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, 2000

[ ] 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. [ ]

Aggregate market value of the voting stock held by nonaffiliates of the registrant as of March 15, 2001: **$1,065,447,427**

Number of shares outstanding of the issuer's Common Stock, $0.001 par value, as of March 15, 2001: **97,125,340**

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the definitive Proxy Statement for Axcelis Technologies, Inc.'s Annual Meeting of Stockholders to be held on June 28, 2001 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, products, 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 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 have recently introduced 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 equipment utilization, higher manufacturing yields, the addition of manufacturing equipment in existing fabrication facilities and the construction of 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.

Periodically, and historically every seven or eight years, the semiconductor industry adopts a larger wafer size to achieve greater economics. By increasing the wafer size, semiconductor manufacturers can produce more chips per wafer, thus reducing the overall manufacturing cost per chip. The more advanced wafer fabrication facilities are currently using wafers with a diameter of 200 millimeters. Currently, the industry has started 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 equipment with 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 and are typically smaller companies. 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.

Ion Implantation Systems

Ion implantation is a principal step in the manufacturing process for semiconductors. 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 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 dopants change the electrical properties of the silicon wafer to create the active components of a chip. 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 density, 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 implants 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 to create. We have designed our products to enhance the manufacturers' flexibility in combining machines during the implant process.

A high energy implanter is typically used to implant dopant deep in the wafer, which allows improved isolation of adjoining circuits 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 increasingly used in the manufacture of chips that are used in personal computers because they permit greater computing power from a chip of a given size.

For implants that require high dose and medium to very shallow depth, a high current implanter is most often used. In some applications, very shallow, high-dose implants result in faster chips, an important feature for microprocessors, digital signal processors and other chips.

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.

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

TYPE OF ION IMPLANTER	CORE PRODUCTS	RECENTLY INTRODUCED PRODUCTS
HIGH ENERGY	GSD/HE - Permits multiple implant steps in one process, or chaining, thus increasing throughput - More than 80% of our GSD/HE customers use it for one or more medium current applications - Broadest application coverage GSD/VHE - Highest energy range available - Also used by customers for R&D	HE(MC) - Lower cost alternative to GSD/HE HE3 - For use with 300 millimeter wafers
HIGH CURRENT	GSD/200E(2) - High dose implants - High productivity at low cost	LED - Increased performance at low energy
HIGH TILT/ MEDIUM CURRENT	8250HT - Energy purity - Process flexibility	MC3 - For use with 300 millimeter wafers

Our implanters have been designed with a process overlap that allows customers to tailor the combination of high energy, high current and high tilt/medium current implanters to their specific needs. High energy and high current implanters can be used to cover most high tilt/medium current applications, and the high tilt/medium current implanter can be used for some high energy applications. All of our ion implantation systems share certain of the same modular subsystems for efficiency and convenience. The subsystems for wafer handling robot, ion source, vacuum system and operator interface are common among our three implanters. This common platform reduces our design and production time and costs, and overall cost of ownership for our customers by minimizing training, spare parts inventory and maintenance.

Our GSD/HE product is the industry's only ion implantation product to be rated "best product" and was the "Grand Award" winner among semiconductor capital equipment products, an award sponsored by Semiconductor International, an industry publication.

We have recently introduced our LED implanter, which extends the energy range of our GSD/200E(2) implanter to lower energies than can be achieved with traditional high current implanters. These machines respond to the demand for high dose, ultra shallow implants that increase chip speed at acceptable machine throughput rates.

Our high tilt/medium current ion implanter complements our high energy and high current implanters. Our 8250HT targets high tilt applications that cannot be performed with high energy or high current implanters and extends into some high energy applications to allow customers a flexible combination of implanters. We target our 8250HT high tilt/medium current machine for the relatively few steps that our high energy and high current machines cannot complete. The most important step is an angular implant designed to insert dopants below preexisting features on the wafer. Our recently introduced MC3 high tilt/medium current implanter is designed to process 300 millimeter wafers.

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.

Surface Preparation Products

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 the photoresist in order to provide better performance for the subsequent implant step. After the implant step, the used photoresist must be removed. The primary means of removing excess 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 on the surface of the wafer to remove 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 LINE	CORE PRODUCTS	RECENTLY INTRODUCED PRODUCTS
DRY STRIP	FUSIONGEMINI PLASMA ASHER - High ash rates with low damage FUSIONGEMINI PLASMA ASHER ES - Adds additional capability for dry residue removal	FUSION ES3 - Comprehensive dry strip and residue removal with 300 millimeter capability
PHOTOSTABILIZERS	FUSIONGEMINI PHOTOSTABILIZER - Propriety ultraviolet light source; high throughput	FUSION PS3 - Industry's only 300 millimeter production-ready photostabilizer

Our FusionGemini 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 Fusion ES3 dry strip product, a 300 millimeter dry strip machine, was tested by Sematech, an industry association of semiconductor manufacturers, and met Sematech's 300 millimeter requirements. Satisfaction of Sematech's standard requirements indicates that our Fusion ES3 product has achieved a level of performance required by many semiconductor manufacturers.

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 FusionGemini dual chamber platform. Our recently introduced Fusion PS3 machine has 300 millimeter wafer capability and we believe that it is the only 300 millimeter production-ready photostabilizer available on the market. It has been installed in 300 millimeter pilot production facilities.

Rapid 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 heating coils, as well as an actively cooled base, which create a uniform temperature gradient from top to bottom. The resulting stable temperature profile is inherently repeatable, accurate and reliable. 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 more expensive lamp-based RTP systems, which require frequent lamp replacement and require expensive control systems. For this reason, we believe our RTP machines have lower overall operating costs than these lamp-based systems.

The following chart lists our principal RTP products:

PRODUCT LINE	CORE PRODUCTS	RECENTLY INTRODUCED PRODUCTS
RTP SYSTEMS	SUMMIT - Accommodates 0.18m devices - Repeatable, accurate temperature gradient	SUMMIT 300 - 300 millimeter capability

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. Our recently introduced Summit 300 has 300 millimeter wafer capability.

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 3,200 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 66 locations in ten countries; 13 of these are combined sales and service offices, and the balance are service-only offices, mostly located in our principal customers' fabrication facilities.

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 three 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 .

Our process technology center in Beverly, Massachusetts is available to customers for developing and testing advanced ion implantation and RTP processes, and our process technology center in Rockville, Maryland is available to customers for developing and testing dry strip and photostabilization processes. At these facilities, we also make available to our customers advanced testing and analysis equipment. In addition, we are constructing a 140,000 square foot addition to the Beverly facility, which will house an advanced process development, product demonstration and customer training center for all of the equipment we produce.

The ability to provide prompt and effective field support is critical to our sales efforts, due to the substantial operational and financial commitments made by customers that purchase our systems. Our customer support programs, combined with our research and development efforts, have served to encourage use of our systems in production applications and have accelerated penetration of certain key accounts.

Sales and Marketing

We primarily sell our equipment and services through our direct sales force. We have 13 sales offices in seven 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, Germany, Singapore, Italy and France. In addition, isolated sales are made in smaller markets through distributors and manufacturers representatives. We have over 500 sales and marketing personnel and service engineers. Our sales objective is to work closely with customers to secure purchase orders for multiple systems as they expand existing facilities and build new wafer facilities. We believe that our marketing efforts are enhanced by the technical expertise of our research and development personnel.

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; 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 agreement also provides for the parties to discuss the manufacture and sale of these products through SEN if the parties agree that sales volume will justify manufacturing these products in Japan in the future. 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.

International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, accounted for 69.4% of total net sales in 2000, 53.5% of total net sales in 1999, and 49.4% in 1998. Substantially all of our sales are denominated in U.S. dollars. SEN's sales are denominated in Japanese yen.

Customers

In 2000, the top 20 semiconductor manufacturers accounted for approximately 79% 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 and SEN serve all of the 20 largest semiconductor manufacturers. We believe that more than 3,200 of our products, including products shipped by SEN, are in use worldwide.

Net sales to our ten largest customers accounted for 56.3%, 59.1% and 37.6% of net sales, respectively, in 2000, 1999 and 1998. 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 2000, net sales to STMicroelectronics N.V., accounted for 13.9%, of our net sales. No other customer accounted for as much as 10% of our net sales in 2000. 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. In 1998, no single customer accounted for as much as 9.0% 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. Under our arrangements with Sumitomo Heavy Industries, Ltd., our ion implant products may be sold in Japan only through the joint venture. SEN may sell its products outside Japan only with our consent and through us as exclusive distributor. There are isolated sales of our equipment into Japan to our non-Japanese customers and isolated sales of SEN equipment outside of Japan primarily to its Japanese customers and their joint ventures. SEN manufactures ion implantation equipment at its Toyo, Japan location under the license from us described below. From time to time, we sell ion implantation equipment and other products to SEN. In 2000, our net sales of products to SEN amounted to $11.9 million.

