

ANNUAL REPORT

To Shareholders



axcelis



To Our Shareholders:

Fiscal 2002 challenged the entire semiconductor industry. The equipment and materials sector marked the second consecutive year of double-digit declines, making this downturn unprecedented in our industry's history. During this demanding time, the Axcelis team focused on areas within our control, and we are very proud of what we have been able to accomplish over the past 12 months. We took the opportunity to sharpen our sights, build on our strengths and deliver the most competitive products and services available. Customers continue to buy advanced technology for leading-edge applications, and we're confident that Axcelis is well positioned to meet these demands when the inevitable upturn in the business cycle occurs.

We have remained steadfast in our strategy to be a top-ten semiconductor equipment supplier, with a #1 or #2 position in all of our served markets. We continue to make the right investments in technology, customer support infrastructure and in operational excellence to set the stage for profitable growth in the coming years.

In executing this strategy, this means we are:

- Delivering innovative products with a clear productivity and technology advantage, tied directly to our customers' and industry roadmaps. We continued to build our complementary product positions in RTP, Cleaning and Curing, enabling growth beyond ion implantation. We have succeeded in increasing our complementary businesses to 25% of annual revenues in 2002, up from 20% in 2001.
- Focusing our attention in expanding new markets, particularly China, to secure an early advantage as that market continues to grow. Leading chipmakers in China continue to plan new fabs, and capital spending in the region is expected to grow 150% in 2003, representing an estimated 9% of worldwide wafer fab equipment spending.
- Lowering our cost structure while enhancing operational efficiency to improve profitability. We have lowered our quarterly breakeven point by 30% since the beginning of 2001.

A Milestone Year for Innovation

Our commitment to innovation is unmatched. In early 2002, we announced the opening of our Advanced Technology Center in Beverly, MA, a new facility dedicated to next-generation semiconductor process development, product demonstration and customer training. The Center gives our customers access to Axcelis' equipment and process applications expertise, supporting them with core transistor formation technology as well as advanced cleaning and curing techniques used in semiconductor production. The facility also provides a rich, collaborative environment where technical alliances and process integration programs can be carried out with our customers, as well as our partners in academia, consortia and industry. In addition, a new training center provides courses focused on optimizing system performance and productivity using our new 'blended learning' paradigm, which combines traditional, electronic and web-based training methods for both customers and our own award-winning service and support organization.

2002 was a record year for innovation on the product technology front. During the year, we launched the Ultra™, the next generation of multi-wafer high current, low energy implanters that enable high-volume production for sub-130 nanometer devices. The product quickly won a total of eight strategic customers during the year, evidence of its compelling productivity advantage. The Ultra has positioned Axcelis to regain the leadership position in ion implantation.

We have also gained tremendous momentum with our complementary products through key wins and next-generation applications development in the areas of strip over low-k, non-volatile memory erasure, and low-temperature silicides. We extended our leadership in the photostabilization segment by introducing RapidErase™, a revolutionary new product designed to improve manufacturing yield by eliminating damaging charge build up in semiconductor devices. Axcelis also continued to gain traction in the RTP segment, with six customers now using our tools in both 200 mm and 300 mm fabs worldwide. In the dry strip segment, we've increased our market penetration by securing key wins at customers in North America, Asia and Europe for both logic and memory applications.

Penetrating Growth Markets

Building our infrastructure in Asia Pacific –the fastest growing region in the world – was a major focus this year. We opened Axcelis' China headquarters in Shanghai and acquired the semiconductor equipment division of Tritex International, one of China's leading capital equipment distribution and support firms. This acquisition followed a 20-year partnership between our companies, and marks an important move in Axcelis' long-term strategy to support China's rapidly growing semiconductor industry. China is widely seen as one of the fastest growing semiconductor markets in the world, with its entrance to the World Trade Organization in 2001 further strengthening its growth outlook. Industry forecasts call for China to become the second largest market for consumer chips by 2010, and we are well positioned for success. Axcelis currently has the largest installed base of ion implanters in China and with our most recent announcement of a full suite of tools ordered by SMIC, we believe we are the benchmark as that region grows.

In Japan, our joint venture partner Sumitomo Eaton Nova (SEN) continued to build momentum in ion implantation. SEN had notable successes in the medium current and high current ion implant segments for traditional applications and emerging silicon-on-insulator (SOI) applications. SEN also continued to expand its flat panel implant business by securing two additional customers. Our collaboration with SEN in R&D and marketing has strengthened our product portfolio and customer positions globally.

Improving Operational Effectiveness

When looking at the future of our industry, we recognize that technology alone will not be enough to maintain a competitive advantage. Productivity gains, in terms of improved efficiencies and prudent cost reductions, are critical to achieving long-term profitable growth in this challenging industry. We are committed to lowering our breakeven level and improving our operating leverage through on-going aggressive cost reduction programs that to date have included lowering headcount by over 20% and reducing quarterly SG&A by 37% in the past two years, as well as consolidating our manufacturing facilities in Beverly. We continue to make significant strides in operational efficiency to drive margin improvement and reduce peak-to-trough margin volatility. We have embarked on a program that enables us to outsource approximately 33% of our incoming material, up from under 10% at the beginning of the cycle. Our goal is continue our outsourcing model through complete system build using international and domestic partnering agreements. Supply chain management initiatives like supplier collaboration via Axcelis' eSupplychain solution, direct and non-inventory eAuctions, and dynamic supply chain systems build on our successes with ship from cell and lean manufacturing to help us reach these goals.

The Axcelis Advantage

Our people continue to be our greatest asset. The dedication of the Axcelis family during this challenging year was tremendous, and we'd like to thank everyone for rising to the occasion. Our core values – speed, accountability, teamwork, empowerment and opportunity - have enabled us to build a successful organization and an exemplary team that continues to be rewarded personally and professionally.

Specifically, we'd like to recognize Dr. Walter Class, who was appointed the '2002 Axcelis Fellow' as well as eight newly appointed members who have joined our elite group of distinguished technologists. During his 16 years at Axcelis, Walter has made innumerable contributions toward our success in technology development and business strategy. Individuals like Walter continue to make this one of the most exciting industries in the world and Axcelis one of the most successful companies in our industry.

While our success in the next year depends to some extent on how quickly the industry recovers, we have no doubt that Axcelis has what it takes to lead the industry into the upturn. We remain focused on actions that will strategically position us to win. We continue to prepare ourselves for growth, and are poised and ready to do the best possible job for our shareholders, our customers and our employees.

Sincerely,



Mary G. Puma
President and CEO



Michael Luttati
Executive VP and COO



Neil Moses
Executive VP and CFO

SAFE HARBOR STATEMENT

This document contains forward-looking statements under the SEC safe harbor provisions. These statements are based on management's current expectations and should be viewed with caution. They are subject to various risks and uncertainties, many of which are outside the control of the company, including our ability to implement successfully our profit plans, the continuing demand for semiconductor equipment, relative market growth, continuity of business relationships with and purchases by major customers, competitive pressure on sales and pricing, increases in material and other production costs that cannot be recouped in product pricing and global economic and financial conditions.

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended **December 31, 2002**

**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
(State of incorporation)

34-1818596
(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:

<u>Title of class</u>	<u>Name of each exchange on which registered</u>
None	None

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

Common Stock, \$.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 No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Aggregate market value of the voting stock held by nonaffiliates of the registrant as of June 30, 2002: \$1,107,390,847

Number of shares outstanding of the registrant's Common Stock, \$0.001 par value, as of March 25, 2003: 98,395,258

Documents incorporated by reference:

Portions of the definitive Proxy Statement for Axcelis Technologies, Inc.'s Annual Meeting of Stockholders to be held on June 26, 2003 are incorporated by reference into Part III of this Form 10-K.

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Forward Looking Statements

Certain information contained or incorporated by reference in this Annual Report on Form 10-K is forward-looking in nature. All statements included or incorporated by reference in this Annual Report on Form 10-K or made by management of Axcelis Technologies, Inc., other than statements of historical fact, are forward-looking statements. Examples of forward-looking statements include statements regarding Axcelis' future financial results, operating results, business strategies, projected costs, product development or future sales, competitive positions and plans and objectives of management for future operations. We use terminology such as "anticipates," "believes," "plans," "expects," "future," "intends," "may," "will," "should," "estimates," "predicts," "potential," "continue," and similar expressions to identify such forward-looking statements. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of important factors, including those discussed in Exhibit 99 to this Form 10-K and elsewhere in this Form 10-K. This Form 10-K also contains forward-looking statements attributed to third parties relating to their estimates regarding the growth of our markets. Forward-looking statements are subject to known and unknown risks, uncertainties, and other factors that may cause our actual results, as well as those of the markets we serve, levels of activity, performance, achievements and prospects to be materially different from those expressed or implied by the forward-looking statements.

PART I

Item 1: Business

Overview of Our Business

We are a worldwide producer of ion implantation, dry strip, thermal processing and photostabilization equipment used in the fabrication of semiconductor chips in the United States, Europe and Asia Pacific. We have been the market share leader, reported by Gartner Dataquest, in the ion implantation market segment in 5 of the last 7 years (through 2001) and have been the market leader in the photostabilization market since its inception in 1993. The ion implantation business comprises approximately 75% of our revenues in 2002 with the remaining 25% being the dry strip, thermal processing and photostabilization businesses. In addition to equipment, we provide extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. We sell to all the top 20 semiconductor chip manufacturers worldwide. We have a 50-50 joint venture with Sumitomo Heavy Industries, Ltd. in Japan. This joint venture, formed in 1982, is known as Sumitomo Eaton Nova Corporation, or SEN. 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.

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

Industry Overview

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

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

2001 and 2002 have had a severe adverse impact on the semiconductor industry and on suppliers to the semiconductor industry.

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

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

Axcelis’ Strategy

Our mission is to be a worldwide supplier of semiconductor processing equipment and services. Our vision is to be one of the top 10 semiconductor equipment companies, ranked by sales revenue, and to have the largest or second largest market share in each of our product markets. In 2001, Gartner Dataquest ranked us, together with SEN, 12th among semiconductor equipment manufacturers based on aggregated sales revenues for us and SEN of \$680 million.

We seek to provide best-in-breed semiconductor manufacturing equipment for selected front-end-of-line (transistor formation) as well as back-end-of-line (interconnect) process steps. Our primary strength is in the front-end transistor sequence, given our more than 20 year history in ion implantation, an important front-end-of-line process step. Our growth strategy involves expanding our product offering beyond implant. Through acquisitions completed in 1996 and 1997, we added complementary tool sets (cleaning, curing, and thermal processing) that are adjacent to the ion implant process sequence. By adding these complementary products to our ion implantation product base, the total available market for all of our products has tripled, based on Dataquest’s forecast for 2005, to over \$3.0 billion. Our revenues from these complementary products represented 25% of our total 2002 revenues. We intend to continue growing our complementary product businesses, while maintaining our leadership position in ion implantation. In addition to offering adjacent front-end-of-line process steps around ion implant, these complementary tools led us to the back-end-of-line as these cleaning, curing and thermal processing tools are also used in the formation of interconnect layers. We believe the use of new materials for interconnects, such as copper conductors and new insulating materials called low-k dielectrics, will increase the appeal of our cleaning and curing products for back-end-of-line applications.

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

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

We have continued to invest in research and development through the industry cycles to assure our products meet the needs of our customers. We continue to add to our portfolio of patents and unpatented proprietary technology to ensure that our investment in technology leadership is translated into unique product advantages. We take pride in our staff of very talented scientists and engineers that represent over 50% of our workforce. We strive for operational excellence by focusing on ways to lower our manufacturing and design cost and to improve our delivery times to our customers. Finally, we have invested to improve our customer support infrastructure and have established Global Customer Teams, a very focused account management structure, to improve our customer relationships and increase customer satisfaction.

Ion Implantation Systems

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

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

A high energy implanter is typically used to implant dopants deep in the wafer, which allows improved isolation of adjoining transistors on the same chip. The high-energy segment is relatively new, with mainstream application being adopted in the mid to late 1990’s. The use of high energy implanters has expanded into the manufacture of virtually all types of chips. They are used in the manufacture of smaller, more complex chips, such as those used in cellular phones and other hand held devices because they enable more functionality with less power consumption. They are also used for non-volatile memory applications such as FLASH memories and embedded technologies like system on chip (SOC) to allow for multiple voltages on the same chip. These devices are typically manufactured using multi-wafer or “batch” implanters which process up to 13 wafers at one time, leading to increased productivity. Trends in this segment include the use of the high energy implanter for shallower implants that have typically been processed by a medium current implanter, which increases the capacity utilization of the machine, thus reducing its cost of ownership.

