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, 2001

[ ] 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.)*

55 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. [X]

Aggregate market value of the voting stock held by nonaffiliates of the registrant as of February 26, 2002: **$1,150,729,596**

Number of shares outstanding of the registrant's Common Stock, $0.001 par value, as of February 26, 2002: **97,987,921**

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the definitive Proxy Statement for Axcelis Technologies, Inc.'s Annual Meeting of Stockholders to be held on May 1, 2002 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.

PART I

Item 1: Business

Overview of Our Business

We are a leading producer of ion implantation, dry strip, and photostabilization equipment used in the fabrication of semiconductors in the United States, Europe and Asia Pacific. We also manufacture rapid thermal processing equipment, which is used in semiconductor manufacturing primarily before and after the ion implantation process. In addition, we provide extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. We have a 50-50 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 us for ion implantation, has exclusive rights to the territory of Japan and is the leading producer of ion implantation equipment in Japan.

Industry Overview

Semiconductors are used in personal computers, telecommunication equipment, digital consumer electronics, wireless communication products and other applications. Most semiconductors are built on a wafer of silicon. The transistor formation process creates the electrically active junction for the semiconductor within the silicon wafer, and those junctions create, typically, either transistors or capacitors. Later, metal interconnections are formed on top of the silicon that connect the transistor or capacitor components.

Semiconductor 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, such as that experienced in 2001 and continuing into 2002 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 wafer size to achieve improved economics. By increasing the wafer size, semiconductor manufacturers can produce more chips per wafer, thus reducing the overall manufacturing cost per chip. The majority of wafer fabrication facilities today are using wafers with a diameter of 200 millimeters. Currently, the industry is in the midst of a transition to 300 millimeter wafers. Some semiconductor manufacturers have launched pilot and production lines using 300 millimeter wafers. It is anticipated that additional manufacturers will add new 300 millimeter production capabilities over the next two to five years, which will lead to increased demand for 300 millimeter equipment.

Given the magnitude of the investment needed to build a new fabrication facility, which today exceeds $1 billion, and the very large volume of product each fab can produce, independent semiconductor manufacturers, or foundries, have emerged to serve semiconductor producers who design but do not manufacture chips. In addition, foundries manufacture semiconductors for large producers who choose to outsource part of their demand. Foundries, which are predominantly located in Taiwan and Singapore, have become significant purchasers of semiconductor equipment. Recently, new foundries are being built in China to rival Taiwan and Singapore as more chip production is being outsourced.

Ion Implantation Systems

Ion implantation is a principal step in the manufacturing process for semiconductors in the transistor cycle. An ion implanter is a large, technically advanced machine that injects charged ions, 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 material known as photoresist so that the dopants will only enter the wafer where needed. The photoresist acts as a stencil to pattern the devices. 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 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). Typically, a wafer will receive from 10 to up 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 which 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. As a result, in recent years 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 to allow for multiple voltages on the same chip. These systems are typically multi-wafer or "batch" systems.

For implants that require high dose and medium to very shallow depths, a high current 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 microprocessors, digital signal processors and other types of logic chips. Very shallow implants require machines with very low energy to make these devices. These systems are typically multi-wafer or "batch" systems.

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 an 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 most optimal combination of implanters for their needs. These systems are typically single wafer machines to allow for the high tilt capability.

We manufacture a complete line of high energy, high current and high tilt/medium current implanters. The following chart lists our principal products:

Product Category	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
	HE3	• 300mm high energy implantation for all types of chips
	GSD/HEmc	• 200mm high energy/medium current applications
High Current	**GSD/200E2**	• 200mm standard high current implanter
	GSDIII/LED	• 200mm high current implanter for low energy applications
	HC3	• 300mm high current implanter with low energy capability
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.

During the past three years, we have also produced a small number of ion implanters used in the production of laptop computer screens and other flat panel displays.

Curing and Cleaning Systems

Dry Strip and Photostabilization Systems.We entered the dry strip and photostabilization product markets through our acquisition of Fusion Systems, Inc. in August 1997. Fusion pioneered the development of photostabilization in 1983. 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. Photostabilization uses ultraviolet light to harden, or "Cure", the photoresist in order to provide better performance for the subsequent implant and etch steps. After the implant step, the used photoresist must be removed. The primary means of removing photoresist and residue is called dry strip. Our dry strip machines, often called ashers, use microwave energy to turn process gases into plasma, which then acts to "Clean" the surface of the wafer by removing the photoresist and unwanted residue. Dry strip and photostabilization are also used for surface preparation processes throughout the wafer fab.

The following chart lists our principal products in each category:

Product Category	Product Name	Description
Dry Strip	**Gemini ES**	• 200mm photoresist strip system
	Fusion ES3	• 300mm/200mm photoresist strip system
	Fusion ES3i	• Second generation 300mm photoresist strip system
Photostabilizers	**Gemini PS**	• 200mm photostabilization system for photoresist curing
	Fusion PS3	• 300mm/200mm photostabilization system for photoresist curing, low-k curing and non-volatile memory charge erasure

Our Gemini dual chamber platform is the foundation for both our dry strip and our photostabilizer products. 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 a majority of 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 low-k dielectric materials.

Thermal Processing Systems

We introduced our rapid thermal processing products in 1999. 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.

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. Most other RTP equipment manufacturers use lamp-based RTP systems.

The following chart lists our principal RTP products:

Product Category	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.

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 3,400 of our products, including products shipped by SEN, are in use worldwide. The service and support that we provide include spare parts, equipment upgrades, maintenance services and customer training. We offer service at 68 locations in twelve countries.

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 300 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. In 1997, we launched 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.

Sales and Marketing

We primarily sell our equipment and services through our direct sales force. We have 15 sales offices in nine countries. Aftermarket service and support is also offered at all of these offices. In the United States, we conduct sales and marketing activities from seven locations. Outside of the United States, our sales offices are located in Taiwan, South Korea, China, Israel, Germany, Singapore, Italy and France. In addition, isolated sales are made in smaller markets through distributors and manufacturers representatives.

In Japan, we market our products through two channels: one, we sell our ion implant products only through our SEN joint venture, which sells its machines and services directly to semiconductor fabricators (see Item I. Section entitled "SEN Joint Venture"); and two, we sell our photostabilizers, dry strip and rapid thermal processing products to semiconductor fabricators through an exclusive distribution agreement with Sumitomo Heavy Industries, Ltd. entered into in 1999. The distribution arrangement expires in 2002 and thereafter is renewable from year to year, unless either party has given the other party six months prior written notice. We are currently negotiating an extension to this distribution agreement.

International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, accounted for 62.0 % of total net sales in 2001, 69.4% of total net sales in 2000, and 53.5% of total net sales in 1999. Substantially all of our sales are denominated in U.S. dollars. SEN's sales are denominated in Japanese yen. See Note 12 to the Financial Statements included herein for a breakdown of our net sales and long-lived assets in the United States, Europe and Asia.

Customers

In 2001, the top 20 semiconductor manufacturers accounted for approximately 72.5% of total semiconductor industry capital spending. These manufacturers are from the four largest semiconductor manufacturing regions in the world: the United States, Asia Pacific (Taiwan, South Korea and Singapore), Japan and Europe. We, along with SEN, serve all of the 20 largest semiconductor manufacturers. We believe that more than 3,400 of our products, including products shipped by SEN, are in use worldwide.

Net sales to our ten largest customers accounted for 50.6 %, 56.3%, and 59.1% of net sales, respectively, in 2001, 2000 and 1999. 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 2001 no customer represented more than 10% of our net sales. In 2000, STMicroelectronics N.V. accounted for 13.9 % of net sales and in 1999, net sales to STMicroelectronics N.V., Motorola, Inc and Texas Instruments Incorporated accounted for 15.9%, 10.6% and 10.5%, respectively, of our net sales.

SEN Joint Venture

In 1982, we established our SEN joint venture with Sumitomo Heavy Industries, Ltd. to provide us with additional manufacturing capacity for our ion implant products and local access to the Japanese semiconductor equipment market. Each of Sumitomo Heavy Industries, Ltd. and the Company own 50% of the equity of SEN. Naoki Takahashi, one of our directors, is a director and officer of Sumitomo Heavy Industries, Ltd.

We granted SEN an exclusive royalty-bearing license to use our current and future ion implantation technology to manufacture, use and sell products in Japan. SEN manufactures ion implantation equipment at its Toyo, Japan location. SEN 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 through us as exclusive distributor. 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 is obligated to pay us royalties on their net sales of ion implantation products in accordance with the rates set forth in the license agreement. These rates were negotiated between Eaton Corporation and SEN in 1996. These royalty payments were $5.8 million in 2001, $13.5 million in 2000, and $3.8 million in 1999. The license agreement expires on December 31, 2004 if either we or SEN gives notice of termination by the end of 2003. If neither party gives such notice, the license agreement will automatically renew for successive five year periods. We expect that we will renegotiate the royalty rates in connection with any renewal of the license agreement.

From time to time, we sell ion implantation equipment and other products to SEN. In 2001, our net sales of products to SEN amounted to $8.4 million. The pricing of these product sales is determined by our Asia Pacific list prices.

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

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.

We have formed alliances with several companies in 2001 to explore opportunities in back-end of line applications. These alliances include SEZ in the area of wet-dry cleaning technology, ASM International in the area of resist strip over low-k and DOW Corning in the area of low-k curing processes.

Our expenditures for research and development during 2001, 2000, and 1999 were $76.5 million, $68.8 million, and $51.6 million respectively, or 21.0%, 10.1%, and 13.0% of net sales, respectively. The increase in research and development expenditures in 2001 as compared to 2000 primarily reflected our research focus to develop second generation products capable of processing 300 millimeter wafers and to continue to expand our portfolio into new application spaces. We expect in future years that research and development expenditures will continue to represent a substantial percentage of net sales.

Manufacturing

We manufacture our products at facilities in Beverly, Massachusetts and in Rockville, Maryland. In addition, SEN manufactures products at its facility in Toyo, Japan. In November of 2001, we announced that our manufacturing operations in Rockville, Maryland will be consolidated with our Beverly, Massachusetts facilities to improve operational efficiencies. This consolidation commenced in the fourth quarter of 2001 and will be completed by the fourth quarter of 2002.

Our Beverly, Massachusetts facility manufactures our high energy, high current and high tilt/medium current ion implantation and rapid thermal processing systems. We recently completed construction of a 135,000 sqaure foot addition to our Beverly facility which houses an advanced process development, product demonstration and customer training center with all of the equipment we produce. In 1999, we completed an 80,000 square foot expansion of this facility. We manufacture photoresist removal and curing systems in our Rockville, Maryland facility, including our photostabilizer and dry strip product lines which will be relocated to Beverly, Massachusetts during 2002.

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. Most of our systems are designed and tailored to meet the customer's specifications as outlined in the sales contract.

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 and the customer's criteria are confirmed to have been met. 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.

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.

We recognize sales at the time of shipment to the customer in accordance with Securities and Exchange Commission Staff Accounting Bulletin No. 101. We have a demonstrated history of customer acceptance subsequent to shipment and installation of our systems. We believe that the customer's post delivery acceptance provisions and installation process are routine from a commercial standpoint because the process is a replication of pre-shipment procedures. We have never failed to successfully complete a system installation. However, should an installation not be successfully completed, our contractual provisions do not provide for forfeitures, refunds or other purchase price concessions beyond those prescribed by the provisions of the Uniform Commercial Code applicable generally to these transactions.

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 high energy equipment our principal competitor is Varian Semiconductor Equipment Associates, Inc. ("Varian"). In high current products, we and Applied Materials Inc. have substantial market shares. In high tilt/medium current equipment, where we have a small market share, Varian has a commanding 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 Inc. 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 Inc.

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 February 28, 2002, we had 163 patents issued in the United States and 294 patents granted in other countries, as well as 488 patent applications (70 in the United States and 418 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. We have a license from Eaton to use the Eaton trademark and logo for a fixed period of time in connection with the sale of semiconductor manufacturing equipment.

We have agreements with third parties, mostly as licensor, that provide for the licensing of patented or proprietary technology. These agreements include royalty-bearing licenses and technology cross-licenses. Our license agreement with SEN is described above under "SEN Joint Venture". No other license is material to us.

There has been substantial litigation regarding patent and other intellectual property rights in semiconductor-related industries. On January 8, 2001, we filed suit in federal district court in Boston, Massachusetts against Applied Materials, Inc., alleging infringement of Axcelis' U.S. Patent No. 4,667,111, tortious interference with contract and prospective advantageous business relationships, and unfair competition and trade practices. That patent survived two re-examination proceedings initiated by Applied Materials, Inc before the United States Patent and Trademark Office. The lawsuit is still pending. (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, and 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, 2001, our backlog was $73.9 million, as compared to $211.0 million and $93.8 million, respectively, for the years ended 2000 and 1999. Our policy is to include in backlog only those orders for which we have accepted purchase orders. 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, 2001, we had 1,950 full-time and 58 temporary employees worldwide, of which 1,709 were employed in North America, 161 in Asia and 138 in Europe. All of our employees have entered into confidentiality and noncompetition agreements with us. At that date, none of our employees based in the United States was represented by a union, and we have never experienced a work stoppage, slowdown or strike. Our employees based in Germany are subject to collective bargaining agreements. 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.

Item 2: Properties

We have a total of 41 properties, of which 24 are located in the United States and the remainder are located in Asia and Europe, including offices in Taiwan, Singapore, South Korea, China, Italy, Germany, France and the United Kingdom. Of these properties, two are owned and 39 are leased. We own our 54,600 square foot corporate headquarters in Beverly, Massachusetts located adjacent to our Beverly manufacturing facility.

Our manufacturing facilities are listed below:

Facility Location	Principal Use	Square Footage (Owned/Leased)
Beverly, Massachusetts	Manufacturing of ion implantation and rapid thermal processing products and research and development	445,200 (owned)
Rockville, Maryland	Manufacturing of dry strip and photostabilization products and research and development	168,900 (leased)

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

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.

In 1998, as part of our restructuring, we closed our Austin, Texas ion implant manufacturing facility and transferred production to our Beverly, Massachusetts facility. On May 18, 2000, we sold our Austin facility for net proceeds of $11.0 million, a price that approximated book value.

We announced in November of 2001, that we would be relocating certain manufacturing and support functions from our Rockville, MD facility to our Beverly, MA facility during 2002. Upon completion of this relocation in 2002, we expect to lower our leased square footage at our Rockville facility to 117,328 square feet.

We do not believe there is any material, long-term, excess capacity in our 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

On January 8, 2001, we filed a lawsuit against Applied Materials, Inc. ("Applied") in the United States District Court for the District of Massachusetts. The complaint alleges that Applied's medium current/high energy ion implanter machine launched in November 2000 infringes our patent for ion implantation equipment using radio frequency linear accelerator technology. We have also alleged that Applied unlawfully interfered with our existing and future contracts. On January 18, 2001, we filed a motion for a preliminary injunction for the reason, among others, that infringement at the time of transition between equipment capable of handling 200 mm wafers and equipment capable of handling 300 mm wafers would irreparably harm us. Through this motion, we asked the court to stop Applied from manufacturing, selling or offering to sell its medium current/high energy ion implanter machine and to order Applied to remove all Axcelis patented technology from implanters that Applied may have placed in chipmakers' plants for process development trials. Applied filed counterclaims of unfair competition, defamation, and tortious interference with prospective economic advantage, all of which it contends arise from certain communications allegedly made by Axcelis about the lawsuit and its claims of infringement.

Hearings on summary judgment motions began in December 2001 and are continuing. We believe our claims are meritorious and intend to pursue the matter vigorously. Although there can be no assurance of a favorable outcome, and while we are incurring significant legal expenses to pursue this litigation, we do not believe that our pursuit of this matter will have a material adverse effect on our financial condition, results of operations or liquidity. In the event that Applied is found not to have infringed, we expect that Applied will continue to use its medium current/high energy implanter as a new and substantial competitor for sales of high energy/medium current ion implantation equipment.

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

None

Executive Officers and Key Management

Executive Officers

Mary G. Puma, 44, 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.

Michael J. Luttati, 46, 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.

Cornelius F. Moses III, 43, has been our Executive Vice President and Chief Financial Officer since October 2000. Prior to that, Mr. Moses was Senior Vice President, Chief Financial Officer of Bradlees, Inc., a discount retail chain, from 1995. From 1990 to 1995, Mr. Moses had various positions with Ames Department Stores, Inc., most recently as Senior Vice President, Finance.

Robert A. Mionis, 39, has served as our Senior Vice President - Worldwide Operations since July 2000 and was our Director of Worldwide Operations since March 1999 and Global Operations Director for our implant systems operations from May 1998. Prior to joining Axcelis, since October 1994, Mr. Mionis served in a number of positions at AlliedSignal Corporation, a diversified industrial manufacturer of automotive, aerospace and engineered material products, most recently as Director of Operations. Prior to that, Mr. Mionis served with GE Aerospace in various management positions.