As part of the joint venture arrangement, we have entered into a separate license agreement with SEN, last renewed in 1996, under which we have granted SEN an exclusive license in Japan to use our current and future ion implantation technology and to manufacture, use and sell products using our current and future ion implantation patents. We have also granted SEN a non-exclusive license to sell ion implantation products outside of Japan. We received royalty income from SEN under the license agreement of $13.5 million in 2000, $3.8 million in 1999, and $4.0 million in 1998. The license agreement expires on December 31, 2004 and is automatically renewable for successive five year periods unless either party has provided one year's prior notice of termination.

SEN has the right to use the name "EATON" as part of its corporate name under a corporate name agreement with Eaton that has been assigned to us. We have the right, however, to terminate that agreement at any time upon 60 days' notice and we are obligated under our trademark license agreement with Eaton to terminate the corporate name agreement on December 31, 2004. SEN also has the right to use in Japan the trademarks "EATON" and "NOVA" on its ion implantation products under SEN's separate trademark license agreement with Eaton that also has been assigned to us. SEN does not, however, have the right to use "EATON" in logo format. The SEN trademark license agreement requires SEN to pay us semiannual royalties equal to 0.5% of net sales. SEN must maintain quality and reliability standards, and we are entitled to terminate our trademark agreement with SEN at any time for cause and we are obligated under our trademark license agreement with Eaton to terminate the SEN trademark license agreement on December 31, 2004.

Research and Development

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

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

Our product development efforts have led to numerous industry breakthroughs, including the first production high current implantation system, the first production high energy implanter and the first photostabilizer.

Our expenditures for research and development during 2000, 1999 and 1998 were $68.8 million, $51.6 million and $78.7 million, respectively, or 10.1%, 13.0% and 29.6% of net sales, respectively. The increase in research and development expenditures in 2000 as compared to 1999 primarily reflected our research focus to develop products capable of processing 300 millimeter wafers. 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.

Our Beverly, Massachusetts facility manufactures our high energy, high current and high tilt/medium current ion implantation and rapid thermal processing systems. 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.

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 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. 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 equipment market is highly competitive and is characterized by a small number of large participants. We compete in four principal product markets primarily at the front-end of the semiconductor manufacturing 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, 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.

Dry Strip, Photostabilization and Rapid Thermal Processing. Our principal competitors in the dry strip product market are, Mattson Technology Inc., and GaSonics International Corp., recently acquired by Novellus Systems, Inc. and our principal competitor in photostabilization is Ushio Inc. Our chief competitor in the rapid thermal processing equipment market is Applied Materials 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, 2001, we had 142 patents in the United States and 271 patents in other countries, as well as 472 patent applications (75 in the United States and 397 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. U.S Patent No. 4.667,111 recently survived re-examination before the United States Patent and Trademark Office, the request for re-examination being made by Applied Materials, Inc.

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 claim will not be successful and require us to pay substantial damages or delete certain features from our products or both.

Backlog

As of December 31, 2000, our backlog was $211.0 million, as compared to $93.8 million, and $27.8 million, respectively, for year end 1999 and 1998. 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, 2000, we had 2,056 full-time and 242 temporary employees worldwide, of which 1,991 were employed in North America, 178 in Asia and 129 in Western 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.

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Item 2: Properties

We have a total of 39 properties, of which 23 are located in the United States and the remainder are located in Asia and Europe, including offices in Taiwan, Singapore, South Korea, Italy, Germany, France and the United Kingdom. Of these properties, two are owned and 37 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	310,200 (owned)
Rockville, Maryland	Manufacturing of dry strip and photostabilization products and research and development	169,900 (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 an 11,000 square foot demonstration line, which is used to develop next-generation application solutions for specific customers, as well as to demonstrate the full range of our integrated process equipment. We also have a process technology center in Rockville, Maryland that is available to customers for developing and testing dry strip and photostabilization processes.

We are building a 140,000 square foot facility in Beverly, Massachusetts which will house an advanced process development, product demonstration and customer training center with 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 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 certified.

Item 3: Legal Proceedings

On January 8, 2001, Axcelis filed a lawsuit against Applied Materials, Inc. in the United States District Court for the District of Massachusetts. The complaint alleges that Applied's medium current/high energy ion implanter machine infringes an Axcelis patent for ion implantation equipment using radio frequency linear accelerator technology. Axcelis has also alleged that Applied unlawfully interfered with Axcelis' existing and future contracts. On January 18, 2001, Axcelis filed a motion for a preliminary injunction, asking 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. The parties are engaged in the process of discovery and, based on the scheduling order entered by the court, a trial is scheduled for the third quarter of 2001. The Company believes its claims are meritorious and intends to pursue the matter vigorously. Although there can be no assurance of a favorable outcome, the Company does not believe that this matter will have a material adverse effect on the Company's financial condition or results of operations.

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

None

Executive Officers and Key Management

Executive Officers

Brian R. Bachman has been the Company's Chief Executive Officer and Vice Chairman since May 2000. From December 1995 to July 2000 he was Senior Vice President and Group Executive-Hydraulics, Semiconductor Equipment and Specialty Controls of Eaton Corporation. From 1991 to 1995, he was Vice President and General Manager for the Standard Products Business Group of Philips Semiconductor. He is a member of the Board of Directors of Keithley Instruments, Inc. He also serves on Northwestern University's Kellogg McCormick Master of Management in Manufacturing Program Advisory Board.

Mary G. Puma has been the Company's President and Chief Operating Officer since May 2000. Prior to her current position, she served as the Company's Vice President from February 1999 to May 2000. In 1998, she became General Manager and Vice President of the Company's Implant Systems Division. 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.

Kevin M. Bisson has been the Company's 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, from 1999 and he held various other financial management positions at UTC since 1989.

Michael L. Dreyer has served as our Vice President-General Manager, Fusion Systems Division since September 2000. Prior to joining Axcelis, Mr. Dreyer served Motorola, Inc. since 1989 in various management positions, most recently as Process, Equipment and Technology Engineering Manager of Motorola's MOS12 Wafer Fab in Chandler, Arizona.

Michael J. Luttati has been the Company's Senior Vice President--General Manager, Implant Systems Division since July 2000 and was our General Manager of implant systems since 1999. Prior to joining the Company, Mr. Luttati served as Vice President, North America Sales Operations of Teradyne Inc. from 1996 to 1998 and, from 1983 to 1996, he held several other sales and marketing positions with Teradyne.

Ted S. Miller has been our Vice President and General Manager-Global Customer Service since July 2000 and was the Company's Director of Global Customer Service since the beginning of 2000. Prior to joining the Company, 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.

Robert A. Mionis has served as our Senior Vice President-Worldwide Operations since July 2000 and was our Director of Worldwide Operations since March 1999 and was the Company's Global Operations Director for our implant systems operations from May 1998. Prior to joining Axcelis, Mr. Mionis served AlliedSignal Corporation as Director of Operations and GE Aerospace in various management positions.

Cornelius F. Moses III has been the Company's 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. from 1995. From 1990 to 1995, Mr. Moses had various positions with Ames Department Stores, Inc., most recently as Senior Vice President, Finance.

Kevin O'Connor has been our Senior Vice President-Human Resources since July 2000. Mr. O'Connor was the principal of 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. From 1993 until December 1996, Mr. O'Connor was Vice President, Human Resources-Americas/Asia for Dell Computer Corporation.

Key Management

Craig Halterman 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 our company, 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 has been our Vice President of Sales since June 2000. He joins Axcelis 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 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 the last two quarters. As of March 15, 2001, we had approximately 11,372 stockholders of record. Other than the $300 million cash dividend paid to Eaton out of the proceeds from our initial public offering, Axcelis has not paid and does not anticipate paying cash dividends in the future.