For implants that require high concentration of dopants- at medium to very shallow depths, a high current / low energy implanter is most often used. These implants are used to enable the electrical connections from the silicon to the metal lines for the subsequent interconnect cycle. In some applications, very shallow, high-dose implants result in faster chips, an important feature for certain microprocessors, digital signal processors and other types of logic chips. Machines with very low energy are required to make very shallow implants. These low energy systems typically require multi-wafer or

“batch” end stations which allow for a shorter beam line length, minimizing beam dispersion problems that arise from the low energy. As the demand for these faster chips requiring very shallow implants grows, we expect the number of implanter tools per fab to increase, since productivity is greatly reduced at these lower energy levels. As a result, the high current market is predicted by industry analysts to be the fastest growing implant segment over the next few years. During 2002, we introduced our Ultra High Current / Low Energy line of ion implanters as an extension of our existing high current products. These implanters use proprietary technology to increase the throughput of the machine thus lowering its cost of ownership.

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

Together with SEN, we offer a complete line of high energy, high current and high tilt/medium current implanters for all chips and for all implant steps. We have sold over 2500 implanters worldwide. The following chart lists our principal products:

Product Category	Axcelis Product Name	Description
High Energy	GSD/HE	• 200mm high energy implantation for logic and memory chips
	GSD/VHE	• 200mm very high energy implantation for logic, memory chips and FLASH memory chips
	HE3	• 300mm high energy implantation for all types of chips
	GSD/HE_{mc}	• 200mm high energy /medium current applications
High Current	GSD/200E²	• 200mm standard high current implanter
	GSDIII/LED	• First generation 200mm high current implanter for low energy applications
	HC3 Ultra	• Second generation 300mm high current implanter with low energy capability introduced in April 2002
	GSD Ultra	• Second generation 200 mm low energy implanter with higher throughput for advanced devices introduced in April 2002
High Tilt/ Medium Current	8250HT	• 200mm high tilt and medium current applications for all chips
	MC3	• 300mm high tilt and medium current applications for all chips

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

Curing and Cleaning Systems

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

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

Some of our customers use our photostabilization system for removing unwanted electrostatic charges that build up on the wafer during processing. This process, known as “charge erasure” is used to eliminate or reduce charges that may damage sensitive devices such as FLASH memory devices.

The following chart lists our principal products in each category:

Product Category	Axcelis Product Name	Description
Dry Strip	Gemini ES	• 200mm photoresist strip system
	Fusion ES3	• 300mm/200mm photoresist strip system
	Fusion ES3i	• Second generation 300mm photoresist strip system for strip photo resist over low-k dielectrics
Photostabilizers	Gemini PS	• 200mm photostabilization system for photoresist curing
	Fusion PS3	• 300mm/200mm photostabilization system for photoresist curing
		• Low-k curing and charge erasure applications

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

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

Thermal Processing Systems

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

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

The following chart lists our principal RTP products:

Product Category	Axcelis Product Name	Description
RTP	Summit 200	<ul style="list-style-type: none"> • 200mm thermal processing system
	Summit 300XT	<ul style="list-style-type: none"> • Second generation 300mm thermal processing system used for front end and back end of line applications

Our Summit series of RTP systems has a flexible design, offering both single and dual chamber systems. Its engineering incorporates recent developments in furnace design, temperature measurement, emission correction techniques and wafer handling. The machine is suited particularly well for lower temperature processing where lamp-based systems may have difficulty controlling the temperature. One of the trends in this market segment is the migration to lower temperature nickel silicide formation for advanced devices at 0.13 micron and below.

Post Sales Support and Services

We offer our customers extensive post sales service and support throughout the lifecycle of the equipment we manufacture. We believe that more than 3,500 of our products, including products shipped by SEN, are in use in 50 countries worldwide. The service and support that we provide include spare parts, equipment upgrades, maintenance services and customer training. We offer service out of 38 field offices in eleven countries. Revenues generated through our service and support business represented about 38% of net revenues in 2002 and 33% of revenues in 2001.

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 150 persons located at our manufacturing facilities work with our customers to provide advanced equipment support, applications support, customer training and documentation.

Most of our customers maintain spare parts inventories for our machines. In 1997, we launched a web-based spare parts management and replenishment tracking program, or SMART, to facilitate internet communication and e-commerce with our customers. The implementation of our SMART program has helped us to achieve reduced order fulfillment costs and cycle times resulting in an expanded customer base for this service offering. Our Productivity Plus program launched in 2001 provides equipment optimization capabilities through on-site networking and internet technology.

Sales and Marketing

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

In Japan, we market our products through two channels: one, we sell our ion implant products only through our SEN joint venture, which sells its machines and services directly to semiconductor manufacturers (see "SEN Joint Venture" below); and two, since 1999, we have sold our photostabilizers, dry strip and rapid thermal processing products in Japan through an exclusive distribution agreement with Sumitomo Heavy Industries, Ltd. (SHI). SHI is currently assisting us in a transition of this distribution arrangement to a new distributor.

In China, we historically marketed our products through a distribution arrangement with the semiconductor division of Trittek International. In September 2002, we acquired Trittek's operations in this area and are currently directly selling and servicing our equipment in that market.

International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, accounted for 52.0% of total net sales in 2002, 62% in 2001, and 69.4% of total net sales in 2000. Substantially all of our sales are denominated in U.S. dollars. SEN's sales are denominated in Japanese yen. See Note 13 to our Consolidated Financial Statements contained in Item 8 of this Form 10-K for a breakdown of our net sales and long-lived assets in the United States, Europe and Asia.

Customers

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

Net sales to our ten largest customers accounted for 63.5%, 50.6%, and 56.3%, of net sales, respectively, in 2002, 2001, and 2000. 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 2002, IBM represented 14.2% percent of net sales. In 2001, no customer represented more than 10% of net sales and in 2000, STMicroelectronics N.V. accounted for 13.9% of net sales.

SEN Joint Venture

For more than 20 years, we have exclusively licensed our ion implantation technology in Japan to SEN, a Japanese corporation of which Axcelis owns 50%. The other 50% of SEN is owned by Sumitomo Heavy Industries, Ltd.. SEN has 555 employees based in Tokyo and Toyo, Japan and manufactures, sells and services ion implanters in Japan. Each of Axcelis and SHI has equal representation on SEN's Board of Directors. In addition, Naoki Takahashi, one of Axcelis' directors, is a director and officer of SHI.

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

SEN is obligated to pay us royalties on their net sales of ion implantation products in accordance with the rates set forth in the license agreement, which vary depending on the type of implanter sold. These royalty payments were \$8.1 million in 2002, \$5.8 million in 2001, and \$13.5 million in 2000. The license agreement will renew on December 31, 2004 for an additional 5 year term unless terminated by either party prior to the end of 2003. SEN has been very successful in achieving its business purpose to manufacture and sell ion implanters using our technology in Japan. We continue to seek to streamline our operations and to optimize the value of SEN, which could result in modifications to the SEN license agreement. However, as of the filing of this Form 10-K, no modifications have been agreed to, and therefore we currently expect to renew our license to SEN at the end of 2003.

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

Research and Development

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

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

Our expenditures for research and development during 2002, 2001, and 2000, were \$72.0 million, \$76.5 million, and \$68.8 million respectively, or 23%, 21.0%, and 10.1%, of net sales, respectively. In 2002, we maintained an equivalent level of R&D expenditures to that in 2001 as we made several new product introductions at 200 mm and 300mm. We expect in future years that research and development expenditures will continue to represent a substantial percentage of net sales.

Manufacturing

We manufacture ion implant, photostabilization, dry strip and rapid thermal processing products at our facility in Beverly, Massachusetts. In addition, SEN manufactures ion implant and flat panel products at its facility in Toyo, Japan. From time to time, SEN acts as an out-sourced manufacturer for us in the case of those products currently manufactured by SEN and not by Axcelis, including our MC3 medium current implanter. In the fourth quarter of 2002, we completed the consolidation of our manufacturing operations from Rockville, Maryland (where we had previously manufactured our Curing and Cleaning products) to Beverly, Massachusetts. We expect this manufacturing consolidation to improve operational efficiencies.

In early 2002, we completed construction of a 135,000 square foot addition to our Beverly facility, called our Advanced Technology Center, which houses an advanced process development, product demonstration and customer training center for all of our products. In 1999, we completed an 80,000 square foot expansion of the Beverly facility to provide for Class 10,000 clean manufacturing.

Our manufacturing facilities employ advanced manufacturing methods and technologies, including lean manufacturing, Six Sigma controls and processes and web-enabled inventory purchase systems. We manufacture our products in cleanroom environments that are similar to the cleanrooms used by semiconductor manufacturers for wafer fabrication. Most of our systems are designed and tailored to meet the customer's specifications as outlined in the sales contract.

To ensure that the customer's specifications are satisfied, per contract terms, the majority of systems are tested at our facilities prior to shipment, normally with the customer present, under conditions that substantially replicate the customer's production environment, and the customer's criteria are confirmed to have been met. These environmental conditions include power requirements, toxic gas usage, air handling requirements including humidity and temperature, equipment bay configuration, wafer characteristics and other factors. These procedures are intended to reduce installation and production qualification times and the amount of particulates and other contaminants in the assembled system, which in turn improves yield and reduces downtime for the customer.

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

To reduce our labor expense and the time to installation for our customers, beginning in 1999, we adopted a new manufacturing technique for our ion implanter that we refer to as Ship from Cell (SFC). This technique allows us to avoid fully integrating and testing the integrated implanters on our factory floor prior to shipment. We assemble the implanters in 5 or 6 separate modules. The modules are then tested using specially developed software and are shipped directly to the customer bypassing the factory integration step. As a result, the implanter system is integrated for the first time on the customer's factory floor and tested for quality assurance. This technique saves an average of 4 weeks in our manufacturing cycle time thus improving lead-times for our customers. Currently all of our 200 mm ion implanters can be shipped using the Ship from Cell technique. By the end of 2003, we expect that all of our 300 mm tools will be qualified for Ship from Cell manufacturing. For 2002, 23% of our ion implant shipments were manufactured via SFC.

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.

Competition

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

Ion Implantation. In high energy equipment our principal competitor is Varian Semiconductor Equipment Associates, Inc. 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 for sales in that market.

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

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

Intellectual Property

We rely on patent, copyright, trademark and trade secret protection, as well as contractual restrictions, in the United States and in other countries to protect our proprietary rights in our products and our business. As of February 5, 2003, we had 166 patents issued in the United States and 376 patents granted in other countries, as well as 454 patent applications (73 in the United States and 381 in other countries) on file with various patent agencies worldwide. We intend to file additional patent applications as appropriate. Although patents are important to our business, we do not believe that we are substantially dependent on any single patent or any group of patents.

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

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

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

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

Backlog

As of December 31, 2002, our systems backlog was \$60.0 million, as compared to \$73.9 million, and \$211.0 million, respectively, for the years ended 2001 and 2000. Our policy is to include in backlog only those system orders for which we have accepted purchase orders and typically are due to ship within 6 months. Backlog does not include orders received for our service business (spare parts, consumables and service contracts) due to the turn rate associated with that business. Generally, orders for service or parts revenue received during the quarter are performed or shipped within the same quarter. All orders are subject to cancellations or rescheduling by customers with limited or no penalties. Due to possible changes in system delivery schedules, cancellations of orders and delays in systems shipments, our backlog at any particular date is not necessarily indicative of our actual sales for any succeeding period. In addition, our backlog at the beginning of a quarter typically does not include all orders required to achieve our sales objectives for that quarter and is not a reliable indicator of our future sales.

Employees

As of December 31, 2002, we had 1,774 full-time and 64 temporary employees worldwide, of which 1,519 were employed in North America, 192 in Asia and 127 in Europe. We consider our relationship with our employees to be good.

