We have 12 sales offices in eight countries. Aftermarket service and support is also offered at all of these offices. In the United States, we conduct sales and marketing activities from five locations. Outside of the United States, our sales offices are located in Taiwan, South Korea, China, Israel, Germany, Singapore, and Italy. In addition, isolated sales are made in smaller markets through distributors and manufacturing representatives.

In Japan, we market our products through two channels: one, we exclusively license our ion implant technology to our SEN joint venture, which manufactures and sells its machines and services directly to semiconductor manufacturers (see "SEN Joint Venture" below); and two, we sell our photostabilizers, dry strip and rapid thermal processing products in Japan through exclusive distribution agreements. From 1999 until 2003, Sumitomo Heavy Industries, Ltd. (SHI) acted as our Japanese distributor of these products. In 2003 the agreement with SHI expired and we signed an agreement with Toda Technologies Service Co., Ltd in Japan to provide sales and support services for our RTP and Dry Strip equipment in the Japanese market. International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, accounted for 64.6% of total net sales in 2003, 52.0% in 2002, and 62.0% in 2001. Substantially all of our sales are denominated in U.S. dollars. SEN's sales are denominated in Japanese yen. See Note 13 to our Consolidated Financial Statements contained in Item 8 of this Form 10-K for a breakdown of our net sales and long-lived assets in the United States, Europe and Asia.

Customers

In 2003, the top 20 semiconductor manufacturers accounted for approximately 73.4% of total semiconductor industry capital spending, up from 72.5% in 2002. These manufacturers are from the four largest semiconductor manufacturing regions in the world: the United States, Asia Pacific (Taiwan, South Korea, Singapore, and China), Japan and Europe. SEN and we together serve all of the 20 largest semiconductor manufacturers. We believe that more than 3,500 of our products, including products shipped by SEN, are in use worldwide.

Net sales to our ten largest customers accounted for 66.8%, 63.5%, and 50.6% of net sales, respectively, in 2003, 2002, and 2001. We expect that sales of our products to relatively few customers will continue to account for a high percentage of net sales for the foreseeable future. In 2003, Samsung represented 11.9 % of net sales and Micron represented 11.1% of net sales. In 2002, IBM was the only customer that represented more than 10% of net sales (with 14.2% of net sales) and in 2001, no customer represented more than 10% of net sales.

SEN Joint Venture

For more than 20 years, we have exclusively licensed our ion implantation technology in Japan to SEN, a Japanese corporation of which Axcelis owns 50%. The other 50% of SEN is owned by SHI. SEN has 666 employees based in Tokyo and Toyo, Japan and manufactures, sells and services ion implanters in Japan. Each of Axcelis and SHI has equal representation on SEN's Board of Directors. In addition, Naoki Takahashi, one of Axcelis' directors, is a director and officer of SHI.

SEN holds an exclusive royalty-bearing license to use our current and future ion implantation technology to manufacture, use and sell products in Japan and has granted us a royalty-free world-wide (except for Japan) license to use any technology SEN develops which is an improvement to our technology. SEN may sell its products outside Japan only with our consent and coordination. From time to time, we have sold our equipment into Japan to our non-Japanese customers and SEN has sold equipment outside of Japan primarily to its Japanese customers and their joint ventures.

SEN pays us royalties on its net sales of ion implantation products in accordance with the rates set forth in a license agreement between SEN and Axcelis. The royalty rates vary depending on the type of implanter sold. These royalty amounts were $5.9 million in 2003, $8.3 million in 2002, and $5.8 million in 2001. In 2003, both SEN and Axcelis elected to enter into a one-year period of negotiating modifications to the agreement. If SEN and Axcelis do not agree to modifications to the license agreement prior to December 31, 2004, the current license agreement will continue in effect until terminated by Axcelis or by SEN with the approval of the Axcelis representatives on the SEN Board. SEN has been very successful in achieving its business purpose to manufacture and sell ion implanters using our technology in Japan, and Axcelis intends to continue to optimize the value of SEN.

We also have a trademark license agreement with SEN covering the names "Eaton" and "Nova" which obligates SEN to pay us an additional 0.5% royalty on net sales. This agreement will terminate on December 31, 2004.

Research and Development

Our industry continues to experience rapid technological change, requiring us to frequently introduce new products and enhancements. Our ability to remain competitive in this market will depend in part upon our ability to develop new and enhanced systems and to introduce these systems at competitive prices and on a timely and cost effective basis.

We devote a significant portion of our personnel and financial resources to research and development programs and seek to maintain close relationships with our customers to remain responsive to their product needs. We have also sought to reduce the development cycle for new products through a collaborative process whereby our engineering, manufacturing and marketing personnel work closely together with one another and with our customers at an earlier stage in the process. We also use 3D, computer-aided design, finite element analysis and other computer-based modeling methods to test new designs. We conduct our research and development programs at our facilities in Beverly, Massachusetts and in Rockville, Maryland. SEN also conducts research and development in Toyo, Japan.

Our expenditures for research and development during 2003, 2002, and 2001, were $63.3 million, $72.1 million, and $76.5 million respectively, or 19.7%, 23.3%, and 21.0%, of net sales, respectively. In 2003, we made several new product introductions at 300mm. We expect in future years that research and development expenditures will continue to represent a substantial percentage of net sales.

Manufacturing

We manufacture ion implant, photostabilization, dry strip and rapid thermal processing products at our 445,200 sq. ft. facility in Beverly, Massachusetts. In addition, SEN manufactures ion implant and flat panel products at its 300,300 square foot facility in Toyo, Japan. From time to time, SEN acts as an out-sourced manufacturer for us in the case of those products currently manufactured by SEN and not by Axcelis, including our MC3 medium current implanter. In 2002, we completed the consolidation of our manufacturing operations from Rockville, Maryland (where we had previously manufactured our Curing and Cleaning products) to Beverly, Massachusetts. In 2003, we consolidated the manufacturing operations of Matrix Integrated Systems, Inc., an acquisition we made in the area of dry strip, from Richmond, California to Beverly, Massachusetts. We expect these manufacturing consolidations to continue to improve operational efficiencies and reduce cost as we now produce our equipment from one facility. Our manufacturing facilities employ advanced manufacturing methods and technologies, including lean manufacturing, Six Sigma controls and processes and web-enabled inventory purchase systems. We manufacture our products in cleanroom environments that are similar to the cleanrooms used by semiconductor manufacturers for wafer fabrication.

Our Beverly facility is also the location of our Advanced Technology Center, completed in early 2002. This center houses an advanced process development laboratory with 12,500 sq. ft of class 10/1000 cleanroom space for product demonstration and process development and a 34,000 sq. ft customer training center. To ensure that the customer's specifications are satisfied, per contract terms, the majority of systems are tested at our facilities prior to shipment, normally with the customer present, under conditions that substantially replicate the customer's production environment. These environmental conditions include power requirements, toxic gas usage, air handling requirements including humidity and temperature, equipment bay configuration, wafer characteristics and other factors. These procedures are intended to reduce installation and production qualification times and the amount of particulates and other contaminants in the assembled system, which in turn improves yield and reduces downtime for the customer.

After testing, the system is disassembled and packaged to maintain cleanroom standards during shipment. Installation is itself not a complex process and does not require specialized skills. It is typically performed by a team of assemblers from the customer and ourselves. It includes placing and leveling the equipment at its installation site, connecting it to sources of gas, water and electricity and recalibrating it to specifications that had previously been tested and met.

To reduce our labor expense and the time to installation for our customers, beginning in 1999, we adopted a new manufacturing technique for our ion implanter that we refer to as Ship from Cell. This technique allows us to avoid fully integrating and testing the integrated implanters on our factory floor prior to shipment. We assemble the implanters in 5 or 6 separate modules. The modules are then tested using specially developed software and are shipped directly to the customer, bypassing the manufacturing integration step. As a result, the implanter system is integrated for the first time on the customer's factory floor and tested for quality assurance. This technique saves an average of 4 weeks in our manufacturing cycle time, thus improving lead-times for our customers. Currently all of our 200 mm ion implanters can be shipped using the Ship from Cell technique. In 2003, 17% of our ion implantation tools were manufactured using the Ship from Cell technique compared with 40% of our tools shipped from cell in the peak of 2000. In the first half of 2004, we expect that all of our 300 mm tools will be qualified for Ship from Cell manufacturing and we expect that Ship from Cell will become the Axcelis standard for implantation manufacturing.

We purchase materials, components and subassemblies, such as pumps, machine components, power supplies and other electrical components, from various suppliers. These items are either standard products or built to our specifications. Some of the components and subassemblies included in our products are obtained either from a sole source or a limited group of suppliers, which could result in disruptions to our operations. We have installed a web-based supply chain system in order to increase efficiency and cut costs associated with obtaining materials and components. This system electronically exchanges information with our vendors as to purchase orders, forecasts and automatic delivery updates.

In 2002 we began outsourcing many of our major sub-assemblies and components. We have several large outsourcing partners that provide this service for assemblies like the frames, power distribution systems, wafer handling systems and vacuum systems. Axcelis will continue to aggressively pursue outsourcing to higher levels of machine build where the economics are justified, enabling factory capacity and margin improvement. At the end of 2003 we were outsourcing complex assemblies up to and including module build. We believe that in the future certain critical assemblies will continue to be manufactured in house due to the high level of expertise required.

Competition

The semiconductor wafer fabrication equipment market is highly competitive and is characterized by a small number of medium to large size participants. We compete in four principal product markets in both the front-end and back end of the semiconductor wafer fabrication process: ion implantation, dry strip, photostabilization and rapid thermal processing. Preexisting relationships have a significant influence on a customer's choice of equipment supplier. Other significant competitive factors in the semiconductor equipment market include price, cost of ownership, equipment performance, customer support, breadth of product line, distribution and financial viability.

Ion Implantation. In ion implantation, our major competition is Varian Semiconductor Equipment Associates, Inc. and Applied Materials, Inc., each of which competes in different areas of the implantation market. In the high-energy equipment segment our principal competitor is Varian Semiconductor. In the high current segment we compete mainly with Applied Materials, although Varian has a smaller position in that market as well. In the high tilt/medium current equipment segment, where we have a small market share, Varian has a leading market position. SEN is the largest manufacturer of ion implantation equipment in Japan and competes with Nissin Electric Co., Ltd., Ulvac Technologies, Inc., Varian and Applied Materials for sales in that market.

Curing and Cleaning Systems.Our principal competitors in the dry strip product market are Mattson Technology Inc. and Novellus Systems, Inc. and our principal competitor in photostabilization is Ushio in Japan, to whom we have granted a royalty-bearing patent license in this field.

Thermal Processing Systems.Our chief competitors in the rapid thermal processing equipment market are Applied Materials, Inc. and Mattson Technology Inc.

Intellectual Property

We rely on patent, copyright, trademark and trade secret protection, as well as contractual restrictions, in the United States and in other countries to protect our proprietary rights in our products and our business. As of January 15, 2004, we had 194 patents issued in the United States and 447 patents granted in other countries, as well as 500 patent applications (85 in the United States and 415 in other countries) on file with various patent agencies worldwide.

We intend to file additional patent applications as appropriate. Although patents are important to our business, we do not believe that we are substantially dependent on any single patent or any group of patents.

We have trademarks, both registered and unregistered, that are maintained to provide customer recognition for our products in the marketplace.

From time to time, we enter into license agreements with third parties under which we obtain or grant rights to patented or proprietary technology. Except for our license agreement with SEN (described above under "SEN Joint Venture"), none of our current licenses is material to us.

There has been substantial litigation regarding patent and other intellectual property rights in semiconductor-related industries. We have a patent litigation action against Applied Materials, Inc. (See Item 3. "Legal Proceedings.")

We can give no assurance that we, our licensors, licensees, customers or suppliers will not be subject to claims of patent infringement or claims to invalidate our patents, or that any such claims will not be successful, requiring Axcelis to pay substantial damages or delete certain features from our products or both.

Backlog

As of December 31, 2003, our systems backlog was $97.7 million, as compared to $60.0 million, and $73.9 million, respectively, for December 31, 2002 and 2001. Our policy is to include in backlog only those system orders for which we have accepted purchase orders and typically are due to ship within 6 months. Backlog does not include orders received for our service business (spare parts, consumables and service contracts) due to the turn rate associated with that business. Generally, orders for service or parts revenue received during the quarter are performed or shipped within the same quarter. All orders are subject to cancellations or rescheduling by customers with limited or no penalties. Due to possible changes in system delivery schedules, cancellations of orders and delays in systems shipments, our backlog at any particular date is not necessarily indicative of our actual sales for any succeeding period. In addition, our backlog at the beginning of a quarter typically does not include all orders required to achieve our sales objectives for that quarter and is not a reliable indicator of our future sales.

Employees

As of December 31, 2003, we had 1,534 full-time and 59 temporary employees worldwide, of which 1,285 were employed in North America, 201 in Asia and 107 in Europe. We consider our relationship with our employees to be good.

Environmental

We are subject to environmental laws and regulations in the countries in which we operate that regulate, among other things: air emissions; water discharges; and the generation, use, storage, transportation, handling and disposal of solid and hazardous wastes produced by our manufacturing, research and development and sales activities. As with other companies engaged in like businesses, the nature of our operations exposes us to the risk of environmental liabilities, claims, penalties and orders. We believe, however, that our operations are in substantial compliance with applicable environmental laws and regulations and that there are no pending environmental matters that would have a material impact on our business. We are ISO-14001 certified in our Beverly, MA and Rockville, MD Facilities.

Item 2: Properties

We have a total of 31 properties, of which 16 are located in the United States and the remainder is located in Asia and Europe, including offices in Taiwan, Singapore, South Korea, China, Malaysia, Italy, Germany and France. Of these properties, one is owned and 30 are leased. In early 2003, we sold a 55 thousand square foot building owned by us in Beverly for cash net proceeds of $5.9 million.

Our principal facilities are listed below:

Facility Location	Principal Use	Square Footage (Owned/Leased)
Beverly, Massachusetts	Manufacturing of ion implantation and rapid thermal processing, dry strip and photostabilization products, research and development, sales/marketing and customer support	445,200 (owned)
Beverly, Massachusetts	Corporate headquarters	55,000 (owned)
Rockville, Maryland	Research and development, marketing and customer support.	88,552(leased)

The Beverly facility includes a 135,000 square foot advanced process development, product demonstration, and customer-training center for all of the equipment we produce.

Our Japanese joint venture manufactures ion implantation products in a 300,300 square foot owned facility located in Toyo, Japan.

In 2003, we completed the relocation of the support functions for our Curing and Cleaning products located in Rockville, MD. As a result, we lowered our leased square footage at our Rockville facility from 117,328 square feet to 88,552 square feet.

Additionally, as a result of the acquisition of Matrix Integrated Systems, Inc., in July 2003, we acquired a leased facility of 30,683 square feet of office, research and development, and production space, which lease is expected to terminate not later than August of 2004.

We do not believe there is any material long-term, excess capacity in our manufacturing facilities, although utilization is subject to change based on customer demand. We believe that our manufacturing facilities and equipment generally are well maintained, in good operating condition, suitable for our purposes, and adequate for our present operations. Our Beverly, Massachusetts and Rockville, Maryland facilities are ISO 9001 and ISO 14001 certified.

Item 3: Legal Proceedings

In January 2001, we filed a lawsuit against Applied Materials, Inc. ("Applied") in the United States District Court for the District of Massachusetts. The complaint alleged, among other things, that Applied's medium current/high energy ion implanter infringed our patent for ion implantation equipment using radio frequency linear accelerator technology. The patent at issue expires in mid 2005. Applied filed counterclaims under applicable state law arising from certain communications allegedly made by Axcelis about the lawsuit and its claims of infringement. A jury trial in July 2003 resulted in a verdict in favor of Applied Materials. We filed a notice of appeal in August 2003. In March 2004, we entered into a Settlement Agreement with Applied in which the lawsuit and the appeal were settled and dismissed with each party bearing its own costs and fees.

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

None

Executive Officers and Key Management

Executive Officers

Mary G. Puma, 46, has been the Company's Chief Executive Officer since January 2002. From May 2000 until January 2002, Ms. Puma was the Company's President and Chief Operating Officer, prior to which she served as a Vice President of the Company from February 1999. In 1998, she became General Manager and Vice President of the Implant Systems Division of Eaton Corporation, a global diversified industrial manufacturer. In May 1996, she joined Eaton as General Manager of the Commercial Controls Division. Prior to joining Eaton, Ms. Puma spent 15 years in various marketing and general management positions for General Electric Company. Ms. Puma is a director of Nordson Corporation and Apogent Technologies, Inc.

Michael J. Luttati, 48, has been the Company's Executive Vice President and Chief Operating Officer since January 2002 and a Senior Vice President since July 2000. Mr. Luttati was General Manager, Ion Implant and Rapid Thermal Processing Systems from January 2000 until January 2002, prior to which he served as Director, Sales and Service from November 1998. Prior to joining us, Mr. Luttati served as Vice President, North America Sales Operations of Teradyne Inc., a manufacturer of semiconductor test and interconnection products, from 1996 to 1998 and, from 1983 to 1996, he held several other sales and marketing positions with Teradyne.

Stephen G. Bassett, 56, has been our interim Chief Financial Officer since June 2003. Prior to that, Mr. Bassett served as chief financial officer of Ezenia! Inc. from 1999 to 2002. From 1996 to 1999, Mr. Bassett worked as an independent financial consultant. From 1981 until 1996, Mr. Bassett served as an audit partner at Ernst & Young LLP, where he managed auditing services for a variety of organizations, ranging from multinational Fortune 500 companies to emerging businesses.

David W. Duff, Ph.D., 44, has been our Vice President and General Manager of our Ion Implant and Rapid Thermal Processing business since April 2002. Prior to that, Dr. Duff held several management positions at Axcelis since joining us in 1997, most recently, as Director of Marketing, Implant and Thermal Products. Prior to Axcelis, Dr. Duff worked in the capital equipment industry in variety of marketing management positions and prior to that, worked as a research scientist.

Lynnette C. Fallon, 44, is our Senior Vice President, Human Resources and Legal, General Counsel and corporate Secretary. Ms. Fallon joined Axcelis in April 2001 as Senior Vice President and General Counsel. Prior to that, Ms. Fallon was a partner in the Boston law firm of Palmer & Dodge LLP since 1992, where she was head of the Business Law Department from 1997 to 2001.

Jan-Paul van Maaren, 42, has been our Vice President and General Manager of our Curing and Cleaning business since December 2001. Prior to that, Dr. van Maaren held several management positions at Axcelis since joining us in 1997, most recently, as Director of Business Excellence for Ion Implantation and Rapid Thermal Processing systems. Prior to joining Axcelis, Dr. van Maaren held various marketing and management positions at Honeywell.

Key Management

Craig M. Halterman, 40, has been our Vice President and Chief Information Officer since July 2000 and was our Director of Information Technology since the beginning of 2000. Prior to joining us, Mr. Halterman was Information Technology Director at Honeywell/Allied Signal in its space and defense systems business since 1997. Prior to that, Mr. Halterman held various information technology positions at The Dow Chemical Co., Thompson Consumer Electronics, General Electric Co. and RCA Consumer Electronics.

Donald W. Palette, 46, has been our Vice President, Controller and Treasurer since June 2003, prior to which he was Director of Finance since August 2000 and Controller since 1999. Prior to joining Axcelis in 1999, Mr. Palette was Director of Financial Reporting/Operations for Simplex, a leading manufacturer of fire protection and security systems. Prior to that, Mr. Palette was Director of Finance for Bell & Howell's Mail Processing Company, a leading manufacturer of high speed mail insertion and sorting equipment.

John M. Poate, 63, has been Vice President and Chief Technology Officer since June 2000. From 1997 until he joined Axcelis, Dr. Poate was Dean of the College of Science and Liberal Arts at the New Jersey Institute of Technology. From 1971 to 1997, he held several senior research positions, including head of silicon processing research, with Bell Laboratories.

Matthew P. Flynn, 47, became our Vice President Global Customer Operations in October 2002, prior to which Mr. Flynn was our Director of Sales, Ion Implant and RTP systems. Prior to joining Axcelis in 1996, Mr. Flynn held executive and management roles at Cherry Semiconductor, an integrated circuit manufacturer and at Teradyne Inc., a manufacturer of semiconductor test and interconnection products.

Kevin J. Brewer, 45, became our Vice President of Manufacturing Operations in October 2002, prior to which Mr. Brewer was Axcelis' Director of Operations. Prior to joining Axcelis in 1999, Mr. Brewer was Director of Operations, Business Jets at Raytheon Aircraft Company, a leading manufacturer of business and special mission aircraft owned by Raytheon Company, a manufacturer of defense, government and commercial electronics, as well as aircraft. Prior to that, Mr. Brewer held various management positions in operations and strategic planning in Raytheon Company's Electronic Systems and Missile Systems groups.

PART II

Item 5: Market for Registrant's Common Equity and Related Stockholder Matters

Our common stock trades on the Nasdaq stock market under the symbol ACLS. The following table sets forth the high and low closing sale prices as reported on the Nasdaq stock market during each of the quarters for the two most recent years. As of February 2, 2004, we had approximately 9,644 stockholders of record. Other than the $300 million cash dividend paid to Eaton out of the proceeds from our initial public offering in 2000, Axcelis has not paid any cash dividends. We do not anticipate paying cash dividends in the future and, in any event, would be restricted from doing so by the terms of our bank credit agreement.

	Common Stock Price	
	High	**Low**
2002		
First quarter	16.04	11.34
Second quarter	15.36	9.80
Third quarter	11.46	4.46
Fourth quarter	8.66	3.54
2003		
First quarter	7.14	4.15
Second quarter	6.74	4.39
Third quarter	10.13	6.08
Fourth quarter	11.84	8.44

Item 6: Selected Financial Data

The following selected consolidated statements of operations data for each of the three years ended December 31, 2003, 2002 and 2001 and the consolidated balance sheet data as of December 31, 2003 and 2002 have been derived from the audited consolidated financial statements contained in Item 8 of Part II of this Form 10-K. The selected consolidated statements of operations data for the year ended December 31, 2000 and the consolidated balance sheet data as of December 31, 2001 and 2000 have been derived from the audited financial statements contained in our Form 10-K filed on March 30, 2001. The selected consolidated statements of operations data for the year ended December 31, 1999 and the consolidated balance sheet data as of December 31, 1999 have been derived from the audited financial statements contained in our registration statement on Form S-1 filed on May 5, 2000, as amended.

The historical financial information set forth below may not be indicative of our future performance and should be read together with "Management's Discussion and Analysis" and our historical consolidated financial statements and notes to those statements included in Items 7 and 8 of Part II of this Form 10-K.

	Years Ended December 31,				
	2003	**2002**	**2001**	**2000**	**1999**
	(In thousands, except per share amounts)				
Consolidated statements of operations data					
Net sales	$ 321,973	$309,705	$365,264	$680,401	$397,267
Gross profit	104,351	103,965	131,025	299,309	157,082
Operating income (loss)	(53,054)	(58,318)	(62,245)	104,637	12,333
Net income (loss)	(113,876)	(26,150)	(20,163)	99,115	14,428
Net income (loss) per share (basic and diluted)	$ (1.16)	$ (0.27)	$ (0.21)	$ 1.13	$ 0.18
Shares used in computing basic and diluted per share amounts	98,514	97,920	97,215	88,063	80,000
Consolidated balance sheet data					
Cash and cash equivalents	$ 93,249	$146,298	$122,200	$168,157	$ 3,530
Working capital	227,988	288,181	226,412	297,348	169,759
Total assets	585,595	669,451	551,396	672,331	422,835
Long-term debt	125,000	125,000	—	—	—
Stockholders’ equity	353,250	452,508	462,861	491,369	342,296

During 2000, the Company paid a dividend of $300 million ($3.75 per share) to Eaton Corporation. On June 30, 2000, in connection with our initial public offering, Eaton substantially completed the transfer of all the assets and related liabilities of its semiconductor equipment operations to us. Prior to the initial public offering, Eaton did not account for or operate Axcelis as a separate, stand-alone entity and, as a result, the financial information included herein may not reflect what our consolidated financial position and operating results would have been during the periods presented prior to the initial public offering, if we had been a separate, stand-alone entity.