Fiscal 2000	High	Low
Third quarter	$25.88	$11.63
Fourth quarter	$11.19	$ 7.00

Item 6: Selected Financial Data

The following selected consolidated statements of operations data for each of the three years ended December 31, 2000, 1999 and 1998 and the consolidated balance sheet data as of December 31, 2000 and 1999 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 the year ended December 31, 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 selected consolidated statements of operations data for the year ended December 31, 1996 and the consolidated balance sheets data as of December 31, 1997 and 1996 have 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,				
	2000	1999	1998	1997	1996
	(in thousands, except per share amounts)				
Consolidated statements of operations data:					
Net sales	$ 680 401	$ 397,267	$ 265,709	$ 460,010	$ 448,663
Gross profit	299,309	157,082	64,229	172,802	157,246
Operating income (loss)	104,637	12,333	(137,909)	(72,035)	43,002
Net income (loss)	99,115	14,428	(82,047)	(61,467)	46,304
Net income (loss) per share:					
Basic	$ 1.13	$ 0.18	$ (1.03)	$ (0.77)	$ 0.58
Diluted	$ 1.13	$ 0.18	$ (1.03)	$ (0.77)	$ 0.58
Shares used in computing per					
Basic	88,063	80,000	80,000	80,000	80,000
Diluted	88,064	80,000	80,000	80,000	80,000
COMBINED BALANCE SHEET DATA					
Cash and cash equivalents	$ 168,157	$ 3,530	$ 3,338	$ 3,479	$ 2,159
Working capital	297,348	169,759	91,028	149,041	112,092
Total assets	672,331	422,835	341,121	457,567	279,189
Stockholders' equity	491,369	342,296	269,161	349,192	190,429

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, including, without limitation, 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 have recently introduced 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 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, 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 will reimburse Eaton for its costs plus an additional fee. The transition periods covered by these agreements generally expire by December 29, 2001. The agreements do not necessarily reflect the costs of obtaining these services from unrelated third parties or of providing the applicable services in-house. However, management believes that purchasing these services from Eaton provides an efficient means of obtaining these services during the transition period. We must also negotiate new agreements with various third parties as a separate, standalone entity. There can be no assurance that the terms we will be able to negotiate for these agreements will be as favorable as those we have enjoyed as part of Eaton.

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.

Results of Operations

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

	Year ended December 31,		
	2000	1999	1998
Net sales	100.0%	100.0%	100.0%
Gross profit	44.0	39.5	24.2
Other costs & expenses:			
Research & development	10.1	13.0	29.6
Selling	8.3	9.5	15.9
General & administrative	8.9	11.6	17.7
Amortization of goodwill & intangible assets	1.4	2.3	3.5
Restructuring charges	-	-	9.4
Income (loss) from operations	15.4	3.1	(51.9)
Other income (expense):			
Royalty income	2.2	1.5	3.0
Equity income (loss) of SEN	2.9	0.3	(0.8)
Other income (expense)-net	0.7	-	(0.4)
Income (loss) before income taxes	21.2	4.9	(50.1)
Income taxes (credit)	6.6	1.3	(19.2)
Net income (loss)	14.6%	3.6%	(30.9)%

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. We continue to invest significantly in both current product enhancements and new product development.

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.

Fiscal year ended December 31, 1999 in comparison to the fiscal year ended December 31, 1998

Net Sales

Net sales in 1999 were $397.3 million, an increase of $131.6 million, or 49.5%, as compared to net sales of $265.7 million in 1998. The increase in net sales was attributable to the increased demand for our principal products and services resulting from the semiconductor industry's recovery, which began in the second half of 1999. Our third quarter 1999 net sales increased 125.4% over the third quarter of 1998, and fourth quarter 1999 net sales increased 193.7% over the fourth quarter of 1998.

Sales of our ion implant systems and services accounted for $322.0 million in total sales in 1999 as compared to $219.9 million in 1998, an increase of 46.4% over 1998. Sales of other products and services, including dry strip products, photostabilization products and rapid thermal processing systems, accounted for $75.3 million in total sales in fiscal 1999, an increase of $29.5 million, or 64.4%, as compared to $45.8 million in fiscal 1998.

Gross Profit

Gross profit was $157.1 million in 1999, an increase of $92.9 million, or 144.6%, as compared with gross profit of $64.2 million in 1998. Of this increase, $31.9 million resulted from increased sales while $43.6 million was due primarily to improved capacity utilization resulting from higher product sales volume. In addition, gross profit in 1998 was reduced by $17.4 million of restructuring charges for inventory writedowns. The increase in gross profit as a percentage of net sales to 39.5% in 1999 from 24.2% in 1998 was due to improved capacity utilization, increased sales and the absence of restructuring charges in 1999.

Research and Development

Research and development expense was $51.6 million in 1999, a decrease of $27.1 million, or 34.4%, as compared to $78.7 million in 1998. As a percentage of net sales, research and development expense was 13.0% in 1999 and 29.6% in 1998. Approximately $17.2 million of the decrease in expense was attributable primarily to synergy savings associated with the closing of our Austin, Texas facility and the subsequent transfer of Austin's ion implant engineering activities to our Beverly, Massachusetts facility. The balance of the decrease was attributable to a reallocation of our research and development efforts following our 1998 restructuring and the completion of certain research projects.

Selling

Selling expense was $37.9 million in 1999, a decline of $4.2 million, or 9.9%, as compared to $42.1 million in 1998. The reduction in selling expense between years was driven principally by headcount savings attributable to our cost reduction strategy that was initiated in the second quarter of 1998 and continued into the second quarter of 1999. As a percentage of net sales, selling expense decreased to 9.5% in 1999 as compared to 15.9% in 1998.

General and Administrative

General and administrative expense, including the allocation of Eaton general corporate expenses to our business, was $45.9 million in 1999, a decrease of $1.2 million, or 2.4%, as compared with $47.1 million in 1998. As a percentage of net sales, general and administrative expense decreased to 11.6% in 1999 as compared with 17.7% in 1998 as these costs were spread over a higher revenue base. The allocation of Eaton general corporate expense was $15.0 million in 1999 as compared to $14.8 million in 1998.

Amortization of Goodwill and Intangible Assets

Amortization of goodwill and intangible assets was $9.3 million in 1999, consistent with 1998.

Income (Loss) from Operations

Income from operations was $12.3 million in 1999 as compared to a loss from operations of $137.9 million in 1998, primarily as a result of the factors described above.

Other Income (Expense)

Total other income was $7.2 million in 1999, an increase of $2.4 million, or 51.3%, as compared to $4.8 million in 1998. Other income primarily consisted of royalty income and equity income from SEN. Royalty income, more than half of which was from SEN, was $5.9 million in 1999, as compared to $7.9 million in 1998, or a decrease of 26.4%. The decrease in 1999 was due to income in 1998 from a large one-time royalty payment from an unrelated party. Equity income attributable to SEN was $1.3 million in 1999 as compared to a loss of $2.1 million in 1998. This increase primarily reflects a 19.4% increase in SEN sales volume in 1999 as compared to 1998 as a result of improvements in the Japanese semiconductor market.

Income Taxes (Credit)

Income tax expense was $5.1 million in 1999 as compared with an income tax credit of $51.1 million in 1998, which was generated by our loss from operations in that year. The effective tax rate for 1999 was 26.2% which included a credit for research activities, as compared to an effective tax rate of 38.4% in 1998. See Note 13 to the consolidated financial statements.

Net Income (Loss)

Net income increased to $14.4 million in 1999 as compared to a loss of $82.0 million in 1998, principally as a result of the factors discussed above.

Liquidity and Capital Resources

Cash and cash equivalents at December 31, 2000 were $168.2 million, compared to $3.5 million at December 31, 1999. The significant increase in cash between years was due mainly to higher net income of $99.1 million, net proceeds received from the initial public offering of $348.6 million, partially offset by the payment of a $300 million dividend to Eaton, and the sale of our Austin, Texas facility for $11.0 million. Net working capital was $297.3 million at December 31, 2000 as compared to net working capital of $169.8 million as of December 31, 1999. The increases in cash, accounts receivable and inventory were the primary causes of the increase in working capital, all of which increased primarily as a result of higher business volume in fiscal 2000.

Cash provided by operating activities was $99.7 million for fiscal 2000 as compared to net cash used of $39.1 million for fiscal 1999. The cash provided by operating activities for fiscal 2000 was primarily the result of improved earnings performance and working capital management. Cash provided by financing activities consisted primarily of net proceeds from the initial public offering of $348.6 million offset by the payment of a $300.0 million cash dividend to Eaton.