Kevin O'Connor, 43, has been our Senior Vice President-Human Resources since July 2000. Mr. O'Connor was the principal Koga LLC, a consulting firm providing human resources advice to several privately held technology firms in the United States, from March 2000 until July 2000. From December 1996 until March 2000, he was Vice President - Global Human Resources for Iomega Corporation, a provider of information storage solutions. From 1993 until December 1996, Mr. O'Connor was Vice President, Human Resources-Americas/Asia for Dell Computer Corporation.

Lynnette C. Fallon, 42, has been our Senior Vice President and General Counsel since April 2001. Prior to that, Ms. Fallon was a partner in the Boston law firm of Palmer & Dodge LLP since 1992.

Kevin M. Bisson, 40, has been our Vice President and Controller since June 2000 and has served as the Director of Finance from January 2000 to May 2000. Prior to joining Axcelis, Mr. Bisson was Director of Finance for Hamilton Sundstrand Corporation, a subsidiary of United Technologies Corporation and a global supplier of aerospace and industrial products, from 1999 and he held various other financial management positions at UTC since 1989.

Ted S. Miller, 43, has been our Vice President and General Manager - Global Service Solutions since July 2000 and was our Director of Global Customer Service since the beginning of 2000. Prior to joining us, Mr. Miller most recently served as Division Marketing Manager, Global Customer Service at Teradyne, Inc. and since 1980, he held various other marketing and other positions at Teradyne, including ten years experience in the semiconductor service segment.

Jan-Paul van Maaren, 40, 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 Halterman, 38, 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.

Charles F. Lesko , 43, has been our Vice President of Sales since June 2000. He joined us from Teradyne where he held several significant positions in sales and sales management for the last 10 years. Most recently, he held the position of Western US Sales Manager where he was responsible for global sales and support to many of the leading semiconductor manufacturers throughout the world. Prior to Teradyne, Mr. Lesko held various sales management and engineering positions at companies including Dupont and Pepsico.

John M. Poate, 61, has been our Vice President and Chief Technology Officer since June 2000. Prior to joining us, Dr. Poate was Dean of the College of Science and Technology of the New Jersey Institute of Technology, and was Dean of the College of Liberal Arts since 1997. From 1971 to 1997, he held several senior research positions, including head of silicon processing research, with Bell Laboratories.

PART II

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

Our common stock has traded on the Nasdaq stock market under the symbol ACLS since our initial public offering on July 11, 2000. The following table sets forth the high and low closing sale prices as reported on the Nasdaq stock market during each quarter since our initial public offering. As of February 26, 2002, we had approximately 11,748 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 and does not anticipate paying cash dividends in the future.

	Common Stock Price	
	High	**Low**
Fiscal 2000		
Third quarter	$25.88	$11.63
Fourth quarter	11.19	7.00
Fiscal 2001		
First quarter	12.88	8.44
Second quarter	18.39	9.38
Third quarter	15.25	8.77
Fourth quarter	14.91	9.01

Item 6: Selected Financial Data

The following selected consolidated statements of operations data for each of the three years ended December 31, 2001, 2000 and 1999 and the consolidated balance sheet data as of December 31, 2001 and 2000 has 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 each of the years ended December 31, 1998 and 1997 and the consolidated balance sheet data as of December 31, 1998 has been derived from the audited financial statements contained in our registration statement on Form S-1 filed on May 5, 2000, as amended. The consolidated balance sheet data as of December 31, 1997 has been derived from our unaudited consolidated financial data.

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,				
	2001	**2000**	**1999**	**1998**	**1997**
	(In thousands, except per share amounts)				
Consolidated statements of operations data:					
Net sales	$365,264	$680,401	$397,267	$ 265,709	$460,010
Gross profit	131,025	299,309	157,082	64,229	172,802
Operating income (loss)	(62,245)	104,637	12,333	(137,909)	(72,035)
Net income (loss)	(20,163)	99,115	14,428	(82,047)	(61,467)
Net income (loss) per share:					
Basic	$ (0.21)	$ 1.13	$ 0.18	$ (1.03)	$ (0.77)
Diluted	$ (0.21)	$ 1.13	$ 0.18	$ (1.03)	$ (0.77)
Shares used in computing per share amounts:					
Basic	97,215	88,063	80,000	80,000	80,000
Diluted	97,215	88,064	80,000	80,000	80,000
Consolidated balance sheet data:					

Cash and cash equivalents	$124,177	$168,157	$ 3,530	$ 3,338	$ 3,479
Working capital	226,412	297,348	169,759	91,028	149,041
Total assets	551,396	672,331	422,835	341,121	457,567
Stockholders’ equity	462,861	491,369	342,296	269,161	349,192

During fiscal 2000, the Company paid a dividend of $300 million ($3.75 per share) to Eaton Corporation. In addition, refer to "Separation from Eaton Corporation" and "Basis of Presentation" below for discussion of comparability of operating results.

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

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. The following discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from the results contemplated by these forward-looking statements due to certain factors, including those discussed in this Management's Discussion and Analysis under the heading "Outlook," and in Exhibit 99 to this Form 10-K and elsewhere in this Annual Report on Form 10-K.

Overview

We are a leading producer of ion implantation, dry strip and photostabilization equipment used in the fabrication of semiconductors. We also manufacture rapid thermal processing equipment, which is used in semiconductor manufacturing primarily before and after the ion implantation process. In addition, we provide extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. We have a 50-50 joint venture with Sumitomo Heavy Industries, Ltd. in Japan.

Separation from Eaton Corporation

Prior to the initial public offering on July 10, 2000, we were a wholly owned subsidiary of Eaton Corporation (Eaton). On June 30, 2000, Eaton substantially completed the transfer to us of all of the assets of its semiconductor equipment operations that were not previously owned by us, and we assumed the related liabilities. On December 29, 2000, Eaton completed the divestiture of its investment in Axcelis by distributing its remaining 82% ownership interest in Axcelis in the form of a spin-off to Eaton shareholders. We also entered into various other 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, we reimbursed Eaton for its direct and indirect costs of providing these services until completion of the divestiture, and thereafter, for a limited time, we reimbursed Eaton for its costs plus an additional fee. The transition periods covered by these agreements 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.

Basis of Presentation

On June 30, 2000, Eaton substantially completed the transfer of all the assets and related liabilities of its semiconductor equipment operations to us. Prior to the transfer, the financial statements of the semiconductor equipment operations were presented on a combined basis. 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 our consolidated financial position, operating results and cash flows during the periods presented prior to the initial public offering or in the future, if it had been a separate, stand-alone entity.

Critical Accounting Policies

Management's discussion and analysis of its 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 and installation 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 critical accounting policies affect its more significant judgments and estimates used in the preparation of its consolidated financial statements.

Revenue Recognition

The Company's revenue recognition policy is described in detail in Note 2 to the consolidated financial statements. In the future, if the post delivery acceptance provisions and installation process become more complex or are not successful, the Company may have to revise its revenue recognition policy, which could affect the timing of revenue recognition.

Deferred Tax Assets

As of December 31, 2001, we have approximately $34.0 million of deferred tax assets related principally to domestic loss carryforwards that expire in 2021, for which no valuation allowance has been recorded. The realization of these assets is based upon estimates of future taxable income. Projections of future earnings are based on revenue assumptions consistent with industry forecasts for the next five years along with the necessary operating expenses to support our revenue assumptions. Based on these projections, we estimate that the loss carryforwards will be fully utilized within three years. Should our projections not materialize and future taxable losses continue, a valuation allowance of up to $34.0 million may be required.

Accounts Receivable

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

Axcelis records an allowance for estimated excess and obsolete inventory. The allowance is based upon management's assumptions of future materials usage and obsolescence, which are a result 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.

Accrued Warranty and Installation Costs

Axcelis provides for the estimated cost of product warranties and system installations at the time of shipment. The Company's warranty and installation obligation is affected by product failure rates, material usage and service delivery costs incurred in correcting a product failure or installing a system at a customer's site. If actual product failure rates, material usage or service delivery costs differ from management's estimates, revisions to the estimated warranty and installation liability may be required.

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,		
	2001	2000	1999
Net sales	100.0 %	100.0 %	100.0 %
Gross profit	35.9	44.0	39.5
Other costs and expenses:			
Research and development	21.0	10.1	13.0
Selling	13.5	8.3	9.5
General & administrative	15.9	8.9	11.6
Amortization of goodwill and intangibles	2.5	1.4	2.3
Income (loss) from operations	(17.0)	15.4	3.1
Other income (expense):			
Royalty income	1.8	2.2	1.5
Equity income of SEN	3.3	2.9	0.3
Interest income	1.5	0.8	—
Other—net	(0.6)	(0.1)	—
Income (loss) before income taxes	(11.1)	21.2	4.9
Income taxes (credit)	(5.5)	6.6	1.3
Net income (loss)	(5.5)%	14.6 %	3.6 %

Fiscal year ended December 31, 2001 in comparison to the fiscal year ended December 31, 2000

Net Sales

Net sales were $365.3 million in fiscal 2001, a decrease of $315.1 million, or 46.3%, as compared to net sales of $680.4 million in fiscal 2000. The decrease in net sales was attributable to lower levels of capital spending by our semiconductor manufacturing customers resulting in reduced sales of our products and services.

Sales of ion implant products and services accounted for $292.3 million in total sales in fiscal 2001, a decrease of $242.1 million, or 45.3%, as compared to $534.4 million in fiscal 2000. Sales of other products and services, including dry strip products, photostabilization products and rapid thermal processing systems, accounted for $73.0 million in total sales in fiscal 2001, a decrease of $73.0 million, or 50.0%, as compared to $146.0 million in fiscal 2000.

Gross Profit

Gross profit was $131.0 million in fiscal 2001, a decrease of $168.2 million, or 56.2%, as compared to gross profit of $299.3 million in fiscal 2000. The decrease in gross profit was due mainly to lower sales volume.

Gross profit as a percentage of net sales decreased to 35.9% in fiscal 2001 from 44.0% in fiscal 2000. 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 carry lower average gross margins.

Research and Development

Research and development expense was $76.5 million in fiscal 2001, an increase of $7.8 million, or 11.3%, as compared to $68.8 million in fiscal 2000. The increase in research and development expense between years is due principally to continued investments in our next generation 300 mm tools. We continue to invest significantly in both current product enhancements and new product development. As a percentage of net sales, research and development expense increased to 21.0% in fiscal 2001 from 10.1% in fiscal 2000 as increased costs between years was spread over a lower revenue base.

Selling

Selling expense was $49.4 million in fiscal 2001, a decrease of $7.0 million, or 12.4%, as compared to $56.4 million in fiscal 2000. The decrease in selling expense was primarily due to lower sales commissions and lower marketing and advertising expenses associated with lower overall sales volume.

As a percentage of net sales, selling expense increased to 13.5% in fiscal 2001 as compared to 8.3% in fiscal 2000 as these costs were spread over a lower revenue base.

General and Administrative

General and administrative expense was $58.0 million in fiscal 2001, a decrease of $2.2 million, or 3.6%, as compared with $60.2 million in fiscal 2000. The decrease in general and administrative expense was primarily attributable to a decrease in headcount and related expenses due to lower sales volume of $8.1 million and a decrease in expenses related to the transition to a stand-alone public company of $2.1 million offset by an increase in expenses related to our patent litigation with Applied Materials, Inc. of $8.0 million. (see Part I, Item 3. "Legal Proceedings".)

As a percentage of net sales, general and administrative expense increased to 15.9% in fiscal 2001 as compared with 8.9% in fiscal 2000 as these costs were spread over a lower revenue base.

Amortization of Goodwill and Intangible Assets

Amortization of goodwill and intangible assets was $9.3 million in fiscal 2001, consistent with fiscal 2000.

Income (Loss) from Operations

Loss from operations was $62.2 million in fiscal 2001 as compared to income of $104.6 million in fiscal 2000, primarily as a result of the factors described above.

Other Income (Expense)

Total other income was $21.8 million in fiscal 2001 as compared to $39.6 million in fiscal 2000. Other income consists primarily of royalty income and equity income from SEN. Royalty income, primarily from SEN, was $6.5 million in fiscal 2001 as compared to $15.1 million in fiscal 2000. Equity income attributable to SEN was $12.2 million in fiscal 2001 compared to $19.6 million in fiscal 2000. Both decreases in fiscal 2001 were due to lower SEN sales volume due primarily to the downturn in the Japanese semiconductor market which began in the second half of 2001.

Income Taxes (Credit)

The company had an income tax credit of $20.2 million in fiscal 2001 as compared to income tax expense of $45.2 million in fiscal 2000. Our effective income tax rate was 50.1% in fiscal 2001 as compared to 31.3% in fiscal 2000. 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 13 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Net Income (Loss)

The company incurred a net loss of $20.2 million in fiscal 2001 as compared to net income of $99.1 million in fiscal 2000, principally as a result of the factors discussed above.

Fiscal year ended December 31, 2000 in comparison to the fiscal year ended December 31, 1999

Net Sales

Net sales were $680.4 million in fiscal 2000, an increase of $283.1 million, or 71.3%, as compared to net sales of $397.3 million in fiscal 1999. The increase in net sales was attributable to continued high levels of capital spending by our semiconductor manufacturing customers, resulting in increased demand for our products and services.

Sales of ion implant products and services accounted for $534.4 million in total sales in fiscal 2000, an increase of $212.4 million, or 66.0%, as compared to $322.0 million in fiscal 1999. Sales of other products and services, including dry strip products, photostabilization products and rapid thermal processing systems, accounted for $146.0 million in total sales in fiscal 2000, an increase of $70.7 million, or 94.0%, as compared to $75.3 million in fiscal 1999.

Gross Profit

Gross profit was $299.3 million in fiscal 2000, an increase of $142.2 million, or 90.5%, as compared to gross profit of $157.1 million in fiscal 1999. The increase in gross profit was primarily attributable to increased products and services sales volume. Gross profit as a percentage of net sales increased to 44.0% in fiscal 2000 from 39.5% in fiscal 1999. This increase was due primarily to improved capacity utilization as a result of higher sales volume and, to a lesser extent, to a more favorable product mix of dry strip and photostabilization products.

Research and development

Research and development expense was $68.8 million in fiscal 2000, an increase of $17.2 million, or 33.3%, as compared to $51.6 million in fiscal 1999. As a percentage of net sales, research and development expense decreased to 10.1% in fiscal 2000 from 13.0% in fiscal 1999, as costs were spread over a higher revenue base.

Selling

Selling expense was $56.4 million in fiscal 2000, an increase of $18.5 million, or 48.7%, as compared to $37.9 million in fiscal 1999. The increase in selling expense was primarily due to increased headcount and related expenses associated with increased sales volume. As a percentage of net sales, selling expense decreased to 8.3% in fiscal 2000 as compared to 9.5% in fiscal 1999, as costs were spread over a higher revenue base.

General and Administrative

General and administrative expense, including the allocation of Eaton general corporate expenses to our business, was $60.2 million in fiscal 2000, an increase of $14.3 million, or 31.1%, as compared with $45.9 million in fiscal 1999. The increase in general and administrative expense was primarily attributable to increased spending for additional headcount and related expenses to support the growth in sales as well as higher expenses related to transitioning to a stand-alone public company. As a percentage of net sales, general and administrative expense decreased to 8.9% in fiscal 2000 as compared with 11.6% in fiscal 1999 as these costs were spread over a higher revenue base.

Amortization of Goodwill and Intangible Assets

Amortization of goodwill and intangible assets was $9.3 million in fiscal 2000, consistent with fiscal 1999.

Income from Operations

Income from operations was $104.6 million in fiscal 2000 as compared to $12.3 million in fiscal 1999, primarily as a result of the factors described above.

Other Income (Expense)

Total other income was $39.6 million in fiscal 2000 as compared to $7.2 million in fiscal 1999. Other income consists primarily of royalty income and equity income from SEN. Royalty income, primarily from SEN, was $15.1 million in fiscal 2000 as compared to $5.9 million in fiscal 1999. Equity income attributable to SEN was $19.6 million in fiscal 2000 compared to $1.3 million in fiscal 1999. Both increases in fiscal 2000 were due to increased SEN sales volume due primarily to the recovery in the Japanese semiconductor market, which began in late 1999. Interest income of $5.8 million in fiscal 2000 was earned from the net proceeds from the initial public offering and significantly higher cash balances generated from operating activities.

Income Taxes

Income taxes were $45.2 million in fiscal 2000 as compared with $5.1 million in fiscal 1999. Our effective income tax rate was 31.3% in fiscal 2000 as compared to 26.2% in fiscal 1999. The tax rate in both periods differs from the U.S. federal statutory rate primarily due to state taxes, undistributed nontaxable equity income from SEN, credits from increased research activities and increased foreign sales corporation benefits. See Note 13 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Net Income (Loss)

Net income increased to $99.1 million in fiscal 2000 from $14.4 million fiscal 1999, principally as a result of the factors discussed above.