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

Certain statements in "Management's Discussion and Analysis of Financial Condition and Results of Operations" are forward-looking statements that involve risks and uncertainties. Words such as may, will, should, would, anticipates, expects, intends, plans, believes, seeks, estimates and similar expressions identify such forward-looking statements. The forward-looking statements contained herein are based on current expectations and entail various risks and uncertainties that could cause actual results to differ materially from those expressed in such forward-looking statements. Factors that might cause such a difference include, among other things, those set forth under "Financial Condition, Liquidity and Capital Resources" and "Risk Factors" and those appearing elsewhere in this Form 10-K. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect management's analysis only as of the date hereof. The Company assumes no obligation to update these forward-looking statements to reflect actual results or changes in factors or assumptions affecting forward-looking statements.

Overview

We are a worldwide producer of ion implantation, dry strip, rapid thermal processing and photostabilization equipment used in the fabrication of semiconductors. In addition, we provide extensive aftermarket service and support, including spare parts, equipment upgrades, and maintenance services. We own 50% of the equity of a joint venture, known as SEN, with Sumitomo Heavy Industries, Ltd. in Japan. SEN licenses technology from the Company relating to the manufacture of ion implantation products and has exclusive rights to manufacture and sell these products to the territory of Japan. SEN is the leading producer of ion implantation equipment in Japan.

Critical Accounting Policies

Management's discussion and analysis of our financial condition and results of operations are based upon Axcelis' consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, the Company evaluates its estimates, including those related to revenue recognition, income taxes, accounts receivable, inventory and warranty obligations. Management bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

The Company believes the following accounting policies are critical in the portrayal of our financial condition and results of operations and require management's most significant judgments and estimates in the preparation of our consolidated financial statements.

Revenue Recognition

The Company's revenue recognition policy involves significant judgment by management. As described in detail below, the Company considers a broad array of facts and circumstances in determining when to recognize revenue, including contractual obligations to the customer, and the complexity of the customer's post delivery acceptance provisions, and the installation process. In the future, if the post delivery acceptance provisions, and the installation process become more complex or result in a materially lower rate of acceptance than we now experience, the Company may have to revise its revenue recognition policy, which could affect the timing of revenue recognition.

For revenue arrangements prior to July 1, 2003 Axcelis generally recognized the full sale price at the time of shipment to the customer. The costs of system installation at the customer's site were accrued at the time of shipment for installation and acceptance testing performance obligations incurred at the time of sale. The Company recognized the full sales price at the time of shipment as management believes that the customer's post delivery acceptance provisions and installation process were established to be routine, commercially inconsequential and perfunctory because the process was a replication of the pre-shipment procedures. Also, customer payment terms typically provide that the majority of the purchase price is payable upon shipment. Terms do generally contain delayed payment arrangements for a portion of the purchase price, which are typically time-based.

In November 2002, the Financial Accounting Standards Board's Emerging Issues Task Force reached a consensus on Issue No. 00-21, "Accounting for Revenue Arrangements with Multiple Deliverables" ("EITF 00-21"). This issue addresses determination of whether an arrangement involving more than one deliverable contains more than one unit of accounting and how the arrangement consideration should be measured and allocated to the separate units of accounting. EITF 00-21 became effective for revenue arrangements entered into in periods beginning after June 15, 2003.

For revenue arrangements occurring on or after July 1, 2003, the Company has revised its revenue recognition policy to comply with the provisions of EITF 00-21. Axcelis' revenue transactions include sales of systems under multiple element arrangements. Revenue under these arrangements is allocated to all elements, except systems, based upon their estimated fair market value. The amount of revenue allocated to systems is calculated on a residual method. Under this method, the total value of the arrangement is allocated first to the undelivered elements based on the greater of the fair value of the undelivered elements or the portion of the sales price that will not be received until the elements are delivered, with the residual amount being allocated to systems revenue. The amount allocated to installation is based upon hourly rates and the estimated time to complete the service. The fair value of all other elements is based upon the price charged when these elements are sold separately. System revenue is generally recognized upon shipment provided title and risk of loss has passed to the customer, evidence of an arrangement exists, fees are contractually fixed or determinable, collectibility is reasonably assured through historical collection results and regular credit evaluations, and there are no uncertainties regarding customer acceptance. Revenue for installation services is recognized at the time of customer acceptance. Revenue for other elements is recognized at the time products are shipped or the related services are performed.

Management continues to believe recognition of systems revenue at the time of shipment is appropriate because the customer's post delivery acceptance provisions and installation process have been established to be routine, commercially inconsequential and perfunctory because the process is a replication of the pre-shipment procedures. The majority of Axcelis' systems are designed and tailored to meet the customer's specifications as outlined in the contract between the customer and Axcelis. To ensure that the customer's specifications are satisfied, per contract terms, many customers request that newer systems are to be tested at Axcelis' facilities prior to shipment, normally with the customer present, under conditions that substantially replicate the customer's production environment and the customer's criteria are confirmed to have been met. Customers for mature products generally do not require pre-shipment testing. Axcelis has never failed to successfully complete a system installation. Should an installation not be successfully completed, the contractual provisions do not provide for forfeiture, refund or other purchase price concession beyond those prescribed by the provisions of the Uniform Commercial Code applicable generally to such transactions.

In the small number of instances where Axcelis is unsure of meeting the customer's specifications upon shipment of the system, Axcelis will defer the recognition of systems revenue until written customer acceptance of the system. This deferral period is generally within twelve months of shipment.

Service revenue includes revenue from spare parts, equipment upgrades and maintenance services. Revenue related to maintenance and service contracts is recognized ratably over the duration of the contracts. Revenue related to time and material services is recorded when the services are performed. Revenue related to spare parts sales is recognized upon the later of shipment or when the title and risk of loss passes to the customer.

Deferred Tax Assets

The Company has deferred tax assets resulting from tax credit carryforwards, net operating losses and other deductible temporary differences, which are available to reduce taxable income in future periods. SFAS No. 109 "Accounting for Income Taxes" requires that a valuation allowance be established when it is "more likely than not" that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the Company operates, length of carryback and carryforward periods, existing sales backlog and projections of future operating results. Where there are cumulative losses in recent years, SFAS No. 109 creates a strong presumption that a valuation allowance is needed. This presumption can be overcome in very limited circumstances.

As of March 31, 2003 and December 31, 2002, the Company's evaluation of the realization of these assets was based upon evidence of cumulative historical profitability and estimates of future taxable income. The Company was profitable in year 2000 but was not profitable in years 2001 and 2002. Projections of future earnings were based on revenue assumptions consistent with industry forecasts for the next three years along with the necessary operating expenses to support the Company's revenue assumptions. Based on these projections, the Company estimated that the loss carryforwards would be fully utilized within three years. During the second quarter of 2003, the Company entered a three year cumulative loss position and revised its projections of the amount and timing of future earnings. Due to these factors as well as the uncertainty of the amount and timing of profitability in future periods, the Company increased its valuation allowance as of June 30, 2003. This non-cash charge to earnings increased income tax expense by $69.6 million for the year ended December 31, 2003.

The Company expects to record a full valuation allowance on future tax benefits until it can sustain an appropriate level of profitability and until such time, the Company would not expect to recognize any significant tax benefits in its future results of operations. However, going forward should the Company return to profitability and there is sufficient evidence, in accordance with the provisions of SFAS No. 109, to support the ultimate realization of income tax benefits attributable to net operating losses, tax credit carryforwards and other deductible temporary differences, a reduction in the valuation allowance may be recorded and the carrying value of deferred tax assets may be restored, resulting in a non-cash credit to earnings.

Goodwill and Other Intangible Assets

We account for our acquisitions under the purchase method of accounting pursuant to Statement of Financial Accounting Standard (SFAS) No. 141, "Business Combinations." Goodwill represents the excess of cost over net assets, including all identifiable intangible assets of acquired businesses that are consolidated. Pursuant to SFAS No. 142, "Goodwill and Other Intangible Assets," goodwill is not amortized. Other intangible assets that are separable from goodwill and have determinable useful lives are valued separately and amortized over their useful lives. Such other identifiable intangible assets consist mainly of developed technology and customer related intangibles and are generally amortized over periods ranging from five to ten years. We have determined that all of our intangible assets have finite lives.

During 2002, in accordance with SFAS No. 142, we ceased to amortize goodwill. In lieu of amortization, we perform an impairment review of our goodwill. Impairment tests are performed annually, or more frequently if there are other indicators of impairment. The annual impairment test consists of determining the fair market value of the business unit through a discounted cash flow analysis. Management's best judgments are employed in determining future market conditions that impact this discounted cash flow analysis. As a result of our annual review conducted as of December 31, 2003, we determined that there was no impairment of our goodwill. If we determine through the impairment review process that goodwill has been impaired, we would record the impairment charge in our statement of operations as a non-cash charge to earnings.

We assess the impairment of intangible assets, other than goodwill, whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important that could trigger an impairment review include the following:

- a significant underperformance relative to expected historical or projected future operating results;
- a significant change in the manner of our use of the acquired asset or the strategy for our overall business;
- a significant negative industry or economic trend; and
- our market capitalization relative to net book value.

As part of this assessment, we review the expected future undiscounted cash flows to be generated by the assets. When we determine that the carrying value of intangibles may not be recoverable, we measure any impairment based on a projected discounted cash flow method using a discount rate determined by our management to be commensurate with the risk inherent in our current business model.

Accounts Receivable - Allowance for Doubtful Accounts

Axcelis records an allowance for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. If the financial condition of Axcelis' customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be necessary.

Inventory - Allowance for Excess and Obsolescence

Axcelis records an allowance for estimated excess and obsolete inventory. The allowance is determined using management's assumptions of future materials usage, based on estimates of future demand and market conditions. If actual market conditions become less favorable than those projected by management, additional inventory write-downs may be required.

Product Warranty and Installation Costs

The Company offers a one to three year warranty for all of its products, the terms and conditions of which vary depending upon the product sold. Prior to July 1, 2003, the Company estimated the costs that may be incurred under its standard warranty and product installation obligation and recorded a liability in the amount of such costs at the time product revenue was recognized. Subsequent to July 1, 2003, in connection with the change in its revenue recognition policy (see Revenue Recognition), the Company no longer accrues the estimated costs of its installation but defers the revenue related to the greater of the fair value of the installation services or the amount of revenue that is contingent upon the completion of the installation services. Factors that affect the Company's warranty and installation liability include the number of installed units, historical and anticipated product failure rates, material usage and service labor costs. The Company periodically assesses the adequacy of its recorded warranty and installation liability and adjusts the amount as necessary.

Results of Operations

The following table sets forth our results of operations as a percentage of net sales for the periods indicated:

	Years Ended December 31,		
	2003	2002	2001
Net sales			
Systems	60.5 %	62.2 %	66.6 %
Services	39.5	37.8	33.4
	100.0	100.0	100.0
Gross profit	32.4	33.6	35.9
Other costs and expenses			
Research and development	19.7	23.3	21.0
Selling	14.3	14.2	13.5
General & administrative	12.8	14.4	15.9
Amortization of intangible assets	0.6	0.5	2.5
Restructuring	1.5	—	—
Loss from operations	(16.5)	(18.8)	(17.0)
Other income (expense)			
Sumitomo Eaton Nova Corporation			
Royalty income	1.8	2.7	1.6
Equity income	2.8	1.6	3.3
Other royalty income	—	—	0.2
Interest income	0.6	1.2	1.5
Interest expense	(1.9)	(1.9)	—
Other net	(0.6)	(0.8)	(0.6)
Loss before income taxes	(13.8)	(16.1)	(11.1)
Income taxes (credit)	21.6	(7.6)	(5.5)
Net loss	(35.4)%	(8.4)%	(5.5)%

Year ended December 31, 2003 in comparison to the year ended December 31, 2002

Net Sales

Sales of systems were $194.9 million or 60.5% of net sales in 2003, compared with $192.8 million, or 62.2% of net sales, in 2002. The increase in sales of systems was primarily attributable to increased levels of production volume by our semiconductor manufacturing customers. Increased sales were offset in part by reduced average selling prices caused by a competitive market environment and a concentration of systems sales to a limited number of customers.

Sales of services, which include spare parts, service labor and equipment upgrades, accounted for $127.1 million, or 39.5% of net sales, in 2003 compared with $116.9 million, or 37.8% of net sales in 2002. The demand for our services increased primarily as a result of improved capacity utilization by our customers.

For revenue arrangements occurring on or after July 1, 2003, the Company revised its revenue recognition policy to comply with the provisions of EITF 00-21(see Note 2 to the Consolidated Financial Statements). This change had the effect of reducing the net sales by $12.9 million in 2003.

Sales of ion implantation products and services accounted for $237.2 million of revenue in 2003, an increase of $4.0 million, or 1.7%, compared with $233.2 million in 2002. Sales of other products and services, including dry strip products, photostabilization products and rapid thermal processing systems, accounted for $84.8 million in 2003 an increase of $8.3 million, or 10.8%, compared with $76.5 million in 2002.

Gross Profit

Gross profit was 32.4% of net sales in 2003 compared to gross profit of 33.6% in 2002. The decrease in gross profit was due to higher warranty costs associated with 300mm product shipments (approximately 1.5%); the Company's implementation of a revised revenue recognition policy to comply with the provisions of EITF 00-21 (approximately 1.5%); and a reduction in average selling prices discussed above, (approximately 1.1%). These items were offset by improved manufacturing costs due to increased factory utilization and lower raw material costs.

Research and Development

Research and development expense was $63.3 million in 2003, a decrease of $8.9 million, or 12.2%, compared to $72.1 million in 2002. The decrease in research and development expense in 2003 is due principally to lower investment in our 300mm product development efforts and a corresponding reduction in headcount by approximately 18% from December 31, 2002 to at December 31, 2003. Final completion and release of 300mm products was accomplished in the second half of 2002. Research and development expense for the fourth quarter of 2003 was $14.9 million and the Company expects to spend in the range of $15 to $16 million per quarter for research and development through 2004.

Selling

Selling expense was $46.2 million in 2003, an increase of $2.2 million, or 5.0%, as compared to $44.0 million in 2002. The increase in selling expense was primarily due to increased sales and sales support investments for our expanding Asia Pacific markets.

General and Administrative

General and administrative expense was $41.1 million in 2003, a decrease of $3.6 million, or 8.2%, as compared with $44.7 million in 2002. The decrease in general and administrative expense was attributable to lower costs associated with programmed headcount reductions and an adjustment of $1.7 million to reflect a change in estimate relating to unfunded pension expense and other benefits recorded in prior periods.

Amortization of Intangible Assets

Amortization of intangible assets was $2.0 million in 2003, an increase of $500 thousand, or 33.9%, as compared with $1.5 million in 2002. The increase was due to amortization expense relating to the intangible assets acquired as part of the Matrix Integrated Systems, Inc. acquisition completed on July 3, 2003.

Restructuring

Restructuring costs of $4.9 million in 2003 relate to severance and other benefits associated with reduction in force actions the Company took during the third quarter of 2003 to reduce headcount by approximately 200 permanent positions. At December 31, 2003 $4.0 million had been paid, with the remaining balance of $0.9 million expected to be paid by the end of 2004. The Company estimates the annual savings from the restructuring to approximate $18.5 million, benefits from which began to be realized in the fourth quarter of 2003.

Other Income (Expense)

Total other income was $8.7 million in 2003 as compared to $8.6 million in 2002. Other income consists primarily of royalty income and equity income from SEN. Royalty income from SEN was $5.9 million in 2003 as compared to $8.3 million in 2002. Equity income attributable to SEN was $9.0 million in 2003 compared to $4.8 million in 2002. The change in SEN's revenue recognition policy to comply with the provisions of EITF 00-21 had the effect of reducing the combined contribution (royalties and equity income) from SEN by approximately $5.2 million for 2003. Other fluctuations in royalty and equity contributions from SEN reflect changes in its sales volume and operating earnings resulting from changes in the Japanese semiconductor market.

Interest income of $1.8 million primarily relates to interest earned on cash, cash equivalents and short-term investments. Interest income decreased by $1.9 million from 2002 due primarily to a lower amount of cash, cash equivalents and short-term investments in 2003, as well as lower interest rates.

Interest expense of $6.2 million in 2003 primarily relates to the Company's long-term debt issued in January 2002. See Note 10 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Income Taxes (Credit)

Income taxes provided were $69.5 million in 2003 as compared to an income tax credit of $23.6 million in 2002. Income taxes for 2003 consist primarily of a valuation allowance of $69.7 million recorded at June 30, 2003 to reduce the carrying value of deferred tax assets to zero. See further discussion under "Critical Accounting Policies."

Year ended December 31, 2002 in comparison to the year ended December 31, 2001

Net Sales

Sales of systems were $192.8 million or 62.2% of net sales in 2002, compared with $243.1 million, or 66.6% of net sales, in 2001. The decrease in sales of systems was primarily attributable to a decline in sales volume arising from decreased levels of production volume by our semiconductor manufacturing customers.

Sales of services, which include spare parts, equipment upgrades and maintenance services, accounted for $116.9 million, or 37.8% of net sales, in 2002 compared with $122.1 million, or 33.4% of net sales in 2001. The decrease in sales of services reflects the cyclical nature of the semiconductor manufacturing industry and the related decline in capacity utilization by our customers which translates into a decline in demand for support services and spare parts.

Sales of ion implantation products and services accounted for $233.2 million of revenue in 2002 a decrease of $59.1 million, or 20.2%, compared to $292.3 million in 2001. Sales of other products and services, including dry strip products, photostabilization products and rapid thermal processing systems, accounted for $76.5 million of revenue in 2002 an increase of $3.5 million, or 4.8%, compared to $73.0 million in 2001.

Gross Profit

Gross profit as a percentage of net sales decreased to 33.6% in 2002 from 35.9% in 2001. This decrease was due principally to lower manufacturing capacity utilization caused by lower sales volume and an increasing mix of 300 mm sales which currently have lower average gross margins. 300mm sales comprised 41.0% of systems sales in 2002 compared to only 19% of total system sales in 2001.

Research and development

Research and development expense was $72.1 million in 2002, a decrease of $4.4 million, or 5.8%, compared to $76.5 million in 2001. The decrease in research and development expense between years was due principally to a lower investment in our 300mm product development efforts consistent with the completion of the launch of our 300mm products during the year.

Selling

Selling expense was $44.0 million in 2002, a decrease of $5.4 million, or 10.9%, as compared to $49.4 million in 2001. The decrease in selling expense was primarily due to lower sales commissions and lower marketing expenses associated with lower overall sales volume and lower headcount and related expenses, net of severance costs.

General and Administrative

General and administrative expense was $44.7 million in 2002, a decrease of $13.3 million, or 22.9%, as compared with $58.0 million in 2001. The decrease in general and administrative expense was primarily attributable to a decrease in expenses incurred in connection with the Company's patent litigation with Applied Materials, Inc. of $7.2 million (See Part I, Item 3. "Legal Proceedings"), a decrease in headcount related expenses net of severance costs of $2.0 million and a decrease in expenses associated with transitioning to a stand-alone company of $3.4 million.

Amortization of Goodwill and Intangible Assets

Amortization of goodwill and intangible assets was $1.5 million in 2002, a decrease of $7.8 million, or 83.8%, compared with $9.3 million in 2001. The decrease was due to the Company's adoption of Statement of Financial Accounting Standard (SFAS) No. 142, "Goodwill and Other Intangible Assets" as described under Notes 2 and 6 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Other Income (Expense)

Total other income was $8.6 million in 2002 as compared to $21.8 million in 2001. Other income consists primarily of royalty income and equity income from SEN. Royalty income, primarily from SEN, was $8.2 million in 2002 as compared to $6.5 million in 2001. Equity income attributable to SEN was $4.8 million in 2002 compared to $12.2 million in 2001. The equity income decline was attributable to lower SEN sales volume due primarily to the continuing weakness in the Japanese semiconductor market. Despite the decline in SEN revenues between years, royalty income increased between years due to a more favorable mix of SEN products shipped in 2002 compared to 2001. Interest expense of $5.8 million in 2002 relates to the Company's long-term debt issued in January 2002. See Note 10 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Income Taxes (Credit)

The company had an income tax credit of $23.6 million in 2002 as compared to $20.2 million in 2001. Our effective income tax rate was (47.4)% in 2002 as compared to (50.1)% in 2001. The tax rate in both periods differs from the U.S. federal statutory rate primarily due to undistributed nontaxable equity income from SEN and credits from increased research activities. See Note 16 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Liquidity and Capital Resources

Cash, cash equivalents and short-term investments at December 31, 2003 were $108.2 million, compared to $181.3 million at December 31, 2002. The decrease in cash, cash equivalents and short-term investments between years is mainly attributable to the Company's pretax loss of $44.3 million for the year ended December 31, 2003, recognized equity income of SEN of $9.0 million which is not realized in cash, changes of $21.5 million in other elements of working capital which reflect an increase in sales order activity in the last half of the year (see "Outlook" below), and the acquisition of Matrix Integrated Systems in July 2003 for cash and acquisition expenses aggregating $14.6 million.

Net working capital was $228.0 million at December 31, 2003 as compared to net working capital of $288.2 million at December 31, 2002. The decrease in net working capital is mainly attributable to the Company's pre-tax loss for the year of $44.3 million, recognized equity income of SEN of $9.0 million (included in other assets), and the net impact on working capital related to the recognition of a valuation allowance on net current deferred tax assets recognized in prior periods.

Capital expenditures were $5.0 million and $11.8 million for the years ended December 31, 2003 and 2002, respectively. The decrease in capital expenditures is attributable to the completion in the first half of 2002 of the addition of the Company's Advanced Technology Center and manufacturing facility in Beverly, Massachusetts. The Company has no significant capital projects planned for 2004 and total capital expenditures are projected to approximate depreciation expense.

Future capital expenditures beyond 2004 will depend on a number of factors, including the timing and rate of the expansion of our business.

The Company has no off-balance sheet arrangements.

In October 2003 the Company renegotiated its $50 million revolving credit facility to extend the maturity to October 2006. The purpose of the facility is to provide funds for working capital and general corporate purposes as required. To the extent that the Company has borrowings under the agreement, those borrowings would bear interest at the bank's base rate, as defined in the agreement, or LIBOR plus an applicable percentage. The Company currently has no plans to borrow against the facility but may use the facility to support letters of credit in the future. The credit facility is secured by substantially all of the Company's assets and contains certain financial and other restrictive covenants including minimum levels of tangible net worth, liquidity, profitability and indebtedness as well as maximum levels of capital spending. At December 31, 2003 the Company did not meet a required liquidity threshold to allow it to borrow against the facility. The Company estimates that it will satisfy this liquidity threshold by the second quarter of 2004 and that borrowings pursuant to the terms of the underlying credit agreement will be available if needed.

During January 2004, the Company realized net proceeds of approximately $5.9 million from the sale of a building.

The following represents the contractual obligations and commercial commitments of the Company as of December 31, 2003 (in thousands): :

		Payments Due by Period			
Contractual Obligations	**Total**	**2004**	**2005-2006**	**2007-2008**	**Thereafter**
Long-Term Debt	$125,000	$ —	$ —	$125,000	$ —
Purchase Order Commitments	52,875	52,533	342	—	—
Operating leases	12,278	4,941	5,272	2,065	—
Total Contractual Cash Obligations	$190,153	$57,474	$ 5,614	$127,065	$ —

		Amount of Commitment Expiration by Period			
Other Commercial Commitments	**Total**	**2004**	**2005-2006**	**2007-2008**	**Thereafter**
Unused Line of Credit	$ 50,000	$ —	$50,000	$ —	$ —
Standby Letters of Credit	3,800	3,800	—	—	—
Guarantees	8,425	—	2,772	4,686	967
Total Commercial Commitments	$ 62,225	$ 3,800	$52,772	$ 4,686	$967

Axcelis' liquidity is affected by many factors. Some of these factors are based on normal operations of the business and others relate to the uncertainties of global economies and the semiconductor equipment industry. Although our cash requirements fluctuate based on the timing and extent of these factors, we believe that our existing cash and cash equivalents will be sufficient to satisfy our anticipated cash requirements for at least the next twelve months.