Capital expenditures were $21.8 million in fiscal 2000 and $16.9 million in fiscal 1999. The amount of future capital requirements will depend on a number of factors, including the timing and rate of the expansion of our business. We anticipate increased capital expenditures to support our worldwide sales growth including the expansion of our Beverly, Massachusetts facility.

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 June 1998, the Financial Accounting Standards Board issued Statement of Financial Accounting Standard (SFAS) No. 133, "Accounting for Derivative Instruments and Hedging Activities". This statement revises accounting and reporting standards for derivative instruments, including derivative instruments embedded in other contracts, and for hedging activities. SFAS No. 133, as amended by SFAS No. 137 and SFAS No. 138, is effective for fiscal quarters of fiscal years beginning after June 15, 2000. Axcelis will adopt the standard in the first quarter of fiscal 2001 and does not expect the adoption to have a material impact on its financial condition or results of operations.

In December 1999, the Securities and Exchange Commission (SEC) issued Staff Accounting Bulletin (SAB) No. 101, "Revenue Recognition in Financial Statements". SAB 101, which was subsequently amended by SAB No. 101A and SAB 101B (collectively referred to as SAB 101) provides guidance on the recognition, presentation and disclosure of revenue in financial statements. Axcelis has concluded that its revenue recognition policy continues to be appropriate and in accordance with generally accepted accounting principles and SAB 101.

Outlook

The growth in our business from 1998 to 1999 and from 1999 to 2000 should not be read as an indication of our performance in 2001. The semiconductor industry is highly cyclical and has experienced periodic downturns that 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. If existing fabrication facilities are not expanded or new facilities are not built as rapidly as anticipated, demand for our systems may decline, and we may be unable to generate significant new orders for our systems, which would adversely affect our sales 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 $150,000 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.

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 an apparent slowdown in the U.S. economy. Concerns about inflation, decreased consumer confidence, reduced corporate profits and a slowdown in the sale of electronic goods suggest slower growth in the U.S. economy. A slowing domestic economy may materially and adversely affect our business, financial condition and results of operations.

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. 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, 2000. 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, 2000, all investments mature within 60 days and are carried at cost, which approximates fair market 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 will 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.

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 June 28, 2001 (the "Proxy Statement"), a copy of which will be filed with the Securities and Exchange Commission on or prior to April 30, 2001, 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, 2000.

(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.

Employee Stock Purchase Plan

Although the Company registered interests in its Employee Stock Purchase Plan on Form S-8 on November 13, 2000, the plan had no activity during 2000 and therefore no financial statements relating to the Plan are being filed on Form 11-K for 2000 or being included in this Form 10-K for 2000 pursuant to Rule 15d-21.

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, 2000 and 1999, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2000. 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, 2000 and 1999, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2000, 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, 2001, except for the fourth
paragraph of Note 9, as to which the
date is January 24, 2001

Axcelis Technologies, Inc.
Consolidated Statements of Operations

In thousands, except per share amounts	Year Ended December 31, 2000	1999	1998
Net sales	$680,401	$397,267	$265,709
Cost of products sold	381,092	240,185	184,122
Cost of products sold -- restructuring charges			17,358
Gross profit	299,309	157,082	64,229
Operating expenses:			
Research & development	68,768	51,599	78,656
Selling	56,427	37,946	42,134
General & administrative	60,198	45,925	47,075
Amortization of goodwill & intangible assets	9,279	9,279	9,279
Restructuring charges			24,994
Income (loss) from operations	104,637	12,333	(137,909)
Other income (expense):			
Royalty income	15,054	5,854	7,949
Equity income (loss) of Sumitomo Eaton Nova Corporation	19,570	1,338	(2,132)
Interest income	5,801		
Other -- net	(790)	28	(1,045)
Income (loss before income taxes	144,272	19,553	(133,137)
Income taxes (credit)	45,157	5,125	(51,090)
Net income (loss)	$ 99,115	$ 14,428	$(82,047)
Basic net income (loss) per share	$ 1.13	$ 0.18	$ (1.03)
Diluted net income (loss) per share	$ 1.13	$ 0.18	$ (1.03)
Share used in computing:			
Basic net income (loss) per share	88,063	80,000	80,000
Diluted net income (loss) per share	88,064	80,000	80,000

See accompanying Notes to Consolidated Financial Statements

Axcelis Technologies, Inc.
Consolidated Balance Sheets

(In thousands)	December 31, 2000	1999
ASSETS		
Current assets		
Cash and short-term investments	$ 168,157	$ 3,530
Receivable from Eaton Corporation		11,241
Accounts receivable	150,482	101,335
Inventories	122,036	83,326
Deferred income taxes & other current assets	26,851	36,060
Total current assets	467,526	235,492
Property, plant and equipment, net	75,653	73,809
Investment in Sumitomo Eaton Nova Corporation	44,915	22,210
Goodwill	42,977	47,006
Intangible assets	20,418	26,190
Other assets	20,842	18,128
Total assets	$ 672,331	$ 422,835
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 46,855	$ 24,579
Payable to Eaton Corporation	25,818	
Accrued compensation	17,686	8,984
Warranty reserve	36,195	18,568
Income taxes payable	31,153	
Other current liabilities	12,471	13,602
Total current liabilities	170,178	65,733

Deferred income taxes	7,391	10,238
Other long-term liabilities	3,393	4,568
Stockholders' equity		
Preferred stock, $0.001 par value, 30,000 shares authorized		
Common stock, $0.001 par value, 300,000 shares authorized; 97,050 and 80,000 shares issued and outstanding at December 31, 2000 and 1999, respectively	97	80
Additional paid-in capital	437,472	
Retained earnings	58,682	
Accumulated other comprehensive income (loss)	(4,882)	(5,529)
Parent company investment		347,745
Total stockholders' equity	491,369	342,296
Total liabilities and stockholders' equity	$ 672,331	$ 422,835

See accompanying Notes to Consolidated Financial Statements.

Axcelis Technologies, Inc.
Consolidated Statements of Stockholders' Equity

	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Parent Company Investment	Retained Earnings	Accumulated Other Comprehensive Income/(Loss)	Total
(In thousands)							
Balance at December 31, 1997	80,000	$ 80		$ 356,029		$ (6,917)	$ 349,192
Comprehensive income:							
Net loss				(82,047)			(82,047)
Foreign currency translation adjustments						1,097	1,097
Total comprehensive loss							(80,950)
Net transfers from Eaton Corporation				919			919
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 transfer 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	$ 0	$ 58,682	$ (4,882)	$ 491,369

See accompanying Notes to Consolidated Financial Statements.

Axcelis Technologies, Inc.
Consolidated Statements of Cash Flows

(In thousands)	Year Ended December 31, 2000	1999	1998
Operating activities:			
Net income (loss)	$ 99,115	$ 14,428	$ (82,047)
Adjustments to reconcile to net cash provided (used) by operating activities:			
Depreciation	8,535	9,803	10,548
Amortization of goodwill & intangible assets	9,279	9,279	9,279
Deferred income taxes	(8,355)	(2,758)	(12,065)
Undistributed (income) loss of Sumitomo Eaton Nova Corporation	(19,570)	(1,347)	2,890
Deferred royalty income from Sumitomo Eaton Nova Corporation		(2,286)	(3,249)
Restructuring charges		(7,060)	37,347
Changes in operating assets & liabilities, excluding acquisition of a business & non-cash restructuring charges:			
Accounts receivable	(50,097)	(71,918)	57,465
Inventories	(39,431)	(16,989)	27,936
Accounts payable & other current liabilities	44,824	18,481	(39,920)
Payable to Eaton Corporation	25,818		
Income taxes payable	31,153		
Other assets	(2,765)	7,604	(616)
Other-net	1,177	3,658	4,638
Net cash provided (used) by operating activities	99,683	(39,105)	12,206
Investing activities:			
Expenditures for property, plant & equipment	(21,848)	(16,914)	(14,988)
Proceeds from sale of Austin, Texas facility	10,967		
Other-net	(138)	(2,205)	1,722
Net cash used by investing activities	(11,019)	(19,119)	(13,266)
Financing activities:			
Net proceeds from the sale of Axcelis common shares	348,585		
Payment of previously declared dividend to Eaton Corporation	(300,000)		
Net transfers from Parent Company	27,378	58,416	919
Net cash provided by financing activities	75,963	58,416	919
Net increase (decrease) in cash & cash equivalents	164,627	192	(141)
Cash & short-term investments at beginning of period	3,530	3,338	3,479
Cash & short-term investments at end of period	$ 168,157	$ 3,530	$ 3,338

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 has recently introduced 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 has continued to incur amounts payable to Eaton in connection with transitional agreements, under which Eaton provides 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 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 an 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. Prior to Axcelis' initial public offering, Eaton managed cash and cash equivalents on a centralized basis. Cash receipts associated with Axcelis' business were transferred to Eaton and Eaton funded Axcelis' cash disbursements. The amount for cash and cash equivalents at December 31, 1999 substantially relates to cash and highly liquid short-term investments maintained for working capital purposes, primarily at international locations.