Liquidity and Capital Resources

Cash and cash equivalents at December 31, 2001 were $124.2 million, compared to $168.2 million at December 31, 2000. The decrease in cash between years was due mainly to a net loss of $20.2 million, payments to Eaton of $54.7 million for transition expenses and income tax payments, as well as capital expenditures of $29.6 million and a decrease in accounts payable and other current liabilities of $27.5 million offset by a decrease in accounts receivable of $86.4 million. Net working capital was $226.4 million at December 31, 2001 as compared to net working capital of $297.3 million at December 31, 2000. The decreases in cash, accounts receivable and inventory were the primary causes of the decrease in working capital, all of which decreased as a result of lower sales volume.

Cash used by operating activities was $16.6 million for fiscal 2001 as compared to net cash provided of $99.7 million for fiscal 2000. The cash used by operating activities for fiscal 2001 was primarily the result of the factors described above. The Company anticipates a use of cash from operations in fiscal 2002.

Capital expenditures were $29.6 million in fiscal 2001 and $21.8 million in fiscal 2000. The increase in capital expenditures was principally due to the expansion of our Beverly, Massachusetts facility to house an advanced product demonstration and customer training center for all of our products. The amount of future capital requirements will depend on a number of factors, including the timing and rate of the expansion of our business. Capital expenditures for fiscal 2002 are expected to decline with the completion of the Company's construction of an addition to its Beverly, Massachusetts facility.

In the fourth quarter of 2001, the Company established a $45 million secured, three-year Revolving Credit Facility. The facility is comprised of a $13 million, 364 day tranche and a $32 million, three year tranche. The purpose of this facility is to provide funds for working capital and general corporate purposes. Borrowings under this credit arrangement are limited to the lesser of $45 million or the sum of a percentage of certain eligible domestic accounts receivable and inventory and bear interest at LIBOR plus an applicable spread. There are no borrowings currently outstanding under this facility although availability is reduced by an outstanding letter of credit.

The facility contains certain financial and other restrictive covenants including minimum profitability, liquidity and leverage ratios as well as maximum capital expenditure levels. The Company is in compliance with all covenants.

In January 2002, the Company completed an offering of $125.0 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, of the Company. Expenses associated with the offering of approximately $3.6 million have been deferred in other assets and are being amortized to other expense using the straight line method, which approximates the effective interest method, over the term of the Notes.

The balance sheet for SEN, which is not consolidated for financial reporting purposes, includes approximately $31.5 million of short-term debt at November 30, 2001. (See Note 15 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K). While the Company is not a guarantor of this debt, it is a 50% shareowner of SEN.

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.

Recent Accounting Pronouncements

In July 2001, the Financial Accounting Standards Board (FASB) issued SFAS 142, "Goodwill and Other Intangible Assets" (SFAS No. 142) which supercedes APB Opinion No. 17, "Intangible Assets." SFAS No. 142 eliminates the current requirement to amortize goodwill and indefinite-lived intangible assets, addresses the amortization of intangible assets with a defined life and addresses the impairment testing and recognition for goodwill and intangible assets. SFAS No. 142 will apply to goodwill and intangible assets arising from transactions completed before and after the effective date. SFAS No. 142 is effective for fiscal years beginning after December 15, 2001. The Company will apply the new rules on accounting for goodwill and other intangible assets beginning in the first quarter of 2002. The Company does not expect the adoption of SFAS No. 142 to result in the recognition of a loss due to goodwill impairment. Application of the non-amortization provisions of the statement related to goodwill is expected to result in an increase in income before taxes of approximately $3.3 million per year. The Company has not yet determined the impact of the statement's provisions on its intangible assets and the corresponding effect on its financial condition or results of operations.

In October 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." which addresses the accounting and financial reporting for the impairment of long-lived assets as well as the disposal of such assets. SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. The company does not expect the adoption of SFAS No. 144 to have a material effect on its financial condition or results of operations.

Outlook

The Company's performance in 2001 in comparison to 2000 and 1999 is illustrative of the highly cyclical nature of the semiconductor industry in general, and in particular, of the semiconductor capital equipment sector. Periodic downturns, such as that experienced in 2001 and continuing into 2002, have had a severe adverse impact on the semiconductor industry and on suppliers to the semiconductor industry, including us. Our business depends in significant part upon capital expenditures by semiconductor manufacturers, especially manufacturers that are 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. Our outlook for 2002 is dependent on whether our customers decide to expand existing fabrication facilities or build new facilities, and it is very difficult for us to predict such capital investment. 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 $150,000 to over $5.0 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.

In addition, the continued requirements for 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 during downturns in proportion to declining sales.

We are also exposed to the risks associated with the current slowdown in the U.S. economy. Concerns about decreased consumer confidence, reduced corporate profits and whether or when there will be a recovery in the sale of electronic goods suggest the need for caution in predicting growth in the semiconductor sector. The recessionary domestic economy may continue to materially and adversely affect our business, financial condition and results of operations for the foreseeable future.

Exhibit 99 hereto contains additional information about important factors that may cause our actual results to differ from our past performance and from performance contemplated by any forward-looking statements in this Annual Report or that may be made by our executives and other spokespersons in public statements. That information is incorporated herein by reference.

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 as of December 31, 2001. 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, 2001, all investments mature within 90 days and are carried at cost, which approximates fair value.

Foreign Currency Exchange Risk

Prior to our separation from Eaton, our exposure to foreign currency exchange rate risk was managed on an enterprise-wide basis as part of Eaton's risk management strategy. Having now separated from Eaton, we manage our exchange rate risk on an independent basis. Currently, substantially all of our sales are billed in U.S. dollars, thereby reducing the impact of fluctuations in foreign exchange rates on our results. 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 increase in other comprehensive loss (included in stockholders' equity) of $4.8 million at December 31, 2001.

Item 8: Financial Statements and Supplementary Data

Response to this Item is submitted as a separate section of this report immediately following Item 14.

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

None

PART III

Item 10: Directors and Executive Officers of the Registrant

The information required by Item 10 of Form 10-K is incorporated by reference from the information contained in the sections captioned "Election of Directors" and "Section 16(a) Beneficial Ownership Reporting Compliance" in Axcelis' Proxy Statement for the Annual Meeting of Stockholders to be held May 1, 2002 (the "Proxy Statement"), a copy of which will be filed with the Securities and Exchange Commission on or prior to April 30, 2002, and the remainder of such information is set forth under the heading "Executive Officers" 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

The information required by Item 12 of Form 10-K is incorporated by reference from the information contained in the section captioned "Share Ownership" 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 contained in the sections captioned "Executive Agreements" and "Compensation Committee Interlocks and Insider Participation" in the Proxy Statement.

PART IV

Item 14. 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

No reports on Form 8-K were filed by the Company during the quarter ended December 31, 2001.

(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 14 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, 2001 and 2000, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2001. Our audits also included the financial statement schedule listed in the Index at Item 14 (a). 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, 2001 and 2000, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2001, 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.

/s/ ERNST & YOUNG LLP

Boston, Massachusetts
January 22, 2002

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

	Years Ended December 31,		
	2001	**2000**	**1999**
Net sales	$365,264	$680,401	$397,267
Cost of products sold	234,239	381,092	240,185

Gross profit	131,025	299,309	157,082
Operating expenses:			
Research and development	76,538	68,768	51,599
Selling	49,439	56,427	37,946
General and administrative	58,014	60,198	45,925
Amortization of goodwill & intangible assets	9,279	9,279	9,279
Income (loss) from operations	(62,245)	104,637	12,333
Other income (expense):			
Royalty income	6,463	15,054	5,854
Equity income of Sumitomo Eaton Nova Corporation	12,205	19,570	1,338
Interest income	5,400	5,801	—
Other —net	(2,224)	(790)	28
Income (loss) before income taxes	(40,401)	144,272	19,553
Income taxes (credit)	(20,238)	45,157	5,125
Net income (loss)	$ (20,163)	$ 99,115	$ 14,428
Basic net income (loss) per share	$ (0.21)	$ 1.13	$ 0.18
Diluted net income (loss) per share	$ (0.21)	$ 1.13	$ 0.18
Shares used in computing:			
Basic net income (loss) per share	97,215	88,063	80,000
Diluted net income (loss) per share	97,215	88,064	80,000

See accompanying Notes to Consolidated Financial Statements

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

	December 31,	
	2001	2000
ASSETS		
Current assets:		
Cash and cash equivalents	$124,177	$168,157
Accounts receivable	63,057	150,482
Inventories	105,339	122,036
Deferred income taxes & other current assets	18,622	26,851
Total current assets	311,195	467,526
Property, plant & equipment, net	92,618	75,653
Investment in Sumitomo Eaton Nova Corporation	48,183	44,915
Goodwill	39,282	42,977
Intangible assets	14,601	20,418
Other assets	45,517	20,842
	$551,396	$672,331
LIABILITIES AND STOCKHOLDERS’ EQUITY		
Current liabilities:		
Accounts payable	$ 32,602	$ 46,855
Payable to Eaton Corporation	—	25,818

Accrued compensation	6,966	17,686
Warranty reserve	24,218	33,324
Income taxes payable	—	31,153
Other current liabilities	20,997	15,342
Total current liabilities	84,783	170,178
Deferred income taxes	—	7,391
Other long-term liabilities	3,752	3,393
Stockholders' equity:		
Preferred stock, $0.001 par value, 30,000 shares authorized; none outstanding		
Common stock, $0.001 par value, 300,000 shares authorized; 97,495 shares issues and 97,375 shares outstanding at December 31, 2001; 97,050 shares issued and outstanding at December 31, 2000	97	97
Additional paid-in capital	440,638	437,472
Treasury stock - at cost	(1,218)	—
Retained earnings	38,519	58,682
Accumulated other comprehensive loss	(15,175)	(4,882)
Total stockholders' equity	462,861	491,369
	$551,396	$672,331

See accompanying Notes to Consolidated Financial Statements.

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

	Common Stock		Additional Paid-in Capital	Treasury Stock	Parent Company Investment	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total
	Shares	Amount						
Balance at December 31, 1998	80,000	$ 80	—	—	$ 274,901	—	$ (5,820)	$ 269,161
Comprehensive income:								
Net income	—	—	—	—	14,428	—	—	14,428
Foreign currency translation adjustments	—	—	—	—	—	—	291	291
Total comprehensive income	—	—	—	—	—	—	—	14,719
Net transfers from Eaton Corporation	—	—	—	—	58,416	—	—	58,416
Balance at December 31, 1999	80,000	80	—	—	347,745	—	(5,529)	342,296
Comprehensive income:								
Net income	—	—	—	—	40,433	$ 58,682	—	99,115
Foreign currency translation adjustments	—	—	—	—	—	—	647	647
Total comprehensive income	—	—	—	—	—	—	—	99,762
Initial public offering	17,050	17	$348,568	—	—	—	—	348,585
Dividend paid to Eaton Corporation ($3.75 per share)	—	—	—	—	(300,000)	—	—	(300,000)
Net transfers from Eaton Corporation	—	—	—	—	726	—	—	726
Reclassification of parent company investment to additional paid-in capital	—	—	88,904	—	(88,904)	—	—	—
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 treasury shares	—	—	—	$(1,218)	—	—	—	(1,218)
Balance at December 31, 2001	97,495	$ 97	$440,638	$(1,218)	$ —	$ 38,519	$(15,175)	$ 462,861

See accompanying Notes to Consolidated Financial Statements.

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

	Years Ended December 31,		
	2001	2000	1999
Operating activities:			
Net income (loss)	$ (20,163)	$ 99,115	$ 14,428
Adjustments to reconcile to net cash provided (used) by operating activities:			
Depreciation	11,936	8,535	9,803
Amortization of goodwill & intangible assets	9,279	9,279	9,279
Deferred income taxes	(16,017)	(8,355)	(2,758)
Undistributed income of Sumitomo Eaton Nova Corporation	(12,205)	(19,570)	(1,347)
Deferred royalty income of Sumitomo Eaton Nova Corporation	—	—	(2,286)
Restructuring charges	—	—	(7,060)
Changes in operating assets & liabilities, excluding acquisition of a business & non-cash restructuring charges:			
Accounts receivable	86,446	(50,097)	(71,918)
Inventories	15,822	(39,431)	(16,989)
Other current assets	(327)	—	—
Accounts payable and other current liabilities	(27,464)	44,824	18,481
Payable to Eaton Corporation	(25,818)	25,818	—
Income taxes payable	(31,153)	31,153	—
Other assets	(7,505)	(2,765)	7,604
Other—net	592	1,479	3,658
Net cash provided (used) by operating activities	(16,577)	99,985	(39,105)
Investing activities:			
Expenditures for property, plant & equipment	(29,577)	(21,848)	(16,914)
Proceeds from sale of Austin, Texas facility	—	10,967	—
Other—net	677	(138)	(2,205)
Net cash used by investing activities	(28,900)	(11,019)	(19,119)
Financing activities:			
Proceeds from the exercise of stock options	2,296	—	—
Issuance of common stock under Employee Stock Purchase Plan	870	—	—
Acquisition of treasury shares	(1,218)	—	—
Net proceeds from sale of Axcelis common shares	—	348,585	—
Net proceeds from sale of Axcelis common shares	—	(300,000)	—
Net transfers from Parent Company	—	27,378	58,416
Net cash provided by financing activities	1,948	75,963	58,416
Effect of exchange rate changes on cash & cash equivalents	(451)	(302)	—
Net increase (decrease) in cash & cash equivalents	(43,980)	164,627	192
Cash & cash equivalents at beginning of period	168,157	3,530	3,338
Cash and cash equivalents at end of period	$124,177	$ 168,157	$ 3,530

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"), a wholly owned subsidiary of Eaton Corporation ("Eaton") prior to July 10, 2000, is a leading producer of ion implantation, dry strip and photostabilization equipment used in the fabrication of semiconductors in the United States, Europe and Asia Pacific. The Company also produces rapid thermal processing equipment, which is used in semiconductor manufacturing primarily before and after the ion implantation process. In addition, the Company provides extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. The Company has a 50-50 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 for ion implantation, has exclusive rights to the territory of Japan and is the leading producer of ion implantation equipment in Japan.

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. 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.

Axcelis' legal separation from Eaton occurred on June 30, 2000, at which time the Company began to operate independently from Eaton. Subsequent to June 30, 2000, the Company's financial statements are prepared on a consolidated basis. Although prior periods have been prepared on a combined basis, all statements presented are referred to as consolidated statements for simplicity. For periods prior to the separation date, the consolidated financial statements reflect historical results of operations and cash flows of Eaton's semiconductor equipment operations during each respective period, and include allocations of certain Eaton expenses, as discussed in Note 16 to the consolidated financial statements. Beginning in the third quarter of fiscal year 2000, Axcelis' consolidated financial statements no longer include an allocated portion of Eaton's corporate services and infrastructure costs. However, the Company continued to incur amounts payable to Eaton in connection with transitional agreements, under which Eaton provided services, such as 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.

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 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 and Cash Equivalents

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.

Inventories

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

Long-Lived Assets

Depreciation and amortization are 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. Substantially all goodwill is amortized over fifteen years. Intangible assets, consisting of developed technology, are amortized over seven years.

Goodwill and other long-lived 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. The asset would be considered impaired when the future net undiscounted cash flows generated by the asset are less than its carrying value. An impairment loss would be recognized based on the amount by which the carrying value of the asset exceeds its fair value.

Concentration of Credit Risk

Financial instruments, which potentially expose Axcelis to concentrations of credit risk, consist principally of accounts receivable and cash equivalents. These financial instruments are recorded at cost, which approximates fair value. Axcelis' customers consist of semiconductor manufacturers located throughout the world. Axcelis' net sales to its ten largest customers accounted for 50.6%, 56.3% and 59.1% of net sales in 2001, 2000 and 1999, 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 enter into letters of credit. Axcelis maintains a reserve for potentially uncollectible accounts receivable based on its assessment of the collectibility of accounts receivable.

Revenue Recognition

Axcelis recognizes sales at the time of shipment to the customer. The costs of system installation at the customer's site are accrued at the time of shipment. Management believes 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, the systems are 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. 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. Installation is non-complex and does not require specialized skills, and the related costs are predictable and insignificant to the total purchase price. Axcelis has a demonstrated history of customer acceptance subsequent to shipment and installation of these systems.

Shipping and Handling Costs

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

Stock-Based Compensation

Axcelis applies the intrinsic value based method described in Accounting Principles Board Opinion (APB) No. 25 to account for stock options granted to employees. Under this method, no compensation expense is recognized on the grant date, since on that date the option price equals the market price of the underlying common shares.

Income Taxes

Prior to 2001, Axcelis' results had been included in Eaton's consolidated U.S. and state income tax returns and in tax returns of certain Eaton foreign subsidiaries. The provision for income taxes in Axcelis' consolidated financial statements had been determined on a separate-return basis before 2001 and on a stand-alone basis beginning in 2001. For all years presented, deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts.