The Company has standby letters of credit to support certain operating lease obligations, workers' compensation insurance, and certain value added tax claims in Europe. Guarantees (of which $2.6 million are cash collateralized) relate to value added tax refunds in Europe.

Recent Accounting Pronouncements

In January 2003, the FASB issued Interpretation No. 46 "Consolidation of Variable Interest Entities, an Interpretation of Accounting Research Bulletin No. 51" (FIN 46). FIN 46 provides a new consolidation model which determines control and consolidation based on potential variability in gains and losses. The provisions of FIN 46 are effective for enterprises with variable interests in variable interest entities created after January 31, 2003. For public companies with variable interest in variable interest entities created before February 1, 2003, the provisions of FIN 46 are to be applied no later than December 31, 2003. The Company has determined that its equity investment in SEN does not constitute a variable interest entity that would require consolidation. Accordingly, FIN 46 did not have any impact on the Company's consolidated financial statements.

Outlook

The Company's performance for the year ended December 31, 2003 was directly related to continuing low levels of capital expenditures through the first nine months of the year by semiconductor manufacturers, especially manufacturers opening new or expanding existing fabrication facilities. The level of capital expenditures by these manufacturers depends upon the current and anticipated market demand for semiconductors and the products utilizing them, the available manufacturing capacity in manufacturers' fabrication facilities, and the ability of manufacturers to increase productivity in existing facilities without incurring additional capital expenditures. Currently, management, along with industry and economic analysts, believe that semiconductor manufacturers are looking to expand capacity and increase capital spending over the next twelve to twenty-four months. Based on bookings received in the third and fourth quarters of 2003 the Company believes it will begin to realize benefits in terms of increased revenues and improved operating performance from this anticipated upturn in capital spending during 2004.

Management has continued its ongoing actions to reduce manufacturing costs as well as decrease research and development and SG&A expense. During the third quarter of 2003, the Company took actions to reorganize the business and eliminate 200 permanent positions. These actions are estimated to result in annual savings of $18.5 million, the benefit of which started to be realized in the fourth quarter of 2003.

On January 28, 2004, the Company announced its expectation that its revenues for the first quarter of 2004 will be in the range of $120 to $127 million, an increase of 25% to 32% in comparison to reported revenues for the fourth quarter of 2003. On these forecast revenues, management stated that gross margins are expected to be in the mid 30% range and net income per share for the first quarter of 2004 was expected to be $0.07 to $0.10 per share.

It is difficult for us to predict our customers' capital spending plans, which can change very quickly. In addition, at our current sales level, each sale, or failure to make a sale, could have a material effect on us in a particular quarter.

Risk Factors

Some of the matters discussed in this filing contain forward-looking statements regarding future events that are subject to risks and uncertainties. The following important factors, among others, could cause actual results to differ materially from those described by such statements. These factors include, but are not limited to: the cyclical nature of the semiconductor industry, our ability to keep pace with rapid technological changes in semiconductor manufacturing processes, the highly competitive nature of the semiconductor equipment industry, quarterly fluctuations in operating results attributable to the timing and amount of orders for our products and services, dependence on SEN (our Japanese joint venture) for access to the Japanese semiconductor equipment market, and those risk factors contained in the section titled "Outlook" and Exhibit 99.1 of this Form 10-K, which is incorporated herein by reference. If any of those risk factors actually occurs, our business, financial condition and results of operations could be seriously harmed and the trading price of our common stock could decline.

Item 7a: Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Sensitivity

Axcelis' exposure to market risk for changes in interest rates relates primarily to our investment portfolio, which consists entirely of cash-equivalents and short-term investments at December 31, 2003. The primary objective of our investment activities is to preserve principal while maximizing yields without significantly increasing risk. This is accomplished by investing in marketable high investment grade securities, and by limiting exposure to any one issue or issuer. We do not use derivative financial instruments in managing our investment portfolio and, due to the nature of our investments, we do not expect our operating results or cash flows to be affected to any significant degree by any change in market interest rates. As of December 31, 2003, all investments had a maturity within 90 days and were carried at cost, which approximates fair value. To the extent the Company has borrowings in the future under the revolving credit facility, such borrowings would be exposed to market risk associated with fluctuations in the bank's base rate or LIBOR.

Foreign Currency Exchange Risk

Substantially all of our sales are billed in U.S. dollars, thereby reducing the impact of fluctuations in foreign exchange rates on our results. Operating margins of certain foreign operations can fluctuate with changes in foreign exchange rates to the extent revenues are billed in U.S. dollars and operating expenses are incurred in the local functional currency. During the year ended December 31, 2003, approximately 8.0% of the Company's revenues were derived from foreign operations with this inherent risk. Our investment in SEN and our royalty and equity income from SEN are subject to foreign currency exchange risks. The effect of a 10% depreciation of the Japanese Yen compared to the U.S. dollar would result in a write-down in the Company's investment in SEN and a corresponding decrease in accumulated other comprehensive income (included in stockholders' equity) of $7.3 million at December 31, 2003.

Item 8: Financial Statements and Supplementary Data

Response to this Item is submitted as a separate section of this report immediately following Item 15.

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

None

Item 9A: Controls and Procedures

(a) Evaluation of disclosure controls and procedures. Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this annual report. Based on this evaluation, our principal executive officer and principal financial officer concluded that these disclosure controls and procedures are effective and designed to ensure that the information required to be disclosed in our reports filed or submitted under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the requisite time periods.

In connection with its audit of the Company's consolidated financial statements for the year ended December 31, 2003, Ernst & Young LLP ("Ernst & Young"), the Company's independent accountants, advised the Audit Committee and management of internal control matters with respect to certain inventory and revenue recognition transactions that they considered to be reportable conditions as that term is defined under standards established by the American Institute of Certified Public Accountants. The Company considered these matters in connection with the year end closing process and the preparation of the December 31, 2003 consolidated financial statements included in this Form 10-K and also determined that no prior period financial statements were materially affected by such matters. In response to the observations made by Ernst & Young, in 2004 the Company will implement certain enhancements to its internal controls and procedures, which it believes address the matters raised by Ernst & Young.

(b)Changes in internal controls. There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended) identified in connection with the evaluation of our internal control performed during our fourth quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART III

Item 10: Directors and Executive Officers of the Registrant

A portion of the information required by Item 10 of Form 10-K is incorporated by reference from the information responsive thereto contained in the sections captioned:

- "Proposal 1: Election of Directors,"
- "Committees of the Board of Directors,"
- "Section 16(a) Beneficial Ownership Reporting Compliance" and
- "Code of Ethics"

in Axcelis' Proxy Statement for the Annual Meeting of Stockholders to be held April 29, 2004 (the "Proxy Statement").

The remainder of such information is set forth under the heading "Executive Officers and Key Management" at the end of Part I of this report.

Item 11: Executive Compensation

The information required by Item 11 of Form 10-K is incorporated by reference from the information contained in the section captioned "Executive Compensation" in the Proxy Statement.

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

The information required by Item 12 of Form 10-K is incorporated by reference from the information responsive thereto contained in the sections in the Proxy Statement captioned:

- "Share Ownership of 5% Stockholders,"
- "Share Ownership of Directors and Executive Officers" and
- "Equity Plan Reserves Disclosure"

in the Proxy Statement.

Item 13: Certain Relationships and Related Transactions

The information required by Item 13 of Form 10-K is incorporated by reference from the information responsive thereto contained in the sections in the Proxy Statement captioned:

- "Executive Agreements,"
- "Certain Transactions" and
- "Compensation Committee Interlocks and Insider Participation"

Item 14: Principal Accountant Fees and Services

The information required by Item 14 of Form 10-K is incorporated by reference from the information responsive thereto contained in the section captioned "Proposal 2: Ratification of the Appointment of Independent Auditors" in the Proxy Statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K

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

(1) Financial Statements:

(2) Financial Statement Schedules:

All other schedules for which provision is made in the applicable regulation of the Securities and Exchange Commission are not required under the related instructions or are inapplicable, and therefore have been omitted.

(b) Reports on Form 8-K

A Current Report on Form 8-K was furnished with the Securities and Exchange Commission on October 27, 2003 relating to the Company's announcement of earnings for its quarter ended September 30, 2003.

(c) Exhibits

The exhibits filed as part of this Form 10-K are listed on the Exhibit Index immediately preceding such Exhibits, which Exhibit Index is incorporated herein by reference.

(d) Financial Statement Schedules

The response to this portion of Item 15 is submitted as a separate section of this report.

Report of Ernst & Young LLP, Independent Auditors

Board of Directors and Stockholders

Axcelis Technologies, Inc.

We have audited the accompanying consolidated balance sheets of Axcelis Technologies, Inc. (the "Company") as of December 31, 2003 and 2002, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2003. Our audits also included the financial statement schedule listed in the Index at Item 15a. These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule 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 consolidated financial position of Axcelis Technologies, Inc. at December 31, 2003 and 2002, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2003, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Notes 2 and 6 to the consolidated financial statements, effective January 1, 2002, the Company adopted Statement of Financial Accounting Standards No. 142 "Accounting for Goodwill and other Intangible Assets."

As discussed in Note 2 to the consolidated financial statements, effective July 1, 2003, the Company adopted the provisions of Emerging Issues Task Force Issue No. 00-21, "Accounting for Revenue Arrangements with Multiple Deliverables."

/s/ ERNST & YOUNG LLP

Boston, Massachusetts
January 28, 2004

Axcelis Technologies, Inc.
Consolidated Statements of Operations
(In thousands, except per share amounts)

	Years Ended December 31,		
	2003	2002	2001
Net sales			
Systems	$ 194,899	$192,780	$243,125
Services	127,084	116,925	122,139
	321,973	309,705	365,264
Cost of sales	217,622	205,740	234,239
Gross profit	104,351	103,965	131,025
Operating expenses			
Research and development	63,284	72,069	76,538
Selling	46,202	44,038	49,439
General and administrative	41,057	44,716	58,014
Amortization of goodwill and intangible assets	1,955	1,460	9,279
Restructuring	4,907	—	—
	157,405	162,283	193,270
Loss from operations	(53,054)	(58,318)	(62,245)
Other income (expense)			
Sumitomo Eaton Nova Corporation			
Royalty income	5,866	8,275	5,835
Equity income	8,954	4,806	12,205
Other royalty income	151	104	628
Interest income	1,807	3,691	5,400
Interest expense	(6,229)	(5,803)	—
Other—net	(1,836)	(2,498)	(2,224)
	8,713	8,575	21,844
Loss before income taxes	(44,341)	(49,743)	(40,401)
Income taxes (credit)	69,535	(23,593)	(20,238)

Net loss	$(113,876)	$ (26,150)	$ (20,163)
Net loss per share (basic and diluted)	$ (1.16)	$ (0.27)	$ (0.21)
Shares used in computing basic and diluted net loss per share	98,514	97,920	97,215

See accompanying Notes to Consolidated Financial Statements

Axcelis Technologies, Inc.
Consolidated Balance Sheets
(In thousands, except per share amounts)

	December 31,	
	2003	**2002**
ASSETS		
Current assets		
Cash and cash equivalents	$ 93,249	$146,298
Restricted cash	3,800	—
Short-term investments	14,972	34,992
Accounts receivable, net	84,925	60,311
Inventories	123,985	115,290
Deferred income taxes & other current assets	8,928	18,329
Total current assets	329,859	375,220
Property, plant & equipment, net	80,927	93,597
Investment in Sumitomo Eaton Nova Corporation	73,327	57,868
Goodwill	46,774	40,682
Intangible assets	20,119	13,141
Deferred income taxes	—	57,136
Restricted cash, long-term portion	2,616	4,353
Other assets	31,973	27,454
	$ 585,595	$669,451
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 36,335	$ 32,594
Accrued compensation	8,343	6,745
Warranty	17,000	16,625
Income taxes	7,109	12,823
Deferred revenue	14,441	224
Other current liabilities	18,643	18,028
Total current liabilities	101,871	87,039
Long-term debt	125,000	125,000
Other long-term liabilities	5,474	4,904
Stockholders' equity		
Preferred stock, $0.001 par value, 30,000 shares authorized; none issued or outstanding	—	—
Common stock, $0.001 par value, 300,000 shares authorized; 99,114 shares issues and 98,994 shares outstanding at	99	98

December 31, 2003; 98,359 shares issues and 98,239 shares outstanding at December 31, 2002		
Additional paid-in capital	451,389	447,533
Deferred compensation	(811)	(782)
Treasury stock, 120 shares at December 31, 2003 and 2002	(1,218)	(1,218)
Retained earnings (deficit)	(101,507)	12,369
Accumulated other comprehensive income (loss)	5,298	(5,492)
Total stockholders' equity	353,250	452,508
	$ 585,595	$669,451

See accompanying Notes to Consolidated Financial Statements.

Axcelis Technologies, Inc.
Consolidated Statements of Stockholders' Equity
(In thousands)

	Common Stock		Additional Paid-in Capital	Deferred Compensation	Treasury Stock	Retained Earnings (Deficit)	Accumulated Other Comprehensive Income (Loss)	Total
	Shares	Amount						
Balance at December 31, 2000	97,050	$ 97	$437,472	—	—	$ 58,682	$ (4,882)	$ 491,369
Comprehensive loss								
Net loss	—	—	—	—	—	(20,163)	—	(20,163)
Foreign currency translation adjustments	—	—	—	—	—	—	(10,293)	(10,293)
Total comprehensive loss	—	—	—	—	—	—	—	(30,456)
Exercise of stock options	133	—	2,296	—	—	—	—	2,296
Issuance of shares under Employee Stock Purchase Plan	312	—	870	—	—	—	—	870
Acquisition of 120 treasury shares	—	—	—	—	$(1,218)	—	—	(1,218)
Balance at December 31, 2001	97,495	97	440,638	—	(1,218)	38,519	(15,175)	462,861
Comprehensive loss								
Net loss	—	—	—	—	—	(26,150)	—	(26,150)
Foreign currency translation adjustments	—	—	—	—	—	—	9,683	9,683
Total comprehensive loss	—	—	—	—	—	—	—	(16,467)
Exercise of stock options	23	—	152	—	—	—	—	152
Issuance of shares under Employee Stock Purchase Plan	735	1	5,621	—	—	—	—	5,622
Issuance of restricted common shares	106	—	1,122	$(1,122)	—	—	—	—
Deferred stock-based compensation expense	—	—	—	340	—	—	—	340
Balance at December 31, 2002	98,359	98	447,533	(782)	(1,218)	12,369	(5,492)	452,508
Comprehensive loss								
Net loss	—	—	—	—	—	(113,876)	—	(113,876)
Foreign currency translation adjustments	—	—	—	—	—	—	10,790	10,790
Total comprehensive loss	—	—	—	—	—	—	—	(103,086)
Exercise of stock options	105	—	760	—	—	—	—	760
Issuance of shares under Employee Stock Purchase Plan	582	1	2,878	—	—	—	—	2,879
Issuance of restricted common shares	97	—	573	(573)	—	—	—	—
Forfeiture of	(29)	—	(355)	355	—	—	—	—

restricted common shares								
Deferred stock-based compensation expense	—	—	—	189	—	—	—	189
Balance at December 31, 2003	99,114	$ 99	$451,389	$ (811)	$(1,218)	$(101,507)	$ 5,298	$ 353,250

See accompanying Notes to Consolidated Financial Statements.

Axcelis Technologies, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	Years Ended December 31,		
	2003	**2002**	**2001**
Operating activities			
Net loss	$(113,876)	$ (26,150)	$ (20,163)
Adjustments to reconcile to net cash used for operating activities			
Depreciation	11,608	10,298	11,936
Amortization of intangible assets	1,955	1,460	9,279
Stock compensation expense, net of forfeitures	189	340	—
Deferred income taxes	73,685	(39,648)	(16,017)
Undistributed income of Sumitomo Eaton Nova Corporation	(8,954)	(4,806)	(12,205)
Changes in operating assets & liabilities, excluding amounts related to business combination			
Accounts receivable	(20,176)	4,727	86,446
Inventories	(4,410)	(7,327)	15,822
Other current assets	(167)	(118)	(327)
Accounts payable and other current liabilities	(42)	(12,657)	(27,464)
Deferred revenue	16,311	—	(25,818)
Income taxes	(5,714)	12,823	(31,153)
Other assets	(4,778)	3,484	(7,505)
Other	(1,440)	1,590	592
Net cash used for operating activities	(55,809)	(55,984)	(16,577)
Investing activities			
Sales (purchases) of short-term investments, net	20,020	(34,992)	—
Expenditures for property, plant & equipment	(4,993)	(11,751)	(29,577)
Acquisition of Matrix Integrated Systems, net of cash acquired of $400	(14,572)	—	—
Increase in restricted cash	(2,063)	(2,376)	(1,977)
Other—net	575	(260)	677
Net cash used for investing activities	(1,033)	(49,379)	(30,877)
Financing activities			
Proceeds from the exercise of stock options	760	152	2,296
Issuance of common stock under Employee Stock Purchase Plan	2,879	5,622	870
Acquisition of treasury shares	—	—	(1,218)
Proceeds from long-term debt, net	—	121,578	—
Net cash provided by financing activities	3,639	127,352	1,948
Effect of exchange rate changes on cash	154	2,109	(451)
Net increase (decrease) in cash & cash equivalents	(53,049)	24,098	(45,957)
Cash & cash equivalents at beginning of period	146,298	122,200	168,157
Cash and cash equivalents at end of period	$ 93,249	$146,298	$122,200

Cash paid for interest	$ 5,313	$ 2,656	—
Cash paid for income taxes	666	269	$ 497

See accompanying Notes to Consolidated Financial Statements

Axcelis Technologies, Inc.
Notes to Consolidated Financial Statements

Note 1. Nature of Business and Basis of Presentation

Axcelis Technologies, Inc. ("Axcelis" or the "Company"), is a worldwide producer of ion implantation, dry strip, rapid thermal processing and photostabilization equipment used in the fabrication of semiconductors in the United States, Europe and Asia. In addition, the Company provides extensive aftermarket service and support, including spare parts, equipment upgrades, and maintenance services. The Company owns 50% of the equity of a joint venture with Sumitomo Heavy Industries, Ltd. in Japan. This joint venture, which is known as Sumitomo Eaton Nova Corporation, or SEN, licenses technology from the Company relating to the manufacture of ion implantation products and has exclusive rights to manufacture and sell these products to the territory of Japan. SEN is the leading producer of ion implantation equipment in Japan.

Prior to July 10, 2000, Axcelis was a wholly-owned subsidiary of Eaton Corporation ("Eaton"). On April 26, 2000, Eaton announced its plan to reorganize its semiconductor equipment operations into an independent, publicly-held company, Axcelis Technologies, Inc. On June 30, 2000, Eaton substantially completed the transfer of all the assets and related liabilities of its semiconductor equipment operations to the Company. Prior to the transfer, the financial statements of the semiconductor equipment operations were presented on a combined basis. On July 10, 2000, the Company commenced its initial public offering (IPO) of 15,500,000 shares of common stock. On July 20, 2000, the IPO was completed when the underwriters of the IPO exercised their over-allotment option to purchase an additional 1,550,000 shares. A portion of the net proceeds of the offering of $348.6 million was used to pay a previously declared $300 million dividend to Eaton. Subsequent to the IPO, Eaton owned approximately 82 percent of Axcelis' outstanding common stock. On October 25, 2000, Eaton announced that its board of directors had declared a stock dividend of all remaining shares of Axcelis held by Eaton. The dividend was distributed on December 29, 2000. The distribution was made on the basis of 1.179023 shares of Axcelis for each Eaton common share outstanding.

Note 2. Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of Axcelis and its subsidiaries. All significant intercompany balances and transactions are eliminated in consolidation. The equity method of accounting is used to account for the Company's 50% investment in SEN.

Use of Estimates

The preparation of consolidated financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

Foreign Currency

The functional currency for all operations outside the United States is the local currency. Financial statements for these operations are translated into United States dollars at year-end rates as to assets and liabilities and average exchange rates as to revenues and expenses. The resulting translation adjustments are recorded in stockholders' equity as the only element of accumulated comprehensive income (loss). Foreign currency transaction gains and losses recorded in the consolidated statements of operations are not material for all periods presented.

Cash, Cash Equivalents and Short-Term Investments

Cash and cash equivalents are highly liquid investments (primarily time deposits) acquired with a remaining maturity of three months or less at the time of acquisition. Short-term investments, which are intended to be held to maturity, are highly liquid investments with a remaining maturity greater than three months at the time of acquisition. The carrying values of cash equivalents and short-term investments in the consolidated balance sheets approximated their estimated fair values.

Restricted Cash

Restricted cash at December 31, 2003 consists of cash collateralizing standby letters of credit of $3,800 and a bank guarantee of $2,616.

Inventories

Inventories are carried at lower of cost, determined using the first-in, first-out (FIFO) method, or market.

Axcelis records an allowance for estimated excess and obsolete inventory. The allowance is determined using management's assumptions of future materials usage, based on estimates of future demand and market conditions. If actual market conditions become less favorable than those projected by management, additional inventory write-downs may be required.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation is computed by the straight-line method for financial statement purposes. The historical cost of buildings is depreciated over forty years and machinery and equipment principally over three to ten years. Expenditures for maintenance and repairs are expensed as incurred. Expenses for renewals and betterments are capitalized.

Impairment of Long-Lived Assets

Long-lived assets (primarily property, plant and equipment and intangible assets) are reviewed for impairment losses whenever events or changes in circumstances indicate the carrying amount may not be recoverable. Events or circumstances that would result in an impairment review primarily include operations reporting sustained losses or a significant change in the use of an asset. An impairment loss would be recognized based on the amount by which the carrying value of the asset exceeds its fair value.

Goodwill and Intangible Assets

For years prior to 2002 substantially all goodwill was amortized over 15 years. Effective January 1, 2002, the Company adopted Statement of Financial Accounting Standard (SFAS) No. 142, "Goodwill and Other Intangible Assets" which eliminated the requirement to amortize goodwill.

The Company tests for impairment of goodwill on an annual basis or whenever events and changes in circumstances suggest that the carrying amount may not be recoverable. As of December 31, 2003, the Company completed its annual assessment and determined that goodwill was not impaired.

Concentration of Credit Risk

Financial instruments, which potentially expose Axcelis to concentrations of credit risk, consist principally of accounts receivable, cash equivalents and short-term investments. Axcelis' customers consist of semiconductor manufacturers located throughout the world. Axcelis' net sales to its ten largest customers accounted for 66.8%, 63.5% and 50.6% of net sales in 2003, 2002 and 2001, respectively. Axcelis performs ongoing credit evaluations of its customers' financial condition and generally requires no collateral to secure accounts receivable. For selected overseas sales, Axcelis requires customers to obtain letters of credit before product is shipped. Axcelis maintains an allowance for doubtful accounts based on its assessment of the collectibility of accounts receivable.

Axcelis' exposure to market risk for changes in interest rates relates primarily to our investment portfolio, which consists entirely of cash-equivalents and short-term investments at December 31, 2003. The primary objective of our investment activities is to preserve principal while maximizing yields without significantly increasing risk. This is accomplished by investing in marketable high investment grade securities, and by limiting exposure to any one issue or issuer. We do not use derivative financial instruments in managing our investment portfolio and, due to the nature of our investments, we do not expect our operating results or cash flows to be affected to any significant degree by any change in market interest rates. As of December 31, 2003, all investments mature within 90 days and are carried at cost, which approximates fair value.