Inventories

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

Shipping and Handling Costs

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

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 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. Axcelis' customers consist of semiconductor manufacturers located throughout the world. Axcelis performs ongoing credit evaluations of its customers' financial condition and generally requires no collateral to secure accounts receivable. Axcelis maintains a reserve for potentially uncollectible accounts receivable based on its assessment of the collectibility of accounts receivable.

Financial Instruments

Axcelis has no material financial instruments outstanding at December 31, 1000 used to manage foreign exchange or interest rate risk. In 1998, Statement of Financial Accounting Standard No. 133, "Accounting for Derivative Instruments and Hedging Activities", was issued. This Statement requires all derivatives to be recognized on the balance sheet at fair value. Axcelis must adopt the standard by the first quarter of 2001. It expects that the adoption of the standard will have an immaterial effect on financial position and operating results, if any.

Revenue Recognition

Axcelis recognizes sales at the time of shipment of the system to the customer. The costs of 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.

In December 1999, the Securities and Exchange Commission (SEC) issued Staff Accounting Bulletin (SAB) No. 101, "Revenue Recognition". SAB No. 101, which was subsequently amended by Staff Accounting Bulletin No. 101A (collectively referred to as SAB 101), articulates certain of the SEC staff's views in applying generally accepted accounting principles to revenue recognition in financial statements. Axcelis has concluded that its revenue recognition policy continues to be appropriate and in accordance with generally accepted accounting principles and SAB 101.

Income Taxes

Axcelis' results historically have 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 has been determined on a separate-return basis. 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 1999 and 1998 and will be included in Eaton's 2000 tax returns.

Consistent with the terms of the tax sharing agreement with Eaton, the consolidated statements of operations include an allocation of Eaton's United States income taxes (credit) 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.

Several of Axcelis' operations outside the United States account and pay for income taxes related to their operations. 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.

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.

Net Income (Loss) Per Share

Basic net income per share is calculated based on the weighted average shares of common stock outstanding during the period. Diluted net income 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.

Note 3. Restructuring Charges

Due to the decline of the semiconductor capital equipment market in 1998, Axcelis took actions in the third quarter of 1998 to restructure its business and recorded restructuring charges of $42.4 million ($27.5 million aftertax).

Several specific actions comprised the overall restructuring efforts, including workforce reductions, asset write-downs and other restructuring actions. The charge for workforce reductions, primarily severance and other related employee benefits, included the termination of approximately 475 employees, primarily manufacturing personnel. Approximately half of the workforce reductions related to the closing of the Austin, Texas plant. The charge for asset write-downs included $17.4 million for inventory, which was written down to estimated market value, and is included in cost of products sold. The ion implantation equipment manufacturing facility in Austin, Texas was closed and production was transferred to Beverly, Massachusetts. The write-down of this plant to estimated selling price represented approximately $2.1 million of the restructuring charge. The phase-out of production was concluded in the first quarter of 1999. Further, the Thermal Processing Systems product line, located in Peabody, Massachusetts, was merged into the Fusion Systems division in Rockville, Maryland and the Flat Panel Equipment product line was merged into the Implant Systems division in Beverly, Massachusetts.

A summary of the various components of the restructuring liabilities follows (in thousands of dollars):

	WORKFORCE REDUCTIONS		INVENTORY & OTHER ASSET WRITE-DOWNS	PLANT CONSOLIDATION & OTHER	TOTAL
	EMPLOYEES	DOLLARS			
1998 charges	475	$ 7,054	$ 30,296	$ 5,002	$ 42,352
Utilized in 1998	(300)	(3,493)	(30,296)	(1,503)	(35,292)
Balance remaining at December 31, 1998	175	3,561	0	3,499	7,060
Utilized in 1999	(175)	(3,561)		(3,499)	(7,060)
Balance remaining at December 31, 1999	0	$ 0	$ 0	$ 0	$ 0

During 2000, the Company disposed of the Austin plant for proceeds of approximately $11 million. The net gain on disposal was not material.

Note 4. Accounts Receivable

The components of accounts receivable follow (in thousands):

	DECEMBER 31,	
	2000	1999
Trade	$141,676	$100,137

Sumitomo Eaton Nova Corporation	10,915	3,246
	152,591	103,383
Allowance for doubtful accounts	(2,109)	(2,048)
	$150,482	$101,335

Note 5. Inventories

The components of inventories follow (in thousands):

	December 31,	
	2000	1999
Raw materials	$ 74,929	$ 54,146
Work in process	31,531	19,229
Finished goods	26,828	20,800
	133,288	94,175
Inventory allowances	(11,252)	(10,849)
	$122,036	$ 83,326

Note 6. Property, Plant & Equipment

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

	December 31,	
	2000	1999
Land & buildings	$ 48,904	$ 59,862
Machinery & equipment	55,917	48,914
Construction in process	19,679	9,662
	124,500	118,438
Accumulated depreciation	(48,847)	(44,629)
	$ 75,653	$ 73,809

Note 7. Goodwill & Other Intangible Assets

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

	December 31,	
	2000	1999
Goodwill	$55,419	$ 55,904
Accumulated amortization	(12,442)	(8,898)
	$42,977	$ 47,006
Intangible assets	$40,000	$ 40,000
Accumulated amortization	(19,582)	(13,810)
	$20,418	$ 26,190

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 will match 50% of contributions for the first 6% of eligible pay contributed by the employee. No expense was recognized in 2000 under this plan.

Prior to the Company's separation from Eaton, Axcelis employees participated in defined benefit and defined contribution plans of Eaton. Expense recorded during 2000, 1999 and 1998 for all defined benefit and defined contribution plans was $9.2 million, $5.1 million and $6.9 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 obligation for these employees remained with Eaton. Axcelis continues to provide pension benefits to employees in certain foreign locations, primarily Germany, and post-retirement benefits other than pension benefits are provided to a limited number of its United States employees. The obligations related to these plans 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. Expiration of options or stock appreciation rights are based on award agreements, or in the case of incentive stock options, awards expire ten years from the date of grant. Non-qualified stock options may, if approved by the Board of Directors, have a stated term in excess of ten years. Generally, awards terminate upon termination of employment for options granted to employees. Under the terms of the Plan, the exercise price, determined by the Board of Directors, may not be less than the fair market value of a share of the Company's common stock on the date of grant.

The following tables summarize information about Axcelis' stock options as of and for the year ended December 31, 2000:

	Shares	Weighted-Average Exercise Price
Outstanding at beginning of year....		
Granted.....	4,217,218	$21.26
Forfeited.....	(108,295)	22.00
Outstanding at end of year.....	4,108,923	$21.36
Available for grant at end of year..	14,391,077	

Range of Exercise Price	Outstanding December 31 2000	Weighted Average Exercise Price	Exercisable at December 31 2000	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life
$ 7.13-$10.63	37,900	$ 8.64	373	$ 9.32	9.9 years
11.19- 15.00	231,000	11.38	5,775	11.38	9.8
18.06- 22.00	3,840,023	21.96	191,159	21.97	9.5
	4,108,923	$ 21.36	197,307	$ 21.64	9.6

Stock Options for Eaton Common Shares Granted to Axcelis Employees

Eaton has 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. Historically, the majority of these options vested ratably during the three-year period following the date of grant and expire ten years from the date of grant. A summary of Eaton stock option activity for options granted to Axcelis employees during 1999 and 1998 follows:

	1999		1998	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Outstanding at beginning of year.	305,093	$74.03	192,451	$67.21
Granted.....	162,625	71.41	115,941	84.76
Exercised.....	(8,211)	56.60	(3,299)	53.44
Outstanding at end of year.....	459,507	$73.41	305,093	$74.03

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 each Eaton option 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 not issued through the Axcelis stock option plan and, therefore, are not included in the stock option activity disclosed above for the Plan. A summary of the options outstanding at December 31, 2000 follows:

Range of Exercise Price	Outstanding December 31 2000	Weighted Average Exercise Price	Exercisable at December 31 2000	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life
$ 4.65-$6.81	282,088	$ 6.12	282,088	$ 6.12	4.6 years
7.17-10.62	3,304,015	8.62	1,385,077	8.48	7.9
	3,586,103	$ 8.43	1,667,165	$ 8.08	7.7

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 2000	Eaton Stock Option Plans 1999	1998
Dividend yield	0%	3%	3%
Expected volatility	93%	21%	22%
Risk-free interest rate	5.1% to 6.3%	4.7%	4.7% to 5.7%
Expected option life in years	4	4 or 5	4, 5 or 6
Weighted average fair value per share of options granted during the year	$14.66	$12.56	$17.57

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 2000	Eaton Stock Option Plans 1999	1998
Net income (loss)			
As reported	$99,115	$14,428	$(82,047)
Assuming fair value method	94,435	13,473	(82,665)
Diluted net income (loss) per share			
As reported	$1.13	$0.18	$(1.03)
Assuming fair value method	1.07	0.17	(1.03)

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. No shares were issued under the plan in 2000, as the effective date of the plan was January 1, 2001.