Through December 29, 2000, Eaton accounted and paid for all United States income taxes. Axcelis' taxable income (loss) related to its United States operations was included in Eaton's consolidated income tax returns for 2000 and 1999. Beginning in 2001, Axcelis' taxable loss related to its United States operations will be included in its own separate tax return.

Consistent with the terms of the tax sharing agreement with Eaton, the consolidated statements of operations for 2000 and 1999 include an allocation of Eaton's United States income taxes in amounts generally equivalent to the provisions which would have resulted had the Company filed separate income tax returns for the years presented. The Company has also been allocated United States deferred income taxes based on the estimated differences between the book and tax bases of its assets and liabilities.

Beginning in 2001, all of Axcelis' operations outside the United States account and pay for income taxes related to their operations. Prior to 2001, for those operations which have not accounted and paid for income taxes related to their operations, the consolidated statements of operations include an allocation of Eaton's foreign income taxes in amounts generally equivalent to the provisions which would have resulted had Axcelis filed separate income tax returns for the years presented. These operations have also been allocated foreign deferred income taxes based on the estimated differences between the book and tax bases of their assets and liabilities.

Net Income (Loss) Per Share

Basic net income (loss) per share is calculated based on the weighted average shares of common stock outstanding during the period. Diluted net income (loss) per share is calculated based on the weighted average shares of common stock outstanding, plus the dilutive effect of stock options, calculated using the treasury stock method. There were 1,165,276 shares of common stock equivalents calculated using the treasury stock method that were not included in the calculation of diluted EPS in 2001 because the effect would be antidilutive.

Reclassifications

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

Recent Accounting Pronouncements

In July 2001, the Financial Accounting Standards Board (FASB) issued SFAS 142, "Goodwill and Other Intangible Assets" (SFAS No. 142) which supercedes APB Opinion No. 17, "Intangible Assets." SFAS No. 142 eliminates the current requirement to amortize goodwill and indefinite-lived intangible assets, addresses the amortization of intangible assets with a defined life and addresses the impairment testing and recognition for goodwill and intangible assets. SFAS No. 142 will apply to goodwill and intangible assets arising from transactions completed before and after the effective date. SFAS No. 142 is effective for fiscal years beginning after December 15, 2001. The Company will apply the new rules on accounting for goodwill and other intangible assets beginning in the first quarter of 2002. The Company does not expect the adoption of SFAS No. 142 to result in the recognition of a loss due to goodwill impairment. The Company has not yet determined the impact of the statement's provisions on its goodwill and other intangible assets and the corresponding effect on its financial condition or results of operations.

In October 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." which addresses the accounting and financial reporting for the impairment of long-lived assets as well as the disposal of such assets. SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. The company does not expect the adoption of SFAS No. 144 to have a material effect on its financial condition or results of operations.

Note 3. Accounts Receivable

The components of accounts receivable follow (in thousands):

	December 31,	
	2001	**2000**
Trade	$66,758	$141,676
Sumitomo Eaton Nova Corporation	401	10,915

	67,159	152,591
Allowance for doubtful accounts	(4,102)	(2,109)
	$63,057	$150,482

Note 4. Inventories

The components of inventories follow (in thousands):

	December 31,	
	2001	2000
Raw materials	$ 75,821	$ 74,929
Work in process	8,889	31,531
Finished goods	31,996	26,828
	116,706	133,288
Inventory allowances	(11,367)	(11,252)
	$105,339	$122,036

Note 5. Property, Plant & Equipment

The components of property, plant and equipment follow (in thousands):

	December 31,	
	2001	2000
Land & buildings	$ 52,697	$ 48,904
Machinery & equipment	63,496	55,917
Construction in progress	32,364	19,679
	148,557	124,500
Accumulated depreciation	(55,939)	(48,847)
	$ 92,618	$ 75,653

Note 6. Goodwill & Other Intangible Assets

The components of goodwill and intangible assets follow (in thousands):

	December 31,	
	2001	2000
Goodwill	$ 55,419	$ 55,419
Accumulated amortization	(16,137)	(12,442)
	$ 39,282	$ 42,977
Intangible assets	$ 40,000	$ 40,000
Accumulated amortization	(25,399)	(19,582)
	$ 14,601	$ 20,418

Note 7. Financing Arrangements

Revolving Credit Facility

In the fourth quarter of 2001, the Company established a $45 million secured, three-year Revolving Credit Facility. The facility is comprised of a $13 million, 364 day tranche and a $32 million, three year tranche. The purpose of this facility is to provide funds for working capital and general corporate purposes. Borrowings under this credit arrangement are limited to the lesser of $45 million or the sum of a percentage of certain eligible domestic accounts receivable and inventory and bear interest at LIBOR plus an applicable spread. There are noborrowings currently outstanding under this facility.

The facility contains certain financial and other restrictive covenants including minimum profitability, liquidity and leverage ratios as well as maximum capital expenditure levels. The Company is in compliance with all covenants.

Convertible Subordinated Note Offering

In January 2002, the Company completed an offering of $125.0 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, of the Company. Expenses associated with the offering of approximately $3.6 million have been deferred in other assets and are being amortized to other expense using the straight line method, which approximates the effective interest method, over the term of the Notes.

Note 8. Defined Contribution Plan

During 2000, the Company established 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 17% of their eligible compensation, subject to limitations set by federal income tax regulations. The Company matches 50% of contributions for the first 6% of eligible pay contributed by the employee. Beginning in January of 2002, the Company's matching contribution was changed to reflect a guaranteed match of 100% of contributions for the first 6% of eligible pay with a maximum match of $1,000. In addition, the Company has the option to match up to 100% of contributions, capped in combination with the guaranteed match, at a total of 6% of eligible pay contributed by the employee. Under this plan, $2.7 million was recognized as expense in 2001. No expense was recognized in 2000.

Prior to the Company's separation from Eaton, Axcelis employees participated in defined benefit and defined contribution plans of Eaton. Expense recorded during 2000 and 1999 for all defined benefit and defined contribution plans was $9.2 million and $5.1 million, respectively. In connection with the separation on December 29, 2000, Axcelis employees participating in Eaton's domestic pension plan fully vested, and the pension and post retirement obligations for these employees remained with Eaton. Axcelis continues to provide pension benefits to employees in certain foreign locations, primarily Germany. The obligations related to these benefits are not significant.

Note 9. Stock Option Plans

Axcelis Stock Option Plan

During 2000, the Company adopted 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 reserved 18.5 million shares of common stock for grant under the Plan, which maximum amount increases annually by the lesser of (i) five percent (5%) of the then number of outstanding shares of Common Stock, (ii) 5,000,000 shares or (iii) such lesser amount as may be determined by the Board. The effect of this provision in 2001 was to increase the shares available for grant under the Plan by 4,875,742. Expiration of options or stock appreciation rights are based on award agreements, or in the case of incentive stock options, 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, options granted to employees terminate upon termination of employment. 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 tables summarize information about Axcelis' stock option activity as of and for the years ended December 31, 2001 and 2000:

	2001		2000	
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price
Outstanding at beginning of year	7,695,026	$15.33	—	—
Granted	2,264,620	13.89	7,803,321	$15.36
Exercised	(133,163)	8.84	—	—
Forfeited	(462,392)	14.08	(108,295)	22.00
Outstanding at end of year	9,364,091	$15.05	7,695,026	$15.33
Available for grant at end of year	13,878,488		10,804,974	

The following table summarizes information with respect to stock options outstanding and exercisable at December 31, 2001:

Range of Exercise Price	Outstanding at December 31 2001	Weighted-Average Exercise Price	Exercisable at December 31 2001	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life
$ 4.65-$ 6.81	181,143	$ 6.22	181,143	$ 6.22	4.0 Years
$ 7.13-$10.94	3,171,625	8.64	1,466,156	8.47	7.0
$11.19-$13.82	303,050	11.48	54,813	11.21	9.0
$14.10-$17.91	2,108,155	14.18	50,625	16.03	9.6
$18.06-$22.00	3,600,118	21.96	972,210	21.96	8.5
	9,364,091	$15.05	2,724,947	$14.28	8.2

Stock Options for Eaton Common Shares Granted to Axcelis Employees

Eaton had stock option plans under which Axcelis employees were granted options, through July 11, 2000, to purchase Eaton common shares at prices equal to fair market value as of the date of grant. The majority of these options vested ratably during the three-year period following the date of grant and expired ten years from the date of grant. A summary of Eaton stock option activity for options granted to Axcelis employees during 1999 follows:

	1999	
	Shares	Weighted-Average Exercise Price
Outstanding at beginning of year	305,093	$74.03
Granted	162,625	71.41
Exercised	(8,211)	56.60
Outstanding at end of year	459,507	$73.41

The stock option activity for options granted to Axcelis employees under Eaton's stock option plans was not significant during the period January 1, 2000 through July 11, 2000. On January 24, 2001, Axcelis' Board of Directors approved, effective as of December 29, 2000, the assumption, by Axcelis, of substantially all of the stock options originally issued by Eaton that were outstanding at December 29, 2000 and held by individuals who were employees of Axcelis on that date. To effect this assumption, Axcelis' Board of Directors approved the conversion of those Eaton options to Axcelis options in a manner that resulted in Axcelis employees receiving the same intrinsic value and ratio of exercise price per share to market value per share as they had prior to conversion. In addition, each new Axcelis option resulting from this conversion will have the same vesting provisions and terms as the Eaton options assumed. Approximately 423,400 Eaton options were converted to 3,586,103 Axcelis options. The converted options were issued through the Axcelis stock option plan and, therefore, are included in the stock option activity disclosed above under "Axcelis Stock Option Plan".

Pro Forma Disclosure

As permitted under Statement of Financial Accounting Standard (SFAS) No. 123, "Accounting for Stock-Based Compensation", Axcelis has elected to follow APB No. 25, Accounting for Stock Issued to Employees, and related interpretations in accounting for stock-based awards to employees. Under APB No. 25, the Company recognizes no compensation expense with respect to such awards, since on the date the options were granted, the option price equaled the market value of the common shares.

Pro forma information regarding net income (loss) is required by SFAS No. 123. This information is required to be determined as if Axcelis had accounted for stock-based awards to its employees granted subsequent to 1995 under the fair value method of that Statement. The fair values of the options granted under the Axcelis stock option plan and the Eaton stock option plans have been estimated at the date of grant using the Black-Scholes options pricing model with the following assumptions:

	Axcelis Stock Option Plan		Eaton Stock Option Plan
	2001	2000	1999
Dividend yield	0%	0%	3%
Expected volatility	139%	93%	21%
Risk-free interest rate	4.3% to 4.8%	5.1% to 6.3%	4.7%
Expected option life in years	4	4	4 or 5
Weighted average fair value per hsare of options granted during the year	$11.77	$14.66	$12.56

For purposes of pro forma disclosures under SFAS No. 123, the estimated fair values of the options are assumed to be amortized to expense over the options' vesting periods. Although some Eaton stock options were granted to Axcelis employees during the period January 1, 2000 to July 11, 2000, the number of such options was not significant and, therefore, have not been included in the pro forma presentation below. Pro forma information related to options granted follows (in thousands, except per share amounts):

	Axcelis Stock Option Plan		Eaton Stock Option Plan
	2001	2000	1999
Net income (loss)			
As reported	$(20,163)	$99,115	$14,428
Assuming fair value method	(32,808)	94,435	13,473
Diluted net income (loss) per share			
As reported	$ (0.21)	$ 1.13	$ 0.18
Assuming fair value method	(0.34)	1.07	0.17

Note 10. Stockholders' Equity

Common and Preferred Stock

Prior to June 2000, Axcelis had authorized common stock of 1,000 shares with a par value of $1.00 per share; 100 shares were outstanding and owned by Eaton. In June 2000, the Axcelis Board of Directors authorized the conversion of the 100 shares of Axcelis common stock owned by Eaton into 80 million shares and increased the number of authorized shares to 300 million with a par value of $0.001 per share. Stockholders' equity has been restated to give retroactive recognition for the stock split for all periods presented by reclassifying from Parent Company Investment to common stock the par value of additional shares arising from the split. In addition, all references in the financial statements to the number of shares and per-share amounts of the Company's common stock have been restated.

In connection with Eaton's distribution of Axcelis shares to Eaton shareholders, Axcelis transferred the net Parent Company Investment of $88,904 to paid-in capital.

In June 2000, the Board also authorized the establishment of 30 million shares of preferred stock with a par value of $0.001. No shares of preferred stock have been issued.

Employee Stock Purchase Plan

In June 2000, the Board of Directors approved the adoption of 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. 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 maximum shares that may be issued under the plan may not exceed 7.5 million shares. The Company issued 312,132 shares under the plan in 2001.

Note 11. Lease Commitments

At December 31, 2001, the Company had lease commitments beyond 2006. Minimum rental commitments under noncancelable operating leases, which expire at various dates and in most cases contain renewel options, are as follows (in millions): 2002, $5.1; 2003, $3.8; 2004, $2.6; 2005, $1.6; 2006, $1.6; thereafter, $1.5.

Rental expense in 2001, 2000, and 1999 (in millions) was $8.8, $7.8 and $4.8, respectively.

Note 12. Business Segment and Geographic Region Information

Axcelis operates in only 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, thermal processing systems and other products and services. Net sales by product line follow (in thousands):

	2001	2000	1999
Ion implantation systems & services	$292,263	$534,428	$322,002
Other products & services	73,001	145,973	75,265
	$365,264	$680,401	$397,267

Net Sales and long-lived assets by geographic region based on the physical location of the operation recording the sales or the asset, follow (in thousands):

	Net Sales	Long-Lived Assets*
2001		
United States	$314,567	$90,489
Europe	33,996	359
Asia Pacific	16,701	1,770
	$365,264	$92,618
2000		
United States	$596,934	$74,276
Europe	58,351	458
Asia Pacific	25,116	919
	$680,401	$75,653
1999		
United States	$343,345	$71,740
Europe	35,482	752
Asia Pacific	18,440	1,317
	$397,267	$73,809

* Long-lived assets consist of property, plant and equipment - net.

International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, (in thousands) were $226,483 (62.0%) in 2001, $472,146 (69.4%) in 2000 and $212,445 (53.5%) in 1999.

Note 13. Income Taxes

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

	December 31,

	2001	2000	1999
United States	$(58,643)	$108,296	$12,999
Foreign	6,037	16,406	5,216
Equity income of Sumitomo Eaton Nova Corporation	12,205	19,570	1,338
	$(40,401)	$144,272	$19,553

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

	December 31,		
	2001	2000	1999
Current:			
United States			
Federal	$ (6,859)	$44,761	$ 4,150
State	(556)	3,546	1,883
Foreign	3,194	5,205	1,850
	(4,221)	53,512	7,883
Deferred:			
United States	(14,708)	(8,355)	(2,211)
Foreign	(1,309)	—	(547)
	(16,017)	(8,355)	(2,758)
	$(20,238)	$45,157	$ 5,125

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 (in thousands):

	2001		2000	1999
	Amount	Rate	Rate	Rate
Income taxes (credit) at the United States statutory rate	$(14,140)	(35.0)%	35.0%	35.0%
State taxes, net of federal income tax benefit	(1,068)	(2.6)	1.6	6.3
Amortization of goodwill	1,293	3.2	0.9	6.4
Current and prior years' foreign sales corporation benefit	—	—	(2.1)	(1.5)
Current and prior years' credit for increasing research activities	(2,048)	(5.1)	(0.7)	(15.9)
Foreign income tax rate differentials	(227)	(0.6)	(0.4)	(2.7)
Foreign tax credit	—	—	—	(0.2)
Income tax rate differential related to Sumitomo Eaton Nova Corporation	(4,272)	(10.6)	(4.6)	(2.4)
Other—net	224	0.6	1.6	1.2
	$(20,238)	(50.1)%	31.3%	26.2%

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

	Current Assets	Long-term Assets	Long-term Liabilities
2001			
Inventories	$10,819	—	—
Accrued warranty	5,645	—	—
Accrued vacation	1,280	—	—
Property, plant & equipment	—	$ (4,472)	—
Intangible assets	—	(5,144)	—
Net operating loss carryforwards	—	22,148	—
Tax credit carryforwards	—	3,048	—
Other items	(879)	1,592	—
	$16,865	$17,172	—
2000			
Inventories	$11,309	—	—
Accrued warranty	8,300	—	—
Accrued vacation	2,206	—	—

Property, plant & equipment	—	—	$(2,032)
Intangible assets	—	—	(5,245)
Other items	3,596	—	(114)
	$25,411	—	$(7,391)

As of December 31, 2001, the Company has approximately $34.0 million of deferred tax assets related principally to domestic loss carryforwards that expire in 2021, for which no valuation allowance has been recorded. The realization of these assets is based upon estimates of future taxable income. Projections of future earnings are based on revenue assumptions consistent with industry forecasts for the next five years along with the necessary operating expenses to support our revenue assumptions. Based on these projections, management estimates that the loss carryforwards will be fully utilized within three years. Should these projections not materialize and future taxable losses continue, a valuation allowance of up to $34.0 million may be required.