Some of the components and subassemblies included in our products are obtained either from a sole source or a limited group of suppliers, which could result in disruptions to our operations.

Fair Value of Financial Instruments

The fair values of the Company's cash, cash equivalents and short-term investments approximate their carrying values (cost) at December 31, 2003. The fair value of the Company's convertible subordinated notes at December 31, 2003, estimated based on quoted market prices, approximated $119,375.

Revenue Recognition

The Company's revenue recognition policy involves significant judgment by management. As described in detail below, the Company considers a broad array of facts and circumstances in determining when to recognize revenue, including contractual obligations to the customer, the complexity of the customer's post delivery acceptance provisions, and the installation process. In the future, if the post delivery acceptance provisions and installation process become more complex or result in a materially lower rate of acceptance than we now experience, the Company may have to revise its revenue recognition policy, which could affect the timing of revenue recognition.

For revenue arrangements prior to July 1, 2003 Axcelis generally recognized the full sale price at the time of shipment to the customer. The costs of system installation at the customer's site were accrued at the time of shipment for installation and acceptance testing performance obligations incurred at the time of sale. The Company recognized the full sales price at the time of shipment as management believes that the customer's post delivery acceptance provisions and installation process were established to be routine, commercially inconsequential and perfunctory because the process was a replication of the pre-shipment procedures. Also, customer payment terms typically provide that the majority of the purchase price is payable upon shipment. Terms do generally contain delayed payment arrangements for a portion of the purchase price, which are typically time-based.

In November 2002, the Financial Accounting Standards Board's Emerging Issues Task Force reached a consensus on Issue No. 00-21, "Accounting for Revenue Arrangements with Multiple Deliverables" ("EITF 00-21"). This issue addresses determination of whether an arrangement involving more than one deliverable contains more than one unit of accounting and how the arrangement consideration should be measured and allocated to the separate units of accounting. EITF 00-21 became effective for revenue arrangements entered into in periods beginning after June 15, 2003.

For revenue arrangements occurring on or after July 1, 2003, the Company has revised its revenue recognition policy to comply with the provisions of EITF 00-21. Axcelis' revenue transactions include sales of systems under multiple element arrangements. Revenue under these arrangements is allocated to all elements, except systems, based upon their estimated fair market value. The amount of revenue allocated to systems is calculated on a residual method. Under this method, the total value of the arrangement is allocated first to the undelivered elements based on the greater of the fair value of the undelivered elements or the portion of the sales price that will not be received until the elements are delivered, with the residual amount being allocated to systems revenue. The amount allocated to installation is based upon hourly rates and the estimated time to complete the service. The fair value of all other elements is based upon the price charged when these elements are sold separately. System revenue is generally recognized upon shipment provided title and risk of loss has passed to the customer, evidence of an arrangement exists, fees are contractually fixed or determinable, collectibility is reasonably assured through historical collection results and regular credit evaluations, and there are no uncertainties regarding customer acceptance. Revenue for installation services is recognized at the time of customer acceptance. Revenue for other elements is recognized at the time products are shipped or the related services are performed.

Management continues to believe recognition of systems revenue at the time of shipment is appropriate because the customer's post delivery acceptance provisions and installation process have been established to be routine, commercially inconsequential and perfunctory because the process is a replication of the pre-shipment procedures. The majority of Axcelis' systems are designed and tailored to meet the customer's specifications as outlined in the contract between the customer and Axcelis. To ensure that the customer's specifications are satisfied, per contract terms, many customers request that newer systems are to be tested at Axcelis' facilities prior to shipment, normally with the customer present, under conditions that substantially replicate the customer's production environment and the customer's criteria are confirmed to have been met. Customers for mature products generally do not require pre-shipment testing. Axcelis has never failed to successfully complete a system installation. Should an installation not be successfully completed, the contractual provisions do not provide for forfeiture, refund or other purchase price concession beyond those prescribed by the provisions of the Uniform Commercial Code applicable generally to such transactions.

In the small number of instances where Axcelis is unsure of meeting the customer's specifications upon shipment of the system, Axcelis will defer the recognition of systems revenue until written customer acceptance of the system. This deferral period is generally within twelve months of shipment.

Service revenue includes revenue from spare parts, equipment upgrades and maintenance services. Revenue related to maintenance and service contracts is recognized ratably over the duration of the contracts. Revenue related to time and material services is recorded when the services are performed. Revenue related to spare parts sales is recognized upon the later of shipment or when the title and risk of loss passes to the customer.

Shipping and Handling Costs

Shipping and handling costs are included in cost of products sold.

Stock-Based Compensation

As permitted under Statement of Financial Accounting Standards (SFAS) No. 123, "Accounting for Stock-Based Compensation," as amended by SFAS No. 148 "Accounting for Stock-Based Compensation Transition and Disclosure," Axcelis has elected to follow the provisions of Accounting Principles Board (APB) No. 25 to account for stock-based awards to employees. Under APB No. 25, compensation expense with respect to such awards is not recognized, if on the date the awards were granted, the exercise price equaled the market value of the common shares.

As required by SFAS No. 123 the following proforma information is presented as if Axcelis had accounted for stock-based awards to its employees granted subsequent to 1995 under the fair value method. The fair values of the options granted have been estimated at the date of grant using the Black-Scholes options pricing model with the following assumptions:

		Axcelis Stock Option Plan	
	2003	2002	2001
Dividend yield	0%	0%	0%
Expected volatility	74%	80%	139%
Risk-free interest rate	2.5% to 3.6%	2.8% to 4.5%	4.3% to 4.8%
Expected option life in years	4	4	4
Weighted average fair value per share of options granted during the year	$4.77	$6.08	$11.77

The Black-Scholes options valuation model was developed for use in estimating the fair value of traded options that have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions, including the expected stock price volatility. Because Axcelis' options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in the opinion of management, the existing models do not necessarily provide a reliable single measure of the fair value of the Company's options.

For purposes of the following pro forma information, the estimated fair values of the options are assumed to be amortized to expense over the options' vesting periods.

		Year Ended December 31,	
	2003	2002	2001
Net loss, as reported	$(113,876)	$(26,150)	$(20,163)
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards, net of related tax effects	(20,167)	(15,855)	(12,645)
Pro forma net loss	$(134,043)	$(42,005)	$(32,808)
Net loss per share (basic and diluted)			
As reported	$ (1.16)	$ (0.27)	$ (0.21)
Pro forma	$ (1.36)	$ (0.43)	$ (0.34)

Deferred Income Taxes

The Company has deferred tax assets resulting from tax credit carryforwards, net operating losses and other deductible temporary differences, which are available to reduce taxable income in future periods. SFAS No. 109 "Accounting for Income Taxes" requires that a valuation allowance be established when it is "more likely than not" that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the Company operates, length of carryback and carryforward periods, existing sales backlog and projections of future operating results. Where there are cumulative losses in recent years, SFAS No. 109 creates a strong presumption that a valuation allowance is needed. This presumption can be overcome in very limited circumstances.

As of March 31, 2003 and December 31, 2002, the Company's evaluation of the realization of these assets was based upon evidence of cumulative historical profitability and estimates of future taxable income. The Company was profitable in year 2000 but was not profitable in years 2001 and 2002. Projections of future earnings were based on revenue assumptions consistent with industry forecasts for the next three years along with the necessary operating expenses to support the Company's revenue assumptions. Based on these projections, the Company estimated that the loss carryforwards would be fully utilized within three years. During the second quarter of 2003, the Company entered a three year cumulative loss position and revised its projections of the amount and timing of future earnings. Due to these factors as well as the uncertainty of the amount and timing of profitability in future periods, the Company increased its valuation allowance as of June 30, 2003. This non-cash charge to earnings increased income tax expense by $69.7 million for the year ended December 31, 2003.

The Company expects to record a full valuation allowance on future tax benefits until it can sustain an appropriate level of profitability and until such time, the Company would not expect to recognize any significant tax benefits in its future results of operations. However, going forward should the Company return to profitability and there is sufficient evidence, in accordance with the provisions of SFAS No. 109, to support the ultimate realization of income tax benefits attributable to net operating losses, tax credit carryforwards and other deductible temporary differences, a reduction in the valuation allowance may be recorded and the carrying value of deferred tax assets may be restored, resulting in a non-cash credit to earnings.

Net Income (Loss) Per Share

SFAS No. 128, "Earnings Per Share," requires two presentations of earnings per share, "basic" and "diluted". Basic earnings per share is computed by dividing income available to common stockholders (the numerator) by the weighted-average number of common shares outstanding (the denominator) for the period. The computation of diluted earnings per share is similar to basic earnings per share, except that the denominator is increased to include the number of additional common shares that would have been outstanding if the potentially dilutive common shares had been issued. Shares used in the calculation of basic and diluted earnings per share were 98,514, 97,920 and 97,215 for the years ended December 31, 2003, 2002 and 2001, respectively.

The Company has excluded 8,179, 6,960, and 1,165 of common stock equivalents attributable to outstanding stock options, computed using the treasury stock method, and conversion of the notes, computed using the if converted method, from the computation of diluted earnings per share in 2003, 2002, and 2001, respectively, because they are anti-dilutive.

Reclassifications

Certain prior year balances have been reclassified to conform with the current year presentation.

Recent Accounting Pronouncements

In January 2003, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 46 "Consolidation of Variable Interest Entities, an Interpretation of Accounting Research Bulletin No. 51" (FIN 46). FIN 46 provides a new consolidation model which determines control and consolidation based on potential variability in gains and losses. The provisions of FIN 46 are effective for enterprises with variable interests in variable interest entities created after January 31, 2003. For public companies with variable interest in variable interest entities created before February 1, 2003, the provisions of FIN 46 are to be applied no later than March 31, 2004. The Company has determined that its equity investment in SEN does not constitute a variable interest entity that would require consolidation. Accordingly, FIN 46 did not have any impact on the Company's consolidated financial statements.

Note 3. Accounts Receivable

The components of accounts receivable follow:

	December 31,	
	2003	2002
Trade receivables	$77,115	$56,498
Other receivables	11,138	6,762
Sumitomo Eaton Nova Corporation	495	695
	88,748	63,955
Allowance for doubtful accounts	(3,823)	(3,644)
	$84,925	$60,311

Note 4. Inventories

The components of inventories follow:

	December 31,	
	2003	2002
Raw materials	$ 84,773	$ 77,085
Work in process	32,292	27,237
Finished goods	6,920	10,968
	$123,985	$115,290

A building held for sale at December 31, 2003, of approximately $5,900, is included in other current assets. The sale was finalized during January 2004.

Note 5. Property, Plant & Equipment

The components of property, plant and equipment follow:

	December 31,	
	2003	2002
Land & buildings	$ 65,966	$ 72,806
Machinery & equipment	63,977	67,899
Construction in progress	4,340	5,164
	134,283	145,869
Accumulated depreciation	(53,356)	(52,272)
	$ 80,927	$ 93,597

Note 6. Goodwill & Intangible Assets

Effective January 1, 2002, the Company adopted SFAS No. 142 which eliminated the requirement to amortize goodwill and indefinite-lived intangible assets, addressed the amortization of intangible assets with a definite life and established criteria for measuring and recognition of impairment of goodwill and indefinite-lived intangible assets. The adoption of SFAS No. 142 in the fiscal first quarter of 2002 and subsequently updated in the fiscal fourth quarter of 2002, did not require the recognition of a loss due to goodwill impairment, and resulted in no amortization of goodwill for the twelve months ended December 31, 2002. The Company also determined that based on an examination of the economic life of its intangible assets as of January 1, 2002, the amortization period for these intangible assets should be ten years from that date.

The Company tests for impairment of goodwill on an annual basis or whenever events and changes in circumstances suggest that the carrying amount may not be recoverable. As of December 31, 2003, the Company completed its annual assessment and determined that goodwill was not impaired.

In connection with the acquisition of Matrix Integrated Systems, Inc. on July 3, 2003, the Company recorded goodwill of $6,092 and other intangible assets of $8,933.

The components of intangible assets follow:

	December 31,	
	2003	2002
Developed technology	$ 48,030	$ 40,000
Customer-related	903	—
	48,933	40,000
Accumulated amortization	(28,814)	(26,859)
	$ 20,119	$ 13,141

The estimated useful lives of intangible assets ranges from five to ten years. Estimated amortization expense for the year ending December 31, 2004 and for each of the four succeeding years is $2,448.

Had SFAS No. 142 been adopted for the year ended December 31, 2001, the impact on net loss and net loss per share would have been as follows:

	2001
Reported net loss	$(20,163)
Add back: Goodwill amortization, net of tax	1,780
Adjust: Intangible asset amortization, net of tax	2,122
Adjusted net loss	$(16,261)
Reported net loss per share	$ (0.21)
Add back: Goodwill amortization, net of tax	0.02
Adjust: Intangible asset amortization, net of tax	0.02
Adjusted net loss per share	$ (0.17)

Note 7. Acquisition of Matrix Integrated Systems

On July 3, 2003, the Company completed the acquisition of Matrix Integrated Systems, Inc. ("Matrix"), a photoresist dry strip equipment supplier based in Richmond, California for cash and acquisition expenses of $14.6 million. The acquisition was accounted for as a purchase. Accordingly, the results of operations of Matrix have been included in the Company's results of operations since the date of acquisition. Pro forma information is not presented because the acquisition is not considered material.

Note 8. Restructuring Charges

Restructuring charges of $4.9 million relate to severance and other benefits associated with reduction in force actions taken, during the third quarter of 2003 that reduced headcount by approximately 200 permanent positions. At December 31, 2003 $4.0 million had been paid, with the remaining balance of $0.9 million expected to be paid by the end of the third quarter of 2004.

Note 9. Product Warranty and Installation Costs

The Company offers a one to three year warranty for all of its products, the terms and conditions of which vary depending upon the product sold. Prior to July 1, 2003, the Company estimated the costs that may be incurred under its standard warranty and product installation obligation and recorded a liability in the amount of such costs at the time product revenue was recognized. Subsequent to July 1, 2003, in connection with the change in its revenue recognition policy (see Revenue Recognition), the Company no longer accrues the estimated costs of its installation but defers the revenue related to the greater of the fair value of the installation services or the amount of revenue that is contingent upon the completion of the installation services. Factors that affect the Company's warranty and installation liability include the number of installed units, historical and anticipated product failure rates, material usage and service labor costs. The Company periodically assesses the adequacy of its recorded warranty and installation liability and adjusts the amount as necessary.

Changes in the Company's product warranty and installation liability for the years ended December 31, 2003 and 2002 are as follows:

Years ended December 31,

	2003	2002
Beginning balance	$ 16,625	$ 24,218
Warranties and installations issued during the period	22,292	19,079
Settlements made during the period	(22,314)	(25,936)
Changes in liability for pre-existing warranties and installations during the period	397	(736)
Balance at December 31, 2003	$ 17,000	$ 16,625

Note 10. Financing Arrangements

Revolving Credit Facility

In October 2003 the Company renegotiated its $50 million revolving credit facility to extend the maturity to October 2006. The purpose of the facility is to provide funds for working capital and general corporate purposes as required. To the extent that the Company has borrowings under the agreement, those borrowings would bear interest at the bank's base rate, as defined in the agreement, or LIBOR plus an applicable percentage. The Company currently has no plans to borrow against the facility but may use the facility to support letters of credit in the future. The credit facility is secured by substantially all of the Company's assets and contains certain financial and other restrictive covenants including minimum levels of tangible net worth, liquidity, profitability and indebtedness as well as maximum levels of capital spending. At December 31, 2003 the Company did not meet a required liquidity threshold to allow it to borrow against the facility. The Company estimates that it will satisfy this liquidity threshold by the second quarter of 2004 and that borrowings pursuant to the terms of the underlying credit agreement will be available if needed.

Convertible Subordinated Notes

In January 2002, the Company completed an offering of $125 million of 4.25% Convertible Subordinated Notes ("the Notes"), which mature on January 15, 2007. Interest on the Notes is payable on January 15 and July 15 of each year, commencing July 15, 2002. The Notes are convertible into shares of Axcelis common stock at any time prior to the close of business on the maturity date, unless previously redeemed, at a conversion price of $20.00 per share, subject to certain adjustments. The Notes are redeemable, in whole or in part, at the option of the Company beginning on January 19, 2005 with at least 30 days notice at redemption prices starting at 101.7% and at diminishing prices thereafter, plus accrued interest. The Notes are unsecured and subordinated in right of payment in full to all existing and future senior indebtedness, as defined. Expenses associated with the offering of approximately $3.6 million have been deferred and are being amortized to interest expense using the straight-line method, which approximates the effective interest method, over the term of the Notes.

Note 11. Defined Contribution Plan

The Company maintains the Axcelis Long-Term Investment Plan, a defined contribution plan that became effective on January 1, 2001. All regular employees are eligible to participate and may contribute up to 35% of their compensation on a before-tax basis subject to IRS limitations. Highly compensated employees may contribute up to 12% of their compensation on a before-tax basis subject to IRS limitations. During 2003, the Company matched employee contributions in an amount equal to the greater of (A) 100% of the employee's pre-tax contributions up to $1,000 or (B) 50% of the employee's pre-tax contributions, up to the first 6% of eligible compensation. In 2002, the Company's match was set at 100% of the employee's pre-tax contributions up to $1,000. In 2001, the Company's match was set at 50% of the employee's pre-tax contributions, up to the first 6% of eligible compensation. Under this plan, $2.3 million, $1.3 million and $2.7 million was recognized as expense in 2003, 2002 and 2001, respectively.

Note 12. Stock Award Plans

Axcelis Stock Plan

The Company maintains the Axcelis Technologies, Inc. 2000 Stock Plan (the Plan), a stock award and incentive plan which permits the issuance of options, stock appreciation rights, restricted stock, and performance awards to selected employees, directors and consultants of the Company. The Plan originally reserved 18.5 million shares of common stock for grant under the Plan, which original maximum amount increases annually on July 14th by the lesser of (i) five percent (5%) of the then number of outstanding shares of Common Stock, (ii) 5.0 million shares or (iii) such lesser amount as may be determined by the Board. The effect of this provision was to increase the shares available for grant under the Plan by 4.9 million in each of the years ended December 31, 2003, 2002 and 2001. Expiration of options or stock appreciation rights are based on award agreements, or in the case of incentive stock options, awards expire ten years from the date of grant. Non-qualified stock options may, if approved by the Board of Directors, have a stated term in excess of ten years. Generally, awards terminate upon termination of employment (or 90 days thereafter) for options granted to employees. Under the terms of the Plan, the exercise price, determined by the Board of Directors, may not be less than the fair market value of a share of the Company's common stock on the date of grant.

The following table summarizes Axcelis' stock option activity as of and for the years ended December 31, 2003 and 2002 and 2001:

	2003		2002		2001	
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price
Outstanding at beginning of year	13,016	$13.13	9,364	$15.05	7,695	$15.33
Granted	3,353	8.27	4,973	10.04	2,264	13.89
Exercised	(104)	7.32	(22)	6.79	(133)	8.84
Forfeited	(2,094)	12.58	(1,299)	15.31	(462)	14.08
Outstanding at end of year	14,171	$12.10	13,016	$13.12	9,364	$15.05
Available for grant at end of year	18,568		14,944		13,725	

The following table summarizes information with respect to stock options outstanding and exercisable at December 31, 2003:

Range of Exercise Price	Outstanding at December 31 2003	Weighted-Average Exercise Price	Exercisable at December 31 2003	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life
$ 4.63-$ 6.88	3,128	$ 5.81	515	$ 6.00	8.8 Years
$ 7.13-$10.65	3,898	9.18	2,399	8.93	6.2
$10.75-$16.12	4,367	12.96	1,582	13.71	8.5
$16.40-$22.00	2,778	21.95	2,261	21.94	6.5
	14,171	$12.10	6,757	$14.18	7.5

There were 174 and 106 shares of restricted stock outstanding under the Plan at December 31, 2003 and 2002, respectively.

Note 13. Stockholders' Equity

Common Stock Repurchase

In November 2000, the Board of Directors authorized the repurchase up to six million shares. Through December 31, 2003, 120 shares had been repurchased at a cost of $1,218. The repurchase program expires March 2004 (three years after the initial purchase transaction under the program).

Preferred Stock

The Company may issue up to 30 million shares of preferred stock in one or more series. The Board of Directors is authorized to fix the rights and terms for any series of preferred stock without additional shareholder approval. In June 2000, the Board of Directors authorized and designated 3 million shares of preferred stock as Series A Participating Preferred Stock for issuance pursuant to our Shareholder Rights Plan discussed below. As of December 31, 2003 and 2002, there were no outstanding shares of preferred stock.

Shareholder Rights Plan

In June 2000, the Board of Directors adopted a Shareholder Rights Plan and declared a dividend distribution of one share purchase right (a "Right") for each outstanding share of common stock to stockholders of record at the close of business on June 30, 2000. Each share of common stock newly issued after that date also will carry with it one Right. Each Right will entitle the record holder to purchase from the Company one one-hundredth of a share of Series A Participating Preferred Stock at an exercise price of $110.00 per Right subject to adjustment. If certain takeover events occur, exercise of the rights would entitle the holders thereof (other than the acquiring person or group) to receive common shares or common stock of a surviving corporation, or cash, property or other securities, with a market value equal to twice the purchase price. These takeover events include a person or group becoming the owner of 20% or more of our outstanding common stock or the commencement of, or announcement of an intention to make, a tender offer or exchange offer the consummation of which would result in the beneficial ownership by a person or group of 20% or more of the Company's outstanding common shares. The Rights expire in June 2020, and may be redeemed by the Company at the option of our Board of Directors, for $.001 per Right.

Employee Stock Purchase Plan

The Company maintains the 2000 Employee Stock Purchase Plan, which provides effectively all Axcelis employees the opportunity to purchase common stock of the Company at less than market prices. Purchases are made through payroll deductions up to 10% of the employee's salary, subject to certain caps set forth in the plan. Generally, employees may purchase Axcelis common stock at 85% of the market value of the Company's common stock on the first trading day of each offering period or on the day the stock is purchased, whichever is lower. The purchase price may be adjusted by a committee of the Board of Directors. Compensation expense is not recognized by the Company because the plan is a non-compensatory plan under Section 423 of the Internal Revenue Code. The number of shares of common stock that may be issued under the stock purchase plan is 2.5 million shares, plus an annual increase to be added on the last day of each fiscal year beginning in 2001 equal to one percent of the outstanding shares on such date, or a lesser amount approved by the Board of Directors. The effect of this provision was to increase the shares available for grant under the Plan by 990, 982 and 971 in 2003, 2002 and 2001, respectively. The maximum shares that may be issued under the plan may not exceed 7.5 million shares. The Company issued 582, 735,and 312, shares under the plan in 2003, 2002 and 2001, respectively.

At December 31, 2003, 14,171 shares of common stock were reserved for issuance on outstanding options granted under the Axcelis stock plan and 18,568 shares are available for issuance on future stock awards under that plan. In addition, 3,814 shares have been reserved for issuance under the employee stock purchase plan and 6,250 upon conversion of the Notes.

Note 14. Lease Commitments

At December 31, 2003, the Company had lease commitments into 2007. Minimum rental commitments under noncancelable operating leases, which expire at various dates and in most cases contain renewal options, are as follows (in millions): 2004, $4.9; 2005, $2.9; 2006, $2.4; 2007, $2.1.

Rental expense in 2003, 2002, and 2001 (in millions) was $8.5, $9.2, and $8.8, respectively.

Note 15. Business Segment and Geographic Region Information

Axcelis operates in one business segment, which is the manufacture of capital equipment for the semiconductor manufacturing industry. The principal market for semiconductor manufacturing equipment is semiconductor manufacturers. Substantially all sales are made directly by Axcelis to customers located in the United States, Europe and Asia Pacific.