Note 11. Lease Commitments

At December 31, 2000, the Company had lease commitments through 2004. Minimum rental commitments under noncancelable operating leases, which expire at various dates and in most cases contain renewel options, are as follows (in millions): 2001, $8.4; 2002, $6.2; 2003, $4.2; 2004, $2.6.

Rental expense in 2000, 1999 and 1998 (in millions) was $7.8, $4.8 and $5.6, 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 photostabilizers, ozone and plasma ashers, thermal processing systems and other products and services. Net sales by product line follow (in thousands):

	2000	1999	1998
Ion implantation systems & services	$534,428	$322,002	$219,927
Other products & services	145,973	75,265	45,782
	$680,401	$397,267	$265,709

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*
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
1998		
United States	$214,174	$62,321
Europe	40,254	1,192
Asia Pacific	11,281	1,050
	$265,709	$64,563

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

Sales from United States operations to customers in foreign countries (in thousands) were $388,679 (57.1%) in 2000, $158,523 (39.9%) in 1999 and $79,791 (30.0%) in 1998.

Note 13. Income Taxes

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

	December 31,		
	2000	1999	1998
United States	$108,296	$ 12,999	$(132,446)
Foreign	16,406	5,216	1,441
Equity income (loss) of Sumitomo Eaton Nova Corporation	19,570	1,338	(2,132)
	$144,272	$ 19,553	$(133,137)

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

	December 31,		
	2000	1999	1998
Current:			
United States			
Federal	$44,761	$ 4,150	$(34,469)
State	3,546	1,883	(5,809)
Foreign	5,205	1,850	1,253
	53,512	7,883	(39,025)
Deferred:			
United States	(8,355)	(2,211)	(11,910)
Foreign		(547)	(155)
	(8,355)	(2,758)	(12,065)
	$45,157	$ 5,125	$(51,090)

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):

	2000		1999	1998
	Amount	Rate	Rate	Rate
Income taxes (credit) at the United States statutory rate	$ 50,495	35.0%	35.0%	(35.0)%
State taxes, net of federal income tax benefit	2,305	1.6	6.3	(2.9)
Amortization of goodwill	1,248	0.9	6.4	1.0
Current and prior years' foreign sales corporation benefit	(3,029)	(2.1)	(1.5)	(0.2)
Current and prior years' credit for increasing research activities	(1,046)	(0.7)	(15.9)	(2.8)
Foreign income tax rate differentials	(538)	(0.4)	(2.7)	0.4
Foreign tax credit			(0.2)	
Income tax rate differential related to Sumitomo Eaton Nova Corporation	(6,687)	(4.6)	(2.4)	0.6
Other - net	2,409	1.6	1.2	0.5
	$ 45,157	31.3%	26.2%	(38.4)%

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

	Current Assets	Long-term Liabilities
2000		
Inventories	$11,309	
Accrued warranty	9,990	
Accrued vacation	2,206	
Property, plant & equipment		$ (2,032)
Intangible assets		(5,245)
Other items	1,906	(114)
	$25,411	$ (7,391)
1999		
Inventories	$25,048	
Accrued warranty	5,267	
Accrued vacation	1,061	
Property, plant & equipment		$ (3,229)
Intangible assets		(9,167)
Other items	1,660	2,158
	$33,036	$(10,238)

No provision has been made for income taxes on undistributed earnings of operations outside the United States of $68.1 million at December 31, 2000, which includes $42.4 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

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. No single customer represented more than 10% of net sales in 1998.

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):

	2000	1999	1998
Twelve months ended November 30:			
Net sales	$261,351	$110,722	$ 92,740
Income from operations	73,022	5,005	(5,581)
Net income	39,139	2,676	(4,264)
November 30:			
Current assets	185,116	157,591	
Noncurrent assets	44,909	53,799	
Current liabilities	140,178	150,087	
Noncurrent liabilities	615	430	

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):

	2000	1999	1998
Net sales to SEN	$11,913	$ 6,660	$ 6,401
Royalty income from SEN	13,464	3,838	4,036
Dividends received	375		720
Axcelis' equity in income (loss) of SEN	19,570	1,338	(2,132)
Accounts receivable at December 31 from SEN	10,915	3,246	3,358

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, $15.0 in 1999 and $14.8 in 1998. 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 is reimbursing Eaton for its costs plus an additional fee for providing certain of these additional services. The transition periods covered by these agreements vary, but are

generally less than two years from July 10, 2000. The agreements do not necessarily reflect the costs of obtaining these services from unrelated third parties or of providing the applicable services in-house. However, management believes that continuing to purchase certain of these services from Eaton provides 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, 2000 amounted to $5.5 million.

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 are payable to Eaton as the former parent will file a consolidated return for 2000, which will include 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, 2000	Sept. 30, 2000	June 30, 2000	March 31, 2000	Dec. 31, 1999	Sept. 30, 1999	June 30, 1999	March 31, 1999
Net sales.....	$188,997	$182,509	$165,844	$143,051	$130,671	$108,658	$ 98,814	$ 59,124
Gross profit.....	83,385	81,182	73,268	61,474	52,542	42,260	41,512	20,768
Net income.....	30,202	28,480	21,571	18,862	8,942	9,649	6,212	(10,375)
Basic and diluted net income per share....	$ 0.31	$ 0.30	$ 0.27	$ 0.24	$ 0.11	$ 0.12	$ 0.08	$ (0.13)

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.

By: /s/ Brian R. Bachman

Brian R. Bachman
Vice Chairman and
Chief Executive Officer

Dated: March 29, 2001

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.

Name	Title	Date
/s/ Brian R. Bachman Brian R. Bachman	Vice Chairman and Chief Executive Officer	March 29, 2001
/s/ Cornelius F. Moses, III Cornelius F. Moses, III	Principal Accounting and Financial Officer	March 29, 2001
/s/ Mary G. Puma Mary G. Puma	Director	March 29, 2001
/s/ Alexander M. Cutler Alexander M. Cutler	Director	March 29, 2001
/s/ Stephen R. Hardis Stephen R. Hardis	Director	March 29, 2001
Ned C. Lautenbach	Director	
/s/ Philip S. Paul Philip S. Paul	Director	March 29, 2001
/s/ Naoki Takahashi Naoki Takahashi	Director	March 29, 2001
/s/ Gary L. Tooker	Director	March 29, 2001

AXCELIS TECHNOLOGIES, INC.

INDEX TO EXHIBITS

to Form 10-K for the Year ended December 31, 2000.