Environmental

We are subject to environmental laws and regulations in the countries in which we operate that regulate, among other things: air emissions; water discharges; and the generation, use, storage, transportation, handling and disposal of solid and hazardous wastes produced by our manufacturing, research and development and sales activities. As with other companies engaged in like businesses, the nature of our operations exposes us to the risk of environmental liabilities, claims, penalties and orders. We believe, however, that our operations are in substantial compliance with applicable environmental laws and regulations and that there are no pending environmental matters that would have a material impact on our business. We are ISO-14001 certified in our Beverly, MA. and Rockville, MD. facilities and re-certification is scheduled for 2003.

Item 2: Properties

We have a total of 40 properties, of which 19 are located in the United States and the remainder are located in Asia and Europe, including offices in Taiwan, Singapore, South Korea, China, Malaysia, Italy, Germany, France and the United Kingdom. Of these properties, two are owned and 38 are leased. We own our 54,600 square foot corporate headquarters in Beverly, Massachusetts located adjacent to our Beverly manufacturing facility.

Our principle facilities are listed below:

Facility Location	Principal Use	Square Footage (Owned/Leased)
Beverly, Massachusetts	Manufacturing of ion implantation rapid thermal processing, dry strip and photostabilization products, research and development, sales/marketing and customer support.	445,200 (owned)
Rockville, Maryland	Research and Development, marketing and customer support.	117,328 (leased)

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

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

In 2002, we completed the relocation of the manufacturing and support functions for our Curing and Cleaning products from our Rockville, MD facility to our Beverly, MA facility. As a result, we completed this relocation in 2002, and lowered our leased square footage at our Rockville facility to 117,328 square feet.

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

Item 3: Legal Proceedings

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

Hearings on summary judgment motions began in December 2001 and rulings are expected prior to trial, which has been scheduled for May 2003. We believe our claims are meritorious and intend to

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

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

None

Executive Officers and Key Management

Executive Officers

Mary G. Puma, 45, has been the Company's Chief Executive Officer since January 2002. From May 2000 until January 2002, Ms. Puma was the Company's President and Chief Operating Officer, prior to which she served as a Vice President of the Company from February 1999. In 1998, she became General Manager and Vice President of the Implant Systems Division of Eaton Corporation, a global diversified industrial manufacturer. In May 1996, she joined Eaton as General Manager of the Commercial Controls Division. Prior to joining Eaton, Ms. Puma spent 15 years in various marketing and general management positions for General Electric Company. Ms. Puma is a director of Nordson Corporation.

Michael J. Luttati, 47, has been the Company's Executive Vice President and Chief Operating Officer since January 2002 and a Senior Vice President since July 2000. Mr. Luttati was General Manager, Ion Implant and Rapid Thermal Processing Systems from January 2000 until January 2002, prior to which he served as Director, Sales and Service from November 1998. Prior to joining us, Mr. Luttati served as Vice President, North America Sales Operations of Teradyne Inc., a manufacturer of semiconductor test and interconnection products, from 1996 to 1998 and, from 1983 to 1996, he held several other sales and marketing positions with Teradyne.

Cornelius F. Moses III, 44, has been our Executive Vice President and Chief Financial Officer since October 2000. Prior to that, Mr. Moses was Senior Vice President, Chief Financial Officer of Bradlees, Inc., a discount retail chain, from 1995. From 1990 to 1995, Mr. Moses had various positions with Ames Department Stores, Inc., most recently as Senior Vice President, Finance.

David Duff, Ph.D., 42, has been our Vice President and General Manager of our Ion Implant and Rapid Thermal Processing business since April, 2002. Prior to that, Dr. Duff held several management positions at Axcelis since joining us in 1997, most recently, as Director of Marketing, Implant and Thermal Products. Prior to Axcelis, Dr. Duff worked in the capital equipment industry in variety of marketing management positions and prior to that, worked as a research scientist.

Lynnette C. Fallon, 43, is our Senior Vice President, Human Resources and Legal, General Counsel and corporate Secretary. Ms. Fallon joined Axcelis in April 2001 as Senior Vice President and General Counsel. Prior to that, Ms. Fallon was a partner in the Boston law firm of Palmer & Dodge LLP since 1992, where she was head of the Business Law Department from 1997 to 2001.

Kevin M. Bisson, 41, has been our Vice President, Controller and Treasurer since June 2002 and Vice President and Controller since June 2000. From January 2000 to May 2000, Mr. Bisson served as the Director of Finance. Prior to joining Axcelis, Mr. Bisson was Director of Finance for Hamilton Sundstrand Corporation, a subsidiary of United Technologies Corporation and a global supplier of aerospace and industrial products, from 1999 and he held various other financial management positions at UTC since 1989.

Jan-Paul van Maaren, 41, has been our Vice President and General Manager of our Curing and Cleaning business since December 2001. Prior to that, Dr. van Maaren held several management positions at Axcelis since joining us in 1997, most recently, as Director of Business Excellence for Ion Implantation and Rapid Thermal Processing systems. Prior to joining Axcelis, Dr. van Maaren held various marketing and management positions at Honeywell.

Key Management

Craig Halterman, 39, has been our Vice President and Chief Information Officer since July 2000 and was our Director of Information Technology since the beginning of 2000. Prior to joining us,

Mr. Halterman was Information Technology Director at Honeywell/Allied Signal in its space and defense systems business since 1997. Prior to that, Mr. Halterman held various information technology positions at The Dow Chemical Co., Thompson Consumer Electronics, General Electric Co. and RCA Consumer Electronics.

John M. Poate, 62, has been our Vice President and Chief Technology Officer since June 2000. From 1997 until he joined Axcelis, Dr. Poate held the joint positions of Dean of the College of Science and Technology and Dean of Liberal Arts at the New Jersey Institute of Technology. From 1971 to 1997, he held several senior research positions, including head of silicon processing research, with Bell Laboratories.

Matthew Flynn, 46, became our Vice President Global Customer Operations in October 2002, prior to which Mr. Flynn was our Director of Sales, Ion Implant and RTP systems. Prior to joining Axcelis in 1996, Mr. Flynn held executive and management roles at Cherry Semiconductor, an integrated circuit manufacturer and at Teradyne Inc., a manufacturer of semiconductor test and interconnection products.

Kevin Brewer, 44, became our Vice President of Manufacturing Operations in October 2002, prior to which Mr. Brewer was Axcelis' Director of Operations. Prior to joining Axcelis in 1999, Mr. Brewer was Director of Operations, Business Jets at Raytheon Aircraft Company, a leading manufacturer of business and special mission aircraft owned by Raytheon Company, a manufacturer of defense, government and commercial electronics, as well as aircraft. Prior to that, Mr. Brewer held various management positions in operations and strategic planning in Raytheon Company's Electronic Systems and Missile Systems groups.

PART II

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

Our common stock has traded on the Nasdaq stock market under the symbol ACLS since our initial public offering on July 11, 2000. The following table sets forth the high and low closing sale prices as reported on the Nasdaq stock market during each of the quarters for the two most recent fiscal years. As of March 25, 2003, we had approximately 11,178 stockholders of record. Other than the \$300 million cash dividend paid to Eaton out of the proceeds from our initial public offering in 2000, Axcelis has not paid any cash dividends. We do not anticipate paying cash dividends in the future and, in any event, would be restricted from doing so by the terms of our bank credit agreement.

	Common Stock Price	
	High	Low
Fiscal 2001		
First quarter	12.88	8.44
Second quarter	18.39	9.38
Third quarter	15.25	8.77
Fourth quarter	14.91	9.01
Fiscal 2002		
First quarter	16.04	11.34
Second quarter	15.36	9.80
Third quarter	11.46	4.46
Fourth quarter	8.66	3.54

Item 6: Selected Financial Data

The following selected consolidated statements of operations data for each of the three years ended December 31, 2002, 2001 and 2000 and the consolidated balance sheet data as of December 31, 2002 and 2001 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 years ended December 31, 1999 and 1998 and the consolidated balance sheet data as of December 31, 1999 and 1998 have been derived from the audited financial statements contained in our registration statement on Form S-1 filed on May 5, 2000, as amended.

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

	Years ended December 31,				
	2002	2001	2000	1999	1998
	(in thousands, except per share amounts)				
Consolidated statements of operations data:					
Net sales	\$309,705	\$365,264	\$680,401	\$397,267	\$265,709
Gross profit	103,965	131,025	299,309	157,082	64,229
Operating income (loss)	(58,318)	(62,245)	104,637	12,333	(137,909)
Net income (loss)	(26,150)	(20,163)	99,115	14,428	(82,047)
Net income (loss) per share:					
Basic	\$ (0.27)	\$ (0.21)	\$ 1.13	\$ 0.18	\$ (1.03)
Diluted	\$ (0.27)	\$ (0.21)	\$ 1.13	\$ 0.18	\$ (1.03)
Shares used in computing per share amounts:					
Basic	97,920	97,215	88,063	80,000	80,000
Diluted	97,920	97,215	88,064	80,000	80,000
Consolidated balance sheet data:					
Cash and cash equivalents	\$150,651	\$124,177	\$168,157	\$ 3,530	\$ 3,338
Working capital	292,386	226,412	297,348	169,759	91,028
Total assets	669,451	551,396	672,331	422,835	341,121
Long-term debt	125,000	—	—	—	—
Stockholders' equity	452,508	462,861	491,369	342,296	269,161

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

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

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

Overview

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

Separation from Eaton Corporation

Prior to the initial public offering on July 10, 2000, we were a wholly owned subsidiary of Eaton Corporation (Eaton). On June 30, 2000, Eaton substantially completed the transfer to us of all of the assets of its semiconductor equipment operations that were not previously owned by us, and we assumed the related liabilities. On December 29, 2000, Eaton completed the divestiture of its investment in Axcelis by distributing its remaining 82% ownership interest in Axcelis in the form of a spin-off to Eaton shareholders. We also entered into various other agreements with Eaton which provided for transitional services and support, including those associated with voice and data

transmissions and other data-related operations, accounts receivable, accounts payable, fixed assets, payroll, general accounting, financial accounting consolidation, cash management, human resources, tax, legal and real estate. Under these agreements, we reimbursed Eaton for its direct and indirect costs of providing these services until completion of the divestiture, and thereafter, for a limited time, we reimbursed Eaton for its costs plus an additional fee. The transition periods covered by these agreements generally expired on December 29, 2001. The agreements did not necessarily reflect the costs of obtaining these services from unrelated third parties or of providing the applicable services in-house. However, management believed that purchasing these services from Eaton provided an efficient means of obtaining these services during the transition period.

Basis of Presentation

On June 30, 2000, Eaton substantially completed the transfer of all the assets and related liabilities of its semiconductor equipment operations to us. Prior to the transfer, the financial statements of the semiconductor equipment operations were presented on a combined basis. Prior to the initial public offering, Eaton did not account for or operate Axcelis as a separate, stand-alone entity and, as a result, the financial information included herein may not reflect what our consolidated financial position, operating results and cash flows would have been during the periods presented prior to the initial public offering, if we had been a separate, stand-alone entity.

Critical Accounting Policies

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

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

Revenue Recognition

The Company's revenue recognition policy involves significant judgment by management. The Company's revenue recognition policy is described in detail in Note 2 to the consolidated financial statements. As Note 2 describes in detail, the Company considers a broad array of facts and circumstances in determining when to recognize revenue, including the complexity of the customer's post delivery acceptance provisions and the installation process. In the future, if the post delivery acceptance provisions and installation process become more complex or result in a materially lower rate of acceptance than we now experience, the Company may have to revise its revenue recognition policy, which could affect the timing of revenue recognition.

Deferred Tax Assets

As of December 31, 2002, we have approximately \$73.7 million of deferred tax assets related principally to domestic loss carryforwards and tax credit carryforwards that expire at various times

through 2022, for which a \$0.9 million valuation allowance has been recorded. The realization of these assets is based upon estimates of future taxable income. Projections of future earnings are based on revenue assumptions consistent with industry forecasts for the next three years along with the necessary operating expenses to support our revenue assumptions. Based on these projections, we estimate that the loss carryforwards will be fully utilized within three years. We update these projections quarterly based on current industry trends and company-specific events. Should trends within our industry or specific to the Company cause our projections not to materialize and future taxable losses continue, a valuation allowance of up to \$73.7 million may be required. Such a valuation allowance, if required, would result in a non-cash charge to earnings.