As of December 31, 2001, the Company has federal, state and foreign tax net operating loss carryforwards, the tax effect of which is approximately $22.1 million. These carryforwards may be utilized on various dates through 2021. The Company also has tax credit carryforwards of approximately $3.0 million. These carryforwards may be utilized through 2021.

No provision has been made for income taxes on undistributed earnings of operations outside the United States of $87.4 million at December 31, 2001, which includes $54.1 million for Sumitomo Eaton Nova Corporation, since the earnings retained have been reinvested by the operations. If distributed, such remitted earnings would be subject to withholding taxes but substantially free of United States income taxes.

Note 14. Significant Customers

No single customer represented more than 10% of net sales in 2001. One customer individually accounted for 13.9% of net sales in fiscal 2000. Three customers individually accounted for 15.9%, 10.6%, and 10.5% of net sales in 1999.

Note 15. Sumitomo Eaton Nova Corporation

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):

	2001	2000	1999
Twelve months ended November 30:			
Net sales	$185,841	$261,351	$110,722
Income from operations	41,716	73,022	5,005
Net income	24,410	39,139	2,676
November 30:			
Current assets	113,963	185,116	
Noncurrent assets	40,797	44,909	
Current liabilities	57,472	140,178	
Noncurrent liabilities	577	615	

The fiscal 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):

	2001	2000	1999
Net sales to SEN	$ 8,390	$11,913	$6,660
Royalty income from SEN	5,835	13,464	3,838
Dividends received	444	375	—
Axcelis' equity in income of SEN	12,205	19,570	1,338
Accounts receivable at December 31 from SEN	401	10,915	3,246

The amount of Axcelis' retained earnings comprised of undistributed earnings of SEN was $24.3 million and $12.5 million at December 31, 2001 and 2000, respectively.

Note 16. Transactions with Eaton Corporation

Prior to the initial public offering, Axcelis' consolidated statements of operations include an allocation of Eaton's general corporate expenses to reflect the services provided or benefits received by Axcelis. Such allocated expenses were (in millions) $8.2 in 2000 and $15.0 in 1999. This allocation was based on Eaton's internal expense allocation methodology which charged these expenses to operating locations based both on net working capital, excluding cash equivalents and short-term debt, and on property, plant and equipment-net. Management believes this was a reasonable method of allocating these expenses and was representative of the operating expenses that would have been incurred had Axcelis operated on a stand-alone basis. The consolidated statements of operations do not include an allocation of interest expense related to Eaton's debt obligations, consistent with Eaton's internal expense allocation methodology.

Commencing with the initial public offering, the Company entered into various agreements with Eaton, which provide 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 and 2000 amounted to $3.4 million and $5.5 million, respectively.

At December 31, 2000, the Company had a payable to Eaton of $25.8 million and taxes payable of $31.2 million. The payable to Eaton arose primarily from expenditures, such as workers' compensation claims, health claims, legal and other professional services, and other general and administrative expenses, made by Eaton on Axcelis' behalf subsequent to the initial public offering. Taxes payable were payable to Eaton as the former parent filed a consolidated return for 2000, which included Axcelis. Effective January 1, 2001, Axcelis began paying for the majority of these costs as the Company transitioned off of Eaton's systems and support. Amounts payable to Eaton as of December 31, 2000 were paid in January, 2001.

Note 17. Quarterly Results of Operations (unaudited)

The historical financial information, particularly for the periods prior to the separation date, may not be indicative of Axcelis' future performance.

	Dec. 31 2001	**Sept. 30 2001**	**June 30 2001**	**March 31 2001**	**Dec. 31 2000**	**Sept. 30 2000**	**June 30 2000**	**March 31 2000**
Net sales	$ 49,317	$ 61,796	$102,002	$152,149	$188,997	$182,509	$165,844	$143,051
Gross profit	9,982	18,595	39,100	63,348	83,385	81,182	73,268	61,474
Net income (loss)	(17,993)	(16,211)	(2,150)	16,191	30,202	28,480	21,571	18,862
Basic and diluted net income (loss) per share	$ (0.18)	$ (0.17)	$ (0.02)	$ 0.17	$ 0.31	$ 0.30	$ 0.27	$ 0.24

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: MARCH 11, 2002 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	March 11, 2002
/s/ CORNELIUS F. MOSES, III Cornelius F. Moses, III	Principal Accounting and Financial Officer	March 11, 2002
/s/ ALEXANDER M. CUTLER	Director	March 11, 2002

Alexander M. Cutler		
/s/ STEPHEN R. HARDIS Stephen R. Hardis	Director	March 11, 2002
/s/ NED C. LAUTENBACH Ned C. Lautenbach	Director	March 11, 2002
/s/ PATRICK H. NETTLES Patrick H. Nettles	Director	March 11, 2002
/s/ PHILIP S. PAUL Philip S. Paul	Director	March 11, 2002
/s/ NAOKI TAKAHASHI Naoki Takahashi	Director	March 11, 2002
/s/ H. BRIAN THOMPSON H. Brian Thompson	Director	March 11, 2002
/s/ GARY L. TOOKER Gary L. Tooker	Director	March 11, 2002

AXCELIS TECHNOLOGIES, INC.

INDEX TO EXHIBITS

to Form 10-K for the Year ended December 31, 2001.

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. Filed herewith.
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.
4.4	Revolving Credit Agreement dated as of October 11, 2001, 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 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 July 31, 2001. Incorporated by reference from Exhibit 10.1 from the Company's Report on Form 10-Q for the quarter ended June 30, 2001, filed with the Commission on August 14, 2001.
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*	Employment Agreement between the Company and Brian R. Bachman. Incorporated by reference from Exhibit 10.4 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
10.6*	Settlement Agreement and Release between the Company and Brian R. Bachman dated January 23, 2002. Filed herewith.
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).
21.1	Subsidiaries of the Company. Filed herewith.
23.1	Consent of Ernst & Young LLP, Independent Auditors. Filed herewith.
99	Factors affecting future operating results. Filed herewith.

* 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, 2001				
Allowance for doubtful accounts and returns	$2,109	$1,996	$ 3	$4,102
Year Ended December 31, 2000				
Allowance for doubtful accounts and returns	2,048	247	186	2,109
Year Ended December 31, 1999				
Allowance for doubtful accounts and returns	2,028	505	485	2,048

EXHIBIT 3.2

BY-LAWS
OF
AXCELIS TECHNOLOGIES, INC.

Adopted by the Board of Directors on January 24, 2002

ARTICLE I STOCKHOLDERS

SECTION 1.1. Place of Meetings. All meetings of stockholders shall be held at the principal office of the corporation or at such other place as may be named in the notice.

SECTION 1.2. Annual Meeting. The annual meeting of stockholders for the election of directors and the transaction of such other business as may properly come before the meeting shall be held on such date and at such hour and place as the directors or an officer designated by the directors may determine. If the annual meeting is not held on the date designated therefor, the directors shall cause the meeting to be held as soon thereafter as convenient.

SECTION 1.3. Special Meetings. Special meetings of the stockholders may be called at any time by the Chairman of the Board, the Chief Executive Officer, or by the Board of Directors.

SECTION 1.4. Notice of Meetings. Except where some other notice is required by law, written notice of each meeting of stockholders, stating the place, date and hour thereof and the purposes for which the meeting is called, shall be given by the Secretary not less than ten nor more than sixty days before the date fixed for such meeting, to each stockholder of record entitled to vote at such meeting. Notice shall be given personally to each stockholder or left at his or her residence or usual place of business or mailed postage prepaid and addressed to the stockholder at his or her address as it appears upon the records of the corporation. In case of the death, absence, incapacity or refusal of the Secretary, such notice may be given by a person designated either by the Secretary or by the person or persons calling the meeting or by the Board of Directors. A waiver of such notice in writing, signed by the person or persons entitled to said notice, whether before or after the time stated therein, shall be deemed equivalent to such notice. Attendance of a person at a meeting of stockholders shall constitute a waiver of notice of such meeting, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice. Except as required by statute, notice of any adjourned meeting of the stockholders shall not be required.

SECTION 1.5. Record Date. The Board of Directors may fix in advance a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days before any other action to which such record date relates. If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held, and the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

SECTION 1.6. Nomination of Directors. Only persons who are nominated in accordance with the following procedures shall be eligible for election as directors at any annual or special meeting of stockholders. Nominations of persons for election as directors may be made only by or at the direction of the Board of Directors, or by any stockholder entitled to vote for the election of directors at the meeting in compliance with the notice procedures set forth in this Section 1.6. Such nominations, other than those made by or at the direction of the Board of Directors, shall be made pursuant to timely notice in writing to the Secretary. To be timely, a stockholder's notice shall be delivered to or mailed and received at the principal executive offices of the corporation by the close of business on the Advance Notice Date. For the purposes of these by-laws, the "Advance Notice Date" shall be one of the following:

(a) in the case of an annual meeting only, the date 90 days before the anniversary date of the prior year's meeting, if (i) there was an annual meeting in the prior year and (ii) the date of the current year's annual meeting is not more than 30 days before or after the anniversary date of the prior year's annual meeting; or

(b) if clause (a) does not apply, the date 45 days prior to the date of the current year's annual meeting or a special meeting if at least 60 days' notice or prior public disclosure of the date of the current year's annual meeting or the special meeting is given or made; or

(c) if neither clause (a) nor clause (b) applies, the date 15 days after the day on which notice of the date of the current year's annual meeting or the special meeting was mailed or public disclosure was made.

Such stockholder's notice shall set forth (a) as to each person whom the stockholder proposes to nominate for election or re-election as a director, (i) the name, age, business address and residence address of the person, (ii) the principal occupation or employment of the person, (iii) the class and number of shares of capital stock of the corporation that are beneficially owned by the person and (iv) any other information relating to the person that is required to be disclosed in solicitations for proxies for election of directors pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended, or any successor provision thereto; and (b) as to the stockholder giving the notice, (i) the name and record address of such stockholder and (ii) the class and number of shares of capital stock of the corporation that are beneficially owned by such stockholder.

The chairman of the meeting shall, if the facts warrant, determine and declare to the meeting that a nomination was not made in accordance with the foregoing procedure, and if the chairman should so determine, he or she shall so declare to the meeting and the defective nomination shall be disregarded.

SECTION 1.7. Advance Notice of Business at Annual Meetings. At any annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be brought properly before an annual meeting, business must be either (a) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Chief Executive Officer, President or the Board of Directors, (b) otherwise properly brought before the meeting by or at the direction of the Board of Directors, or (c) properly brought before the meeting by a stockholder. In addition to any other applicable requirements, for business to be brought properly before an annual meeting by a stockholder, the stockholder must have given timely notice thereof in writing to the Chairman of the Board, if any, the Chief Executive Officer, the President or the Secretary. To be timely, a stockholder's notice must be delivered to or mailed and received at the principal executive offices of the corporation by the close of business on the Advance Notice Date as defined in Section 1.6 of Article I hereof. A stockholder's notice shall set forth as to each matter the stockholder proposes to bring before the annual meeting (a) a brief description of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (b) the name and record address of the stockholder proposing such business, (c) the class and number of shares of the corporation that are beneficially owned by the stockholder and (d) any material interest of the stockholder in such business.

Notwithstanding anything in these by-laws to the contrary, no business shall be conducted at the annual meeting except in accordance with the procedures set forth in this Section 1.7, *provided, however*, that nothing in this Section 1.7 shall be deemed to preclude discussion by any stockholder of any business properly brought before the annual meeting in accordance with said procedure.

The chairman of an annual meeting shall, if the facts warrant, determine and declare to the meeting that business was not properly brought before the meeting in accordance with the foregoing procedure, and if the chairman should so determine, he or she shall so declare to the meeting and any such business not properly brought before the meeting shall not be transacted.

SECTION 1.8. *Voting List*. The officer who has charge of the stock ledger of the corporation shall make or have made, at least 10 days before every meeting of stockholders, a complete list of the stockholders, arranged in alphabetical order and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting, during ordinary business hours, for a period of at least 10 days before the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. The stock ledger shall be the only evidence as to who are the stockholders entitled to examine the stock ledger, the list required by this section or the books of the corporation, or to vote at any meeting of stockholders.

SECTION 1.9. *Quorum of Stockholders*. At any meeting of the stockholders, the holders of a majority in interest of all stock issued and outstanding and entitled to vote upon a question to be considered at the meeting, present in person or represented by proxy, shall constitute a quorum for the consideration of such question, but in the absence of a quorum a smaller group may adjourn any meeting from time to time. When a quorum is present at any meeting, a majority of the votes properly cast shall, except where a different vote is required by law, by the Certificate of Incorporation or by these by-laws, decide any question brought before such meeting. Any election by stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote at the election.

SECTION 1.10. *Proxies and Voting*. Unless otherwise provided in the Certificate of Incorporation, each stockholder shall at every meeting of the stockholders be entitled to one vote in person or by proxy for each share of the capital stock held of record by such stockholder, but no proxy shall be voted or acted upon after three years from its date, unless said proxy provides for a longer period. Persons holding stock in a fiduciary capacity shall be entitled to vote the shares so held, and persons whose stock is pledged shall be entitled to vote unless in the transfer by the pledgor on the books of the corporation the pledgee shall have been expressly empowered to vote thereon, in which case only the pledgee or the pledgee's proxy may represent said stock and vote thereon. Shares of the capital stock of the corporation belonging to the corporation or to another corporation, a majority of whose shares entitled to vote in the election of directors is owned by the corporation, shall neither be entitled to vote nor be counted for quorum purposes.

SECTION 1.11. *Conduct of Meeting*. Meetings of the stockholders shall be presided over by one of the following officers in the order specified and if present and acting: the Chairman or, in the event of the Chairman's absence or disability, the Vice Chairman, if any, or, in the event of the Vice Chairman's absence or disability, the Chief Executive Officer, or in the event of such person's absence or disability, a presiding officer chosen by a majority of the Board of Directors. The Secretary of the corporation, if present, or an Assistant Secretary, shall act as secretary of every meeting, but if neither the Secretary nor an Assistant Secretary is present the chairman of the meeting shall appoint a secretary of the meeting.

The Board of Directors may adopt such rules, regulations and procedures for the conduct of the meeting of stockholders as it shall deem appropriate. Except to the extent inconsistent with such rules and regulations as adopted by the Board of Directors, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, (i) the establishment of an agenda or order of business for the meeting, (ii) rules and procedures for maintaining order at the meeting and the safety of those present, (iii) limitations on attendance at or participation in the meeting to stockholders of record of the corporation, their duly authorized and constituted proxies or such other persons as the chairman of the meeting shall determine, (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof, and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

ARTICLE II DIRECTORS

SECTION 2.1. General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation that are not by law required to be exercised by the stockholders. In the event of a vacancy in the Board of Directors, the remaining directors, except as otherwise provided by law, may exercise the powers of the full Board until the vacancy is filled.

SECTION 2.2. Number; Election; Tenure and Qualification. Subject to any restrictions contained in the Certificate of Incorporation, the number of directors that shall constitute the whole Board shall be fixed by resolution of the Board of Directors. The directors shall be elected in the manner provided in the Certificate of Incorporation, by such stockholders as have the right to vote thereon. The number of directors may be increased or decreased by action of the Board of Directors. Directors need not be stockholders of the corporation.

SECTION 2.3. Enlargement of the Board. Subject to any restrictions contained in the Certificate of Incorporation, the number of the Board of Directors may be increased at any time, such increase to be effective immediately unless otherwise specified in the resolution, by vote of a majority of the directors then in office.

SECTION 2.4. Vacancies. Unless and until filled by the stockholders and except as otherwise determined by the Board of Directors in establishing a series of Preferred Stock as to directors elected by the holders of such series, any vacancy on the board of directors that results from an increase in the number of directors shall be filled only by a majority of the board of directors then in office, provided that a quorum is present, and any other vacancy occurring in the board of directors shall be filled by a majority of the directors then in office, even if less than a quorum, or by a sole remaining director. If at any time there are no directors in office, then an election of directors may be held in accordance with the General Corporation Law of the State of Delaware.

SECTION 2.5. Resignation. Any director may resign at any time upon written notice to the corporation. Such resignation shall take effect at the time specified therein, or if no time is specified, at the time of its receipt by the Chairman, the Chief Executive Officer or the Secretary.

SECTION 2.6. Removal. Directors may be removed from office only as provided in the Certificate of Incorporation. The vacancy or vacancies created by the removal of a director may be filled by the stockholders at the meeting held for the purpose of removal or, if not so filled, by the directors in the manner provided in Section 2.4 of Article II hereof.

SECTION 2.7. Committees. The Board of Directors may, by resolution or resolutions passed by a majority of the whole Board of Directors, designate one or more committees, each committee to consist of one or more directors of the corporation. The Board of Directors may designate one or more directors as alternate members of any committee to replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of any member of any such committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of such absent or disqualified member. The Board of Directors shall have the power to change the members of any such committee at any time, to fill vacancies therein and to discharge any such committee, either with or without cause, at any time.