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

Exhibit No.	Description
2.1	Master Separation and Distribution Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.2	General Assignment and Assumption Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.2 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.3	Trademark License Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.3 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.4	Employee Matters Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.4 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.5	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).
2.6	Transitional Services Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.6 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.7	Real Estate Matters Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.7 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.8	Indemnification and Insurance Matters Agreement between Eaton Corporation and the Company. Incorporated by reference from Exhibit 2.8 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.9	Purchase and Sale Agreement dated December 29, 1995 by and between Eaton Corporation and Eaton Semiconductor Equipment, Inc. Incorporated by reference from Exhibit 2.9 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
2.10	Agreement and Plan of Merger dated as of June 30, 1997 among Eaton Corporation, ETN Acquisition Corp., a wholly-owned subsidiary of Eaton and Fusion Systems Corporation. Incorporated by reference from Exhibit 2.10 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. Incorporated by reference from Exhibit 3.2 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
3.3	Certificate of Designation of Series A Participating Preferred Stock, filed with the Secretary of State of Delaware on July 5, 2000. Filed herewith.
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).
10.1*	2000 Stock Plan, as amended. Incorporated by reference from Exhibit 10.1 from the Company's Report on Form 10-Q filed with the Commission on November 14, 2000.
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*	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).
10.7**	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).
10.8**	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. Incorporated by reference from Exhibit 21.1 of the Company's Registration Statement on Form S-1 (Registration No. 333-36330).
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)

Description	Balance at Beginning of Period	Charged to Costs and Expenses	Charged to Other Accounts-Describe	Deductions-Describe	Balance at End of Period
(In thousands)					
Year ended December 31, 2000					
Allowances for doubtful accounts	$2,048	$247		$186 (A)	$2,109
Year ended December 31, 1999					
Allowances for doubtful accounts	$2,028	$505		$485 (A)	$2,048
Year ended December 31, 1998					
Allowances for doubtful accounts	$1,971	$ 2		$(55)(A)	$2,028

(A) Uncollectible accounts written off, net of recoveries

CERTIFICATE OF DESIGNATIONS

of

SERIES A PARTICIPATING PREFERRED STOCK

of

AXCELIS TECHNOLOGIES, INC.

(Pursuant to Section 151 of the

Delaware General Corporation Law)

Axcelis Technologies, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware (hereinafter called the "Corporation"), hereby certifies that the following resolution was adopted by the Board of Directors of the Corporation as required by Section 151 of the General Corporation Law by the unanimous written consent of the Board of Directors dated as of June 30, 2000.

RESOLVED, that, pursuant to the authority granted to and vested in the Board of Directors of this Corporation (hereinafter called the "Board of Directors" or the "Board") in accordance with the provisions of the Restated Certificate of Incorporation, the Board of Directors hereby creates a series of Preferred Stock, par value $0.001 per share (the "Preferred Stock"), of the Corporation and hereby states the designation and number of shares and fixes the relative rights, preferences, and limitations thereof as follows:

1. Designation and Amount. The shares of such series shall be designated as "Series A Participating Preferred Stock" (the "Series A Preferred Stock") and the number of shares constituting the Series A Preferred Stock shall be 3,000,000.
2. Dividends and Distributions.
    A. Subject to the rights of the holders of any shares of any class of preferred stock ranking prior and superior to the Series A Preferred Stock with respect to dividends, the holders of shares of Series A Preferred Stock, in preference to the holders of Common Stock, par value $0.001 per share (the "Common Stock"), of the Corporation, and of any other junior stock, shall be entitled to receive, when, as and if declared by the Board of Directors out of funds legally available for the purpose, quarterly dividends payable in cash on the first day of March, June, September and December in each year (each such date being referred to herein as a "Quarterly Dividend Payment Date"), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series A Preferred Stock, in an amount per share (rounded to the nearest cent) equal to the greater of (a) $1.00 or (b) subject to the provision for adjustment hereinafter set forth, 100 times the aggregate per share amount of all cash dividends, and 100 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions, other than a dividend payable in shares of Common Stock or a subdivision of the outstanding shares of Common Stock (by reclassification or otherwise), declared on the Common Stock since the immediately preceding Quarterly Dividend Payment Date or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series A Preferred Stock. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under clause (b) of the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.
    B. The Corporation shall declare a dividend or distribution on the Series A Preferred Stock as provided in paragraph (A) of this Section immediately alter it declares a dividend or distribution on the Common Stock (other than a dividend payable in shares of Common Stock); provided that, in the event no dividend or distribution shall have been declared on the Common Stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of $1.00 per share on the Series A Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date.
    C. Dividends shall begin to accrue and be cumulative on outstanding shares of Series A Preferred Stock from the Quarterly Dividend Payment Date next preceding the date of issue of such shares, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend and before such Quarterly Dividend Payment Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series A Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding. The Board of Directors may fix a record date for the determination of holders of shares of Series A Preferred Stock entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than 60 days prior to the date fixed for the payment thereof.
3. Voting Rights. The holders of shares of Series A Preferred Stock shall have the following voting rights:
    A. Each share of Series A Preferred Stock shall entitle the holder thereof to one vote on all matters submitted to a vote of the stockholders of the Corporation. The holders of fractional Series A Preferred Stock shall not be entitled to any vote on any matter submitted to a vote of the shareholders of the Corporation.
    B. The holders of Series A Preferred Stock shall be entitled to elect two directors of the Corporation whenever dividends payable on any series of Series A Preferred Stock shall be in default as qualified therein. For purposes of the holders of Series A Preferred Stock exercising such right, the provisions of the Corporation's By-Laws and other provisions of law shall apply, as if the Series A Preferred Stock were the only class of shares of the Corporation outstanding.
    C. Except as otherwise provided herein, in the Restated Certificate of Incorporation, in any other Certificate of Amendment creating a series of Preferred Stock or any similar stock, or by law, the holders of shares of Series A Preferred Stock and the holders of shares of Common Stock and any other capital stock of the Corporation having general voting rights shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.
    D. Except as set forth herein, in the Restated Certificate of Incorporation of the Corporation, or as otherwise provided by law, holders of Series A Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of Common Stock as set forth herein) for taking any corporate action.
4. Certain Restrictions.
    A. Whenever quarterly dividends or other dividends or distributions payable on the Series A Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series A Preferred

Stock outstanding shall have been paid in full, the Corporation shall not:

i. declare or pay dividends, or make any other distributions, on any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock;

ii. declare or pay dividends, or make any other distributions, on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except dividends paid ratably on the Series A Preferred Stock and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

iii. redeem or purchase or otherwise acquire for consideration shares of any stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such junior stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series A Preferred Stock; or

iv. redeem or purchase or otherwise acquire for consideration any shares of Series A Preferred Stock, or any shares of stock ranking on a parity with the Series A Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the Board of Directors) to all holders of such shares upon such terms as the Board of Directors, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

B. The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under paragraph (A) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

5. Reacquired Shares. Any shares of Series A Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and cancelled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of Preferred Stock and may be reissued as part of a new series of Preferred Stock subject to the conditions and restrictions on issuance set forth herein, in the Restated Certificate of Incorporation, or in any other Certificate of Amendment creating a series of Preferred Stock or any similar stock or as otherwise required by law.

6. Liquidation Dissolution or Winding Up. Upon any liquidation, dissolution or winding up of the Corporation, no distribution shall be made (1) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock unless, prior thereto, the holders of shares of Series A Preferred Stock shall have received $100 per share, plus an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, provided that the holders of shares of Series A Preferred Stock shall be entitled to receive an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 100 times the aggregate amount to be distributed per share to holders of shares of Common Stock, or (2) to the holders of shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except distributions made ratably on the Series A Preferred Stock and all such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the aggregate amount to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under the proviso in clause (1) of the preceding sentence shall be adjusted by multiplying such amount by a fraction the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.

7. Consolidation, Merger, etc. In case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the shares of Common Stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case each share of Series A Preferred Stock shall at the same time be similarly exchanged or changed into an amount per share, subject to the provision for adjustment hereinafter set forth, equal to 100 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of Common Stock is changed or exchanged. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of shares of Series A Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.

8. No Redemption. The shares of Series A Preferred Stock shall not be redeemable except as provided in that certain Rights Agreement dated as of June 30, 2000 between Axcelis Technologies, Inc. and Equiserve Trust Company NA.

9. Rank. The Series A Preferred Stock shall rank, with respect to the payment of dividends and the distribution of assets, on a parity with any other series of Serial Preferred Shares and shall rank junior to any series of any other class of preferred stock of the Corporation which by its terms is senior to the Serial Preferred Shares.

10. Amendment. Subject to the provisions of Article 14 of the Corporation's Restated Certificate of Incorporation, the Corporation's Restated Certificate of Incorporation shall not be amended, altered or repealed in any manner which would affect adversely the voting powers, rights or preferences of the holders of the Series A Preferred Stock so as to affect them adversely without the affirmative vote of the holders of at least two-thirds of the outstanding shares of Series A Preferred Stock, voting together as & single class.

IN WITNESS WHEREOF, this Certificate of Designation is executed on behalf of the Corporation by the undersigned duly authorized officer this 30th day of June, 2000.

/s/ Earl R. Franklin

Earl R. Franklin

Assistant Secretary

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. 333-49768) pertaining to the Axcelis Technologies, Inc. 2000 Stock Plan, of our report dated January 22, 2001, except for the fourth paragraph of Note 9, as to which the date is January 24, 2001, 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, 2000.