Axcelis' ion implantation systems product line includes high and medium current implanters and high energy implanters and services. Other products include dry strip equipment, photostabilizers, and thermal processing systems. In addition to equipment, Axcelis provides aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training.

Net sales by product line follow:

	2003	2002	2001
Ion implantation systems & services	$237,213	$233,157	$292,263
Other products systems & services	84,760	76,548	73,001
	$321,973	$309,705	$365,264

Net sales and long-lived assets by geographic region based on the physical location of the operation recording the sale or the asset, follow:

	Net Sales	Long-Lived Assets
2003		
United States	$265,964	$79,396
Europe	26,016	343
Asia Pacific	29,993	1,188
	$321,973	$80,927
2002		
United States	$263,772	$91,709
Europe	23,557	362
Asia Pacific	22,376	1,526
	$309,705	$93,597
2001		
United States	$314,567	$90,489
Europe	33,996	359
Asia Pacific	16,701	1,770
	$365,264	$92,618

Long-lived assets consist of property, plant and equipment, net. Operations in Europe and Asia Pacific consist of sales and service organizations.

International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, were $208,110 (64.6%), in 2003, $161,132 (52.0%) in 2002, and $226,483 (62.0%) in 2001.

Note 16. Income Taxes

Income (loss) before income taxes for the years ended December 31 follows:

	2003	2002	2001
United States	$(55,810)	$(55,038)	$(58,643)
Foreign	2,515	489	6,037
Equity income of Sumitomo Eaton Nova Corporation	8,954	4,806	12,205
	$(44,341)	$(49,743)	$(40,401)

Income taxes (credit) for the years ended December 31 follows:

	2003	2002	2001
Current			
United States			
Federal	—	$ 8,683	$ (6,859)
State	$ 378	2,929	(556)
Foreign	255	4,443	3,194
Total current	633	16,055	(4,221)
Deferred			
United States	66,102	(37,093)	(14,708)
Foreign	2,800	(2,555)	(1,309)
Total deferred	68,902	(39,648)	(16,017)

Income taxes (credit)	$69,535	$(23,593)	$(20,238)

Reconciliations of income taxes (credit) at the United States Federal statutory rate to the effective income tax rate for the years ended December 31 follow:

	2003	2002	2001
Income tax credit at the United States statutory rate	$(15,520)	$(17,410)	$(14,140)
State taxes, net of federal income tax benefit	378	(997)	225
Change in valuation allowance	80,999	900	—
Deemed distribution from foreign subsidiaries	9,007	—	—
Credit for increasing research activities	(4,698)	(5,791)	(2,048)
Foreign income tax rate differentials	(29)	(229)	(227)
Equity income of Sumitomo Eaton Nova Corporation	(3,134)	(1,682)	(4,272)
Other—net	2,532	1,616	224
	$ 69,535	$(23,593)	$(20,238)

Significant components of current and long-term deferred income taxes at December 31 follow:

	Current Assets	Long-term Assets
2003		
Inventories	$ 11,119	—
Warranty	5,950	—
Accrued vacation	477	—
Deferred revenue	4,532	$ 733
Property, plant & equipment	—	(5,279)
Intangible assets	—	(4,680)
Tax net operating loss carryforwards	—	48,315
Tax credit carryforwards	—	28,775
Other items	—	1,671
Valuation allowance	(22,078)	(69,535)
	$ —	$ —
2002		
Inventories	$10,105	—
Warranty	3,684	—
Accrued vacation	592	—
Property, plant & equipment	—	$ (2,071)
Intangible assets	3	(6,819)
Net operating loss carryforwards	—	47,904
Tax credit carryforwards	—	17,219
Other items	2,165	1,803
Valuation allowance		(900)
	$16,549	$57,136

At December 31, 2003, the Company has approximately $91.6 million of deferred tax assets resulting from tax credit carryforwards, net operating losses, and other deductible temporary differences, which are available to reduce taxable income in future periods. SFAS No. 109 "Accounting for Income Taxes" requires that a valuation allowance be established when it is "more likely than not" that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the Company operates, length of carryback and carryforward periods, existing sales backlog, and projections of future operating results. Where there are cumulative losses in recent years, SFAS No. 109 creates a strong presumption that a valuation allowance is needed. This presumption can be overcome in very limited circumstances.

At December 31, 2002 and March 31, 2003, the Company's evaluation of the realization of these assets was based upon evidence of cumulative historical profitability and estimates of future taxable income. The Company was profitable in 2000 but was not profitable in 2001 and 2002. Projections of future earnings were based on revenue assumptions consistent with industry forecasts for the next three years along with the necessary operating expenses to support the Company's revenue assumptions. Based on these projections, the Company estimated that the loss carryforwards would be fully utilized within three years.

During the second quarter of 2003, the Company entered a three year cumulative loss position and revised its projections of the amount and timing of profitability in future periods. As a result, the Company increased its valuation allowance as of June 30, 2003. The valuation allowance for deferred tax assets amounted to $91.6 million and $.9 million at December 31, 2003 and 2002, respectively. The increase in valuation allowance of $90.7 million for the year ended December 31, 2003 consists of $81.0 million charged to income tax expense, $4.8 million reclassified from current taxes payable, and $4.9 million related to deferred tax assets obtained with the acquisition of Matrix Integrated Systems, Inc. in July 2003.

The Company expects to record a full valuation allowance on future tax benefits until it can sustain an appropriate level of profitability and until such time, the Company would not expect to recognize any significant tax benefits in its future results of operations. However, going forward should the Company return to profitability and there is sufficient evidence, in accordance with the provisions of SFAS No. 109, to support the ultimate realization of income tax benefits attributable to net operating losses, tax credit carryforwards, and other deductible temporary differences, a reduction in the valuation allowance may be recorded and the carrying value of deferred tax assets may be restored, resulting in a non-cash credit to earnings.

At December 31, 2003, the Company has federal, state, and foreign tax net operating loss carryforwards, the tax effect of which is approximately $48.3 million. Net operating loss carryforwards from acquired businesses, the future tax benefit of which approximates $4.5 million, can be used to offset future taxable income subject to certain annual limitations. Any future income tax benefits related to net operating loss carryforwards of acquired businesses will be recorded as a reduction of goodwill during the period the benefit is realized.

The Company has research and development tax credit carryforwards of approximately $20.3 million at December 31, 2003 that can be used to reduce future U.S. income tax liabilities. The carryforwards expire between 2021 and 2023. In addition, the Company has foreign tax credit carryforwards of approximately $8.5 million at December 31, 2003 that are available to reduce future U.S. income tax liabilities subject to certain limitations. These foreign tax credit carryforwards expire between 2006 and 2008.

Undistributed earnings of the Company's foreign subsidiaries amounted to approximately $71.7 million at December 31, 2003, including $67.9 million attributable to the equity income of Sumitomo Eaton Nova Corporation. These earnings are considered to be indefinitely reinvested. Upon distribution of these earnings in the form of dividends or otherwise, some portion of the distribution would be subject to both U.S. income taxes and foreign withholding taxes, less an adjustment for applicable foreign tax credits. Determination of the amount of any U.S. income tax liability is not practicable because of the complexities associated with its hypothetical calculation.

Note 17. Significant Customers

Two customers individually accounted for 11.9% and 11.1% of net sales in 2003, respectively. One customer individually accounted for 14.2% of net sales in 2002 and no single customer represented more than 10% of net sales in 2001. Net sales to the Company's ten largest customers accounted for 66.8%, 63.5%, and 50.6%, of net sales, respectively, in 2003, 2002, and 2001.

Note 18. Sumitomo Eaton Nova Corporation (unaudited)

Sumitomo Eaton Nova Corporation (SEN) was established in 1982 under the Commercial Code of Japan and is owned equally by Sumitomo Heavy Industries, Ltd., a Japanese corporation, and Axcelis. SEN designs, manufactures, sells and services ion implantation equipment in Japan under a license agreement with Axcelis. Summary financial information follows (in thousands):

	2003	2002	2001
Twelve months ended November 30:			
Net sales	$164,179	$138,690	$185,841
Gross profit	78,132	62,483	98,667
Income from operations	32,573	15,510	41,716
Net income	17,908	9,611	24,410
November 30:			
Current assets	185,705	122,596	113,963
Noncurrent assets	34,560	36,955	40,797
Current liabilities	72,570	42,522	57,472
Noncurrent liabilities	800	952	577

The year end for SEN is March 31. The consolidated statements of operations for Axcelis include the results of SEN for the twelve-month periods ended November 30, which represents a one-month lag. The information above has been presented as of and for the twelve months ended November 30 to conform to Axcelis' equity accounting for SEN.

A summary of Axcelis' transactions with SEN follows (in thousands):

	2003	2002	2001
Net sales to SEN	$3,179	$1,985	$ 8,390
Royalty income from SEN	5,866	8,275	5,835
Dividends received	456	464	444
Axcelis' equity in income of SEN	8,954	4,806	12,205
Accounts receivable at December 31 from SEN	495	695	401

Axcelis' retained earnings included $37.1 million and $28.6 million of undistributed earnings of SEN at December 31, 2003 and 2002, respectively.

Note 19. Transactions with Eaton Corporation

Commencing with the initial public offering, the Company entered into various agreements with Eaton, which provided for transitional services and support, including those associated with voice and data transmissions and other data-related operations, accounts receivable, accounts payable, fixed assets, payroll, general accounting, financial accounting consolidation, cash management, human resources, tax, legal and real estate. Under these agreements, the Company reimbursed Eaton for its direct and indirect costs of providing these services until the divestiture, and thereafter, for a limited time, the Company reimbursed Eaton for its costs plus an additional fee for providing certain of these additional services. The transition periods covered by these agreements vary, but generally expired on December 29, 2001. The agreements did not necessarily reflect the costs of obtaining these services from unrelated third parties or of providing the applicable services in-house. However, management believed that purchasing these services from Eaton provided an efficient means of obtaining these services during the transition period. Transition expenses included in Axcelis' consolidated statement of operations for the year ended December 31, 2001 amounted to $3.4 million. There were no transition expenses for the years ended December 31, 2002 and 2003.

Note 20. Quarterly Results of Operations (unaudited)

	Dec. 31 2003(1)	Sept. 30 2003(2)	June 30 2003(3)	March 31 2003	Dec. 31 2002	Sept. 30 2002	June 30 2002	March 31 2002

Net sales	$95,890	$ 59,007	$ 84,671	$82,405	$65,515	$93,117	$88,988	$ 62,085
Gross profit	35,761	13,899	27,016	27,675	18,895	36,445	33,228	15,397
Net income (loss)	3,270	(31,942)	(78,878)	(6,326)	(6,833)	191	(1,677)	(17,831)
Basic and diluted net income (loss) per share	$ 0.03	$ (0.32)	$ (0.80)	$ (0.06)	$ (0.07)	$ 0.00	$ (0.02)	$ (0.18)

(1) Includes decrease in warranty cost of $2.3 million and restructuring cost of $0.2 million.

(2) Includes increase in warranty cost of $4.3 million and restructuring cost of $4.7 million.

(3)) Includes tax provision of $69.7 million related to an increase in the valuation allowance for deferred tax assets and a $1.7 million adjustment reducing selling, general and administrative expenses reflecting a change in estimate relating to unfunded pension expense and other benefit claims recorded in prior periods.

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.

AXCELIS TECHNOLOGIES, INC.

DATED: FEBRUARY 26, 2004 By: /s/ MARY G. PUMA

Mary G. Puma, Chief Executive Officer

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

Signature	Title	Date
/s/ MARY G. PUMA Mary G. Puma	Director and Principal Executive Officer	February 26, 2004
/s/ STEPHEN G. BASSETT Stephen G. Bassett	Principal Accounting and Financial Officer	February 26, 2004
/s/ ALEXANDER M. CUTLER Alexander M. Cutler	Director	February 26, 2004
/s/ R. JOHN FLETCHER R. John Fletcher	Director	February 26, 2004
/s/ STEPHEN R. HARDIS Stephen R. Hardis	Director	February 26, 2004
/s/ WILLIAM C. JENNINGS William C. Jennings	Director	February 26, 2004
/s/ PATRICK H. NETTLES Patrick H. Nettles	Director	February 26, 2004
/s/ NAOKI TAKAHASHI Naoki Takahashi	Director	February 26, 2004
/s/ H. BRIAN THOMPSON H. Brian Thompson	Director	February 26, 2004
/s/ GARY L. TOOKER Gary L. Tooker	Director	February 26, 2004

AXCELIS TECHNOLOGIES, INC.

INDEX TO EXHIBITS

to Form 10-K for the Year ended December 31, 2003.

These Exhibits are numbered in accordance with the Exhibit Table of Item 601 of Regulation S-K:

Exhibit No.	Description
2.1	Tax Sharing and Indemnification Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.5 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
3.1	Amended and Restated Certificate of Incorporation of the Company. Incorporated by reference from Exhibit 3.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
3.2	Bylaws of the registrant, as amended as of January 23, 2002. Incorporated by reference from Exhibit 3.2 of the Company's Form 10-K for the year ended December 31, 2001, filed with the Commission on March 12, 2002.
3.3	

	Certificate of Designation of Series A Participating Preferred Stock, filed with the Secretary of State of Delaware on July 5, 2000. Incorporated by reference from Exhibit 3.3 of the Company's Form 10-K for the year ended December 31, 2000, filed with the Commission on March 30, 2001.
4.1	Specimen Stock Certificate. Incorporated by reference from Exhibit 4.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
4.2	Rights Agreement between the Company and EquiServe Trust Company, N.A. Incorporated by reference from Exhibit 4.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
4.3	Indenture between the Company and State Street Bank and Trust Company, as trustee, including the form of note, dated as of January 15, 2002. Incorporated by reference from Exhibit 4.1 to the Company's Report on Form 8-K filed with the Commission on January 15, 2002.
4.4	Registration Rights Agreement by and among the Company, Morgan Stanley & Co., Incorporated, Salmomon Smith Barney Inc. and SG Cowen Securities Corporation, dated as of January 15, 2002. Incorporated by reference from Exhibit 4.2 to the Company's Report on Form 8-K filed with the Commission on January 15, 2002.
4.5	Revolving Credit Agreement dated as of October 3, 2003, among the Company, ABN Amro Bank N.V. and the other lenders named therein, as amended. Pursuant to Regulation S-K, Item 601(b)(4)(iii), this exhibit has not been filed, since the total amount of the facility does not exceed 10% of the Company's total assets at this time. The Company will furnish a copy of the Credit Agreement to the Commission on request.
10.1*	2000 Stock Plan, as amended on December 18, 2003. Filed herewith.
10.2*	Employee Stock Purchase Plan. Incorporated by reference from Exhibit 10.2 from the Company's Report on Form 10-Q filed with the Commission on November 14, 2000.
10.3	Form of Indemnification Agreement entered into by the Company with each of its directors and executive officers. Incorporated by reference from Exhibit 10.2 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
10.4*	Form of Change in Control Agreement between the registrant and certain of its executive officers. Incorporated by reference from Exhibit 10.3 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
10.5	Intentionally omitted.
10.6	Intentionally omitted.
10.7*	Employment Agreement between the Company and Mary G. Puma. Incorporated by reference from Exhibit 10.5 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
10.8**	Organization Agreement dated December 3, 1982 between Eaton Corporation and Sumitomo Heavy Industries, Ltd. relating to Sumitomo Eaton Nova Corporation, as amended. Incorporated by reference from Exhibit 10.6 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
10.9**	Master License Agreement dated January 16, 1996 between Eaton Corporation and Sumitomo Eaton Nova Corporation. Incorporated by reference from Exhibit 10.7 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
10.10*	Executive Officer Agreement dated as of December 18, 2003 between the Company and Stephen G. Bassett. Filed herewith.
14.1	Ethical Business Conduct at Axcelis, revised through January 2003. Incorporated by reference from Exhibit 14.1 of the Company's report on Form 10-K filed with the Commission on March 28, 2003.
21.1	Subsidiaries of the Company. Filed herewith.
23.1	Consent of Ernst & Young LLP, Independent Auditors. Filed herewith.
31.1	Certification of the Chief Executive Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated March 8, 2004. Filed herewith.
31.2	Certification of the Chief Financial Officer under Exchange Act Rule 13a-14(a)/15d-14(a) (Section 302 of the Sarbanes-Oxley Act), dated March 8, 2004. Filed herewith.
32.1	Certification of the Chief Financial Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated March 8, 2004. Filed herewith.
32.2	Certification of the Chief Executive Officer pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code (Section 906 of the Sarbanes-Oxley Act), dated March 8, 2004. Filed herewith.
99.1	Factors affecting future operating results as of December 31, 2003. Filed herewith.
99.2	

	Charter of the Audit Committee of the Board of Directors of Axcelis, as adopted on January 23, 2003. Incorporated by reference to Exhibit 99.4 of the Company's report on Form 10-K filed with the Commission on March 28, 2003.
99.3	Governance Policies adopted by the Board of Directors of Axcelis on September 26, 2002 and amended on October 22, 2003. Filed herewith.
99.4	Charter of the Nominating and Governance Committee of the Board of Directors, as adopted on September 26, 2002. Incorporated by reference to Exhibit 99.6 of the Company's report on Form 10-K filed with the Commission on March 28, 2003.
99.5	Charter of the Compensation Committee of the Board of Directors of Axcelis, as adopted on January 23, 2003. Incorporated by reference to Exhibit 99.7 of the Company's report on Form 10-K filed with the Commission on March 28, 2003.

* Indicates a management contract or compensatory plan.

Certain confidential information contained in the document has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended, or Rule 24b-2 promulgated under the Securities and Exchange Act of 1934, as amended

Schedule II-Valuation and Qualifying Accounts

Axcelis Technologies, Inc.

(In thousands)

	Balance at Beginning of Period	**Charged to Costs and Expenses**	**Deductions**	**Balance at End of Period**
Year Ended December 31, 2003				
Allowance for doubtful accounts and returns	$ 3,644	$ 318	$ 139	$ 3,823
Warranty and installation reserve	$16,625	$22,689	$22,314	$17,000
Year Ended December 31, 2002				
Allowance for doubtful accounts and returns	$ 4,102	$ (146)	$ 312	$ 3,644
Warranty and installation reserve	$24,218	$18,343)	$25,936	$16,625
Year Ended December 31, 2001				
Allowance for doubtful accounts and returns	$ 2,109	$ 1,996	$ 3	$ 4,102
Warranty and installation reserve	$33,491	$19,536	$28,809	$24,218

Exhibit 10.1

AXCELIS TECHNOLOGIES, INC.

2000 STOCK PLAN

Adopted by the Board of Directors and Stockholder on June 9, 2000 Amended by the Board of Directors on October 25, 2000 and July 31, 2001 and Approved by the Stockholders on May 1, 2002 and further amended by the Board of Directors on December 18, 2003

ARTICLE I

PURPOSE AND ADOPTION OF THE PLAN

1.01 Purpose. The purpose of the Axcelis Technologies, Inc. 2000 Stock Plan (hereinafter referred to as the "Plan") is to assist in attracting and retaining highly competent employees, directors and consultants and to act as an incentive in motivating selected employees, directors and consultants of Axcelis Technologies, Inc. and its Subsidiaries (as defined below) to achieve long-term corporate objectives.

1.02 Adoption and Term. The Plan has been approved by the Board of Directors of Axcelis Technologies, Inc. and its stockholder to be effective as of July 14, 2000 (the "Effective Date"). The Plan shall remain in effect until May 1, 2012 (the 10th anniversary of the last shareholder approval of the Plan) unless earlier terminated by action of the Board.

ARTICLE II

DEFINITIONS

For the purposes of this Plan, capitalized terms shall have the following meanings:

2.01 Award means any grant to a Participant of one or a combination of Non-Qualified Stock Options or Incentive Stock Options described in Article VI, Stock Appreciation Rights described in Article VI, Restricted Shares described in Article VII and Performance Awards described in Article VIII.

2.02 Award Agreement means a written agreement between the Company and a Participant or a written notice from the Company to a Participant specifically setting forth the terms and conditions of an Award granted under the Plan.

2.03 Award Period means, with respect to an Award, the period of time set forth in the Award Agreement during which specified target performance goals must be achieved or other conditions set forth in the Award Agreement must be satisfied.

2.04 Beneficiary means an individual, trust or estate who or which, by a written designation of the Participant filed with the Company or by operation of law, succeeds to the rights and obligations of the Participant under the Plan and an Award Agreement upon the Participant's death.

2.05 Board means the Board of Directors of the Company.

2.06 Change in Control means, and shall be deemed to have occurred upon the occurrence of any one of the following events:

(a) The acquisition by any individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) (a "Person") of beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of 25% or more of either (i) the then outstanding shares of common stock of the Company (the "Outstanding Company Common Stock") or (ii) the combined voting power of the then outstanding voting securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this subsection (a), the following acquisitions shall not constitute a Change of Control: (i) any acquisition directly from the Company, (ii) any acquisition by the Company, or (iii) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any corporation controlled by the Company; or

(b) Individuals who, as of the date hereof, constitute the Board (the "Incumbent Board") cease for any reason to constitute at least a majority of the Board; provided, however, that any individual becoming a director subsequent to the date hereof whose election, or nomination for election by the Company's shareholders, was approved by a vote of at least two-thirds of the directors then comprising the Incumbent Board shall be considered as though such individual were a member of the Incumbent Board, but excluding, for this purpose, any such individual whose initial assumption of office occurs as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board; or

(c) Consummation by the Company of a reorganization, merger or consolidation or sale or other disposition of all or substantially all of the assets of the Company or the acquisition of assets of another corporation (a "Business Combination"), in each case, unless, following such Business Combination, (i) all or substantially all of the individuals and entities who were the beneficial owners, respectively, of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than 75% of, respectively, the then outstanding shares of common stock and the combined voting power of the then outstanding voting securities entitled to vote generally in the election of directors, as the case may be, of the corporation resulting from such Business Combination (including, without limitation, a corporation which as a result of such transaction owns the Company or all or substantially all of the Company's assets either directly or through one or more subsidiaries) in substantially the same proportions as their ownership, immediately prior to such Business Combination of the Outstanding Company Common Stock and Outstanding Company Voting Securities, as the case may be, (ii) no Person (excluding any employee benefit plan (or related trust) of the Company or such corporation resulting from such Business Combination) beneficially owns, directly or indirectly, 25% or more of, respectively, the then outstanding shares of common stock of the corporation resulting from such Business Combination or the combined voting power of the then outstanding voting securities of such corporation except to the extent that such ownership existed prior to the Business Combination and (iii) at least a majority of the members of the board of directors of the corporation resulting from such Business Combination were members of the Incumbent Board at the time of the execution of the initial agreement, or of the action of the Board, providing for such Business Combination; or

(d) Approval by the shareholders of the Company of a complete liquidation or dissolution of the Company.

2.07 Code means the Internal Revenue Code of 1986, as amended. References to a section of the Code include that section and any comparable section or sections of any future legislation that amends, supplements or supersedes said section.

2.08 Company means Axcelis Technologies, Inc., a Delaware corporation, and its successors.

2.09 Common Stock means Common Stock of the Company, par value $0.001 per share.

2.10 Company Voting Securities means the combined voting power of all outstanding securities of the Company entitled to vote generally in the election of directors of the Company.

2.11 Date of Grant means the date designated by the Board as the date as of which it grants an Award, which shall not be earlier than the date on which the Board approves the granting of such Award.

2.12 Disability means a total and permanent disability such that, due to physical or mental illness, injury or disease, a Participant is unable to perform any services for the Company and its Subsidiaries and, in the opinion of a qualified physician designated by the Board, such disability will be permanent and continuous during the remainder of the Participant's life.