Goodwill and Other Intangible Assets

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

During 2002, in accordance with SFAS No. 142, we ceased to amortize goodwill arising primarily from our 1997 acquisition of our curing and cleaning business. In lieu of amortization, we perform an impairment review of our goodwill. Impairment tests are performed annually, or more frequently if there are other indicators of impairment. The annual impairment test consists of determining the fair market value of the business unit through a discounted cash flow analysis. Management's best judgments are employed in determining future market conditions that impact this discounted cash flow analysis. As a result of our annual review, we determined that there was no impairment of our goodwill as of December 31, 2002. In the future, we will conduct an annual impairment review. If we determine through the impairment review process that goodwill has been impaired, we would record the impairment charge in our statement of operations as a non-cash charge to earnings. Net goodwill amounted to \$40.7 million as of December 31, 2002.

We assess the impairment of identifiable intangibles whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important that could trigger an impairment review include the following:

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

As part of this assessment, we would review the expected future undiscounted cash flows to be generated by the assets. When we determine that the carrying value of intangibles may not be recoverable, we measure any impairment based on a projected discounted cash flow method using a discount rate determined by our management to be commensurate with the risk inherent in our current business model. Net intangible assets amounted to \$13.1 million as of December 31, 2002.

Accounts Receivable

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

Inventory

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

Product Warranty and Installation Costs

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

Results of Operations

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

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Net sales	100.0%	100.0%	100.0%
Gross profit	33.6	35.9	44.0
Other costs & expenses			
Research & development	23.3	21.0	10.1
Selling	14.2	13.5	8.3
General & administrative	14.4	15.9	8.9
Amortization of goodwill & intangible assets	0.5	2.5	1.4
Income (loss) from operations	(18.8)	(17.0)	15.4
Other income (expense):			
Royalty income	2.7	1.8	2.2
Equity income of SEN	1.6	3.3	2.9
Interest income	1.2	1.5	0.8
Interest expense	(1.9)	—	—
Other—net	(0.8)	(0.6)	(0.1)
Income (loss) before income taxes	(16.1)	(11.1)	21.2
Income taxes (credit)	(7.6)	(5.5)	6.6
Net income (loss)	(8.4)%	(5.5)%	14.6%

Fiscal year ended December 31, 2002 in comparison to the fiscal year ended December 31, 2001

Net Sales

Net sales were \$309.7 million in fiscal 2002, a decrease of \$55.6 million, or 15.2%, as compared to net sales of \$365.3 million in fiscal 2001. The decrease in net sales was attributable to lower levels of

capital investment by our semiconductor manufacturing customers resulting in reduced sales of our products and services.

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

Gross Profit

Gross profit was \$104.0 million in fiscal 2002, a decrease of \$27.0 million, or 20.6%, as compared to gross profit of \$131.0 million in fiscal 2001. The decrease in gross profit was due mainly to lower sales volume.

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

Research and Development

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

As a percentage of net sales, research and development expense increased to 23.3% in fiscal 2002 from 21.0% in fiscal 2001 as decreased costs between years were more than offset by lower revenues.

Selling

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

As a percentage of net sales, selling expense increased to 14.2% in fiscal 2002 as compared to 13.5% in fiscal 2001 as decreased costs between years were more than offset by lower revenues.

General and Administrative

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

As a percentage of net sales, general and administrative expense decreased to 14.4% in fiscal 2002 as compared with 15.9% in fiscal 2001 as decreased costs between years were more than offset lower revenues.

Amortization of Goodwill and Intangible Assets

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

Income (Loss) from Operations

Loss from operations was \$58.3 million in fiscal 2002 as compared to loss from operations of \$62.2 million in fiscal 2001, primarily as a result of the factors described above.

Other Income (Expense)

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

Income Taxes (Credit)

The company had an income tax credit of \$23.6 million in fiscal 2002 as compared to \$20.2 million in fiscal 2001. Our effective income tax rate was (47.4)% in fiscal 2002 as compared to (50.1)% in fiscal 2001. The tax rate in both periods differs from the U.S. federal statutory rate primarily due to undistributed nontaxable equity income from SEN and credits from increased research activities. See Note 14 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Net Income (Loss)

The company incurred a net loss of \$26.2 million in fiscal 2002 as compared to a net loss of \$20.2 million in fiscal 2001, principally as a result of the factors discussed above.

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

Net Sales

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

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

Gross Profit

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

Gross profit as a percentage of net sales decreased to 35.9% in fiscal 2001 from 44.0% in fiscal 2000. This decrease was due principally to lower manufacturing capacity utilization caused by lower sales volume and an increasing mix of 300 mm sales which currently carry lower average gross margins.

Research and Development

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

Selling

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

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

General and Administrative

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

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

Amortization of Goodwill and Intangible Assets

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

Income (Loss) from Operations

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

Other Income (Expense)

Total other income was \$21.8 million in fiscal 2001 as compared to \$39.6 million in fiscal 2000. Other income consists primarily of royalty income and equity income from SEN. Royalty income, primarily from SEN, was \$6.5 million in fiscal 2001 as compared to \$15.1 million in fiscal 2000. Equity income attributable to SEN was \$12.2 million in fiscal 2001 compared to \$19.6 million in fiscal 2000.

Both decreases in fiscal 2001 were due to lower SEN sales volume due primarily to the downturn in the Japanese semiconductor market which began in the second half of 2001.

Income Taxes (Credit)

The company had an income tax credit of \$20.2 million in fiscal 2001 as compared to income tax expense of \$45.2 million in fiscal 2000. Our effective income tax rate was 50.1% in fiscal 2001 as compared to 31.3% in fiscal 2000. The tax rate in both periods differs from the U.S. federal statutory rate primarily due to undistributed nontaxable equity income from SEN and credits from increased research activities. See Note 14 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Net Income (Loss)

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

Liquidity and Capital Resources

Cash, cash equivalents and short-term investments at December 31, 2002 were \$185.7 million, compared to \$124.2 million at December 31, 2001. The increase in cash, cash equivalents and short-term investments between years was due mainly to the net proceeds of \$121.6 million received from the Company's convertible subordinated note offering in January 2002 offset by cash used in operations of \$56.0 million and purchases of plant and equipment of \$11.8 million. Net working capital was \$292.4 million at December 31, 2002 as compared to net working capital of \$226.4 million at December 31, 2001. The increase in net working capital was due mainly to the increase in cash, cash equivalents and short-term investments at December 31, 2002 compared to December 31, 2001.

Cash used by operating activities was \$56.0 million for fiscal 2002 as compared to \$16.6 million for fiscal 2001. The cash used by operating activities for fiscal 2002 was primarily due to the Company's pre-tax loss.

Capital expenditures were \$11.8 million in fiscal 2002 and \$29.6 million in fiscal 2001. The decrease in capital expenditures was principally due to the completion of the Company's addition to its Beverly, Massachusetts facility during the first fiscal quarter of 2002. The amount of future capital requirements will depend on a number of factors, including the timing and rate of the expansion of our business.

Net cash provided by financing activities amounted to \$127.4 million in fiscal 2002 due mainly to the Company's completion of an offering in January 2002 of \$125.0 million of 4.25% Convertible Subordinated Notes ("the Notes"), which mature on January 15, 2007. Interest on the Notes is payable on January 15 and July 15 of each year, commencing July 15, 2002. The Notes are convertible into shares of Axcelis common stock at any time prior to the close of business on the maturity date, unless previously redeemed, at a conversion price of \$20.00 per share, subject to certain adjustments. The Notes are redeemable, in whole or in part, at the option of the Company beginning on January 19, 2005 with at least 30 days notice at redemption prices starting at 101.7% and at diminishing prices thereafter, plus accrued interest. The Notes are unsecured and subordinated in right of payment in full to all existing and future senior indebtedness, as defined, of the Company. In the fourth quarter of 2001, the Company established a \$45 million secured, three-year Revolving Credit Facility comprised of a \$13 million, 364 day tranche and a \$32 million, three year tranche. The \$13 million, 364 day tranche was renewed in the fourth quarter of 2002. In January 2003, the overall facility was increased to \$50 million and is comprised of a \$15 million, 364 day tranche and a \$35 million, three year tranche. The purpose of this facility is to provide funds for working capital and general corporate purposes. Borrowings under this credit arrangement are limited to the lesser of \$50 million or the sum of a

percentage of certain eligible domestic accounts receivable and inventory and bear interest at LIBOR plus an applicable spread. There are no borrowings currently outstanding under this facility.

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

The following represents the contractual obligations and commercial commitments of the Company as of December 31, 2002 (in thousands):

<u>Contractual Obligations</u>	<u>Total</u>	<u>Payments Due by Period</u>			
		<u>2003</u>	<u>2004-2005</u>	<u>2006-2007</u>	<u>Thereafter</u>
Long-Term Debt	\$125,000	\$ —	\$ —	\$125,000	\$ —
Purchase Order Commitments .	28,712	28,498	214	—	—
Operating Leases	16,471	6,110	7,070	3,291	—
	<u>\$170,173</u>	<u>\$34,608</u>	<u>\$7,284</u>	<u>\$128,291</u>	<u>\$ —</u>

<u>Other Commercial Commitments</u>	<u>Total</u>	<u>Amount of Commitment Expiration by Period</u>			
		<u>2003</u>	<u>2004-2005</u>	<u>2006-2007</u>	<u>Thereafter</u>
Unused Line of Credit	\$45,000	\$13,000	\$32,000	\$ —	\$—
Standby Letters of Credit	1,602	1,057	545	—	—
Guarantees	4,064	17	27	3,987	33
	<u>\$50,666</u>	<u>\$14,074</u>	<u>\$32,572</u>	<u>\$3,987</u>	<u>\$33</u>

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 2002, the Financial Accounting Standards Board (FASB) issued SFAS No. 146 "Accounting for Costs Associated with Exit or Disposal Activities". SFAS No. 146 addresses the financial accounting and reporting for costs associated with exit or disposal activities and effectively nullifies EITF Issue No. 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity, (including Certain Costs Incurred in a Restructuring)." (EITF 94-3). SFAS No. 146 requires that a liability be recognized for a cost associated with an exit or disposal activity when the liability is incurred. Under EITF 94-3, a liability for an exit cost was recognized at the date of an entity's commitment to an exit plan. SFAS No. 146 also requires that a liability recorded in connection with an exit or disposal activity shall be measured initially at fair value. SFAS No. 146 is effective for exit or disposal activities that are initiated after December 31, 2002. The Company will adopt SFAS No. 146 in the first quarter of fiscal year 2003.

In November 2002, the FASB issued Interpretation No. 45, "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Interest Guarantees of Indebtedness of Others" (the Interpretation). The Interpretation requires certain guarantees to be recognized as a liability on the consolidated balance sheet. The liability shall be measured initially at the fair value of the obligation which the guarantee supports. The Interpretation's initial recognition and initial measurement provisions are applicable on a prospective basis to guarantees issued or modified after December 31, 2002. The Interpretation's disclosure requirements are effective for financial statements of interim or annual periods ending after December 15, 2002. The Company has included the new disclosure requirements in the Notes to the Consolidated Financial Statements (see Note 7. Product Warranties).

In December 2002, the FASB issued SFAS No. 148 "Accounting for Stock-Based Compensation—Transition and Disclosure,". SFAS No. 148 amends SFAS No. 123, "Accounting for Stock-Based Compensation," to provide alternative methods of transition to SFAS No. 123's fair value method of accounting for stock-based employee compensation. SFAS No. 148 also amends the disclosure provisions of SFAS No. 123 and APB Opinion No. 28, "Interim Financial Reporting," to require disclosure in the summary of significant accounting policies of the effects of an entity's accounting policy with respect to stock-based employee compensation on reported net income and earnings per share in annual and interim financial statements. The disclosure provisions of SFAS No. 148 are applicable to all companies with stock-based employee compensation, regardless of whether they account for that compensation using the fair value method of SFAS No. 123 or the intrinsic value method of APB Opinion No. 25, "Accounting for Stock Issued to Employees." SFAS No. 148's amendment of the transition and annual disclosure requirements of SFAS No. 123 are effective for fiscal years ending after December 15, 2002. SFAS No. 148's amendment of the disclosure requirements of APB No. 28 is effective for financial reports containing condensed consolidated financial statements for interim periods beginning after December 15, 2002. The Company currently uses the intrinsic value method of accounting for stock-based employee compensation and has included the new disclosure requirements in the Notes to the Consolidated Financial Statements (see Note 10. Stock Option Plans).