/s/ERNST & YOUNG LLP

Boston, Massachusetts

March 29, 2001

Exhibit 99

AXCELIS TECHNOLOGIES, INC.

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.

Downturns in the semiconductor industry have had in the past, and may have in the future, a severe adverse effect on our sales and profitability.

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.

The semiconductor industry is highly cyclical and has experienced periodic downturns that have had a severe adverse impact on the semiconductor industry and on suppliers to the semiconductor industry, including us. The semiconductor industry has in the past experienced, and will likely experience in the future, periods of oversupply that result in significantly reduced demand for capital equipment, including our systems. When these periods occur, we will be adversely affected. For instance, semiconductor equipment manufacturers were affected by a severe downturn in the semiconductor industry in 1998, during which our net sales declined by $194.3 million, or 42.2%, from the prior year.

We anticipate that a significant portion of our new orders will depend upon demand from semiconductor manufacturers who build or expand fabrication facilities. If existing fabrication facilities are not expanded or new facilities are not built as rapidly as anticipated, demand for our systems may decline, and we may be unable to generate significant new orders for our systems, which would adversely affect our sales levels. 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. Any future downturns or slowdowns in the semiconductor industry may cause the price of our common stock to decline.

If we fail to develop and introduce new or enhanced products and services for semiconductor manufacturers, we will not be able to compete effectively.

Rapid technological changes in semiconductor manufacturing processes require the semiconductor equipment industry to respond quickly to changing customer requirements. We believe that 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. Our ability to successfully develop, introduce and sell new and enhanced systems depends upon a variety of factors, including new product selection, timely and efficient completion of product design and development, timely and efficient implementation of manufacturing and assembly processes, product performance in the field and effective sales and marketing. We cannot assure you that we will be successful in selecting, developing, manufacturing and marketing new products or in enhancing our existing products.

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. Our inability to develop or meet the technical specifications of any of our new systems or enhancements to our existing systems or to manufacture and ship these systems or enhancements in volume in a timely manner could materially and adversely affect us.

If new products have reliability or quality problems, we may experience reduced orders, higher manufacturing costs, delays in acceptance and payment, and additional service and warranty expense. In the past, we have experienced some delays as well as reliability and quality problems in connection with new product introductions, resulting in some of these consequences.

We cannot assure you that we will successfully develop and manufacture new products or that our new products will be accepted in the marketplace. A failure to successfully introduce new products will have a material adverse effect on us.

We expect to continue to make significant investments in research and development. Future technologies, processes or product developments may render our current product offerings obsolete or we may not be able to develop and introduce new products or enhancements to existing products that satisfy customer needs in a timely manner or achieve market acceptance. The failure to do so could adversely affect us. If we are not successful in marketing and selling advanced processes or equipment to customers with whom we have formed long-term relationships, sales of our products to those customers could be adversely affected.

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. We believe that, to remain competitive, we will require significant financial resources in order to offer a broad range of products, to maintain customer service and support centers worldwide and to invest in product and process research and development.

In the ion implantation market, we compete with a relatively small number of competitors. An acquisition of, or by, one of our competitors in the ion implant sector may result in a substantially strengthened competitor with greater financial, engineering, manufacturing, marketing and customer service and support resources than we have. Competitors with substantially greater financial resources than we have may be better positioned to successfully compete 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 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 cannot assure you that we will be able to compete successfully with our existing competitors or with new competitors.

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 such customers 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 2000, three of our customers, STMicroelectronics N.V., Texas Instruments Incorporated, and Motorola, Inc. accounted for 28.0% of our net sales, and our ten largest customers accounted for 56.3%. None of our customers has entered into a long-term agreement requiring it to purchase our products. Product sales to certain of our customers may decrease in the near future as those customers complete current purchasing requirements for new or expanded fabrication facilities. 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 increase the adverse 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 $150,000 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.

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 scheduled shipments or in shipments from new orders could materially and adversely affect us, which could cause our stock price to decline significantly. 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.

We are dependent upon our Japanese joint venture and Sumitomo for access to the Japanese semiconductor equipment market.

In 1982, we established our SEN joint venture with Sumitomo to provide us with additional manufacturing capacity for our ion implantation products and local access to the Japanese semiconductor equipment market. Under our arrangements with Sumitomo, our ion implantation products may be sold in Japan only through the joint venture. We receive our 50% proportionate share of the equity income or loss from SEN. As part of the joint venture arrangement, we have entered into a separate license agreement with SEN, last renewed in 1996, under which SEN is entitled to use our ion implantation technology in sales of ion implanters to semiconductor manufacturers in Japan. We receive substantial income from this license agreement. The license agreement expires on December 31, 2004 and is automatically renewable for successive five-year periods unless either party has provided one year's prior notice of termination. A substantial decline in SEN's sales and income from operations could have a material adverse effect on our net income.

We also have an arrangement with Sumitomo, outside the SEN joint venture, under which it is the exclusive distributor of our dry strip, photostabilization and rapid thermal processing products to semiconductor manufacturers in Japan. This 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 substantially dependent upon sales of our products and services to customers outside the United States.

Sales of our products and services to customers outside the United States, including exports from our U.S. facilities, accounted for approximately 49.4% , 53.5% and 69.4% of our net sales in 1998, 1999 and 2000, 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, we are subject to 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 operations; and
- potentially adverse tax consequences.

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. If it becomes necessary for us to make sales denominated in foreign currencies, we will become more exposed to the risk of currency fluctuations. Our equity income and royalty income from SEN are denominated in Japanese yen.

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 Taiwan and Singapore. If we are unable to retain our existing key personnel, or attract and retain additional qualified personnel, we may from time to time experience inadequate levels of staffing to develop, manufacture and market our products and perform services for our customers. As a result, our growth could be limited due to our lack of capacity to develop and market our products to our customers, 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 us and cause the value of our common 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 subassemblies 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 prior to 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 Corporation, including increased costs associated with being a publicly traded, stand-alone company.

In certain circumstances, we may need additional capital.

We believe our capital requirements will vary greatly 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 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. We cannot assure you, however, that the underlying assumed levels of sales and expenses will prove to be accurate. 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. Future equity financings would be dilutive to the existing holders of our common stock. Moreover, we are restricted in raising substantial amounts of equity capital under our tax sharing and indemnification agreement with Eaton Corporation, as well as by market conditions. Future debt financings could involve restrictive covenants that 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. in the United States District Court for the District of Massachusetts. The complaint alleges that Applied's medium current/high energy ion implanter machine 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, asking 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 of our patented technology from implanters that Applied may have placed in chipmakers' plants for process development trials.

While we believe our claims are meritorious and intend to pursue this matters vigorously, there can be no assurance of a favorable outcome.

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.

Risks Related to our Agreements with Eaton Corporation

Prior to 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 Corporation 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 Corporation. 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 period beginning after December 31, 1999 through December 29, 2000.
- Until December 29, 2002, without Eaton's consent, we may not liquidate, merge or consolidate with any person, or enter into any transaction or make any change in our equity structure that might cause Eaton's distribution of our stock to be treated as part of a plan pursuant to which one or more persons acquire a 50-percent or greater interest in our stock.
- We have agreed not to solicit or recruit employees of Eaton without Eaton's consent until December 29, 2002.

Transitional Services. We are currently using Eaton to provide all or a portion of the following services, including:

- voice and data transmission and other data related operations;
- accounts receivable, accounts payable, fixed assets, payroll, general accounting and financial accounting consolidation;
- cash management;
- human resources;
- tax
- legal; and
- real estate.

Our transitional services agreements with Eaton will generally terminate not later than December 31, 2001. We are in the process of engaging our own personnel and creating or acquiring our own processes, services and systems to replace some of the services and systems provided to us by Eaton. In order to successfully implement these services without Eaton's assistance, we must be able to attract and retain a significant number of highly skilled employees.

Although Eaton is contractually obligated to provide us with these services, these services may not be provided at the same level as when we were part of Eaton or on which we could provide the services for ourselves. Moreover, the cost of obtaining such services from Eaton may exceed the cost at which we could provide such services for ourselves with our own personnel and creating or acquiring our own processes, services and systems.

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 non-binding 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 Corporation and one, Alexander M. Cutler, is also an executive officer of Eaton. Our directors who are also directors of Eaton will have obligations to both companies and may have conflicts of interest with respect to matters that could have different implications for Eaton and us.