2.13 Effective Date shall have the meaning given to such term in Section 1.02.

2.14 Exchange Act means the Securities Exchange Act of 1934, as amended.

2.15 Exercise Price means, with respect to a Stock Appreciation Right, the amount established by the Board in the related Award Agreement as the amount to be subtracted from the Fair Market Value on the date of exercise in order to determine the amount of the payment to be made to the Participant, as further described in Section 6.02(b).

2.16 Fair Market Value means, as of any applicable date, the closing price of a share of the Common Stock on the Nasdaq National Market System ("NMS") or, if not then authorized for trading on the NMS but traded on a nationally recognized exchange, the closing price of a share of the Common on such exchange or, if not then authorized or traded on any nationally recognized exchange, the fair market value of the Common Stock as determined in good faith under procedures established by the Board.

2.17 Incentive Stock Option means a stock option within the meaning of Section 422 of the Code.

2.18 Merger means any merger, reorganization, consolidation, share exchange, transfer of assets or other transaction having similar effect involving the Company.

2.19 Non-Employee Director means a member of the Board who is not also a common law employee of Company. A member of the Board who is a common law employee of the Company shall become a Non-Employee Director as of the date he or she ceases to be an active employee of the Company. For purposes of this Plan, a member of the Board who receives deferred compensation or benefits, whether through a qualified plan or other arrangement, will not be deemed to be an active employee of the Company solely on account of the receipt of such deferred compensation or benefits.

2.20 Non-Qualified Stock Option means a stock option which is not an Incentive Stock Option.

2.21 Options means all Non-Qualified Stock Options and Incentive Stock Options granted at any time under the Plan.

2.22 Participant means a person designated to receive an Award under the Plan in accordance with Section 5.01.

2.23 Performance Awards means Awards granted in accordance with Article VIII.

2.24 Plan means the Axcelis Technologies, Inc. 2000 Stock Plan as described herein, as the same may be amended from time to time.

2.25 Purchase Price, with respect to Options, shall have the meaning set forth in Section 6.01(c).

2.26 Restricted Shares means Common Stock subject to restrictions imposed in connection with Awards granted under Article VII.

2.27 Retirement means a Participant's voluntary Termination of Employment with the consent of the Board.

2.28 Stock Appreciation Rights means Awards granted in accordance with Article VI.

2.29 Subsidiary means a subsidiary of the Company within the meaning of Section 424(f) of the Code.

2.30 Termination of Employment means the voluntary or involuntary termination of a Participant's employment with the Company or a Subsidiary for any reason, including death, Disability, Retirement or as the result of the divestiture of the Participant's employer or any similar transaction in which the Participant's employer ceases to be the Company or one of its Subsidiaries. Whether entering military or other government service shall constitute Termination of Employment, or whether a Termination of Employment shall occur as a result of Disability, shall be determined in each case by the Board in its sole discretion. In the case of a Member of the Board or consultant who is not an employee of the Company or a Subsidiary, Termination of Employment shall mean voluntary or involuntary termination of Board service or the consulting relationship, as the case may be, for any reason.

ARTICLE III

ADMINISTRATION

3.01 Administration. The Plan shall be administered by the Board, except (i) awards to Non-Employee Directors under Section 6.01(b) shall be automatic and granted under the terms set forth for Non-Employee Directors under the Plan without power or authority of the Board (or if applicable a committee) to alter or amend the number, terms or conditions of such awards and (ii) awards intended to qualify as exempt from the limitations on deductible compensation imposed by Section 162(m) of the Code shall be granted and administered by a committee appointed by the Board consisting of no fewer than two members of the Board who meet each and all requirements to serve as outside directors within the meaning of Section 162(m) of the Code and the regulations promulgated thereunder (the "162(m) Committee"). Except to the extent of matters reserved for the 162(m) Committee, the Board (or its designee, as described below) shall have exclusive and final authority in each determination, interpretation or other action affecting the Plan and its Participants. The Board (or its designee, as described below) shall have the sole discretionary authority to interpret the Plan, to establish and modify administrative rules for the Plan, to impose such conditions and restrictions on Awards as it determines appropriate, and to take such steps in connection with the Plan and Awards granted hereunder as it may deem necessary or advisable. The Board may, subject to compliance with applicable legal requirements, delegate to a person or a committee, none of whom need be members of the Board of the Company, such of its powers and authority under the Plan as it deems appropriate to designated officers or employees of the Company. The Board may appoint such person or committee to exercise any of the authority conferred upon the Board hereunder and, if a person or committee is designated to so serve, the term "Board" as used in this Plan shall include such committee. In the event of any such delegation of authority or exercise of authority by a person or committee so designated, references in the Plan to the Board shall be deemed to refer to the delegate of the Board or such committee, as the case may be.

ARTICLE IV

SHARES

4.01 Number of Shares Issuable. The total number of shares initially authorized to be issued under the Plan shall be 18,500,000 shares of Common Stock. The number of shares available for issuance under the Plan shall be subject to adjustment in accordance with Section 9.07 and, for the purposes of granting Awards other than Incentive Stock Options, shall be increased annually on the anniversary of the Effective Date by the lesser of (i) five (5%) percent of the then number of outstanding shares of Common Stock of the Company, (ii) 5,000,000 shares or (iii) such lesser amount determined by the Board. The shares to be offered under the Plan shall be authorized and unissued shares of Common Stock, or issued shares of Common Stock which will have been reacquired by the Company.

4.02 Shares Subject to Terminated Awards. Shares of Common Stock covered by any unexercised portions of terminated Options (including canceled Options) granted under Article VI, shares of Common Stock forfeited as provided in Section 7.02(a) and shares of Common Stock subject to any Award that are otherwise surrendered by a Participant may be subject to new Awards under the Plan. Shares of Common Stock subject to Options, or portions thereof, that have been surrendered in connection with the exercise of Stock Appreciation Rights shall not be available for subsequent Awards under the Plan, but shares of Common Stock issued in payment of such Stock Appreciation Rights shall not be charged against the number of shares of Common Stock available for the grant of Awards hereunder.

ARTICLE V

PARTICIPATION

Participants in the Plan shall be such employees, directors and consultants of the Company and its Subsidiaries as the Board, in its sole discretion, may designate from time to time. The Board's designation of a Participant in any year shall not require the Board to designate such person to receive Awards in any other year. The designation of a Participant to receive an Award under one portion of the Plan does not require the Board to include such Participant under other portions of the Plan. The Board shall consider such factors as it deems pertinent in selecting Participants and in determining the types and amounts of their respective Awards.

ARTICLE VI

STOCK OPTIONS AND STOCK APPRECIATION RIGHTS

6.01 Option Awards.

(a) Grant of Options. The Board may grant, to such Participants as the Board may select, Options entitling the Participants to purchase shares of Common Stock from the Company in such numbers, at such prices, and on such terms and subject to such conditions, not inconsistent with the terms of the Plan, as may be established by the Board. The terms of any Option granted under the Plan shall be set forth in an Award Agreement. No Participant may be granted an Option to purchase more than 1,250,000 shares of Common Stock in any fiscal year of the Company, except that in his or her initial year of service, a Participant may be granted an Option to purchase up to 1,250,000 shares of Common Stock.

(b) Non-Employee Director Options.

(i) Annual Grants. Each person serving as a Non-Employee Director at the commencement of the first meeting of the Board of Directors following July 1st of each calendar year (beginning in 2001) will be automatically granted a Non-Qualified Stock Option on that date to purchase 15,000 shares of Common Stock of the Company. Each such option shall be evidenced by a written Award Agreement that shall set forth the following terms:

(1) The per share Purchase Price shall be equal to the Fair Market Value of a share of Common Stock on the date of grant, unless then Board determines otherwise in accordance with Section 6.01(c);

(2) The Option shall expire on the 10th anniversary of the date of grant;

(3) The Option shall be fully vested on the 181st day after the date of grant; and

(4) The Option shall be exercisable in accordance with Section 6.04 of this Plan.

(ii) Initial Grants. If a member of the Board of Directors first becomes a Non-Employee Director after the initial public offering of the Common Stock of the Company (1) he or she shall automatically be granted a Non-Qualified Option to purchase up to 40,000 shares of Common Stock as of the date he or she first becomes a Non-Employee Director subject to the terms set forth in (1) through (4) above and (2) he or she shall be eligible to receive an annual grant of a Non-Qualified Stock Option as provided above in and each subsequent calendar year thereafter as long as he or she serves as a Non-Employee Director.

(iii) Non-Exclusive. Nothing set forth in this section shall prevent the Board from considering Non-Employee Directors for other awards under this Plan and from making any Awards to Non-Employee Directors.

(c) Purchase Price of Options. Subject to Section 6.01(e) with respect to certain Incentive Stock Options, the Purchase Price of each share of Common Stock which may be purchased upon exercise of any Option granted under the Plan shall be determined by the Board; provided, however, that the Purchase Price shall in all cases be equal to or greater than the Fair Market Value on the Date of Grant.

(d)) Designation of Options. Except as otherwise expressly provided in the Plan, the Board may designate, at the time of the grant of an Option, such Option as an Incentive Stock Option or a Non-Qualified Stock Option; provided, however, that an Option may be designated as an Incentive Stock Option only if the applicable Participant is an employee of the Company or a Subsidiary on the Date of Grant.

(e) Special Incentive Stock Option Rules. No Participant may be granted Incentive Stock Options under the Plan (or any other plans of the Company and its Subsidiaries) that would result in Incentive Stock Options to purchase shares of Common Stock with an aggregate Fair Market Value (measured on the Date of Grant) of more than $100,000 first becoming exercisable by such Participant in any one calendar year. Notwithstanding any other provision of the Plan to the contrary, no Incentive Stock Option shall be granted to any person who, at the time the Option is granted, owns stock (including stock owned by application of the constructive ownership rules in Section 424(d) of the Code) possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Subsidiary, unless at the time the Incentive Stock Option is granted the Option price is at least 110% of the Fair Market Value of the Common Stock subject to the Incentive Stock Option and the Incentive Stock Option by its terms is not exercisable for more than five (5) years from the Date of Grant.

(f) Rights as a Shareholder. A Participant or a transferee of an Option pursuant to Section 9.04 shall have no rights as a shareholder with respect to the shares of Common Stock covered by an Option until that Participant or transferee shall have become the holder of record of any such shares, and no adjustment shall be made with respect to any such shares of Common Stock for dividends in cash or other property or distributions of other rights on the Common Stock for which the record date is prior to the date on which that Participant or transferee shall have become the holder of record of any shares covered by such Option; provided, however, that Participants are entitled to share adjustments to reflect capital changes under Section 9.07.

6.02 Stock Appreciation Rights.

(a) Stock Appreciation Right Awards. The Board is authorized to grant to any Participant one or more Stock Appreciation Rights. Such Stock Appreciation Rights may be granted either independent of or in tandem with Options granted to the same Participant. Stock Appreciation Rights granted in tandem with Options may be granted simultaneously with, or, in the case of Non-Qualified Stock Options, subsequent to, the grant to such Participant of the related Options; provided, however, that: (i) any Option covering any share of Common Stock shall expire and not be exercisable upon the exercise of any Stock Appreciation Right with respect to the same share, (ii) any Stock Appreciation Right covering any share of Common Stock shall expire and not be exercisable upon the exercise of any Option with respect to the same share, and (iii) an Option and a Stock Appreciation Right covering the same share of Common Stock may not be exercised simultaneously. Upon exercise of a Stock Appreciation Right with respect to a share of Common Stock, the Participant shall be entitled to receive an amount equal to the excess, if any, of (A) the Fair Market Value of a share of Common Stock on the date of exercise over (B) the Exercise Price of such Stock Appreciation Right established in the Award Agreement, which amount shall be payable as provided in Section 6.02(c).

(b) Exercise Price. The Exercise Price established for any Stock Appreciation Right granted under this Plan shall be determined by the Board, but in the case of Stock Appreciation Rights granted in tandem with Options shall not be less than the Purchase Price of the related Options. Upon exercise of Stock Appreciation Rights, the number of shares issuable upon exercise under any related Options shall automatically be reduced by the number of shares of Common Stock represented by such Options which are surrendered as a result of the exercise of such Stock Appreciation Rights.

(c) Payment of Incremental Value. Any payment that may become due from the Company by reason of a Participant's exercise of a Stock Appreciation Right may be paid to the Participant as determined by the Board (i) all in cash, (ii) all in Common Stock, or (iii) in any combination of cash and Common Stock. In the event that all or a portion of the payment is to be made in Common Stock, the number of shares of Common Stock to be delivered in satisfaction of such payment shall be determined by dividing the amount of such payment or portion thereof by the Fair Market Value on the date of exercise . No fractional share of Common Stock shall be issued to make any payment in respect of Stock Appreciation Rights; if any fractional share would otherwise be issuable, the combination of cash and Common Stock payable to a Participant shall be adjusted as directed by the Board to avoid the issuance of any fractional share.

6.03 Terms of Stock Options and Stock Appreciation Rights.

(a) Conditions on Exercise. An Award Agreement with respect to Options and/or Stock Appreciation Rights may contain such waiting periods, exercise dates and restrictions on exercise (including, but not limited to, periodic installments) as may be determined by the Board at the time of grant.

(b) Duration of Options and Stock Appreciation Rights. Options and Stock Appreciation Rights shall terminate after the first to occur of the following events:

(i) Expiration of the Option or Stock Appreciation Right as provided in the related Award Agreement; or

(ii) Termination of the Award as provided in Section 6.03(e), following the applicable Participant's Termination of Employment; or

(iii) In the case of an Incentive Stock Option, ten years from the Date of Grant (five years in certain cases, as described in Section 6.01(e)) Non-Qualified Stock Options may, if so approved by the Board, have a stated term in excess of ten years, but such Options shall in all events be subject to termination in accordance with clauses (i) and (ii) above); or

(iv) Solely in the case of a Stock Appreciation Right granted in tandem with an Option, upon the expiration of the related Option.

(c) Acceleration of Exercise Time. The Board, in its sole discretion, shall have the right (but shall not in any case be obligated), exercisable at any time after the Date of Grant, to permit the exercise of any Option or Stock Appreciation Right prior to the time such Option or Stock Appreciation Right would otherwise become exercisable under the terms of the related Award Agreement.

(d) Extension of Exercise Time. In addition to the extensions permitted under Section 6.03(e) in the event of Termination of Employment, the Board, in its sole discretion, shall have the right (but shall not in any case be obligated), exercisable on or at any time after the Date of Grant, to permit the exercise of any Option or Stock Appreciation Right after its expiration date described in Section 6.03(e), subject, however, to the limitations described in Sections 6.03(b)(i), (iii) and (iv).

(e) Exercise of Options or Stock Appreciation Rights Upon Termination of Employment. Unless an Optionee's Award Agreement provides otherwise, the following rules shall govern the treatment of Options and Stock Appreciation Rights upon Termination of Employment:

(i) Termination of Vested Options and Stock Appreciation Rights Upon Termination of Employment.

(A) Reasons Other Than Death, Disability or Retirement. In the event of a Participant's voluntary or involuntary Termination of Employment for any reason other than death, Disability or Retirement, the right of the Participant to exercise any Option or Stock Appreciation Right shall terminate on the date of such Termination of Employment, unless the exercise period is extended by the Board in accordance with Section 6.03(d).

(B) Death, Disability or Retirement. In the event of a Participant's Termination of Employment by reason of death, Disability or Retirement, the right of the Participant to exercise any Option or Stock Appreciation Right which he or she was entitled to exercise upon Termination of Employment (or which became exercisable pursuant to Section 6.03(e)(ii)) shall, unless the exercise period is extended by the Board in accordance with Section 6.03(d), terminate upon the earlier of (i) the later to occur of (A) first anniversary of the date of such Termination of Employment and (B) the first anniversary of the date of consummation of a public offering of the Common Stock and (ii) the date of expiration of the Option determined pursuant to Section 6.03(b)(i), (iii) or (iv).

(ii) Termination of Unvested Options or Stock Appreciation Rights Upon Termination of Employment. Subject to Section 6.03(c), to the extent the right to exercise an Option or a Stock Appreciation Right, or any portion thereof, has not accrued as of the date of Termination of Employment, such right shall expire at the date of such Termination of Employment regardless of the reason for such Termination of Employment. Notwithstanding the foregoing, the Board, in its sole discretion and under such terms as it deems appropriate, may permit, for a Participant who terminates employment by reason of Retirement and who will continue to render significant services to the Company or one of its Subsidiaries after his or her Termination of Employment, the continued vesting of his or her Options and Stock Appreciation Rights during the period in which that individual continues to render such services.

6.04 Exercise Procedures. Each Option and Stock Appreciation Right granted under the Plan shall be exercised by written notice to the Company which must be received by the officer or employee of the Company designated in the Award Agreement at or before the close of business on the expiration date of the Award. The Purchase Price of shares purchased upon exercise of an Option granted under the Plan shall be paid in full in cash by the Participant pursuant to the Award Agreement; provided, however, that the Board may (but shall not be required to) permit payment to be made by delivery to the Company of either (a) shares of Common Stock held by the Participant for at least six months (which may include Restricted Shares, subject to such rules as the Board deems appropriate) or (b) any combination of cash and Common Stock or (c) such other consideration as the Board deems appropriate and in compliance with applicable law (including payment in accordance with a cashless exercise program under which, if so instructed by a Participant, shares of Common Stock may be issued directly to the Participant's broker or dealer upon receipt of an irrevocable written notice of exercise from the Participant). In the event that any shares of Common Stock shall be transferred to the Company to satisfy all or any part of the Purchase Price, the part of the Purchase Price deemed to have been satisfied by such transfer of shares of Common Stock shall be equal to the product derived by multiplying the Fair Market Value as of the date of exercise times the number of shares of Common Stock transferred to the Company. The Participant may not transfer to the Company in satisfaction of the Purchase Price any fractional share of Common Stock. Any part of the Purchase Price paid in cash upon the exercise of any Option shall be added to the general funds of the Company and may be used for any proper corporate purpose. Unless the Board shall otherwise determine, any shares of Common Stock transferred to the Company as payment of all or part of the Purchase Price upon the exercise of any Option shall be held as treasury shares.

6.05 Change in Control. Unless otherwise provided by the Board in the applicable Award Agreement, in the event of a Change in Control, all Options and Stock Appreciation Rights outstanding on the date of such Change in Control shall become immediately and fully exercisable. The provisions of this Section 6.05 shall not be applicable to any Options or Stock Appreciation Rights granted to a Participant if any Change in Control results from such Participant's beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of Company Voting Securities.

ARTICLE VII

RESTRICTED SHARES

7.01 Restricted Share Awards. The Board may grant to any Participant an Award of such number of shares of Common Stock on such terms, conditions and restrictions, whether based on performance standards, periods of service, retention by the Participant of ownership of purchased or designated shares of Common Stock or other criteria, as the Board shall establish. The terms of any Restricted Share Award granted under this Plan shall be set forth in an Award Agreement which shall contain provisions determined by the Board and not inconsistent with this Plan.

(a) Issuance of Restricted Shares. As soon as practicable after the Date of Grant of a Restricted Share Award by the Board, the Company shall cause to be transferred on the books of the Company or its agent, shares of Common Stock, registered on behalf of the Participant, evidencing the Restricted Shares covered by the Award, subject to forfeiture to the Company as of the Date of Grant if an Award Agreement with respect to the Restricted Shares covered by the Award is not duly executed by the Participant and timely returned to the Company. All shares of Common Stock covered by Awards under this Article VII shall be subject to the restrictions, terms and conditions contained in the Plan and the applicable Award Agreements entered into by the appropriate Participants. Until the lapse or release of all restrictions applicable to an Award of Restricted Shares the share certificates representing such Restricted Shares may be held in custody by the Company, its designee, or, if the certificates bear a restrictive legend, by the Participant. Upon the lapse or release of all restrictions with respect to an Award as described in Section 7.01(d), one or more share certificates, registered in the name of the Participant, for an appropriate number of shares as provided in Section 7.01(d), free of any restrictions set forth in the Plan and the related Award Agreement shall be delivered to the Participant.

(b) Shareholder Rights. Beginning on the Date of Grant of a Restricted Share Award and subject to execution of the related Award Agreement as provided in Section 7.01(a), and except as otherwise provided in such Award Agreement, the Participant shall become a shareholder of the Company with respect to all shares subject to the Award Agreement and shall have all of the rights of a shareholder, including, but not limited to, the right to vote such shares and the right to receive dividends; provided, however, that any shares of Common

Stock distributed as a dividend or otherwise with respect to any Restricted Shares as to which the restrictions have not yet lapsed, shall be subject to the same restrictions as such Restricted Shares and held or restricted as provided in Section 7.01(a).

(c) Restriction on Transferability. None of the Restricted Shares may be assigned or transferred (other than by will or the laws of descent and distribution or to an inter vivos trust with respect to which the Participant is treated as the owner under Sections 671 through 677 of the Code), pledged or sold prior to the lapse of the restrictions applicable thereto.

(d) Delivery of Shares Upon Vesting. Upon expiration or earlier termination of the forfeiture period without a forfeiture and the satisfaction of or release from any other conditions prescribed by the Board, or at such earlier time as provided under the provisions of Section 7.03, the restrictions applicable to the Restricted Shares shall lapse. As promptly as administratively feasible thereafter, subject to the requirements of Section 9.05, the Company shall deliver to the Participant or, in case of the Participant's death, to the Participant's Beneficiary, one or more share certificates for the appropriate number of shares of Common Stock, free of all such restrictions, except for any restrictions that may be imposed by law.

7.02 Terms of Restricted Shares.

(a) Forfeiture of Restricted Shares. Subject to Sections 7.02(b) and 7.03, Restricted Shares shall be forfeited and returned to the Company and all rights of the Participant with respect to such Restricted Shares shall terminate unless the Participant continues in the service of the Company or a Subsidiary as an employee until the expiration of the forfeiture period for such Restricted Shares and satisfies any and all other conditions set forth in the Award Agreement. The Board shall determine the forfeiture period (which may, but need not, lapse in installments) and any other terms and conditions applicable with respect to any Restricted Share Award.

(b) Waiver of Forfeiture Period. Notwithstanding anything contained in this Article VII to the contrary, the Board may, in its sole discretion, waive the forfeiture period and any other conditions set forth in any Award Agreement under appropriate circumstances (including the death, Disability or Retirement of the Participant or a material change in circumstances arising after the date of an Award) and subject to such terms and conditions (including forfeiture of a proportionate number of the Restricted Shares) as the Board shall deem appropriate.

(c) Repurchase Rights. The Board may, but shall not be required to, grant to Participants who promptly inform the Board of their intention to elect federal income taxation under Section 83(b) of the Code, the right to require the Company to repurchase upon their termination of employment for any reason other than cause the shares for which federal income tax treatment under Section 83(b) of the Code was elected. Such repurchase right, if granted, may be exercised by the Participant at any time after his or her termination of employment at a price to be determined by the Board at the date of grant but in no event greater than the fair market value of such shares at the time federal income tax treatment under Section 83(b) of the Code was elected.

7.03 Change in Control. Unless otherwise provided by the Board in the applicable Award Agreement, in the event of a Change in Control, all restrictions applicable to the Restricted Share Award shall terminate fully and the Participant shall immediately have the right to the delivery of share certificates for such shares in accordance with Section 7.01(d).

ARTICLE VIII

PERFORMANCE AWARDS

8.01 Performance Awards.

(a) Award Periods and Calculations of Potential Incentive Amounts. The Board may grant Performance Awards to Participants. A Performance Award shall consist of the right to receive a payment (measured by the Fair Market Value of a specified number of shares of Common Stock, increases in such Fair Market Value during the Award Period and/or a fixed cash amount) contingent upon the extent to which certain predetermined performance targets have been met during an Award Period. Performance Awards may be made in conjunction with, or in addition to, any other Awards made under this Plan. The Award Period shall be two or more fiscal or calendar years as determined by the Board. The Board, in its discretion and under such terms as it deems appropriate, may permit newly eligible employees, such as those who are promoted or newly hired, to receive Performance Awards after an Award Period has commenced.