Outlook

The Company's performance in fiscal year 2002 was directly related to the continuing low levels of capital expenditures by semiconductor manufacturers, especially manufacturers opening new or expanding existing fabrication facilities. The level of capital expenditures by these manufacturers depends upon the current and anticipated market demand for semiconductors and the products utilizing them, the available manufacturing capacity in manufacturers' fabrication facilities, and the ability of manufacturers to increase productivity in existing facilities without incurring additional capital expenditures. Currently, management believes that its customers see limited growth in important end markets such as telecommunications and personal computers. As a result, management took actions to reduce manufacturing costs, research and development expense and SG&A expense during 2002.

On January 23, 2003, the Company announced its expectation that its revenues for the first quarter of fiscal 2003 will be in the range of \$75 to \$85 million, an increase over the \$65 million in revenues that the Company reported in the fourth quarter of 2002. On these forecast revenues, management stated on January 23, 2003 that gross margins would be approximately 30% and the net loss for the first quarter of fiscal 2003 was expected to be \$0.06 to \$0.08 per share. Management is continuing to manage the Company's cost structure on a quarterly basis with the objective of improving profitability, while at the same time making sure that the Company has the right resources for an upturn in demand for its systems.

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

Risk Factors

As defined under Safe Harbor provisions of The Private Securities Litigation Reform Act of 1995, some of the matters discussed in this filing contain forward-looking statements regarding future events that are subject to risks and uncertainties. The following important factors, among others, could cause actual results to differ materially from those described by such statements. These factors include, but are not limited to: the cyclical nature of the semiconductor industry, our ability to keep pace with rapid technological changes in semiconductor manufacturing processes, the highly competitive nature of the semiconductor equipment industry, quarterly fluctuations in operating results attributable to the timing and amount of orders for our products and services, dependence on SEN (our Japanese joint venture)

for access to the Japanese semiconductor equipment market, and those risk factors contained in the section titled “Outlook” and Exhibit 99.1 of this Form 10-K. If any of those risk factors actually occurs, our business, financial condition and results of operations could be seriously harmed and the trading price of our common stock could decline.

Item 7a: Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Sensitivity

Axcelis’ exposure to market risk for changes in interest rates relates primarily to our investment portfolio, which consists entirely of cash-equivalents and short-term investments as of December 31, 2002. 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, 2002, all investments mature within 90 days and are carried at cost, which approximates fair value.

Foreign Currency Exchange Risk

Prior to our separation from Eaton, our exposure to foreign currency exchange rate risk was managed on an enterprise-wide basis as part of Eaton’s risk management strategy. We now manage our exchange rate risk on an independent basis. Currently, substantially all of our sales are billed in U.S. dollars, thereby reducing the impact of fluctuations in foreign exchange rates on our results. Our investment in SEN and our royalty and equity income from SEN are subject to foreign currency exchange risks. The effect of a 10% depreciation of the Japanese yen compared to the U.S. dollar would result in a write-down in the Company’s investment in SEN and a corresponding increase in accumulated other comprehensive loss (included in stockholders’ equity) of \$5.8 million at December 31, 2002.

Item 8: Financial Statements and Supplementary Data

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

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

None

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 26, 2003 (the "Proxy Statement"), a copy of which will be filed with the Securities and Exchange Commission on or prior to April 30, 2003, and the remainder of such information is set forth under the heading "Executive Officers and Key Management" at the end of Part I of this report.

Philip S. Paul, a member of the Company's Board of Directors, submitted his resignation effective January 13, 2003. William C. Jennings was elected as a member of the Board of Directors effective February 13, 2003.

Item 11: Executive Compensation

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

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

The information required by Item 12 of Form 10-K is incorporated by reference from the information contained in the sections captioned "Share Ownership of 5% Stockholders" and "Share Ownership of Directors and Executive Officers" and "Equity Plan Reserves Disclosure" in the Proxy Statement.

Item 13: Certain Relationships and Related Transactions

The information required by Item 13 of Form 10-K is incorporated by reference from the information contained in the sections captioned "Executive Agreements" and "Compensation Committee Interlocks and Insider Participation" in the Proxy Statement.

PART IV

ITEM 14. CONTROLS AND PROCEDURES.

- (a) *Evaluation of disclosure controls and procedures.* Our chief executive officer and our chief financial officer, after evaluating the effectiveness of our “disclosure controls and procedures” (as defined in the Securities Exchange Act of 1934 Rules 13a-14(c) and 15d-14(c)) as of a date (the “Evaluation Date”) within 90 days before the filing date of this annual report, have concluded that, as of the Evaluation Date, our disclosure controls and procedures were adequate and designed to ensure that the information required to be disclosed in the reports filed or submitted by us under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the requisite time periods.
- (b) *Changes in internal controls.* There were no significant changes in our internal controls or in other factors that could significantly affect our internal controls subsequent to the Evaluation Date.
- (c) *Effectiveness of Control Systems.* It should be noted that any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote.

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

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

- 1) Financial Statements:

Report of Ernst & Young LLP—Independent Auditors	F-1
Consolidated Statements of Operations—For the fiscal years ended December 31, 2002, 2001 and 2000	F-2
Consolidated Balance Sheets—December 31, 2002 and 2001	F-3
Consolidated Statements of Stockholders’ Equity—For the fiscal years ended December 31, 2002, 2001 and 2000	F-4
Consolidated Statements of Cash Flows—For the fiscal years ended December 31, 2002, 2001 and 2000	F-5
Notes to Consolidated Financial Statements	F-6

- 2) Financial Statement Schedules:

Schedule II—Valuation and Qualifying Accounts for the fiscal years ended December 31, 2002, 2001 and 2000.

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

- (b) Reports on Form 8-K

A Current Report on Form 8-K dated December 11, 2002, was filed with the Securities and Exchange Commission on December 12, 2002, and amended by a Form 8-K/A filed on December 13, 2002. These filings relate to our pending patent infringement litigation. No other reports on Form 8-K were filed by the Company during the quarter ended December 31, 2002.

- (c) Exhibits

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

- (d) Financial Statement Schedules

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

Report of Ernst & Young LLP, Independent Auditors

Board of Directors and Stockholders
Axcelis Technologies, Inc.

We have audited the accompanying consolidated balance sheets of Axcelis Technologies, Inc. (the "Company") as of December 31, 2002 and 2001, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2002. Our audits also included the financial statement schedule listed in the Index at Item 15a. These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Axcelis Technologies, Inc. at December 31, 2002 and 2001, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2001, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

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

/s/ ERNST & YOUNG LLP

Boston, Massachusetts
January 23, 2003

AXCELIS TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Year Ended December 31,		
	2002	2001	2000
Net sales	\$309,705	\$365,264	\$680,401
Cost of products sold	205,740	234,239	381,092
Gross profit	103,965	131,025	299,309
Operating expenses:			
Research & development	72,069	76,538	68,768
Selling	44,038	49,439	56,427
General & administrative	44,716	58,014	60,198
Amortization of goodwill & intangible assets	1,460	9,279	9,279
Income (loss) from operations	(58,318)	(62,245)	104,637
Other income (expense):			
Royalty income	8,194	6,463	15,054
Equity income of Sumitomo Eaton Nova Corporation . .	4,806	12,205	19,570
Interest income	3,691	5,400	5,801
Interest expense	(5,803)	—	—
Other income (expense)—net	(2,313)	(2,224)	(790)
Income (loss) before income taxes	(49,743)	(40,401)	144,272
Income taxes (credit)	(23,593)	(20,238)	45,157
Net income (loss)	\$(26,150)	\$(20,163)	\$ 99,115
Basic net income (loss) per share	\$ (0.27)	\$ (0.21)	\$ 1.13
Diluted net income (loss) per share	\$ (0.27)	\$ (0.21)	\$ 1.13
Shares used in computing:			
Basic net income (loss) per share	97,920	97,215	88,063
Diluted net income (loss) per share	97,920	97,215	88,064

See accompanying Notes to Consolidated Financial Statements.

AXCELIS TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share amounts)

	December 31,	
	2002	2001
ASSETS		
Current assets:		
Cash & cash equivalents	\$150,651	\$124,177
Short-term investments	34,992	—
Accounts receivable	60,311	63,057
Inventories	115,290	105,339
Deferred income taxes & other current assets	18,329	18,622
Total current assets	<u>379,573</u>	<u>311,195</u>
Property, plant & equipment, net	93,597	92,618
Investment in Sumitomo Eaton Nova Corporation	57,868	48,183
Goodwill	40,682	39,282
Intangible assets	13,141	14,601
Deferred income taxes	57,136	17,172
Other assets	27,454	28,345
Total assets	<u>\$669,451</u>	<u>\$551,396</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 32,594	\$ 32,602
Accrued compensation	6,745	6,966
Warranty reserve	16,625	24,218
Income taxes payable	12,823	—
Other current liabilities	18,400	20,997
Total current liabilities	<u>87,187</u>	<u>84,783</u>
Long-term debt	125,000	—
Other long-term liabilities	4,756	3,752
Stockholders' equity:		
Preferred stock, \$0.001 par value, 30,000 shares authorized; none outstanding	—	—
Common stock, \$0.001 par value, 300,000 shares authorized; 98,359 shares issued and 98,239 shares outstanding at December 31, 2002; 97,495 shares issued and 97,375 shares outstanding at December 31, 2001	98	97
Additional paid-in capital	447,533	440,638
Deferred compensation	(782)	—
Treasury stock — at cost	(1,218)	(1,218)
Retained earnings	12,369	38,519
Accumulated other comprehensive loss	(5,492)	(15,175)
Total stockholders' equity	<u>452,508</u>	<u>462,861</u>
Total liabilities and stockholders' equity	<u>\$669,451</u>	<u>\$551,396</u>

See accompanying Notes to Consolidated Financial Statements.

AXCELIS TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except per share amounts)

	Common Stock		Additional	Deferred	Treasury	Parent	Retained	Accumulated	Total
	Shares	Amount	Paid-in	Compensation	Stock	Company	Earnings	Other	
			Capital			Investment		Comprehensive	
								Income (Loss)	
Balance at December 31, 1999	80,000	\$80	—	—	—	\$ 347,745	—	\$ (5,529)	\$342,296
Comprehensive income:									
Net income	—	—	—	—	—	40,433	\$ 58,682	—	99,115
Foreign currency translation adjustments	—	—	—	—	—	—	—	647	647
Total comprehensive income	—	—	—	—	—	—	—	—	99,762
Initial public offering	17,050	17	\$348,568	—	—	—	—	—	348,585
Dividend paid to Eaton Corporation (\$3.75 per share)	—	—	—	—	—	(300,000)	—	—	(300,000)
Net transfers from Eaton Corporation	—	—	—	—	—	726	—	—	726
Reclassification of parent company investment to additional paid-in capital	—	—	88,904	—	—	(88,904)	—	—	—
Balance at December 31, 2000	97,050	97	437,472	—	—	—	58,682	(4,882)	491,369
Comprehensive loss:									
Net loss	—	—	—	—	—	—	(20,163)	—	(20,163)
Foreign currency translation adjustments	—	—	—	—	—	—	—	(10,293)	(10,293)
Total comprehensive loss	—	—	—	—	—	—	—	—	(30,456)
Exercise of stock options	133	—	2,296	—	—	—	—	—	2,296
Issuance of shares under Employee Stock Purchase Plan	312	—	870	—	—	—	—	—	870
Acquisition of treasury shares	—	—	—	—	\$(1,218)	—	—	—	(1,218)
Balance at December 31, 2001	97,495	\$97	\$440,638	—	\$(1,218)	—	\$ 38,519	\$(15,175)	\$462,861
Comprehensive loss:									
Net loss	—	—	—	—	—	—	(26,150)	—	(26,150)
Foreign currency translation adjustments	—	—	—	—	—	—	—	9,683	9,683
Total comprehensive loss	—	—	—	—	—	—	—	—	(16,467)
Exercise of stock options	23	—	152	—	—	—	—	—	152
Issuance of shares under Employee Stock Purchase Plan	735	1	5,621	—	—	—	—	—	5,622
Issuance of restricted common shares	106	—	1,122	(1,122)	—	—	—	—	—
Deferred stock-based compensation expense	—	—	—	340	—	—	—	—	340
Balance at December 31, 2002	98,359	\$98	\$447,533	\$(782)	\$(1,218)	\$ —	\$ 12,369	\$(5,492)	\$452,508

See accompanying Notes to Consolidated Financial Statements.