Any such committee, to the extent permitted by law and to the extent provided in the resolution of the Board of Directors or in these by-laws, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it.

A majority of all the members of any such committee may fix its rules of procedure, determine its action and fix the time and place, whether within or without the State of Delaware, of its meetings and specify what notice thereof, if any, shall be given, unless the Board of Directors shall otherwise by resolution provide. Each committee shall keep regular minutes of its meetings and make such reports as the Board of Directors may from time to time request.

SECTION 2.8. Meetings of the Board of Directors. Regular meetings of the Board of Directors may be held without call or formal notice at such places either within or without the State of Delaware and at such times as the Board may by vote from time to time determine. A regular meeting of the Board of Directors may be held without call or formal notice immediately after and at the same place as the annual meeting of the stockholders, or any special meeting of the stockholders at which a Board of Directors is elected.

Special meetings of the Board of Directors may be held at any place either within or without the State of Delaware at any time when called by the Chairman of the Board or, in the event of such person's absence or disability, by the Vice Chairman of the Board, if any, or, in the event of such person's absence or disability, by the Chief Executive Officer, or, in the event of such person's absence or disability, by the President or, in the event of such person's absence or disability, by a majority of the Board of Directors. Reasonable notice of the time and place of a special meeting shall be given to each director unless such notice is waived by attendance or by written waiver in the manner provided in these by-laws for waiver of notice by stockholders. Notice may be given by, or by a person designated by, the Secretary, the person or persons calling the meeting, or the Board of Directors. No notice of any adjourned meeting of the Board of Directors shall be required. In any case it shall be deemed sufficient notice to a director to send notice by mail at least seventy-two hours, or by telegram or fax at least forty-eight hours, before the meeting, addressed to such director at his or her usual or last known business or home address.

Directors or members of any committee may participate in a meeting of the Board of Directors or of such committee by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

SECTION 2.9. Quorum and Voting. A majority of the total number of directors shall constitute a quorum, except that when a vacancy or vacancies exist in the Board, a majority of the directors then in office (but not less than one-third of the total number of the directors) shall constitute a quorum. A majority of the directors present, whether or not a quorum is present, may adjourn any meeting from time to time. The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the Board of Directors, except where a different vote is required by law, by the Certificate of Incorporation or by these by-laws.

SECTION 2.10. Compensation. The Board of Directors may fix fees for their services and for their membership on committees, and expenses of attendance may be allowed for attendance at each meeting. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity, as an officer, agent or otherwise, and receiving compensation therefor.

SECTION 2.11. Action Without Meeting. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting and without notice if a written consent thereto is signed by all members of the Board of Directors or of such committee, as the case may be, and such written consent is filed with the minutes of proceedings of the Board of Directors or of such committee.

ARTICLE III OFFICERS

SECTION 3.1. Number. The officers of the Corporation shall be chosen by the Board of Directors and may include, without limit, a Chairman of the Board of Directors, a Vice Chairman of the Board of Directors, a Chief Executive Officer, a President, one or more Vice Presidents, a Secretary, a Treasurer and such other officers as may be elected in accordance with Article III, Section 3.2 of these By-Laws. Any number of offices may be held by the same person. No officer need be a director of the Corporation. The Chairman of the Board of Directors shall be a non-executive position.

SECTION 3.2. Election. Unless otherwise determined by the Board of Directors, the officers of the Corporation shall be elected by the Board of Directors at the annual meeting of the Board of Directors, and shall be elected to hold office until the next succeeding annual meeting of the Board of Directors. Each officer shall hold office until his or her successor has been elected and qualified, or until his or her earlier death, resignation or removal.

SECTION 3.3. Compensation. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors or any committee thereof appointed for the purpose.

SECTION 3.4. Removal and Resignation; Vacancies. Any officer may be removed for or without cause at any time by the Board of Directors. Any officer may resign at any time by delivering a written notice of resignation, signed by such officer, to the Board of Directors, the Chief Executive Officer, or the President. Unless otherwise specified therein, such resignation shall take effect upon delivery. Any vacancy occurring in any office of the Corporation by death, resignation, removal or otherwise, shall be filled by the Board of Directors.

SECTION 3.5. Authority and Duties of Officers. The officers of the Corporation shall have such authority and shall exercise such powers and perform such duties as may be specified in these By-Laws, except that in any event each officer shall exercise such powers and perform such duties as may be required by law.

SECTION 3.6. The Chairman. The Chairman, or, in the event of the Chairman's absence or disability, the Vice Chairman, or in the event of the Vice Chairman's absence or disability, a presiding officer chosen by a majority of the Board of Directors, shall preside at all meetings of the stockholders and of the Board of Directors and shall perform such other duties as may from time to time be assigned to the Chairman by the Board of Directors.

SECTION 3.7. The Vice Chairman. The Vice Chairman shall assist the Chairman and shall perform such other duties as may from time to time be assigned to the Vice Chairman by the Chairman or by the Board of Directors.

SECTION 3.8. The Chief Executive Officer. The Chief Executive Officer shall have general executive charge and control over the affairs of the Corporation, subject to the Board of Directors, shall see that all orders and resolutions of the Board of Directors are carried out, shall report thereon to the Board of Directors, and shall have such other powers and perform such other duties as shall be prescribed from time to time by the Board of Directors. In the absence of the President, the duties of the President shall be performed, and the President's powers may be exercised, by the Chief Executive Officer, or in the absence of the Chief Executive Officer, by such Vice President as shall be designated by the Chief Executive Officer, or failing such designation, such duties shall be performed and such powers may be exercised by each Vice President in the order described in Section 3.10, subject in any case to review and superseding action by the Chief Executive Officer.

SECTION 3.9. The President. The President shall have general and active management of the operations of the business of the Corporation, subject to the authority and direction of the Chief Executive Officer. The President shall have and exercise such further powers and duties as may be specifically delegated to or vested in the President from time to time by these By-Laws, the Chief Executive Officer or the Board of Directors. In the absence of the Chief Executive Officer, or in the event of the inability of or refusal to act by the Chief Executive Officer, or if the Board of Directors has not designated a Chief Executive Officer, the President shall perform the duties of the Chief Executive Officer, and, when so acting, shall have all of the powers and be subject to all of the restrictions upon the Chief Executive Officer.

SECTION 3.10. The Vice Presidents. Each Vice President shall perform such duties and exercise such powers as may be assigned to him or her from time to time by the Board of Directors, the Chief Executive Officer or the President.

In the case of a Vice President who is designated as the Chief Financial Officer, he or she shall perform such duties and exercise such powers as may be assigned to him or her from time to time by the Board of Directors or the Chief Executive Officer, including without limitation, the power and duty to render to the Board of Directors or the Chief Executive Officer, whenever requested, a statement of the financial condition of the Corporation, and to render a full financial report at the annual meeting of the stockholders, if called upon to do so, and to require from all officers or agents of the Corporation reports or statements giving such information as he or she may desire with respect to any and all financial transactions of the Corporation.

The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors. In the absence of the President or in the event of his or her inability or refusal to act, the duties of the President shall be performed by the Executive Vice-President, if any, Senior Vice President, if any, or Vice President, if any, in that order (and, in the event there be more than one person in any such office, in the order of their seniority), and when so acting, such officer shall have all the powers of and be subject to all the restrictions upon the President.

SECTION 3.11. Secretary and Assistant Secretaries. The Secretary shall attend all meetings of the Board of Directors and of the stockholders and record all the proceedings of such meetings in a book to be kept for that purpose, shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the Board of Directors, shall maintain, or cause to be maintained, a stock ledger and prepare, or cause to be prepared, lists of stockholders and their addresses as required and shall have custody of the corporate seal, which the Secretary or any Assistant Secretary shall have authority to affix to any instrument requiring it and attest by any of their signatures. The Board of Directors may give general authority to any other officer to affix and attest the seal of the corporation.

Any Assistant Secretary may, in the absence of the Secretary or in the event of the Secretary's inability or refusal to act, perform the duties and exercise the powers of the Secretary.

SECTION 3.12. Treasurer and Assistant Treasurers. The Treasurer shall have the custody of the corporate funds and securities, shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by or pursuant to resolution of the Board of Directors. The Treasurer shall disburse the funds of the corporation upon the authorized depositories, taking proper vouchers for such disbursements.

Any Assistant Treasurer may, in the absence of the Treasurer or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the Treasurer.

SECTION 3.13. Additional Officers. The Board of Directors may appoint such other officers and agents as it may deem appropriate, and such other officers and agents shall hold their offices for such terms and shall exercise such powers and perform such duties as may be determined from time to time by the Board of Directors. The Board of Directors from time to time may delegate to any officer or agent the power to appoint subordinate officers or agents and to prescribe their respective rights, terms of office, authorities and duties. Any such officer or agent may remove any such subordinate officer or agent appointed by him or her, for or without cause.

ARTICLE IV STOCK

SECTION 4.1. Certificates of Stock. One or more stock certificates, signed by the Chairman or Vice-Chairman of the Board of Directors or by the President or a Vice-President and by the Treasurer or an Assistant Treasurer or the Secretary or an Assistant Secretary shall be issued to each stockholder certifying the number of shares owned by the stockholder in the corporation. Any or all signatures on any such certificate may be facsimiles. In case any officer, transfer agent or registrar who shall have signed or whose facsimile signature shall have been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if he or she were such officer, transfer agent or registrar at the date of issue.

Each certificate for shares of stock that are subject to any restriction on transfer pursuant to the Certificate of Incorporation, the by-laws, applicable securities laws, or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

SECTION 4.2. Transfers of Shares of Stock. Subject to the restrictions, if any, stated or noted on the stock certificates, shares of stock may be transferred on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. The corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to that stock, regardless of any transfer, pledge or other disposition of that stock, until the shares have been transferred on the books of the corporation in accordance with the requirements of these by-laws.

SECTION 4.3. Lost Certificates. A new stock certificate may be issued in the place of any certificate theretofore issued by the corporation and alleged to have been lost, stolen, destroyed or mutilated, upon such terms in conformity with law as the Board of Directors shall prescribe. The directors may, in their discretion, require the owner of the lost, stolen, destroyed or mutilated certificate, or the owner's legal representatives, to give the corporation a bond, in such sum as they may direct, to indemnify the corporation against any claim that may be made against it on account of the alleged loss, theft, destruction or mutilation of any such certificate, or the issuance of any such new certificate.

SECTION 4.4. Fractional Share Interests. The corporation may, but shall not be required to, issue fractions of a share. If the corporation does not issue fractions of a share, it shall (i) arrange for the disposition of fractional interests by those entitled thereto, (ii) pay in cash the fair value of fractions of a share as of the time when those entitled to receive such fractions are determined, or (iii) issue scrip or warrants in registered or bearer form, which shall entitle the holder to receive a certificate for a full share upon the surrender of such scrip or warrants aggregating a full share. A certificate for a fractional share shall, but scrip or warrants shall not unless otherwise provided therein, entitle the holder to exercise voting rights, to receive dividends thereon, and to participate in any of the assets of the corporation in the event of liquidation. The Board of Directors may cause scrip or warrants to be issued subject to the conditions that they shall become void if not exchanged for certificates representing full shares before a specified date, or subject to the conditions that the shares for which scrip or warrants are exchangeable may be sold by the corporation and the proceeds thereof distributed to the holders of scrip or warrants, or subject to any other conditions that the Board of Directors may impose.

SECTION 4.5. Dividends. Subject to the provisions of the Certificate of Incorporation, the Board of Directors may, out of funds legally available therefor, at any regular or special meeting, declare dividends upon the capital stock of the corporation as and when they deem expedient.

ARTICLE V INDEMNIFICATION OF DIRECTORS AND OFFICERS

The corporation shall, to the extent legally permissible, indemnify each person who may serve or who has served at any time as a director or officer of the corporation or of any of its subsidiaries, or who at the request of the corporation may serve or at any time has served as a director, officer or trustee of, or in a similar capacity with, another organization or an employee benefit plan, against all expenses and liabilities (including counsel fees, judgments, fines, excise taxes, penalties and amounts payable in settlements) reasonably incurred by or imposed upon such person in connection with any threatened, pending or completed action, suit or other proceeding, whether civil, criminal, administrative or investigative, in which he may become involved by reason of his serving or having served in such capacity (other than a proceeding voluntarily initiated by such person unless he is successful on the merits, the proceeding was authorized by the corporation or the proceeding seeks a declaratory judgment regarding his own conduct); provided that no indemnification shall be provided for any such person with respect to any matter as to which he shall have been finally adjudicated in any proceeding not to have acted in good faith in the reasonable belief that his action was in the best interests of the corporation and, with respect to any criminal action or proceeding, he had reasonable cause to believe his conduct was unlawful or, to the extent such matter relates to service with respect to any employee benefit plan, in the best interests of the participants or beneficiaries of such employee benefit plan; and provided, further, that as to any matter disposed of by a compromise payment by such person, pursuant to a consent decree or otherwise, the payment and indemnification thereof have been approved by the corporation, which approval shall not unreasonably be withheld, or by a court of competent jurisdiction. Such indemnification shall include payment by the corporation of expenses incurred in defending a civil or criminal action or proceeding in advance of the final disposition of such action or proceeding, upon receipt of an undertaking by the person indemnified to repay such payment if he shall be adjudicated to be not entitled to indemnification under this article, which undertaking may be accepted without regard to the financial ability of such person to make repayment.

A person entitled to indemnification hereunder whose duties include service or responsibilities as a fiduciary with respect to a subsidiary or other organization shall be deemed to have acted in good faith in the reasonable belief that his action was in the best interests of the corporation if he acted in good faith in the reasonable belief that his action was in the best interests of such subsidiary or organization or of the participants or beneficiaries of, or other persons with interests in, such subsidiary or organization to whom he had a fiduciary duty.

For purposes of determining whether a person is entitled to indemnification hereunder, the termination of any action, suit or other proceeding by judgment, order, settlement (with or without court approval), conviction, or upon a plea of nolo contendere, or its equivalent, shall not create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful.

Where indemnification hereunder requires authorization or approval by the corporation, such authorization or approval shall be conclusively deemed to have been obtained, and in any case where a director of the corporation approves the payment of indemnification, such director shall be wholly protected, if:

(i) the payment has been approved or ratified (l) by a majority vote of a quorum of the directors consisting of persons who are not at that time parties to the proceeding, (2) by a majority vote of a committee of two or more directors who are not at that time parties to the proceeding and are selected for this purpose by the full board (in which selection directors who are parties may participate), or (3) by a majority vote of a quorum of the outstanding shares of stock of all classes entitled to vote for directors, voting as a single class, which quorum shall consist of stockholders who are not at that time parties to the proceeding; or

(ii) the action is taken in reliance upon the opinion of independent legal counsel (who may be counsel to the corporation) appointed for the purpose by vote of the directors or in the manner specified in clauses (l), (2) or (3) of subparagraph (i); or

(iii) the payment is approved by a court of competent jurisdiction; or

(iv) the directors have otherwise acted in accordance with the standard of conduct set forth in the Delaware General Corporation Law.

Any indemnification or advance of expenses under this article shall be paid promptly, and in any event within 30 days, after the receipt by the corporation of a written request therefor from the person to be indemnified, unless with respect to a claim for indemnification the corporation shall have determined that the person is not entitled to indemnification. If the corporation denies the request or if payment is not made within such 30 day period, the person seeking to be indemnified may at any time thereafter seek to enforce his rights hereunder in a court of competent jurisdiction and, if successful in whole or in part, he shall be entitled also to indemnification for the expenses of prosecuting such action. Unless otherwise provided by law, the burden of proving that the person is not entitled to indemnification shall be on the corporation.

The right of indemnification under this article shall be a contract right inuring to the benefit of the directors, officers and other persons entitled to be indemnified hereunder and no amendment or repeal of this article shall adversely affect any right of such director, officer or other person existing at the time of such amendment or repeal.

The indemnification provided hereunder shall inure to the benefit of the heirs, executors and administrators of a director, officer or other person entitled to indemnification hereunder. The indemnification provided hereunder may, to the extent authorized by the corporation, apply to the directors, officers and other persons associated with constituent corporations that have been merged into or consolidated with the corporation who would have been entitled to indemnification hereunder had they served in such capacity with or at the request of the corporation.

The right of indemnification under this article shall be in addition to and not exclusive of all other rights to which such director or officer or other persons may be entitled. Nothing contained in this article shall affect any rights to indemnification to which corporation employees or agents other than directors and officers and other persons entitled to indemnification hereunder may be entitled by contract or otherwise under law.

The corporation shall have power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, trustee, employee or agent of another corporation, partnership, joint venture, trust, other enterprise or employee benefit plan against any liability asserted against such person and incurred by such person in any such capacity or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of the General Corporation Law of the State of Delaware.

ARTICLE VI GENERAL PROVISIONS

SECTION 6.1. Fiscal Year. Except as otherwise designated from time to time by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January and end on the last day of December.