(b) Performance Targets. The performance targets may include such goals related to the performance of the Company and/or the performance of a Participant as may be established by the Board in its discretion. The performance targets established by the Board may vary for different Award Periods and need not be the same for each Participant receiving a Performance Award in an Award Period. The Board, in its discretion, but only under extraordinary circumstances as determined by the Board, may change any prior determination of performance targets for any Award Period at any time prior to the final determination of the value of a related Performance Award when events or transactions occur to cause such performance targets to be an inappropriate measure of achievement.

(c) Earning Performance Awards. The Board, on or as soon as practicable after the Date of Grant, shall prescribe a formula to determine the percentage of the applicable Performance Award to be earned based upon the degree of attainment of performance targets.

(d) Payment of Earned Performance Awards. Payments of earned Performance Awards shall be made in cash or shares of Common Stock or a combination of cash and shares of Common Stock, in the discretion of the Board. The Board, in its sole discretion, may provide such terms and conditions with respect to the payment of earned Performance Awards as it may deem desirable.

8.02 Terms of Performance Awards.

(a) Termination of Employment. Unless otherwise provided below or in Section 8.03, in the case of a Participant's Termination of Employment prior to the end of an Award Period, the Participant will not have earned any Performance Awards for that Award Period.

(b) Retirement. If a Participant's Termination of Employment is because of Retirement prior to the end of an Award Period, the Participant will not be paid any Performance Award, unless the Board, in its sole and exclusive discretion, determines that an Award should be paid. In such a case, the Participant shall be entitled to receive a pro-rata portion of his or her Award as determined under subsection (d).

(c) Death or Disability. If a Participant's Termination of Employment is due to death or to Disability (as determined in the sole and exclusive discretion of the Board) prior to the end of an Award Period, the Participant or the Participant's personal representative shall be entitled to receive a pro-rata share of his or her Award as determined under subsection (d).

(d) Pro-Rata Payment. The amount of any payment to be made to a Participant whose employment is terminated by Retirement, death or Disability (under the circumstances described in subsections (b) and (c)) will be the amount determined by multiplying (i) the amount of the Performance Award that would have been earned through the end of the Award Period had such employment not been terminated by (ii) a fraction, the numerator of which is the number of whole months such Participant was employed during the Award Period, and the denominator of which is the total number of months of the Award Period. Any such payment made to a Participant whose employment is terminated prior to the end of an Award Period shall be made at the end of such Award Period, unless otherwise determined by the Board in its sole discretion. Any partial payment previously made or credited to a deferred account for the benefit of a Participant in accordance with Section 8.01(d) of the Plan shall be subtracted from the amount otherwise determined as payable as provided in this Section 8.02(d).

(e) Other Events. Notwithstanding anything to the contrary in this Article VIII, the Board may, in its sole and exclusive discretion, determine to pay all or any portion of a Performance Award to a Participant who has terminated employment prior to the end of an Award Period under certain circumstances (including the death, Disability or Retirement of the Participant or a material change in circumstances arising after the Date of Grant), subject to such terms and conditions as the Board shall deem appropriate.

8.03 Change in Control. Unless otherwise provided by the Board in the applicable Award Agreement, in the event of a Change in Control, all Performance Awards for all Award Periods shall immediately become fully vested and payable to all Participants and shall be paid to Participants within 30 days after such Change in Control.

ARTICLE IX

TERMS APPLICABLE TO ALL AWARDS GRANTED UNDER THE PLAN

9.01 Plan Provisions Control Award Terms. The terms of the Plan shall govern all Awards granted under the Plan, and in no event shall the Board have the power to grant any Award under the Plan the terms of which are contrary to any of the provisions of the Plan. In the event any provision of any Award granted under the Plan shall conflict with any term in the Plan as constituted on the Date of Grant of such Award, the term in the Plan as constituted on the Date of Grant of such Award shall control. Except as provided in Section 9.03 and Section 9.07, the terms of any Award granted under the Plan may not be changed after the Date of Grant of such Award so as to materially decrease the value of the Award without the express written approval of the holder.

9.02 Award Agreement. No person shall have any rights under any Award granted under the Plan unless and until the Company and the Participant to whom such Award shall have been granted shall have executed and delivered an Award Agreement or the Participant shall have received and acknowledged notice of the Award authorized by the Board expressly granting the Award to such person and containing provisions setting forth the terms of the Award.

9.03 Modification of Award After Grant. No Award granted under the Plan to a Participant may be modified (unless such modification does not materially decrease the value of that Award) after its Date of Grant except by express written agreement between the Company and such Participant, provided that any such change (a) may not be inconsistent with the terms of the Plan, and (b) shall be approved by the Board.

9.04 Limitation on Transfer. Except as provided in Section 7.01(c) in the case of Restricted Shares, a Participant's rights and interest under the Plan may not be assigned or transferred other than by will or the laws of descent and distribution and, during the lifetime of a Participant, only the Participant personally (or the Participant's personal representative) may exercise rights under the Plan. The Participant's Beneficiary may exercise the Participant's rights to the extent they are exercisable under the Plan following the death of the Participant. Notwithstanding the foregoing, the Board may grant Non-Qualified Stock Options that are transferable, without payment of consideration, to such persons, including, but not limited to, immediate family members of the Participant or to trusts or partnerships for such family members, and the Board may also amend outstanding Non-Qualified Stock Options to provide for such transferability.

9.05 Taxes. The Company shall be entitled, if the Board deems it necessary or desirable, to withhold (or secure payment from the Participant in lieu of withholding) the amount of any withholding or other tax required by law to be withheld or paid by the Company with respect to any amount payable and/or shares issuable under such Participant's Award or with respect to any income recognized upon a disqualifying disposition (i.e. a disposition prior to the expiration of the requisite holding periods) of shares received pursuant to the exercise of an Incentive Stock Option, and the Company may defer payment of cash or issuance of shares upon exercise or vesting of an Award unless indemnified to its satisfaction against any liability for any such tax. The amount of such withholding or tax payment shall be determined by the Board and shall be payable by the Participant in cash at such time as the Board determines; provided, however, that with the approval of the Board, the Participant may elect to meet his or her withholding requirement, in whole or in part, by having withheld from such Award at the appropriate time that number of shares of Common Stock, rounded up to the next whole share, the Fair Market Value of which is equal to the amount of withholding taxes due.

9.06 Intentionally Omitted

9.07 Adjustments to Reflect Capital Changes.

(a) Recapitalization. The number and kind of shares subject to outstanding Awards, the Purchase Price or Exercise Price for such shares, the number and kind of shares available for Awards subsequently granted under the Plan and the maximum number of shares in respect of which Awards can be made to any Participant in any calendar year shall be appropriately adjusted to reflect any stock dividend, stock split, combination or exchange of shares, merger, consolidation or other change in capitalization with a similar substantive effect upon the Plan or the Awards granted under the Plan. The Board shall have the power and sole discretion to determine the amount of the adjustment to be made in each case.

(b) Merger. After any Merger in which the Company is the surviving corporation, each Participant shall, at no additional cost, be entitled upon any exercise of an Option or receipt of any other Award to receive (subject to any required action by shareholders), in lieu of the number of shares of Common Stock receivable or exercisable pursuant to such Award prior to such Merger, the number and class of shares or other securities to which such Participant would have been entitled pursuant to the terms of the Merger if, at the time of the Merger, such Participant had been the holder of record of a number of shares of Common Stock equal to the number of shares of Common Stock receivable or exercisable pursuant to such Award. Comparable rights shall accrue to each Participant in the event of successive Mergers of the character described above. In the event of a Merger in which the Company is not the surviving corporation, the surviving, continuing, successor or purchasing corporation, as the case may be (the "Acquiring Corporation"), will either assume the Company's rights and obligations under outstanding Award Agreements or substitute awards in respect of the Acquiring Corporation's stock for outstanding Awards, provided, however, that if the Acquiring Corporation does not assume or substitute for such outstanding Awards, the Board shall provide prior to the Merger that any unexercisable and/or unvested portion of the outstanding Awards shall be immediately exercisable and vested as of a date prior to such Merger, as the Board so determines. The exercise and/or vesting of any Award that was permissible solely by reason of this Section 9.07(b) shall be conditioned upon the consummation of the Merger. Any Options which are neither assumed by the Acquiring Corporation not exercised as of the date of the Merger shall terminate effective as of the effective date of the Merger.

(c) Options to Purchase Shares or Stock of Acquired Companies. After any merger in which the Company or a Subsidiary shall be a surviving corporation, the Board may grant substituted options under the provisions of the Plan, pursuant to Section 424 of the Code, replacing old options granted under a plan of another party to the merger whose shares of stock subject to the old options may no longer be issued following the merger. The manner of application of the foregoing provisions to such options and any appropriate adjustments shall be determined by the Board in its sole discretion. Any such adjustments may provide for the elimination of any fractional shares which might otherwise become subject to any Options.

9.08 Certain Conditions on Awards. The Board may cancel any unexpired Awards at any time the Participant is not in compliance with any agreement between the Company and the Participant or any other legal obligation of the Participant relating to non-competition, confidentiality or proprietary interests and failure to comply with such agreements or obligations prior to, or during the twelve (12) months after, any exercise of an Option or Stock Appreciation Right shall result in the rescission of the exercise and the difference between the Fair Market Value on the date of exercise of the subject shares of Common Stock and the Purchase Price or Exercise Price, as the case may be, shall be returned to the Company by the Participant in cash within ten (10) days after notice of the rescission has been given to the Participant by the Company. Such notice may be given at any time within two years of the date of exercise.

9.09 Initial Public Offering. As a condition of participation under this Plan, each Participant shall be obligated to cooperate with the Company and the underwriters in connection with any public offering of the Company's securities and any transactions relating thereto and shall execute and deliver such agreements and documents, including without limitation, a lock-up agreement, as may be requested by the Company or the underwriters. The Participants' obligations under this Section 9.09 shall apply to any shares of Common Stock issued under the Plan as well as to any and all other securities of the Company or its successor for which such Common Stock may be exchanged or into which such Common Stock may be converted.

9.10 No Right to Employment. No employee or other person shall have any claim of right to be granted an Award under the Plan. Neither the Plan nor any action taken hereunder shall be construed as giving any employee any right to be retained in the employ of the Company or any of its Subsidiaries.

9.11 Awards Not Includable for Benefit Purposes. Payments received by a Participant pursuant to the provisions of the Plan shall not be included in the determination of benefits under any pension, group insurance or other benefit plan applicable to the Participant which is maintained by the Company or any of its Subsidiaries, except as may be provided under the terms of such plans or determined by the Board.

9.12 Governing Law. All determinations made and actions taken pursuant to the Plan shall be governed by the internal laws of the State of Delaware, except for its principles of conflict of laws, and construed in accordance therewith.

9.13 No Strict Construction. No rule of strict construction shall be implied against the Company, the Board or any other person in the interpretation of any of the terms of the Plan, any Award granted under the Plan or any rule or procedure established by the Board.

9.14 Captions. The captions (i.e., all Section headings) used in the Plan are for convenience only, do not constitute a part of the Plan, and shall not be deemed to limit, characterize or affect in any way any provisions of the Plan, and all provisions of the Plan shall be construed as if no captions had been used in the Plan.

9.15 Severability. Whenever possible, each provision in the Plan and every Award at any time granted under the Plan shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of the Plan or any Award at any time granted under the Plan shall be held to be prohibited by or invalid under applicable law, then (a) such provision shall be deemed amended to accomplish the objectives of the provision as originally written to the fullest extent permitted by law and (b) all other provisions of the Plan, such Award and every other Award at any time granted under the Plan shall remain in full force and effect.

9.16 Amendment and Termination.

(a) Amendment. The Board shall have complete power and authority to amend the Plan at any time. No termination or amendment of the Plan may, without the consent of the Participant to whom any Award shall theretofore have been granted under the Plan, materially adversely affect the right of such individual under such Award.

(b) Termination. The Board shall have the right and the power to terminate the Plan at any time. No Award shall be granted under the Plan after the termination of the Plan, but the termination of the Plan shall not have any other effect and any Award outstanding at the time of the termination of the Plan may be exercised after termination of the Plan at any time prior to the expiration date of such Award to the same extent such Award would have been exercisable had the Plan not been terminated.

Exhibit 10.10

AXCELIS TECHNOLOGIES, INC.

EXECUTIVE OFFICER AGREEMENT

This Agreement is entered into effective this 18th day of December, 2003 by and between Axcelis Technologies, Inc., a Delaware corporation with its principal office at 108 Cherry Hill Drive, Beverly, Massachusetts 01915 ("Axcelis" of the "Company") and Stephen G. Bassett, with an address at 2 Keystone Way, Andover, Massachusetts ("Executive").

In consideration of the mutual covenants and promises contained herein, Axcelis and Executive agree as follows:

1. Employment and Term.

1.1. Employment. The Company hereby offers to employ the Executive as the Chief Financial Officer of the Company and the Executive hereby accepts such employment with the Company, for the Term set forth in Section 1.2.

1.2. Term. The term of the Executive's employment under this Agreement (the "Term") shall commence on the date hereof and end on June 30, 2004, subject its earlier termination as provided in Section 3 or its extension by mutual written agreement.

1.3. Duties. During the Term, the Executive shall serve as Chief Financial Officer of the Company. The Executive shall report to the Chief Executive Officer and perform duties consistent with his position. The Executive shall devote his best skill and efforts (reasonable sick leave and vacations excepted) to the performance of his duties under this Agreement.

1.4. Base Salary. For services performed by the Executive for the Company pursuant to this Agreement during the Term, the Company shall pay the Executive a base salary at the rate of at least $276,000 per year, payable in accordance with the Company's regular payroll practices (but no less frequently than monthly). Any compensation which may be paid to the Executive under any additional compensation or incentive plan of the Company or which may be otherwise authorized from time to time by the Board (or an appropriate committee thereof) shall be in addition to the base salary to which the Executive shall be entitled under this Agreement.

1.5. Expense Reimbursement. The Company shall reimburse the Executive, upon a proper accounting, for reasonable business expenses and disbursements incurred by him in the course of the performance of his duties under this Agreement.

1.6. Vacation. The Executive shall be entitled to vacation and paid time off during the Term of this Agreement in accordance with the Company's policies applicable to senior executives, or such greater period as the Board shall approve, without reduction in salary or other benefits.

1.7. Participation in Benefit Plans. With the exception of the short-term disability, long-term disability, flexible spending account plan, and the 401(k) plan, the Executive shall also participate in the various benefit plans maintained in force by the Company from time to time, including any medical, group life insurance, supplemental life insurance coverage, business travel insurance, sick leave, and other similar retirement and welfare benefit plans, programs and arrangements.

2. Exclusivity; Non-Solicitation.

2.1. Exclusivity and Non-Compete. Executive shall not, during the term of this Agreement, and for a period of one (1) year thereafter, organize or serve in any capacity (whether as an officer, director, employee, consultant or otherwise) any person, firm, corporation or other entity which is in direct competition with Axcelis or which may otherwise give rise to a conflict of interest or appearance of a conflict of interest with Executive's employment by the Company, without the prior written consent of Axcelis.

2.2. Non-Solicitation. Executive agrees that during the term of this Agreement and for a period of one (1) year thereafter, Executive shall not induce or attempt to induce any of Axcelis' employees or independent contractors to terminate their employment or contractual relationships with Axcelis, or solicit, divert or take away, or attempt to divert or take away the business or patronage of any of the clients, customers or accounts, or prospective clients, customers or accounts of Axcelis which were contracted, solicited or served by Axcelis during the period in which Executive was employed by Axcelis.

3. Early Termination of Employment; Effect of Termination.

3.1. Early Termination . The Term will end prior to June 30, 2004 as follows:

(a) upon 30 days' prior written notice by Axcelis, without cause; or
(b) immediately, by written notice from Axcelis to Executive, if Executive fails to perform or observe any of the terms, covenants, obligations or conditions of this Agreement; or
(c) upon 30 days' prior written notice from Executive to Axcelis, without cause, or
(d) upon 10 days written notice from Executive to Axcelis, if Axcelis fails to perform or observe any of the terms, covenants, obligations or conditions of this Agreement; or
(e) immediately, in the event of the Executive's death.

3.2. Effect of Early Termination. In the event of termination in accordance with Section 3.1(a) or (d), the Company shall continue to make payments to Executive through the remainder of the Term of the Agreement as provided in Section 1.2 above (which amount may be paid in a lump sum if requested by the Executive). In the event of any other termination prior to the end of the Term, the Company shall have no further obligations to the Executive after his termination of employment, except as set forth in Section 3.4.

3.3. Separation Payment and Option Acceleration; Release of Claims. In the event the Executive's employment with the Company terminates either on June 30, 2004 or prior to such date as a result of a termination in accordance with Section 3.1(a) or (d), then (on the condition that the Executive executes and delivers the Release of Claims described below):

(a) the Company shall make a lump sum payment to Executive in the amount of $23,000 (the "Separation Payment"), which shall be paid by check or wire transfer to a bank account designated by Executive; and

(b) All stock options awarded to the Executive by the Company on or before the date of termination shall become fully vested as of the date of termination and shall remain in effect and exercisable in accordance with the terms and conditions of their grant.

In consideration of the Separation Payment and option acceleration provisions of this Section 3.3, upon termination of his employment with the Company, Executive agrees to execute and deliver to the Company a separation agreement containing a Release of Claims in substantially the form attached here to as Exhibit A.

3.4. Accrued Vacation. Upton termination of Executive's employment for any reason, the Company will make a lump sum payment equal to Executive's unused accrued vacation time.

3.5. Full Compensation; No Other Compensation. The Executive acknowledges that upon his termination of employment for any reason, the payments and benefits specified in this Agreement are good, sufficient and valuable consideration and that such payments, when received, will constitute payment in full for any and all wages, including accrued unused vacation pay. Unless otherwise provided for expressly in this Agreement, all other benefits will cease as of the date of termination of employment.

4. Miscellaneous.

4.1. Entire Agreement. This Agreement represents the entire and integrated agreement between Axcelis and Executive with respect to the subject matter hereof and supersedes all prior negotiations, representations or agreements (including but not limited to the Consulting Agreement between the Company and the Executive dated as of June 9, 2003, as amended), either written or oral. This Agreement may be amended only by written instrument signed by both Axcelis and Executive.

4.2. No Inadvertent Waivers. No waiver of any portion of this Agreement shall be effective unless in writing. The failure of a party at any time to require performance by the other of any provision shall in no way affect the right of such party to enforce that or any other provision of this Agreement. No waiver of any breach of this Agreement shall constitute a waiver of any subsequent breach of the same or any other provision of this Agreement.

4.3. Governing Law. This Agreement and the rights and obligations of the parties shall be governed and construed in accordance with the laws of the Commonwealth of Massachusetts. Any action brought pursuant to or in connection with this Agreement shall be brought only in the state or federal courts within the Commonwealth of Massachusetts without regard to its conflict of laws provisions. In any such action, Executive submits to the personal jurisdiction of the courts of the Commonwealth of Massachusetts, waives any objections to venue of such courts, and agrees to accept service of process by any means reasonably calculated to give effective notice of the action.

4.4. Severablility. The provisions of this Agreement are severable and if any of the provisions hereof are held to be invalid, illegal or unenforceable, in whole or in part, the remaining provisions of this Agreement shall remain binding and enforceable by and between the parties.

4.5. Section Headings. Section headings are for convenience only and shall not be considered in the interpretation of this Agreement.

4.6. Availability of Equitable Remedies. The Executive agrees and warrants that the covenants contained herein are reasonable, that valid consideration has been and will be received therefor and that the agreements set forth herein are the result of arms-length negotiations between the parties hereto. The Executive recognizes and acknowledges that the provisions of Section 2 are vitally important to the continuing welfare of the Company, and its subsidiaries and affiliates, and that money damages constitute a totally inadequate remedy for any violation thereof. Accordingly, in the event of any such violation by the Executive, the Company, and its subsidiaries and affiliates, in addition to any other remedies they may have, shall have the right to institute and maintain a proceeding to compel specific performance thereof or to obtain an injunction restraining any action by the Executive in violation of this Agreement.

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

AXCELIS TECHNOLOGIES, INC.

By: __/s/ Mary G. Puma______________________
Mary G. Puma, Chief Executive Officer

EXECUTIVE

/s/ Stephen G. Bassett_______________________
Stephen G. Bassett

Exhibit A
RELEASE OF CLAIMS
General Release and Covenant Not to Sue.
(f) Release. In consideration of the Company's covenants in this Agreement, the Executive hereby releases and discharges the Company and its officers, directors, agents, employees, successors and assigns ("Released Parties") from any and all claims by the Executive arising before the signing of this Agreement, including all claims arising out of the Executive's employment with the Company or the termination thereof (except those relating to performance of this Agreement and the Company's obligations under the Indemnification Agreement between the Executive and the Company dated June 26, 2003 (the "Indemnification Agreement")) and claims arising under common law and claims arising under federal or state labor and employment laws and laws prohibiting discrimination on the basis

of age, sex, race, national origin or disability. The laws referred to in the preceding sentence include Title VII of the Civil Rights Act of 1964, as amended; the Equal Pay Act of 1963, as amended; the Age Discrimination in Employment Act of 1967 (ADEA), as amended; the Fair Labor Standards Act of 1938, as amended; the Americans With Disabilities Act of 1990, as amended; the Rehabilitation Act of 1973, as amended; the Family and Medical Leave Act of 1993, as amended; Chapter 151B of the Massachusetts General Laws, Chapter 149 of the Massachusetts General Laws; the Massachusetts Civil Rights Act and the Massachusetts Equal Rights Law; or any other state or federal law, order, public policy or regulation affecting or relating to the rights and/or claims of employees. Nothing in this Agreement shall be construed to be a release of certain ADEA and Title VII rights that is not allowed by law, except that the Employee waives and shall not accept any damages from any such claims.

(g) Covenant Not to Sue. The Executive represents and warrants that he has not filed any complaints, charges, or claims for relief against the Released Parties with any local, state or federal court or administrative agency. The Executive agrees and covenants not to sue or bring any claims or charges against the Released Parties with respect to any matters arising out of or relating to the Executive's employment with or separation from the Company, other than enforcement of the terms of this Agreement or the Indemnification Agreement. In the event that the Executive institutes any such action, that claim shall be dismissed upon presentation of this Agreement and he shall reimburse the Company for all legal fees and expenses incurred in defending such claim and obtaining its dismissal.

(h) No Implied Admission. It is understood and agreed that this Agreement does not constitute any admission by the Company that any action taken with respect to the Executive was unlawful or wrongful, or that such action constituted a breach of contract or violated any federal or state law, policy, rule or regulation.

Compliance with Federal Older Workers Benefit Protection Act of 1990.

(i) Time To Consider Agreement. The Executive acknowledges that he has been advised in writing to consult with an attorney and has had ample opportunity to consult with and review this Agreement with an attorney of his choice, and has been given a period of at least forty-five (45) days within which to consider whether to sign this Agreement. If the Executive has signed this Agreement prior to the end of this forty-five (45) day period, he represents that he has done so knowingly and voluntarily.

(j) Revocation Right. It is agreed and understood that for a period of seven (7) days following the execution of this Agreement, which period shall end at 5:00 p.m. on the seventh day following the date of execution by the Executive, he may revoke this Agreement. This Agreement will not become effective until this revocation period has expired. This seven (7) day revocation period cannot be shortened by agreement of the parties or by any other means

Exhibit 21.1

Axcelis Technologies, Inc.