AXCELIS TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	<u>Year Ended December 31,</u>		
	<u>2002</u>	<u>2001</u>	<u>2000</u>
Operating activities:			
Net income (loss)	\$(26,150)	\$(20,163)	\$ 99,115
Adjustments to reconcile to net cash provided (used) by operating activities:			
Depreciation	10,298	11,936	8,535
Amortization of goodwill & intangible assets	1,460	9,279	9,279
Stock compensation expense	340	—	—
Deferred income taxes	(39,648)	(16,017)	(8,355)
Undistributed income of Sumitomo Eaton Nova Corporation	(4,806)	(12,205)	(19,570)
Changes in operating assets & liabilities, excluding acquisition of a business and non-cash restructuring charges:			
Accounts receivable	4,727	86,446	(50,097)
Inventories	(7,327)	15,822	(39,431)
Other current assets	(118)	(327)	—
Accounts payable & other current liabilities	(12,657)	(27,464)	44,824
Payable to Eaton Corporation	—	(25,818)	25,818
Income taxes payable	12,823	(31,153)	31,153
Other assets	3,484	(7,505)	(2,765)
Other—net	1,590	592	1,177
Net cash provided (used) by operating activities	<u>(55,984)</u>	<u>(16,577)</u>	<u>99,683</u>
Investing activities:			
Purchases of short-term investments, net	(34,992)	—	—
Expenditures for property, plant & equipment	(11,751)	(29,577)	(21,848)
Proceeds from sale of Austin, Texas facility	—	—	10,967
Other—net	(260)	677	(138)
Net cash used by investing activities	<u>(47,003)</u>	<u>(28,900)</u>	<u>(11,019)</u>
Financing activities:			
Proceeds from the exercise of stock options	152	2,296	—
Issuance of common stock under Employee Stock Purchase Plan	5,622	870	—
Acquisition of treasury shares	—	(1,218)	—
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
Proceeds from long-term debt, net	121,578	—	—
Net cash provided by financing activities	<u>127,352</u>	<u>1,948</u>	<u>75,963</u>
Effect of exchange rate changes on cash	2,109	(451)	(302)
Net increase (decrease) in cash & cash equivalents	26,474	(43,980)	164,627
Cash & cash equivalents at beginning of period	<u>124,177</u>	<u>168,157</u>	<u>3,530</u>
Cash & cash equivalents at end of period	<u>\$150,651</u>	<u>\$124,177</u>	<u>\$168,157</u>

Cash payments for interest were \$2,656 for fiscal 2002.

See accompanying Notes to Consolidated Financial Statements.

AXCELIS TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Nature of Business and Basis of Presentation

Axcelis Technologies, Inc. (“Axcelis” or the “Company”), is a leading producer of ion implantation, dry strip and photostabilization equipment used in the fabrication of semiconductors in the United States, Europe and Asia Pacific. The Company also produces rapid thermal processing equipment, which is used in semiconductor manufacturing primarily before and after the ion implantation process. In addition, the Company provides extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. The Company has a 50-50 joint venture with Sumitomo Heavy Industries, Ltd. in Japan. This joint venture, which is known as Sumitomo Eaton Nova Corporation, or SEN, licenses technology from the company for ion implantation, has exclusive rights to the territory of Japan and is the leading producer of ion implantation equipment in Japan.

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

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 17 to the consolidated financial statements. Beginning in the third quarter of fiscal year 2000, Axcelis’ consolidated financial statements no longer include an allocated portion of Eaton’s corporate services and infrastructure costs. However, the Company continued to incur amounts payable to Eaton in connection with transitional agreements, under which Eaton provided services, such as voice and data transmissions and other data-related operations, accounts receivable, accounts payable, fixed assets, payroll, general accounting, financial accounting consolidation, cash management, human resources, tax, legal and real estate.

Note 2. Significant Accounting Policies

Principles of Consolidation

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

Use of Estimates

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

Foreign Currency

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

Cash, Cash Equivalents and Short-Term Investments

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

Inventories

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

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

Property, Plant and Equipment

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

Goodwill and Intangible Assets

For fiscal years 2001 and 2000 substantially all goodwill was amortized over fifteen years while intangible assets, consisting of developed technology, were amortized over seven years. Beginning in fiscal year 2002, the Company adopted Statement of Financial Accounting Standard (SFAS) No. 142, "Goodwill and Other Intangible Assets" which eliminated the requirement to amortize goodwill. In addition, the Company determined that based on an examination of the economic life of its intangible assets as of January 1, 2002, the amortization of these assets should be approximately ten years from that date. See Note 6 below for further discussion.

Impairment of Long-Lived Assets

Long-lived assets (primarily property, plant and equipment and intangible assets) are reviewed for impairment losses whenever events or changes in circumstances indicate the carrying amount may not

be recoverable. Events or circumstances that would result in an impairment review primarily include operations reporting sustained losses or a significant change in the use of an asset. An impairment loss would be recognized based on the amount by which the carrying value of the asset exceeds its fair value.

Concentration of Credit Risk

Financial instruments, which potentially expose Axcelis to concentrations of credit risk, consist principally of accounts receivable, cash equivalents and short-term investments. Axcelis' customers consist of semiconductor manufacturers located throughout the world. Axcelis' net sales to its ten largest customers accounted for 63.5%, 50.6% and 56.3% of net sales in 2002, 2001 and 2000, respectively. Axcelis performs ongoing credit evaluations of its customers' financial condition and generally requires no collateral to secure accounts receivable. For selected overseas sales, Axcelis requires customers to enter into letters of credit. Axcelis maintains a reserve for potentially uncollectible accounts receivable based on its assessment of the collectibility of accounts receivable.

Fair Value of Financial Instruments

The fair values of the Company's cash, cash equivalents and short-term investments approximate their carrying values (cost) at December 31, 2002 and 2001 respectively. The fair value of the Company's convertible subordinated notes is estimated based on quoted market prices and approximated \$98,750.

Revenue Recognition

Axcelis generally recognizes the full sale price at the time of shipment to the customer. The costs of system installation at the customer's site are accrued at the time of shipment. Customer payment terms typically provide that the majority of the purchase price is paid upon shipment, but these terms also contain delayed payment arrangements for a portion of the purchase price, which are primarily time-based. In addition, the Company incurs installation and acceptance testing performance obligations at the time of sale.

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 majority of customers request that the systems are to be tested at Axcelis' facilities prior to shipment, normally with the customer present, under conditions that substantially replicate the customer's production environment and the customer's criteria are confirmed to have been met. Pre-shipment testing is generally not required by customers for mature products. 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 the small number of instances where Axcelis is unsure of meeting the customer's specifications upon shipment of the system, Axcelis will defer the recognition of revenue until written customer acceptance of the system. This deferral period is generally within twelve months of shipment.

Shipping and Handling Costs

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

Stock-Based Compensation

As permitted under SFAS No. 123, Accounting for Stock-Based Compensation, Axcelis has elected to follow Accounting Principles Board Opinion (APB) No. 25 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		
	2002	2001	2000
Dividend yield	0%	0%	0%
Expected volatility	80%	139%	93%
Risk-free interest rate	2.8% to 4.5%	4.3% to 4.8%	5.1% to 6.3%
Expected option life in years	4	4	4
Weighted average fair value per share of options granted during the year	\$6.08	\$11.77	\$14.66

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

For purposes of 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):

	<u>Year Ended December 31,</u>		
	<u>2002</u>	<u>2001</u>	<u>2000</u>
Net income (loss), as reported	\$(26,150)	\$(20,163)	\$99,115
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards, net of related tax effects	<u>(14,730)</u>	<u>(12,645)</u>	<u>(4,680)</u>
Pro forma net income (loss)	<u>\$(40,880)</u>	<u>\$(32,808)</u>	<u>\$94,435</u>
Earnings per share:			
Basic—as reported	<u>\$ (0.27)</u>	<u>\$ (0.21)</u>	<u>\$ 1.13</u>
Basic—pro forma	<u>\$ (0.42)</u>	<u>\$ (0.34)</u>	<u>\$ 1.07</u>
Diluted—as reported	<u>\$ (0.27)</u>	<u>\$ (0.21)</u>	<u>\$ 1.13</u>
Diluted—pro forma	<u>\$ (0.42)</u>	<u>\$ (0.34)</u>	<u>\$ 1.07</u>

Income Taxes

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

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

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

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

Net Income (Loss) Per Share

Basic net income (loss) per share is calculated based on the weighted average shares of common stock outstanding during the period. Diluted net income (loss) per share is calculated based on the weighted average shares of common stock outstanding, plus the dilutive effect of stock options, calculated using the treasury stock method. There were 709,803 and 1,165,276 shares of common stock equivalents calculated using the treasury stock method that were not included in the calculation of diluted EPS in 2002 and 2001, respectively, because the effect would be antidilutive.

Reclassifications

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

Recent Accounting Pronouncements

In June 2002, the Financial Accounting Standards Board (FASB) issued SFAS No. 146 "Accounting for Costs Associated with Exit or Disposal Activities". SFAS No. 146 addresses the financial accounting and reporting for costs associated with exit or disposal activities and effectively nullifies EITF Issue No. 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity, (including Certain Costs Incurred in a Restructuring)." (EITF 94-3). SFAS No. 146 requires that a liability be recognized for a cost associated with an exit or disposal activity when the liability is incurred. Under EITF 94-3, a liability for an exit cost was recognized at the date of an entity's commitment to an exit plan. SFAS No. 146 also requires that a liability recorded in connection with an exit or disposal activity shall be measured initially at fair value. SFAS No. 146 is effective for exit or disposal activities that are initiated after December 31, 2002. The Company will adopt SFAS No. 146 in the first quarter of fiscal year 2003.

In November 2002, the FASB issued Interpretation No. 45, "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Interest Guarantees of Indebtedness of Others" (the Interpretation). The Interpretation requires certain guarantees to be recognized as a liability on the consolidated balance sheet. The liability shall be measured initially at the fair value of the obligation for which the guarantee supports. The Interpretation's initial recognition and initial measurement provisions are applicable on a prospective basis to guarantees issued or modified after December 31, 2002. The Interpretation's disclosure requirements are effective for financial statements of interim or annual periods ending after December 15, 2002. The Company has included the new disclosure requirements in the Notes to the Consolidated Financial Statements (see Note 7).

In December 2002, the FASB issued SFAS No. 148 "Accounting for Stock-Based Compensation—Transition and Disclosure",. SFAS No. 148 amends SFAS No. 123, "Accounting for Stock-Based Compensation", to provide alternative methods of transition to SFAS No. 123's fair value method of accounting for stock-based employee compensation. SFAS No. 148 also amends the disclosure provisions of SFAS No. 123 and APB Opinion No. 28 "Interim Financial Reporting", to require disclosure in the summary of significant accounting policies of the effects of an entity's accounting policy with respect to stock-based employee compensation on reported net income and earnings per share in annual and interim financial statements. The disclosure provisions of SFAS No. 148 are applicable to all companies with stock-based employee compensation, regardless of whether they account for that compensation using the fair value method of SFAS No. 123 or the intrinsic value method of APB Opinion No. 25, "Accounting for Stock Issued to Employees." SFAS No. 148's amendment of the transition and annual disclosure requirements of SFAS No. 123 are effective for fiscal years ending after December 15, 2002. SFAS No. 148's amendment of the disclosure requirements of APB No. 28 is effective for financial reports containing condensed consolidated financial statements for interim periods beginning after December 15, 2002. The Company currently uses the intrinsic value method of accounting for stock-based employee compensation and has included the new disclosure requirements in the Notes to the Consolidated Financial Statements.