SECTION 6.2. Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors. The Secretary shall be the custodian of the seal, and a duplicate seal may be kept and used by each Assistant Secretary and by any other officer the Board of Directors may authorize.

SECTION 6.3. Certificate of Incorporation. All references in these by-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as in effect from time to time.

SECTION 6.4. Execution of Instruments. Unless otherwise determined by resolution of the Board of Directors, the Chief Executive Officer, the President, and Vice President, the Secretary or the Treasurer shall have power to execute and deliver on behalf and in the name of the corporation any instrument requiring the signature of an officer of the corporation, including deeds, contracts, mortgages, bonds, notes, debentures, checks, drafts and other orders for the payment of money. In addition, the Board of Directors, the President, each Vice President, the Treasurer and the Secretary may expressly delegate such powers to any other officer or agent of the corporation.

SECTION 6.5. Voting of Securities. Unless otherwise determined by resolution of the Board of Directors, the Chief Executive Officer, the President, any Vice President or any other officer shall have full power and authority on behalf of the corporation to attend any meeting of stockholders of any corporation in which the corporation may hold stock, and to act, vote (or execute proxies to vote) and exercise in person or by proxy all other rights, powers and privileges incident to the ownership of such stock. Such officers acting on behalf of the Corporation shall have full power and authority to execute any instrument expressing consent to or dissent from any action of any such corporation without a meeting. The Board of Directors may by resolution from time to time confer such power and authority upon any other person or persons.

SECTION 6.6. Evidence of Authority. A certificate by the Secretary, an Assistant Secretary or a temporary secretary as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall, as to all persons who rely on the certificate in good faith, be conclusive evidence of that action.

SECTION 6.7. Transactions with Interested Parties. No contract or transaction between the corporation and one or more of the directors or officers, or between the corporation and any other corporation, partnership, association or other organization in which one or more of the directors or officers are directors or officers or have a financial interest, shall be void or voidable solely for that reason or solely because the director or officer is present at or participates in the meeting of the Board of Directors or a committee of the Board of Directors that authorizes the contract or transaction or solely because the vote of any such director is counted for such purpose, if:

(1) The material facts as to the relationship or interest and as to the contract or transaction are disclosed or are known to the Board of Directors or such committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum; or

(2) The material facts as to the relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or

(3) The contract or transaction is fair to the corporation as of the time it is authorized, approved or ratified by the Board of Directors, a committee of the Board of Directors or the stockholders.

Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors or of a committee that authorizes the contract or transaction.

SECTION 6.8. Books and Records. The books and records of the corporation shall be kept at such places within or without the State of Delaware as the Board of Directors may from time to time determine.

ARTICLE VII AMENDMENTS

SECTION 7.1. By the Board of Directors. These by-laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present.

SECTION 7.2. By the Stockholders. These by-laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of the holders of a majority of votes properly cast at any regular meeting of stockholders, or at any special meeting of stockholders, provided notice of such alteration, amendment, repeal or adoption of new by-laws shall have been stated in the notice of such special meeting.

[Approved by the Board of Directors on January 24, 2002.]

EXHIBIT 10.6

THIS AGREEMENT CONTAINS A WAIVER OF CERTAIN OF YOUR LEGAL RIGHTS. YOU ARE ADVISED TO CONSULT WITH AN ATTORNEY PRIOR TO SIGNING

SETTLEMENT AGREEMENT AND RELEASE

This Settlement Agreement and Release is made as of January 23, 2002, by and between Brian R. Bachman (hereinafter referred to as "Employee") and Axcelis Technologies, Inc., a Delaware corporation, which includes, for purposes of this Settlement Agreement and Release, its subsidiaries and related organizations and, collectively, all of its and their officers, directors, employees, trustees, agents, representatives, predecessors, successors and assigns, and compensation plans and programs sponsored or established by any of the foregoing (hereinafter collectively referred to as the "Corporation").

WHEREAS, Employee was an employee of the Corporation, resigned from employment with Corporation without cause for good reason on January 23, 2002 and has been offered the payments and severance benefits set forth herein upon his termination of employment in settlement of all claims against the Corporation and in exchange for a release of all claims and his agreement not to sue the Corporation; and

WHEREAS, the parties desire to reach a mutually satisfactory and legally binding compromise of any and all claims which have been made, or which could be made, arising out of, or related to, Employee's employment with, or separation of employment from, the Corporation, including, but not limited to, claims arising from or under that certain Employment Agreement by and between the Corporation and the Employee dated June 30, 2000 (the "Employment Agreement");

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein and intending to be legally bound hereby, it is understood and agreed as follows:

1. <u>Severance Payments and Benefits</u>

Subject to Section 1(h):

(a) <u>Severance Payments</u>. On the eighth day after the Corporation receives a fully executed copy of this Settlement Agreement and Release and, if the execution by the Employee of this Settlement Agreement and Release has not then been revoked (the "Effective Date"), the Corporation will pay to the Employee, in a lump sum payment, $1,125,000 (less applicable taxes), that is, the sum of (i) the amount determined by multiplying $600,000, his regular annual base pay at the rate in effect as of the date of this Settlement Agreement and Release, by 1.5, the number of whole and partial years remaining in the term of the Employment Agreement and (ii) $225,000, the amount due as bonus under the Employment Agreement.

(b) Benefit Continuation. Until July 14, 2003, the Corporation will continue to provide, at its cost and expense, life, health and disability coverage (as currently elected by the employee) of the Employee and his dependents enrolled as of January 23, 2002 under the Corporation's employee benefits plans providing life, health and disability coverages as in effect on January 23, 2002. The Employee acknowledges and agrees that his rights under the Consolidated Omnibus Budget Reconciliation Act ("COBRA") have been explained to him and that this section satisfies the obligations of the Corporation to the Employee and his dependents under COBRA. The Corporation will provide financial planning and tax preparation service to the extent and under the same terms and conditions as such service are provided under the Corporation's policy for certain executive officers with respect to the Employee's 2001 and 2002 income tax years.

(c) Equipment. The Corporation shall transfer title to the Notebook computer and carrying case used by the Employee as of January 22, 2001 after such computer has been purged of Corporation-specific and Corporation proprietary information and codes. Through January 23, 2003, the Employee shall have the use of the Corporation cell phone used by him on January 22, 2002 and the Corporation shall pay the monthly amount for the rate plan as in effect for such cell phone through January 23, 2003. Charges with respect to such cell phone in addition to those covered by the rate plan in effect on January 22, 2002 shall be paid by the Employee.

(d) Additional Payment. The Corporation shall pay or make available to the Employee a cash amount not to exceed sixty-five thousand dollars ($65,000) for his use in defraying expenses in connection with the termination of his employment and the negotiation of this Settlement Agreement and Release. As an accommodation to the Employee, the Corporation will pay directly to Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. ("Employee's Law Firm") an amount not to exceed $10,000 if the bill from the Employee's Law Firm is delivered to the Corporation on or before January 30, 2002. Any amount paid to Employee's Law Firm shall be deducted dollar-for-dollar from the amount set forth in the first sentence hereof as otherwise payable to the Employee.

(e) Contingent Success Fee. If a Defined Business Combination (as defined on Schedule 2 attached hereto and incorporated herein) occurs on or before January 23, 2003, the Corporation shall pay the Employee a success fee of $500,000 in cash within seven business days after the consummation of such Defined Business Combination occurs.

(f) Stock Options. Notwithstanding the terms of any Stock Option Agreement between the Corporation and the Employee, all options to purchase shares of common stock of the Company awarded on or before January 23, 2002, as set forth on Schedule 1 and incorporated herein shall be and become fully vested on the Effective Date and the Employee shall be permitted to exercise any such option in accordance with its terms up to and including the date such option would expire, notwithstanding his termination of employment, as such expiration dates are shown on Schedule 1.

(g) ERISA Rights. Except as provided in Section 1(b), nothing in this Settlement Agreement and Release is intended to surrender or waive any right the Employee may have under the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), including, but not limited to, any vested and accrued balances under the Axcelis Technologies Long Term Investment Plan.

(h) Applicable Taxes. Notwithstanding any provision of this Settlement Agreement and Release, the Corporation shall withhold from each and any payment under this Settlement Agreement and Release and any ancillary agreement, policy, practice or plan the amount determined in good faith by the Corporation to be required to be withheld for applicable federal, state and/or local taxes or to be paid by the Employee as federal, state or local payroll taxes. At the option of the Company, such obligations shall be satisfied with respect to distribution of securities by withholding from the number of such securities the number with a value equal to the withholding and payroll tax obligation determined using the closing trading price reported on NASDAQ for the day prior to the day upon which distribution is made.

2. Separation from Employment and No Re-Employment

Effective January 23, 2002, the Employee's separation from service was effective and from and after that date he is and was no longer an employee of the Corporation. To the extent not paid or delivered prior to the date described in Section 1(a), the Corporation shall pay to the Employee his accrued obligations, which shall include his regular base salary through January 23, 2002, payment in lieu of accrued vacation time as of January 23, 2002 and reimbursement of Employee's business expenses incurred before January 23, 2002 for which appropriate requests for reimbursement have been submitted and are payable under the Corporation's business reimbursement policy. The Employee agrees that he has no claim for re-employment, and further agrees that he will not at any time after his execution of this Settlement Agreement and Release apply for employment with the Corporation and that, if he does so, the Corporation may refuse to hire him (for any reason or for no reason) and he will not initiate any proceeding of claim of any kind on account of such refusal.

3. Release of Liability and Covenant Not to Sue

(a) Employee, on behalf of himself, his heirs, dependents, and administrators, absolutely, irrevocably and unconditionally releases and forever discharges the Corporation from any and all claims, known and unknown, under federal, state or municipal law (including all common law claims) and all federal, state (including Massachusetts and Maryland) and local statutes, ordinances and regulations including, but not limited to, claims relating to breach of contract, breach of promise, misrepresentation, wrongful discharge, discrimination on account of age, race, sex, religion, national origin, military status, disability or other such characteristics protected by law, that he may have against the Corporation relating to, or arising out of, his employment with, or separation from employment with the Corporation, whether now apparent or yet to be discovered or which may hereafter develop based on events that have transpired from the beginning of time to the date of his execution of this Settlement Agreement and Release, whether or not any action, claim, complaint, grievance or charge has been filed by Employee or on his behalf (collectively "Civil Rights Provisions"). Further, Employee specifically releases the Corporation from any and all claims arising under the following Civil Rights Provisions, in each case as amended and in effect:

(i) Title VII of the Civil Rights Act of 1964, as amended;
(ii) the Americans With Disabilities Act of 1990; as amended
(iii) the Age Discrimination in Employment Act, as amended; and
(iv) any same or similar state or local law, ordinance or regulation prohibiting such discrimination in employment (including but not limited to 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).

The Employee specifically recognizes that a portion of the amount set forth in Section 1 above is in full satisfaction of any claim the Employee may or could make against the Corporation in connection with the Employment Agreement, or any compensation and deferred compensation plan or program of the Corporation applicable to senior or executive employees or employees generally, and the foregoing release is intended to release each and all such obligations and plans.

The foregoing shall not prevent the Employee from (a) filing charges with the Equal Employment Opportunity Commission but the Employee agrees he shall not financially benefit from such charges, (b) filing any claim or suit to enforce the terms of this Settlement Agreement and Release or (c) filing any claim or suit in his capacity as a shareholder of the Corporation. The Employee does not hereby release or discharge the Corporation from liability from or the cost of defense of any claim, action, suit or demand brought by a party other than the Employee and, if a claim is brought against the Employee by a third party, the Employee may join the Corporation as an additional defendant, cross claim, make claim for indemnity or contribution and/or take other actions with regard to the Corporation as permitted under the then prevailing rules of court.

(b) If Employee violates this Settlement Agreement and Release by filing a claim against or suing the Corporation, (except as permitted by the terms of this Settlement Agreement and Release, Employee agrees to pay all costs and expenses of defending against such claims incurred by the Corporation or in prosecuting any counterclaim or cross claim based on this Settlement Agreement and Release, including reasonable attorney's fees and all other costs and expenses associated therewith.

(c) Except as provided below in this subsection, the Corporation absolutely, irrevocably and unconditionally releases and forever discharges the Employee from any and all claims, known and unknown, under federal, state or municipal law (including common law claims) and all federal, state and local statutes, including, but not limited to, claims related to breach of contract, that it may have against the Employee relating to, or arising out of, his employment with, or separation from, employment with the Corporation whether now apparent or yet to be discovered or which may hereafter develop based on events that have transpired from the beginning of time to the date of execution of this Settlement Agreement and Release. The Corporation does not hereby release or discharge the Employee from liability from or the cost of defense of any claim, action suit or demand brought by a party other than the Corporation and, if a claim is bought against the Corporation by a third party, the Corporation may join the Employee as an additional defendant, cross claim, make claim for indemnity or contribution and/or take other actions with regard to the Employee as permitted under the then prevailing rules of court. The foregoing shall not prevent the Corporation from filing a claim or suit to enforce the terms and conditions of this Settlement Agreement and Release.

(d) If the Corporation violates the provisions of subsection 4(c), the Corporation agrees to pay all costs and expenses of defending against claims violating subsection 4(c) incurred by the Employee or in prosecuting any counterclaim or cross claim based on this Settlement Agreement and Release, including reasonable attorneys' fees and all other expenses associated therewith.

4. Waiver of Relief

This Settlement Agreement and Release encompasses all relief, no matter how called, whether now apparent or yet to be discovered, including but not limited to: wages, front pay, back pay, compensatory damages, pension or retirement benefits, punitive damages, liquidated damages, damages for pain, suffering, mental anguish and loss of enjoyment of life, and, costs and attorney's fees.

5. No Admission of Liability

Execution of this Settlement Agreement and Release and compliance with its terms, as provided above, do not constitute an admission by the Corporation that (i) it has treated the Employee or any other person unfairly or unlawfully or (ii) that it engaged in any breach of contract or violation of any Civil Rights Provision or other employment discrimination statute, or any other legal provision, regulation, ordinance order or rule of common law.

6. Mutual Confidentiality of Agreement and Non-Disparagement Commitments

(a) Employee agrees to keep confidential and not to disclose to any person (other than members of the Employee's immediate family and Employees' attorney) the terms of this Settlement Agreement and Release; provided, however, that this Settlement Agreement and Release may be used as evidence in any claim or litigation alleging breaches hereof. Any immediate family member or attorney to whom Employee discloses information concerning this Settlement Agreement and Release shall also be bound by the terms of this sub-section and Employee shall be responsible for any demonstrated breaches of confidentiality by such persons. Employee agrees that, in the event he makes any disclosure that constitutes a violation of this Settlement Agreement and Release (including, without limitation the amount or approximate amount of the severance payment made pursuant to Section 1), a court may direct Employee to cease and desist, to compensate the Corporation for all damages it has incurred as a consequence, and to pay the Corporation its reasonable costs and expenses, including reasonable attorney's fees, incurred in connection with its efforts to enforce this Settlement Agreement and Release. Recognizing that damages may be difficult to calculate, Employee agrees that the appropriate award of damages for his violation of this subsection shall be no less than one hundred thousand dollars ($100,000), without prejudice to the right of the Corporation to request and recover actual damages in a larger amount should they be proven.

(b) Except for disclosure required under any law or regulation, including, but not limited to disclosure in connection with soliciting proxies, the Corporation agrees to keep confidential and not to disclose and agrees to cause its officers to keep confidential and not to disclose to any person (other than employees or agents who approve or implement this Settlement Agreement and Release) the terms of this Settlement Agreement and Release; provided, however, that this Settlement Agreement and Release may be used as evidence by the Corporation in any claim or litigation alleging breaches hereof. The Corporation agrees that, in the event of a disclosure by it, its officers or directors (except for any disclosure permitted herein) that constitutes a violation of this Settlement Agreement and Release (including, without limitation, the amount or approximate amount of the severance payment made pursuant to Section 1), a court may direct the offending party to cease and desist, and direct the Corporation to compensate the Employee for all damages he has incurred as a consequence, and to pay him his reasonable costs and expenses, including reasonable attorney's fees, incurred in connection with his efforts to enforce this Settlement Agreement and Release. Recognizing that damages may be difficult to calculate, the Corporation agrees that the appropriate award of damages for a violation of this subsection by the Corporation, its officers or directors shall be no less than one hundred thousand dollars ($100,000), without prejudice to the right of the Employee to request and recover actual damages in a larger amount should they be proven.

(c) Notwithstanding the foregoing, Employee and Corporation agree that if this document is disclosed by public filing (or otherwise as permitted under this Settlement Agreement and Release), each of the Employee and the Corporation shall be thereafter released from the requirements of subsections (a) and (b) hereof.

(d) Employee states that he has returned to the Corporation all records relating to the Corporation and its business in whatever medium and agrees not to disclose or divulge, directly or indirectly, any business secret or other confidential or proprietary information of the Corporation to any person, firm, partnership, venture or corporation, except as required by law.