Exhibit 21.1 to Form 10-K for the year ended December 31, 2003
Subsidiaries

A. The following is all direct and indirect wholly-owned subsidiaries of Axcelis Technologies, Inc. as of the date hereof:

Domestic Subsidiaries

1. Fusion Systems Corporation a Delaware corporation
2. Fusion Technology International, Inc., a Delaware corporation
3. Axcelis Technologies (Israel), Inc., a Delaware corporation
4. Fusion Investments, Inc., a Maryland corporation
5. High Temperature Engineering Corporation, a Delaware corporation
6. Matrix Integrated Systems Acquisition Corporation, a California corporation

European Subsidiaries

7. Axcelis Technologies, GmbH (Germany)
8. Axcelis Technologies, S.r.L (Italy)
9. Axcelis Technologies, Sarl (France)
10. Axcelis Technologies, Ltd. (U.K.)
11. Axcelis Technologies B.V. (Netherlands)
12. Matrix Europe N.V. (Belgium)

Asian Subsidiaries

13. Axcelis Technologies, KK (Japan)
14. Axcelis Technologies Limited (Korea)
15. Axcelis Technologies Ltd. (Taiwan)
16. Axcelis Technologies Pte. Ltd. (Singapore)
17. Axcelis Technologies Semiconductor Trading (Shanghai) Co., Ltd. (Peoples Republic of China)
18. Matrix KK (Japan)

B. Axcelis Technologies, Inc. holds 50% of the outstanding shares of Sumitomo Eaton Nova Corporation, a Japanese corporation.

EXHIBIT 23.1

CONSENT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

We consent to the incorporation by reference in the Registration Statement (Form S-3 No. 333-85214) of Axcelis Technologies, Inc. and in the related Prospectus, the Registration Statement (Form S-8 No. 333-49726) pertaining to the Axcelis Technologies, Inc. Employee Stock Purchase Plan and the Registration Statement (Form S-8 No. 333-49768) pertaining to the Axcelis Technologies, Inc. 2000 Stock Plan, of our report dated January 28, 2004, with respect to the consolidated financial statements and schedule of Axcelis Technologies, Inc. included in the Annual Report (Form 10-K) for the year ended December 31, 2003.

Boston, Massachusetts
March 5, 2004

CERTIFICATION
of the Principle Executive Officer of Axelis Technologies, Inc.
under Section 302 of the Sarbanes-Oxley Act of 2002

I, Mary G. Puma, certify that:

1. I have reviewed this Form 10-K of Axcelis Technologies, Inc.;

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

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

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

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

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

c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

Date: March 8, 2004

By: /s/ Mary G. Puma

Mary G. Puma
President and Chief Executive Officer

CERTIFICATION
of the Principle Financial Officer of Axelis Technologies, Inc.
under Section 302 of the Sarbanes-Oxley Act of 2002

I, Stephen G. Bassett, certify that:

1. I have reviewed this Form 10-K of Axcelis Technologies, Inc.;

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

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

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

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

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

c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

Date: March 8, 2004

By: /s/ Stephen G. Bassett

Stephen G. Bassett
Chief Financial Officer

EXHIBIT 32.1

AXCELIS TECHNOLOGIES, INC.

Certification of the Chief Executive Officer

Pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code

The undersigned Chief Executive Officer of Axcelis Technologies, Inc., a Delaware corporation, hereby certify, for the purposes of Section 1350 of Chapter 63 of title 18 of the United States Code (as implemented by Section 906 of the Sarbanes-Oxley Act of 2002) as follows:

This Form 10-K annual report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and the information contained herein fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, the undersigned have executed this Certification as of March 8, 2004.

/s/ Mary G. Puma

Mary G. Puma
Chief Executive Officer of Axcelis Technologies, Inc.

EXHIBIT 32.2

AXCELIS TECHNOLOGIES, INC.

Certification of the Chief Financial Officer

Pursuant to Section 1350 of Chapter 63 of title 18 of the United States Code

The undersigned Chief Financial Officer of Axcelis Technologies, Inc., a Delaware corporation, hereby certify, for the purposes of Section 1350 of Chapter 63 of title 18 of the United States Code (as implemented by Section 906 of the Sarbanes-Oxley Act of 2002) as follows:

This Form 10-K annual report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and the information contained herein fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, the undersigned have executed this Certification as of March 8, 2004.

/s/ Stephen G. Bassett

Stephen G. Bassett
Chief Financial Officer of Axcelis Technologies, Inc.

Exhibit 99.1

AXCELIS TECHNOLOGIES, INC.

Form 10-K for the year ended December 31, 2003

FACTORS AFFECTING FUTURE OPERATING RESULTS

From time to time, we may make forward-looking public statements, such as statements concerning our then expected future revenues or earnings or concerning the prospects for our markets or our product development, projected plans, performance, order procurement as well as other estimates relating to future operations. Forward-looking statements may be in reports filed under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), in registration statements filed under the Securities Act of 1933, as amended (the "Securities Act"), in press releases or informal statements made with the approval of an authorized executive officer. The words or phrases "will likely result," "are expected to," "will continue," "is anticipated," "estimate," "project," or similar expressions are intended to identify "forward-looking statements" within the meaning of Section 21E of the Exchange Act and Section 27A of the Securities Act, as enacted by the Private Securities Litigation Reform Act of 1995.

We wish to caution you not to place undue reliance on these forward-looking statements which speak only as of the date on which they are made. In addition, we wish to advise you that the factors listed below, as well as other factors that we may or may not have not currently identified, could affect our financial or other performance and could cause our actual results for future periods to differ materially from any opinions or statements expressed with respect to future periods or events in any current statement.

We will not undertake and specifically decline any obligation to publicly release revisions to these forward-looking statements to reflect either circumstances after the date of the statements or the occurrence of events which may cause us to re-evaluate our forward-looking statements.

In connection with the "safe harbor" provisions of the Private Securities Litigation Reform Act, we are hereby filing cautionary statements identifying important factors that could cause our actual results to differ materially from those projected in forward-looking statements made by us or on our behalf.

If semiconductor manufacturers do not make sufficient capital expenditures, our sales and profitability will be harmed.

We anticipate that a significant portion of our new orders will depend upon demand from semiconductor manufacturers who build or expand fabrication facilities. If the rate of construction or expansion of fabrication facilities declines, demand for our systems will decline, reducing our revenues. This would also hurt our profitability, because our continued investments in engineering, research and development and marketing necessary to develop new products and to maintain extensive customer service and support capabilities limit our ability to reduce expenses in proportion to declining sales.

A number of factors may cause semiconductor manufacturers to make reduced capital expenditures, including the following.

Our quarterly financial results may fluctuate significantly and may fall short of anticipated levels; forecasting quarterly revenues and profitability is complex and may be inaccurate.

We derive most of our revenues from the sale of a relatively small number of expensive products to a small number of customers. The list prices on these products range from $200,000 to over $4.0 million. At our current sales level, each sale, or failure to make a sale, could have a material effect on us in a particular quarter. Our lengthy sales cycle, coupled with customers' competing capital budget considerations, make the timing of customer orders uneven and difficult to predict. In a given quarter, a number of factors can adversely affect our revenues and results, including changes in our product mix, increased fixed expenses per unit due to reductions in the number of products manufactured, and higher fixed costs due to increased levels of research and development and expansion of our worldwide sales and marketing organization. Our gross margins also may be affected by the introduction of new products. We typically become more efficient in producing our products as they mature. For example, our gross margins in 2001, 2002 and 2003 were adversely affected in part as a result of the increased proportion of systems sold to process 300 mm wafers.

In addition, our backlog at the beginning of a quarter typically does not include all orders required to achieve our sales objectives for that quarter and is not a reliable indicator of our future sales. As a result, our net sales and operating results for a quarter depend on our shipping orders as scheduled during that quarter as well as obtaining new orders for products to be shipped in that same quarter. Any delay in, or cancellation of, scheduled shipments or in shipments from new orders could materially and adversely affect our financial results. Due to the foregoing factors, we believe that period-to-period comparisons of our operating results should not be relied upon as an indicator of our future performance.

The SEC's Staff Accounting Bulletin 101 and the Financial Accounting Standard Board's Emerging Issues Tax Force 00-21 addressing revenue recognition have added additional complexity in forecasting quarterly revenues and profitability. Orders for our products may contain multiple delivery elements that result in revenue deferral under generally accepted accounting principles. Management typically provides financial forecasts for the subsequent quarter in the earnings release for each quarter. These forecasts are based on reasonable assumptions of shipment timing and contract terms, but in some cases, at the time the forecast is made the final customer terms may not have been agreed and documented, so the level of revenues recognizable in a particular quarter may vary from the forecast.

Downturns in the semiconductor industry may further reduce demand for our products, harming our sales and profitability.

The semiconductor business is highly cyclical and the industry has been in a severe down cycle from early 2001 through the third quarter of 2003. It is anticipated that such a downturn will return after several more robust quarters. Such downturns reduce demand for new or expanded fabrication facilities. Any continuing weakness or future downturns or slowdowns in the industry may adversely affect our financial condition.

Oversupply in the semiconductor industry reduces demand for capital equipment, including our products.

From time to time, inventory buildups in the semiconductor industry, resulting in part from the down cycle, produce an oversupply of semiconductors. This will cause semiconductor manufacturers to revise capital spending plans, resulting in reduced demand for capital equipment such as our products. If an oversupply is not reduced by increasing demand from the various electronics industries that use semiconductors, which we cannot accurately predict, our sales and profitability will be harmed.

Industry consolidation and outsourcing of semiconductor manufacturing may reduce the number of our potential customers, harming our revenues.

The substantial expense of building, upgrading or expanding a semiconductor fabrication facility is increasingly causing semiconductor companies to contract with foundries to manufacture their semiconductors. In addition, consolidation and joint venturing within the semiconductor manufacturing industry is increasing. We expect these trends to continue, which will reduce the number of our potential customers. This increased concentration of our customers potentially makes our revenues more volatile as a higher percentages of our total revenues are tied to a particular customer's buying decisions.

If we fail to develop and introduce reliable new or enhanced products and services that meet the needs of semiconductor manufacturers, our results will suffer.

Rapid technological changes in semiconductor manufacturing processes require us to respond quickly to changing customer requirements. Our future success will depend in part upon our ability to develop, manufacture and successfully introduce new systems and product lines with improved capabilities and to continue to enhance existing products, including products that process 300 millimeter wafers. This will depend upon a variety of factors, including new product selection, timely and efficient completion of product design and development and of manufacturing and assembly processes, product performance in the field and effective sales and marketing. In particular:

* We must develop the technical specifications of competitive new systems, or enhancements to our existing systems, and manufacture and ship these systems or enhancements in volume in a timely manner.

* We will need to accurately predict the schedule on which our customers will be ready to transition to new products, in order to accurately forecast demand for new products while managing the transition from older products.

* We will need to effectively manage product reliability or quality problems that often exist with new systems, in order to avoid reduced orders, higher manufacturing costs, delays in acceptance and payment and additional service and warranty expenses.

* Our new products must be accepted in the marketplace.

Our failure to meet any of these requirements will have a material adverse effect on our operating results and profitability.

If we fail to compete successfully in the highly competitive semiconductor equipment industry, our sales and profitability will decline.

The market for semiconductor manufacturing equipment is highly competitive and includes companies with substantially greater financial, engineering, manufacturing, marketing and customer service and support resources than we have that may be better positioned to compete successfully in the industry. In addition, there are smaller, emerging semiconductor equipment companies that provide innovative systems with technology that may have performance advantages over our systems. Competitors are expected to continue to improve the design and performance of their existing products and processes and to introduce new products and processes with improved price and performance characteristics. If we are unable to improve or introduce competing products when demanded by the markets, our business will be harmed. In addition, if competitors enter into strategic relationships with leading semiconductor manufacturers covering products similar to those sold or being developed by us, our ability to sell products to those manufacturers may be adversely affected.

We have been dependent on sales to a limited number of large customers; the loss of any of these customers or any reduction in orders from them could materially affect our sales.

Historically, we have sold a significant proportion of our products and services to a limited number of fabricators of semiconductor products. For example, in 2003,our customer, Samsung accounted for 12% of our net sales and Micron represented 10.4% of net sales. Also, in 2003, our top ten customers accounted for 65% of our net sales. None of our customers has entered into a long-term agreement requiring it to purchase our products. Although the composition of the group comprising our largest customers has varied from year to year, the loss of a significant customer or any reduction or delays in orders from any significant customer, including reductions or delays due to customer departures from recent buying patterns, or market, economic or competitive conditions in the semiconductor industry, could adversely affect us. The ongoing consolidation of semiconductor manufacturers may also increase the harmful effect of losing a significant customer.

We access the important Japanese market for ion implant through a joint venture which we do not control.

We own 50% of the equity of a Japanese corporation called Sumitomo Eaton Nova or SEN, to which we have granted an exclusive license to manufacture and sell ion implanters in Japan. Sumitomo Heavy Industries, Ltd., a Japanese manufacturer of industrial machinery and ships, owns the remaining 50% of the equity. Neither Axcelis nor Sumitomo has the right to buy out the other's interest in SEN and the SEN joint venture is perpetual. Our joint venture agreement with Sumitomo gives both owners veto rights, so that neither of us alone can effectively control SEN. SEN's business is subject to the same risks as our business. Royalties and income from SEN have been a substantial contribution to our earnings, and a substantial decline in SEN's sales and income from operations could have a material adverse effect on our net income. As a result of this joint venture structure, we have less control over SEN management than over our own management and may not have timely knowledge of factors affecting SEN's business. In addition, given the equal balance of ownership, it is possible that the SEN Board may be unable to reach consensus from time to time.

In December 2003, each of SEN and Axcelis elected to trigger a provision requiring a one year negotiation in good faith on modifications to the license agreement. If modifications are not agreed to, the license agreement will continue in its existing form on a year-to-year basis, subject to the right of either party to terminate. Under the SEN bylaws, termination of the license agreement by SEN would be an important matter requiring approval of a majority of the SEN directors. Given Axcelis' 50% representation on the SEN Board, the license agreement will be perpetual until such time as Axcelis deems a termination to be in its interest. Axcelis does not expect to terminate the SEN license agreement.

From time to time, we have allowed SEN to sell implanters outside of Japan. We allow these sales when the customer requests SEN products. Such requests tend to occur when SEN customers participate, as joint venturers or technical advisors, in fabrication facilities outside of Japan. In those cases, the financial benefit to Axcelis from the sale of a SEN implanter is less than the financial benefit of a sale of an Axcelis implanter, but our primary goal to satisfy our customer with the product of their choice. When these sales are allowed, we act as exclusive agent for SEN to manage the terms of the sales and to ensure that they are consistent with our global product and customer strategies. We receive commissions from SEN on these extra-territorial sales and assume most of the post-installation warranty responsibility.

A decline in sales of our products and services to customers outside the United States would hurt our business and profits.

We are substantially dependent on sales of our products and services to customers outside the United States. We anticipate that international sales will continue to account for a significant portion of our net sales. Because of our dependence upon international sales, our results and prospects may be adversely affected by a number of factors, including:

* unexpected changes in laws or regulations resulting in more burdensome governmental controls, tariffs, restrictions, embargoes or export license requirements;
* difficulties in obtaining required export licenses;
* volatility in currency exchange rates;
* political and economic instability, particularly in Asia;
* difficulties in accounts receivable collections;
* extended payment terms beyond those customarily offered in the United States;
* difficulties in managing distributors or representatives outside the United States;
* difficulties in staffing and managing foreign subsidiary and branch operations; and
* potentially adverse tax consequences.

Making more sales denominated in foreign currencies to counteract the strong dollar may expose us to additional risks that could hurt our results.

Substantially all of our sales to date have been denominated in U.S. dollars. Our products become less price competitive in countries with currencies that are declining in value in comparison to the dollar. This could cause us to lose sales or force us to lower our prices, which would reduce our gross margins. Our equity income and royalty income from SEN are denominated in Japanese yen, which exposes us to some risk of currency fluctuations. If it becomes necessary for us to make more sales denominated in foreign currencies to counteract the strong dollar, we will become more exposed to these risks.

We may not be able to maintain and expand our business if we are not able to retain, hire and integrate additional qualified personnel.

Our business depends on our ability to attract and retain qualified, experienced employees. There is substantial competition for experienced engineering, technical, financial, sales and marketing personnel in our industry. In particular, we must attract and retain highly skilled design and process engineers. Competition for such personnel is intense, particularly in the areas where we are based, including the Boston metropolitan area and the Rockville, Maryland area, as well as in other locations around the world. If we are unable to retain our existing key personnel, or attract and retain additional qualified personnel, we may from time to time experience levels of staffing inadequate to develop, manufacture and market our products and perform services for our customers. As a result, our growth could be limited or we could fail to meet our delivery commitments or experience deterioration in service levels or decreased customer satisfaction, all of which could adversely affect our financial results and cause the value of our notes and stock to decline.

Our dependence upon a limited number of suppliers for many components and sub-assemblies could result in increased costs or delays in manufacture and sales of our products.

We rely to a substantial extent on outside vendors to manufacture many of the components and subassemblies of our products. We obtain many of these components and sub-assemblies from either a sole source or a limited group of suppliers. Because of our reliance on outside vendors generally, and on a limited group of suppliers in particular, we may be unable to obtain an adequate supply of required components on a timely basis, on price and other terms acceptable to us, or at all.

In addition, we often quote prices to our customers and accept customer orders for our products before purchasing components and subassemblies from our suppliers. If our suppliers increase the cost of components or subassemblies, we may not have alternative sources of supply and may not be able to raise the price of our products to cover all or part of the increased cost of components.

The manufacture of some of these components and subassemblies is an extremely complex process and requires long lead times. As a result, we have in the past and may in the future experience delays or shortages. If we are unable to obtain adequate and timely deliveries of our required components or subassemblies, we may have to seek alternative sources of supply or manufacture these components internally. This could delay our ability to manufacture or to ship our systems on a timely basis, causing us to lose sales, incur additional costs, delay new product introductions and suffer harm to our reputation.

In certain circumstances, we may need additional capital.

Our capital requirements may vary widely from quarter to quarter, depending on, among other things, capital expenditures, fluctuations in our operating results, financing activities, acquisitions and investments and inventory and receivables management. We believe that our available cash, our credit line and our future cash flow from operations will be sufficient to satisfy our working capital, capital expenditure and research and development requirements for the foreseeable future. This, of course, depends on the accuracy of our assumptions about levels of sales and expenses, and a number of factors, including those described in these "Risk Factors," could cause us to require additional capital from external sources. In addition, in the future, we may require or choose to obtain additional debt or equity financing in order to finance acquisitions or other investments in our business. Depending on market conditions, future equity financings may not be possible on attractive terms and would be dilutive to the existing holders of our common stock and convertible notes. Our existing credit agreement contains restrictive covenants and future debt financings could involve additional restrictive covenants, all of which may limit the manner in which we conduct our business.

We may incur costly litigation to protect our proprietary technology, and if unsuccessful, we may lose a valuable asset or experience reduced market share.

We rely on a combination of patents, copyrights, trademark and trade secret laws, non-disclosure agreements and other intellectual property protection methods to protect our proprietary technology. Despite our efforts to protect our intellectual property, our competitors may be able to legitimately ascertain the non-patented proprietary technology embedded in our systems. If this occurs, we may not be able to prevent their use of this technology. Our means of protecting our proprietary rights may not be adequate and our patents may not be sufficiently broad to prevent others from using technology that is similar to or the same as our technology. In addition, patents issued to us have been, or might be challenged, and might be invalidated or circumvented and any rights granted under our patents may not provide adequate protection to us. Our competitors may independently develop similar technology, duplicate features of our products or design around patents that may be issued to us. As a result of these threats to our proprietary technology, we may have to resort to costly litigation to enforce or defend our intellectual property rights.

We might face intellectual property infringement claims or patent disputes that may be costly to resolve and, if resolved against us, could be very costly to us and prevent us from making and selling our systems.

From time to time, claims and proceedings have been or may be asserted against us relative to patent validity or infringement matters. Our involvement in any patent dispute or other intellectual property dispute or action to protect trade secrets, even if the claims are without merit, could be very expensive to defend and could divert the attention of our management. Adverse determinations in any litigation could subject us to significant liabilities to third parties, require us to seek costly licenses from third parties and prevent us from manufacturing and selling our systems. Any of these situations could have a material adverse effect on us and cause the value of our common stock to decline.

Exhibit 99.3

Axcelis Technologies Inc.

Governance Policies

Adopted by the Nominating and Governance Committee of the Board of Directors
on September 25, 2002
as amended October 22, 2003

Board Composition and Criteria for Evaluation of Directors and Nominees

1. The Board shall be comprised of a majority of Independent Directors.

2. For the purposes of this policy, "Independent Director" shall have the meaning set forth in the listing standards for the Nasdaq National Market (the "Nasdaq Rules"), and such definition in this policy shall change as and when the definition in such Rules change, provided that the Nominating and Governance Committee shall promptly circulate any changes to such definition to all members of the Board of Directors.

3. Any determination of whether an incumbent Board member is an "Independent Director" under the then effective Nasdaq Rules shall be made by a majority of the directors then in office who have either been affirmatively determined to be "Independent" or for whom there is no pending question of independence.

4. Former CEOs of the Company will not remain on the Board.

5. All new candidates for election to the Board and all Board members eligible for nomination for re-election to the Board shall be evaluated prior to nomination for election or re-election based on criteria developed by the Nominating and Governance Committee, including but not limited to the following:

(a) such candidate or Board member's current level of, and on-going commitment to, education regarding the responsibilities of a member of a Board of Directors under standards established by the Nominating and Governance Committee;

(b) the adequacy of such candidate or Board member's time available to commit to responsibilities as a member of the Board;

(c) the existence of any financial relationship with the Company other than that arising as an employee of the Company, as a Board member and/or as shareholder; and

(d) in the case of re-election, such member's compliance with our Director Stock Ownership Policy.

6. It would not be normally expected that a member of the Board of Directors would be asked to sit for re-election to the Board after such member's 75th birthday.

7. When a Director's principal occupation or business association changes substantially from the position he or she held when originally invited to join the Board, the Director shall tender a letter of resignation to the Chairman. The Nominating and Governance Committee will review whether the new occupation, or retirement, of the Director is consistent with the specific rationale for originally selecting that individual and the guidelines for board membership. The Nominating and Governance Committee will recommend action to be taken regarding the resignation based on the circumstances of retirement, if that is the case, or in the case of a new position, the responsibility and type of position and company and industry involved

8. New directors will receive a director orientation program to familiarize them with the Company's business, industry trends, and recommended governance practices.

Chairman of the Board

9. The duties of the Chairman of the Board include setting Board agendas and such other responsibilities as may be assigned to him or her by the Board of Directors in accordance with the Company's bylaws.

Conduct of the Board of Directors and Committees

10. The Board shall form an Audit, Compensation and Nominating and Governance Committees.

11. The composition of the Audit Committee shall satisfy the requirements of the Nasdaq Rules, the Sarbanes-Oxley Act of 2002 and the rules and regulations of the Securities and Exchange Commission.

12. The composition of the Compensation Committee shall satisfy the requirements of the Nasdaq Rules, the Securities and Exchange Commission Rule 16b-3 and the Internal Revenue Service requirements to exempt option compensation from the limitations on deductibility under I.R.C. Section 162(m).

13. The composition of the Nominating and Governance Committee shall meet the requirements of the Nasdaq Rules.

14. Independent Directors shall meet regularly in executive session, both as the full Board and in Committees.

15. Minutes of all Board committees shall be submitted to the full Board for their information.

16. At each Board meeting, Committee chairmen shall report to the full Board on Committee activities since the last Board meeting.

17. The Board and Committees shall be free to hire independent

advisors as they in their sole discretion determine appropriate.

18. The Board should undertake an annual review of the Company's strategic direction.

Shareholder Rights

19. The Company shall not limit the rights of shareholders in contravention of Delaware law or the listing requirements of Nasdaq National Market.

20. Board Committee charters and these Governance Policies shall be filed annually with the Company's Form 10-K or proxy statement for the information of our shareholders.

21. Shareholder approval will be solicited on all equity compensation plans to the extent required by the Nasdaq Rules.