Note 3. Accounts Receivable

The Company records an allowance for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. If the financial condition of the Company's

customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be necessary. The components of accounts receivable follow (in thousands):

	December 31,	
	2002	2001
Trade	\$63,260	\$66,758
Sumitomo Eaton Nova Corporation	695	401
	<u>63,955</u>	<u>67,159</u>
Allowance for doubtful accounts	(3,644)	(4,102)
	<u>\$60,311</u>	<u>\$63,057</u>

Note 4. Inventories

The components of inventories follow (in thousands):

	December 31,	
	2002	2001
Raw materials	\$ 80,642	\$ 75,821
Work in process	13,401	8,889
Finished goods	35,939	31,996
	<u>129,982</u>	<u>116,706</u>
Inventory allowances	(14,692)	(11,367)
	<u>\$115,290</u>	<u>\$105,339</u>

Note 5. Property, Plant & Equipment

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

	December 31,	
	2002	2001
Land & buildings	\$ 72,806	\$ 52,697
Machinery & equipment	67,899	63,496
Construction in process	5,164	32,364
	<u>145,869</u>	<u>148,557</u>
Accumulated depreciation	(52,272)	(55,939)
	<u>\$ 93,597</u>	<u>\$ 92,618</u>

Note 6. Goodwill & Intangible Assets

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

The changes in the carrying value of goodwill are as follows:

Balance as of January 1, 2002	\$39,282
Goodwill acquired during the period	<u>1,400</u>
Balance as of December 31, 2002	<u>\$40,682</u>

The components of intangible assets, are as follows (in thousands):

	December 31,	
	2002	2001
Intangible assets	\$40,000	\$40,000
Accumulated amortization	<u>(26,859)</u>	<u>(25,399)</u>
	<u>\$13,141</u>	<u>\$14,601</u>

Aggregate amortization expense for the year ended December 31, 2002 was 1,460,116. Estimated amortization expense for the fiscal year ending December 31, 2003 and for each of the four succeeding fiscal years is \$1,460,116.

Had SFAS No. 142 been adopted for the years ended December 31, 2002, 2001 and 2000, the impact on net income and earnings per share would have been as follows:

	Twelve Months Ended December 31,		
	2002	2001	2000
<i>(000's except for earnings per share amounts)</i>			
Reported net income (loss)	\$(26,150)	\$(20,163)	\$ 99,115
Add back: Goodwill amortization, net of tax	—	1,780	2,451
Adjust: Intangible asset amortization, net of tax . . .	—	2,122	2,921
Adjusted net income (loss)	<u>\$(26,150)</u>	<u>\$(16,261)</u>	<u>\$104,487</u>
Basic and diluted earnings (loss) per share:			
Reported net income (loss) per share:	\$ (0.27)	\$ (0.21)	\$ 1.13
Add back: Goodwill amortization, net of tax	—	0.02	0.03
Adjust: Intangible asset amortization, net of tax . . .	—	0.02	0.03
Adjusted net income (loss) per share	<u>\$ (0.27)</u>	<u>\$ (0.17)</u>	<u>\$ 1.19</u>

Note 7. Product Warranty and Installation Costs

The Company offers a one to three year warranty for all of its products, the terms and conditions of which vary depending upon the product sold. The Company estimates the costs that may be incurred under its warranty and product installation obligation and records a liability in the amount of such costs at the time product revenue is recognized. Factors that affect the Company's warranty and installation liability include the number of installed units, historical and anticipated product failure rates, material usage and service labor costs. The Company periodically assesses the adequacy of its recorded warranty and installation liability and adjusts the amount as necessary.

Changes in the Company's product warranty and installation liability for the year ended December 31, 2002 are as follows (in thousands):

Balance at December 31, 2001	\$24,218
Warranties and installations issued during the period	19,079
Settlements made during the period	(25,936)
Changes in liability for pre-existing warranties and installations during the period	<u>(736)</u>
Balance at December 31, 2002	<u>\$16,625</u>

Note 8. Financing Arrangements**Revolving Credit Facility**

In the fourth quarter of 2001, the Company established a \$45 million secured, three-year Revolving Credit Facility comprised of a \$13 million, 364 day tranche and a \$32 million, three year tranche. The \$13 million, 364 day tranche was renewed in the fourth quarter of 2002. In January 2003, the overall facility was increased to \$50 million and is comprised of a \$15 million, 364 day tranche and a \$35 million, three year tranche. The purpose of this facility is to provide funds for working capital and general corporate purposes. Borrowings under this credit arrangement are limited to the lesser of \$50 million or the sum of a percentage of certain eligible domestic accounts receivable and inventory and bear interest at LIBOR plus an applicable spread. There are no borrowings currently outstanding under this facility.

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

Convertible Subordinated Notes

In January 2002, the Company completed an offering of \$125.0 million of 4.25% Convertible Subordinated Notes ("the Notes"), which mature on January 15, 2007. Interest on the Notes is payable on January 15 and July 15 of each year, commencing July 15, 2002. The Notes are convertible into shares of Axcelis common stock at any time prior to the close of business on the maturity date, unless previously redeemed, at a conversion price of \$20.00 per share, subject to certain adjustments. The Notes are redeemable, in whole or in part, at the option of the Company beginning on January 19, 2005 with at least 30 days notice at redemption prices starting at 101.7% and at diminishing prices thereafter, plus accrued interest. The Notes are unsecured and subordinated in right of payment in full to all existing and future senior indebtedness, as defined, of the Company. Expenses associated with the offering of approximately \$3.6 million have been deferred in other assets and are being amortized to interest expense using the straight line method, which approximates the effective interest method, over the term of the Notes.

Note 9. 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. During fiscal year 2001, the Company matched 50% of contributions for the first 6% of eligible pay contributed by each employee. Beginning in January of 2002, the Company's matching contribution was changed to reflect a guaranteed match of 100% of contributions for the first 6% of eligible pay with a maximum match of \$1,000. Starting in January of 2003, the Company's matching contribution was again changed to reflect a guaranteed match of the greater of 100% of contributions for the first 6% of eligible pay or \$1,000. Under this plan, \$1.3 million and \$2.7 million was recognized as expense in 2002 and 2001, respectively. No expense was recognized in 2000.

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

Note 10. Stock Award Plans**Axcelis Stock 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 originally reserved 18.5 million shares of common stock for grant under the Plan, which original maximum amount increases annually by the lesser of (i) five percent (5%) of the then number of outstanding shares of Common Stock, (ii) 5,000,000 shares or (iii) such lesser amount as may be determined by the Board. The effect of this provision was to increase the shares available for grant under the Plan by 4,868,765 and 4,852,500 in 2002 and 2001, respectively. Expiration of options or stock appreciation rights are based on award agreements, or in the case of incentive stock options, awards expire ten years from the date of grant. Non-qualified stock options may, if approved by the Board of Directors, have a stated term in excess of ten years. Generally, awards terminate upon termination of employment (or 90 days thereafter) for options granted to employees. Under the terms of the Plan, the exercise price, determined by the Board of Directors, may not be less than the fair market value of a share of the Company's common stock on the date of grant.

Note 10. Stock Award Plans (Continued)

The following table summarizes Axcelis' stock option activity as of and for the years ended December 31, 2002 and 2001 and 2000:

	2002		2001		2000	
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price
Outstanding at beginning of year	9,364,091	\$15.05	7,695,026	\$15.33	—	—
Granted	4,973,307	10.04	2,264,620	13.89	7,803,321	\$15.36
Exercised	(22,419)	6.79	(133,163)	8.84	—	—
Forfeited	(1,299,094)	15.31	(462,392)	14.08	(108,295)	22.00
Outstanding at end of year	<u>13,015,885</u>	13.12	<u>9,364,091</u>	\$15.05	<u>7,695,026</u>	\$15.33
Available for grant at end of year	<u>14,943,571</u>		<u>13,724,519</u>		<u>10,804,974</u>	

The following table summarizes information with respect to stock options outstanding and exercisable at December 31, 2002:

Range of Exercise Price	Outstanding at December 31, 2002	Weighted-Average Exercise Price	Exercisable at December 31, 2002	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life
\$ 4.63–\$6.88	1,650,124	\$ 5.83	180,696	\$ 6.23	9.2 Years
\$ 7.13–\$10.65	4,360,792	9.18	1,863,988	8.54	7.2
\$ 10.75–\$16.12	3,856,341	13.52	1,181,302	13.53	8.7
\$ 16.40–\$22.00	3,148,628	21.94	1,550,433	21.90	7.5
	<u>13,015,885</u>	\$13.12	<u>4,776,419</u>	\$14.02	6.8

At December 31, 2002 and 2001, there were 106,227 and 130,727 shares of restricted stock outstanding under the Plan, respectively.

Note 11. 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 at December 31, 1999 has been restated to give retroactive recognition for the stock split 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 \$88.9 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.

Note 11. Stockholders' Equity (Continued)

At December 31, 2002, 24,447,821 shares of common stock were reserved for issuance under Axcelis stock plan, employee stock purchase plan and for conversion of the Notes.

Employee Stock Purchase Plan

In June 2000, the Board of Directors approved the adoption of the 2000 Employee Stock Purchase Plan, which provides effectively all Axcelis employees the opportunity to purchase common stock of the Company at less than market prices. Purchases are made through payroll deductions up to 10% of the employee's salary. Generally, employees may purchase Axcelis common stock at 85% of the market value of the Company's common stock on the first trading day of each offering period or on the day the stock is purchased, whichever is lower. The purchase price may be adjusted by a committee of the Board of Directors. Compensation expense is not recognized by the Company because the plan is a non-compensatory plan under Section 423 of the Internal Revenue Code. The number of shares of common stock that may be issued under the stock purchase plan is 2.5 million shares, plus an annual increase to be added on the last day of each fiscal year beginning in 2001 equal to one percent of the outstanding shares on such date, or a lesser amount approved by the Board of Directors. The maximum shares that may be issued under the plan may not exceed 7.5 million shares. The Company issued 735,400 and 312,132 shares under the plan in 2002 and 2001, respectively.

Note 12. Lease Commitments

At December 31, 2002, the Company had lease commitments into 2007. Minimum rental commitments under noncancelable operating leases, which expire at various dates and in most cases contain renewal options, are as follows (in millions): 2003, \$6.1; 2004, \$4.4; 2005, \$2.6; 2006, \$2.1; 2007, \$1.2; thereafter, \$0.

Rental expense in 2002, 2001, and 2000 (in millions) was \$9.2, \$8.8 and \$7.8, respectively.

Note 13. Business Segment and Geographic Region Information

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

Axcelis' ion implantation systems product line includes high and medium current implanters and high energy implanters and services. Other products include dry strip equipment, photostabilizers, thermal processing systems and other products and services. Net sales by product line follow (in thousands):

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Ion implantation systems & services	\$233,157	\$292,263	\$534,428
Other products & services	76,548	73,001	145,973
	<u>\$309,705</u>	<u>\$365,264</u>	<u>\$680,401</u>

Note 13. Business Segment and Geographic Region Information (Continued)

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

	<u>Net Sales</u>	<u>Long-Lived Assets*</u>
2002		
United States	\$263,772	\$91,709
Europe	23,557	362
Asia Pacific	22,376	1,526
	<u>\$309,705</u>	<u>\$93,597</u>
2001		
United States	\$314,567	\$90,489
Europe	33,996	359
Asia Pacific	16,701	1,770
	<u>\$365,264</u>	<u>\$92,618</u>
2000		
United States	\$596,934	\$74,276
Europe	58,351	458
Asia Pacific	25,116	919
	<u>\$680,401</u>	<u>\$75,653</u>

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

International sales, including export sales from our U.S. manufacturing facilities to foreign customers and sales by our foreign subsidiaries and branches, (in thousands) were \$161,132 (52.0%) in 2002, \$226,483 (62.0%) in 2001 and \$472,146 (69.4%) in 2000.