(e) Employee and Corporation agree that he and it will not, in any way, disparage one another to any person(s) or organization(s), including, without limitation, any employee of the Corporation. The Corporation agrees that it will cause its officers and directors to abide by the requirements of this subsection and that the Corporation shall be liable for any demonstrated breach of this provision by any of its officers and directors. Recognizing that damages may be difficult to calculate, Employee and the Corporation agree that the appropriate award of damages for a violation of this subsection by the Corporation, its officers or directors or, as the case may be, the Employee, shall be no less than one hundred thousand dollars ($100,000), without prejudice to the right of the Corporation or the Employee (as the case may be) to request and recover actual damages in a larger amount should they be proven.

(f) The Corporation will respond to all reference inquiries concerning the Employee by confirming the dates of his employment with the Corporation.

7. Cooperation

Employee agrees to cooperate with the Corporation in the prosecution or defense of claims asserted by or against the Corporation. Such cooperation shall include meeting with representatives of the Corporation or the Corporation's attorneys, or both, divulging to the Corporation any information that the Corporation may request for possible use in litigation, arbitration, or other legal proceeding, and testifying on behalf of the Corporation at the Corporation's request. In the event the Employee is called upon to testify or appear at any location in connection with the cooperation contemplated by this Section 7, he shall be reimbursed for his time (at the same hourly rate he was paid as of the Effective Date) and all reasonable expenses incurred.

8. Non-Competition Agreement

Employee acknowledges and agrees that Section 6 of the Employment Agreement imposes on him certain restrictions, including, but not limited to, Non-competition, Nondisclosure and Nonsolicitation, and that such restrictions survive the termination of his employment under the Employment Agreement for a period of one year. The Employee acknowledges and reaffirms that until after January 23, 2003, he shall keep and observe in all particulars the provisions and the restrictions under Section 6 of the Employment Agreement which is incorporated herein as if set forth at length. Employee agrees that any breach or threatened breach of any covenants contained in Section 6 of the Employment Agreement and incorporated herein would cause immediate, material and irreparable harm to the Corporation and that money damages would not provide an adequate remedy to the Corporation. The Corporation shall have all of the rights and remedies available under law or equity, including, but not limited to, injunctive relief, available to any party enforcing any such covenant. Each of the rights and remedies shall be independent of the other and shall be severally enforceable including, but not limited to, the right to have the covenants specifically enforced by any court of competent jurisdiction by any court of competent jurisdiction and the right to require Employee to account for and pay over to the Corporation all benefits derived or received by him as a result of any such breach of covenant and Employee shall not raise a defense to the granting of any such relief that the Corporation has an adequate remedy at law.

9. Entire Agreement

This Settlement Agreement and Release constitutes the entire agreement and understanding of the parties and supersedes all prior negotiations, understandings and agreements, proposed or otherwise, written or oral, concerning the subject matters hereof, including but not limited to the Employment Agreement and the Change in Control Agreement by and between the Corporation and the Employee dated as of July 1, 2000, but specifically not including the Indemnification Agreement dated as of May 3, 2000. Furthermore, no modification of this Settlement Agreement and Release shall be binding unless in writing signed by each of the parties hereto.

10. Severability

Should any provision of this Settlement Agreement and Release be declared illegal or unenforceable by any court of competent jurisdiction and if such provision cannot be modified to be enforceable (including the general release language), such provision shall immediately become null and void, leaving the remainder of this Settlement Agreement and Release in full force and effect. However, if any portion of the general release language in Section 3 or 4 are ruled unenforceable for any reason, the Corporation and Employee agree to use their best efforts to negotiate in good faith an enforceable general release.

11. SEC Reporting and Applicability of the Corporation's Insider Trading Policy.

(a) Rule 144. For the purposes of Rule 144 promulgated by the Securities Exchange Commission, the Employee shall cease to be an "affiliate" of the Corporation on the Effective Date.

(b) Section 16 Reporting. The Employee shall cease to be a reporting person under the Securities Exchange Act of 1934, as amended, as of the Effective Date, provided however, the Employee may have to file a Form 5 with the SEC for 2001, and must file a Form 4 with the SEC to report any purchase, sale, or option exercise after the Effective Date if the transaction occurs within six months following a Form 4 transaction going the opposite way (e.g., sale vs. purchase) prior to the Effective Date.

(c) Insider Trading Policy. Assuming the Employee does not acquire material non-public information after the Effective Date, beginning the date two trading days after the Corporation's public announcement of the Employee's resignation, the Employee will no longer be subject to restrictions on trading arising under the Corporation's insider trading policy.

12. Governing Law

This Settlement Agreement and Release shall be governed by, and construed and enforced in accordance with, the laws of the Commonwealth of Massachusetts, the state in which the Corporation's principal office is located, without regard to its principles or provisions of conflicts of laws. Any action brought under this Settlement Agreement and Release shall be brought in a court of competent jurisdiction in Boston, Massachusetts.

13. Judicial Enforcement

This Settlement Agreement and Release may be specifically enforced in judicial proceedings brought in equity in a court of competent jurisdiction in Boston, Massachusetts.

14. Voluntary and Understanding Execution

Employee agrees and acknowledges that he has read it and fully understands the terms and conditions of the Settlement Agreement and Release, including the release of claims and waiver of rights, that he has consulted with his attorney, or, if he has not consulted with their attorneys, he has chosen not to consult with an attorney after having been advised to do so with ample opportunity to do so, and that he enters into this Settlement Agreement and Release knowingly, voluntarily, free from duress and as a result of his own free will.

15. Consideration and Revocation Periods

(a) Employee acknowledges that he has been advised by this writing and previously by the Corporation to consult with an attorney of his choosing concerning his rights in connection with his termination from employment and the terms and conditions of this Settlement Agreement and Release, including the release of all claims contained herein.

(b) Employee acknowledges that he has been advised that he has a legal right to use all or any part of twenty-one (21) days to consider, in consultation with his attorney, whether to sign this Settlement Agreement and Release and that, during such period of consideration, the Corporation shall not revoke its offer to enter into this Settlement Agreement and Release on the terms and conditions set forth herein.

(c) Employee acknowledges that he has been advised that, if he signs this Settlement Agreement and Release, he can thereafter revoke his execution of this Settlement Agreement and Release on or before the close of business on the seventh day after his execution hereof by delivering a written revocation to the Corporation, Attention: General Counsel, 55 Cherry Hill Drive, Beverly, Massachusetts 01915.

IN WITNESS WHEREOF, the aforesaid parties have hereunto set their hands and seals as of the date written below.

WITNESS	BRIAN R. BACHMAN
____________________________________	/s/ Brian R. Bachman
Date:______________________________	Date: January 23, 2002
	AXCELIS TECHNOLOGIES INC.
ATTEST:	
/s/ Lynnette C. Fallon, Secretary	By: /s/ Kevin O'Connor
	Title Sr. Vice President, Human Resources
	Date: January 23, 2002

Schedule 1

OWNERSHIP OF AXCELIS GRANTED OPTIONS

Date of Grant	Exercise Price	Total Number of Shares Subject to Option	Expiration Date	Vesting Schedule
7/10/00	$22.00	909,100	7/10/10	Fully exercisable upon the Effective Date
12/29/00	$ 6.26	164,317	1/23/06	Fully exercisable
12/29/00	$ 8.48	381,149	1/27/07	Fully exercisable
12/29/00	$ 8.44	169,399	1/25/10	Fully exercisable upon the Effective Date
12/29/00	$ 8.43	296,450	1/26/09	Fully exercisable upon the Effective Date

Schedule 2 - Defined Business Combination

For the purposes of this Agreement, a "Defined Business Combination" shall mean either:

(a) the acquisition by a public company with which the Employee has conducted discussions on behalf of the Corporation prior to his resignation from employment of beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Securities Exchange Act of 1934) of 25% or more of either (i) the then outstanding shares of common stock of the Corporation or (ii) the combined voting power of the then outstanding voting securities of the Corporation entitled to vote generally in the election of directors; provided, however, for the purposes of this subsection (a), the following acquisitions shall not constitute a Defined Business Combination: (i) any acquisition of securities directly from the Corporation, (ii) any acquisition by the Corporation, or (iii) the acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Corporation or any Corporation or any corporation controlled by the Corporation; or

(b) the consummation by the Corporation of a reorganization, merger or consolidation or sale or other disposition of all or substantially all of the assets of the Corporation or the acquisition of assets (a "Business Combination") involving the public company with which the Employee has conducted discussions on behalf of the Corporation prior to his resignation from employment, in each case, unless, for purposes of this subsection (b) following such Business Combination,

(i) all or substantially all of the individuals and entities who were the beneficial owners, respectively, of the then outstanding shares of common stock of the Corporation (the "Outstanding Common Stock") and the combined voting power of the then outstanding voting securities of the Corporation entitled to vote generally in the election of directors (the "Outstanding 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 Corporation or all or substantially all of the Corporation'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 Common Stock and Outstanding Voting Securities, as the case may be;

(ii) no 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) (excluding any employee benefit plan (or related trust) of the Corporation 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 individuals who constitute the Board at the time of the execution of the initial agreement, or of the action of the Board, providing for such Business Combination.

EXHIBIT 21.1

Axcelis Technologies, Inc.

Exhibit 21 to Form 10-K for the year ended December 31, 2001

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., Delaware corporation
4. Fusion Taiwan, Inc., a Delaware corporation
5. Fusion Investments, Inc. , a Maryland corporation
6. High Temperature Engineering Corporation, a Delaware 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)

Asian Subsidiaries

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

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-8 No. 333-49726) pertaining to the Axcelis Technologies, Inc. Employee Stock Purchase Plan and the Registration Statement (Form S-8 No. 333-46768) pertaining to the Axcelis Technologies, Inc. 2000 Stock Plan, of our report dated January 22, 2002, 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, 2001.

/s/ ERNST & YOUNG LLP

March 8, 2002

Exhibit 99

AXCELIS TECHNOLOGIES, INC.

Form 10-K for the year ended December 31, 2001

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 projected plans, performance, contract 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 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 of 1933, as amended, 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 we 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 equipment 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 they do not build or expand fabrication facilities as rapidly as we anticipate, 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.

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 since early in 2001, the length of which cannot be predicted. This continues to 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.

Inventory buildups in the semiconductor industry, resulting in part from the down cycle, have produced a current oversupply of semiconductors. This has caused semiconductor manufacturers to revise capital spending plans, resulting in reduced demand for capital equipment such as our products. If this 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 within the semiconductor manufacturing industry is increasing. These trends could reduce the number of our potential customers, increasing our dependence on our remaining customers and materially and adversely affecting our sales.

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.

- Due to the risks inherent in transitioning to new products, we will need to accurately forecast demand for new products while managing the transition from older products.

- We must avoid product reliability or quality problems that would lead to 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 2001, one of our customers, STMicroelectronics N.V. accounted for 13.9% of our net sales, and our top ten customers accounted for 67.2%. 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.

Our quarterly financial results may fluctuate significantly and may fall short of anticipated levels.

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 were adversely affected in part as a result of the increased proportion of systems sold to process 300 millimeter 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.

Termination of our Japanese joint venture, or a decline in its fortunes, could hurt our business and profits.

In 1982, we established a joint venture with Sumitomo Heavy Industries, Ltd., known as Sumitomo Eaton Nova, or SEN. We exclusively licensed SEN to manufacture and sell our ion implantation products in Japan. The current license agreement will expire on December 31, 2004 if either SEN or we provide one year's prior notice of termination, otherwise, it will automatically renew for a five year term. We receive royalties under the license agreement and each of Sumitomo and the Company are credited with 50% of the equity income or loss from SEN's operations. Royalties and income from SEN have been a substantial contribution to our earnings. A substantial decline in SEN's sales and income from operations could have a material adverse effect on our net income. We have also benefited from research and development conducted by SEN engineers. A termination of the license to SEN would require us to invest in our own infrastructure to sell and service ion implant products in Japan.

We also have an arrangement with Sumitomo, outside the SEN joint venture, under which Sumitomo distributes and services our dry strip, photostabilization and rapid thermal processing products to semiconductor manufacturers in Japan. This distribution arrangement expires in March 2002 and thereafter is renewable from year to year unless either party has given the other party six months prior written notice. We are currently negotiating the terms of an extension arrangement with Sumitomo. Although we support Sumitomo's activities in Japan, a termination of the distributor agreement with SHI would require us to invest in our own infrastructure to sell and service dry strip, photostabilization and rapid thermal processsing products in Japan.

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, which accounted for approximately 53.5%, 69.4% and 70% of our net sales in 1999, 2000 and 2001, respectively. 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.

Our historical financial information may not be representative of our results as a separate company.

Our combined financial statements for periods ending on or before June 30, 2000 have been carved out from the consolidated financial statements of Eaton Corporation using the historical bases of assets, liabilities and operating results of the semiconductor equipment operations business of Eaton that we comprised. Accordingly, our historical financial information for those periods does not necessarily reflect what our financial position, operating results and cash flows would have been had we been a separate, stand-alone entity during the periods presented. Our costs and expenses for those periods were allocated to our business based on Eaton's internal expense allocation methodology, which charges these expenses to operating locations based both on net working capital, excluding short-term investments and short-term debt, and on property, plant and equipment-net. While we believe this allocation methodology is reasonable and allocated costs are representative of the operating expenses that would have been incurred had we operated on a stand-alone basis, such historical financial information is not necessarily indicative of what our financial position, operating results and cash flows will be in the future. We have not made adjustments to this historical financial information to reflect any significant changes that may occur in our cost structure and operations as a result of our separation from Eaton, including increased costs associated with being a publicly traded, stand-alone company.

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. Moreover, until the end of 2002, we are restricted in raising substantial amounts of equity capital under a covenant to Eaton Corporation. 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.

On January 8, 2001, we filed a lawsuit against Applied Materials, Inc. ("Applied") in the United States District Court for the District of Massachusetts. The complaint alleges that Applied's medium current/high energy ion implanter machine launched in November 2000 infringes our patent for ion implantation equipment using radio frequency linear accelerator technology. We have also alleged that Applied unlawfully interfered with our existing and future contracts. On January 18, 2001, we filed a motion for a preliminary injunction for the reason, among others, that infringement at the time of industry transition between equipment capable of handling 200 millimeter wafers and equipment capable of handling 300 millimeter wafers would irreparably harm us. Through this motion, we asked the court to stop Applied from manufacturing, selling or offering to sell its medium current/high energy ion implanter machine and to order Applied to remove all our patented technology from implanters that Applied may have placed in chipmakers' plants for process development trials. Applied filed counterclaims of unfair competition, defamation and tortious interference with prospective economic advantage, all of which, it contends, arise from certain communications we allegedly made about the lawsuit and its claims of infringement.

Hearings on summary judgment motions began in December 2001 and are continuing. We believe our claims are meritorious and intend to pursue the matter vigorously. Although there can be no assurance of a favorable outcome and we are incurring significant legal expenses to pursue this litigation, we do not believe that our pursuit of this matter will have a material adverse effect on our financial condition, results of operations or liquidity. In the event that Applied is found not to have infringed, we expect that Applied will continue to sell its medium current/high energy implanter as a new and substantial competitor for sales of high energy/medium current ion implantation equipment.

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.

Our agreements with Eaton Corporation may not have the same terms that such agreements would have if they had been negotiated in an arm's length transaction.

Before our initial public offering, we entered into a number of agreements with Eaton Corporation. These agreements were negotiated at a time when we were a wholly-owned subsidiary of Eaton and therefore may not have the same terms that such agreements would have had if they had been negotiated in an arm's length transaction.

Covenants and payables in favor of Eaton. Our agreements with Eaton restrict our operations and obligate us to make payments to Eaton in certain situations, including:

- The Tax Sharing and Indemnification Agreement makes us liable to Eaton for our allocable share of taxes arising for all periods beginning after December 31, 1999 through December 29, 2000. If Eaton were audited for this period and additional taxes were due, we would be obligated to indemnify Eaton.

- Until December 29, 2002, without Eaton's consent, we may not liquidate, merge or consolidate with any person, dispose of or restructure the holding of our assets, or enter into any transaction or make any change in our equity structure that would violate a restrictive covenant designed to protect the tax-free nature of Eaton's distribution of our shares in December 2000.

- We have agreed not to solicit or recruit employees of Eaton without Eaton's consent until December 29, 2002.

Conflicts under Eaton agreements and otherwise. Conflicts may arise under our agreements with Eaton Corporation and other interests of Axcelis and Eaton may differ from time to time. We have agreed to submit all disputes under the agreements with Eaton to binding arbitration, following nonbinding mediation, unless the failure to initiate litigation would cause serious and irreparable injury to one of us or others. Three of our directors are also directors of Eaton and one, Alexander M. Cutler, is also the Chairman and Chief Executive Officer of Eaton. Our directors who are also directors of Eaton have obligations to both companies and may have conflicts of interest with respect to matters that could have different implications for Eaton and us.