Note 14. Income Taxes

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

	December 31,		
	2002	2001	2000
United States	\$(55,038)	\$(58,643)	\$108,296
Foreign	489	6,037	16,406
Equity income of Sumitomo Eaton Nova Corporation	4,806	12,205	19,570
	<u>\$(49,743)</u>	<u>\$(40,401)</u>	<u>\$144,272</u>

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

	December 31,		
	2002	2001	2000
Current:			
United States			
Federal	\$ 8,683	\$ (6,859)	\$44,761
State	2,929	(556)	3,546
Foreign	4,443	3,194	5,205
	<u>16,055</u>	<u>(4,221)</u>	<u>53,512</u>
Deferred:			
United States	(37,093)	(14,708)	(8,355)
Foreign	(2,555)	(1,309)	—
	<u>(39,648)</u>	<u>(16,017)</u>	<u>(8,355)</u>
	<u>\$(23,593)</u>	<u>\$(20,238)</u>	<u>\$45,157</u>

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):

	2002		2001 Rate	2000 Rate
	Amount	Rate		
Income taxes (credit) at the United States statutory rate	\$(17,410)	(35.0)%	(35.0)%	35.0%
State taxes, net of federal income tax benefit	(997)	(2.0)	(2.6)	1.6
Change in valuation allowance	900	1.8	—	0.9
Amortization of goodwill	—	—	3.2	(2.1)
Current and prior years' foreign sales corporation benefit	—	—	—	(0.7)
Current and prior years' credit for increasing research activities . . .	(5,791)	(11.6)	(5.1)	(0.4)
Foreign income tax rate differentials	(229)	(0.5)	(0.6)	—
Income tax rate differential related to Sumitomo Eaton Nova Corporation	(1,682)	(3.4)	(10.6)	(4.6)
Other—net	1,616	3.3	0.6	1.6
	<u>\$(23,593)</u>	<u>(47.4)%</u>	<u>(50.1)%</u>	<u>31.3%</u>

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

	<u>Current Assets</u>	<u>Long-term Assets</u>
2002		
Inventories	\$10,105	\$ —
Accrued warranty	3,685	—
Accrued vacation	592	—
Valuation allowance	—	(900)
Property, plant & equipment	—	(2,071)
Intangible assets	3	(6,819)
Net operating loss carryforwards	—	47,904
Tax credit carryforwards	—	17,219
Other items	<u>2,165</u>	<u>1,803</u>
	<u>\$16,550</u>	<u>\$57,136</u>
2001		
Inventories	\$10,819	\$ —
Accrued warranty	5,645	—
Accrued vacation	1,280	—
Property, plant & equipment	—	(4,472)
Intangible assets	—	(5,144)
Net operating loss carryforwards	—	22,148
Tax credit carryforwards	—	3,048
Other items	<u>(879)</u>	<u>1,592</u>
	<u>\$16,865</u>	<u>\$17,172</u>

As of December 31, 2002, we have approximately \$73.7 million of deferred tax assets related principally to domestic loss carryforwards and tax credit carryforwards that expire at various times through 2022, for which a \$0.9 million valuation allowance has been recorded. The realization of these assets is based upon estimates of future taxable income. Projections of future earnings are based on revenue assumptions consistent with industry forecasts for the next three years along with the necessary operating expenses to support our revenue assumptions. Based on these projections, we estimate that the loss carryforwards will be fully utilized within three years. We update these projections quarterly based on current industry trends and company-specific events. Should trends within our industry or specific to the Company cause our projections not to materialize and future taxable losses continue, a valuation allowance of up to \$73.7 million may be required. Such a valuation allowance, if required, would result in a non-cash charge to earnings.

As of December 31, 2002, the Company has federal, state and foreign tax net operating loss carryforwards, the tax effect of which is approximately \$47.9 million. These carryforwards may be utilized on various dates through 2022. The company also has tax credit carryforwards of approximately \$17.2 million. These carryforwards may be utilized through 2022.

No provision has been made for income taxes on undistributed earnings of operations outside the United States of \$93.8 million at December 31, 2002, which includes \$58.9 million for Sumitomo Eaton Nova Corporation, since the earnings retained have been reinvested by the operations. If distributed, such remitted earnings may be subject to withholding taxes.

Note 15. Significant Customers

One customer individually accounted for 14.2% of net sales in fiscal 2002. No single customer represented more than 10% of net sales in 2001. One customer individually accounted for 13.9% of net sales in fiscal 2000.

Note 16. 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):

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Twelve months ended November 30:			
Net sales	\$138,690	\$185,841	\$261,351
Income from operations	15,510	41,716	73,022
Net income	9,611	24,410	39,139
November 30:			
Current assets	122,596	113,963	185,116
Noncurrent assets	36,955	40,797	44,909
Current liabilities	42,522	57,472	140,178
Noncurrent liabilities	952	577	615

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

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

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Net sales to SEN	\$1,985	\$8,390	\$11,913
Royalty income from SEN	8,275	5,835	13,464
Dividends received	464	444	375
Axcelis' equity in income of SEN	4,806	12,205	19,570
Accounts receivable at December 31 from SEN	695	401	10,915

The amount of Axcelis' retained earnings comprised of undistributed earnings of SEN was \$28.6 million and \$24.3 million at December 31, 2002 and 2001, respectively.

Note 17. 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. This allocation was based on Eaton's internal expense allocation methodology which charged these expenses to operating locations based both on net working capital, excluding cash equivalents and short-term debt, and on property, plant and equipment—net. Management believes this was a reasonable method of allocating these expenses and was representative of the operating expenses that would have been incurred had Axcelis operated on a stand-alone basis. The consolidated statements of operations do not include an allocation of interest expense related to Eaton's debt obligations, consistent with Eaton's internal expense allocation methodology.

Commencing with the initial public offering, the Company entered into various agreements with Eaton, which provide for transitional services and support, including those associated with voice and data transmissions and other data-related operations, accounts receivable, accounts payable, fixed assets, payroll, general accounting, financial accounting consolidation, cash management, human resources, tax, legal and real estate. Under these agreements, the Company reimbursed Eaton for its direct and indirect costs of providing these services until the divestiture, and thereafter, for a limited time, the Company reimbursed Eaton for its costs plus an additional fee for providing certain of these additional services. The transition periods covered by these agreements vary, but generally expired on December 29, 2001. The agreements did not necessarily reflect the costs of obtaining these services from unrelated third parties or of providing the applicable services in-house. However, management believed that purchasing these services from Eaton provided an efficient means of obtaining these services during the transition period. Transition expenses included in Axcelis' consolidated statement of operations for the year ended December 31, 2001 and 2000 amounted to \$3.4 million and \$5.5 million, respectively.

Note 18. Quarterly Results of Operations (unaudited)

	Dec. 31, 2002	Sept. 30, 2002	June 30, 2002	March 31, 2002	Dec. 31, 2001	Sept. 30, 2001	June 30, 2001	March 31, 2001
Net sales	\$65,515	\$93,117	\$88,988	\$62,085	\$49,317	\$61,796	\$102,002	\$152,149
Gross profit	18,895	36,445	33,228	15,397	9,982	18,595	39,100	63,348
Net income (loss)	(6,833)	191	(1,677)	(17,831)	(17,993)	(16,211)	(2,150)	16,191
Basic and diluted net income (loss) per share	\$ (0.07)	\$ 0.00	\$ (0.02)	\$ (0.18)	\$ (0.18)	\$ (0.17)	\$ (0.02)	\$ 0.17

CERTIFICATION

Of the Principle Executive Officer of Axcelis Technologies, Inc. Under Section 302 of the Sarbanes-Oxley Act of 2002

I, Mary G. Puma, certify that:

1. I have reviewed this annual report on Form 10-K of Axcelis Technologies, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
 - a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
 - c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 28, 2003

/s/ MARY G. PUMA

Mary G. Puma
President and Chief Executive Officer

CERTIFICATION

Of the Principle Financial Officer of Axcelis Technologies, Inc. Under Section 302 of the Sarbanes-Oxley Act of 2002

I, Cornelius F. Moses III, certify that:

1. I have reviewed this annual report on Form 10-K of Axcelis Technologies, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
 - a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
 - c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 28, 2003

/s/ CORNELIUS F. MOSES, III

Cornelius F. Moses, III
Executive Vice President and Chief Financial Officer

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BOARD OF DIRECTORS

Stephen R. Hardis
Chairman of the Board,
Axcelis Technologies, Inc.

Alexander M. Cutler
Chairman and Chief Executive Officer,
Eaton Corporation

William C. Jennings
Retired Partner, PriceWaterhouseCoopers LLP

Patrick H. Nettles
Executive Chairman of the Board of Directors,
CIENA Corporation

Mary G. Puma
President and Chief Executive Officer,
Axcelis Technologies, Inc.

Naoki Takahashi
Director, Sumitomo Heavy Industries, Ltd.

H. Brian Thompson
Chairman, COMSAT International and
Chief Executive Officer,
Universal Telecommunications, Inc.

Gary L. Tooker
Former Chairman and Chief Executive Officer,
Motorola, Inc.

EXECUTIVE OFFICERS

Mary G. Puma
President and Chief Executive Officer

Michael J. Luttati
Executive Vice President and Chief Operating Officer

Cornelius F. Moses III
Executive Vice President and Chief Financial Officer

Kevin M. Bisson
Vice President, Controller and Treasurer

David Duff, Ph.D.
Vice President and General Manager,
Ion Implant and Rapid Thermal Processing

Lynnette C. Fallon
Senior Vice President Human Resources and Legal,
General Counsel and Secretary

Jan-Paul van Maaren, Ph.D.
Vice President and General Manager,
Curing and Cleaning

ANNUAL MEETING DATE & LOCATION

The annual meeting of stockholders will be held at 11:00 a.m. on Thursday, June 26, 2003 at the offices of Palmer & Dodge, LLP, 111 Huntington Avenue, Boston, Massachusetts.

CORPORATE HEADQUARTERS

55 Cherry Hill Drive
Beverly, MA 01950-1053
978-787-4000

INDEPENDENT AUDITORS

Ernst & Young LLP
200 Clarendon Street
Boston, MA 02116-5072

INVESTOR INFORMATION

Information on the Company, as well as Form 10-K Report and other SEC filings, can be obtained on our website at <http://www.axcelis.com> or by contacting our Investor Relations Manager at Axcelis Technologies, Inc., 55 Cherry Hill Drive, Beverly, MA 01950-1053. You can also E-mail investor relations at investor-relations@axcelis.com.

LEGAL COUNSEL

Palmer & Dodge LLP
111 Huntington Avenue at Prudential Center
Boston, MA 02108-3190

SEC FORM 10-K

Copies of the Company's 2002 Annual Report on Form 10-K as filed with the Securities and Exchange Commission may be obtained free of charge by writing to the Company at 55 Cherry Hill Drive, Beverly, Massachusetts, 01915, Attention: Lynnette C. Fallon, Corporate Secretary.

STOCK LISTING

The Company's common stock is traded on the Nasdaq Stock Market System under the symbol ACLS.

TRANSFER AGENT & REGISTRAR

For questions regarding misplaced stock certificates, changes of address, or the consolidation of accounts, please contact the Company's transfer agent:

Equiserve Trust Company, NA
P.O. Box 2500
Jersey City, NJ 07303-2500
E-mail Address: equiserve@equiserve.com
<http://www.equiserve.com>

WEBSITE

<http://www.axcelis.com>

AUDIT COMMITTEE

Alexander M. Cutler, Chairman
H. Brian Thompson
Patrick H. Nettles

COMPENSATION COMMITTEE

H. Brian Thompson, Chairman
Stephen R. Hardis
Alexander M. Cutler
Gary L. Tooker

NOMINATING AND GOVERNANCE COMMITTEE

Patrick H. Nettles, Chairman
Stephen R. Hardis
Alexander M. Cutler

KEY MANAGEMENT

Kevin Brewer
Vice President of Manufacturing Operations

Matthew Flynn
Vice President, Global Customer Operations

Craig M. Halterman
Vice President and Chief Information Officer

John M. Poate, Ph.D.
Vice President and Chief Technology Officer

SAFE HARBOR STATEMENT

This document contains forward-looking statements under the SEC safe harbor provisions. These statements are based on management's current expectations and should be viewed with caution. They are subject to various risks and uncertainties, many of which are outside the control of the company, including our ability to implement successfully our profit plans, the continuing demand for semiconductor equipment, relative market growth, continuity of business relationships with and purchases by major customers, competitive pressure on sales and pricing, increases in material and other production costs that cannot be recouped in product pricing and global economic and financial conditions.



Axcelis Technologies Inc.
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