2001

AXCELIS ANNUAL REPORT

axcelis

FINANCIAL HIGHLIGHTS

US$ THOUSANDS, EXCEPT PER SHARE DATA

	2001	2000	1999
CONSOLIDATED INCOME STATEMENT			
NET SALES	365,264	680,401	397,267
GROSS PROFIT	131,025	299,309	157,082
% OF SALES	36%	44%	40%
OPERATING INCOME [LOSS]	[62,245]	104,637	12,333
% OF SALES	[17%]	15%	3%
NET INCOME [LOSS]	[20,163]	99,115	14,428
% OF SALES	[6%]	15%	4%
NET INCOME PER SHARE BASIC AND DILUTED	[0.21]	1.13	0.18
CONSOLIDATED BALANCE SHEET			
CASH AND CASH EQUIVALENTS	124,177	168,157	3,530
WORKING CAPITAL	226,412	297,348	169,759
TOTAL ASSETS	551,396	672,331	422,835
STOCKHOLDERS' EQUITY	462,861	491,369	342,296

THESE ARE CHALLENGING TIMES,
BUT WE HAVE USED OUR TIME WISELY

INNOVATING,
RESEARCHING, DEVELOPING
INVESTING IN OUR FUTURE
WE ARE READY FOR THE CHALLENGES
THAT LIE AHEAD

ACCELERATING INNOVATION

WITH NEW PRODUCT DEVELOPMENT

IN FEBRUARY OF 2002, AXCELIS ANNOUNCED THE OPENING OF ITS ADVANCED TECHNOLOGY CENTER, A NEW 140,000-SQUARE-FOOT FACILITY DEDICATED TO NEXT-GENERATION SEMICONDUCTOR PROCESS DEVELOPMENT, PRODUCT DEMONSTRATION AND CUSTOMER TRAINING.

BEVERLY, MASSACHUSETTS
ROCKVILLE, MARYLAND

TO OUR SHAREHOLDERS:

2001 was a year of significant achievement for Axcelis even though the semiconductor industry entered the worst downturn in our 24-year history. In spite of this downturn, we strengthened our position in 300mm technology, forged new strategic alliances to expand our applications space, implemented lean enterprise initiatives to improve our margins, and developed important new customer relationships to increase our market share.

We have been prudent in managing our expenses during this difficult time to ensure that Axcelis will be ready when the recovery occurs. Instead of making deep cuts to improve short-term financial results, we have taken a longer-term perspective in managing our business. Our first priority has been to protect R&D, the lifeblood of our business. We increased R&D spending by over 10 percent to strengthen our existing portfolio and develop new front- and back-end-of-line applications for our customers' fabs. At the same time, we aggressively pursued reductions in general and administrative costs, and succeeded in reducing our quarterly expenses in this area by over 30 percent in 2001. We have taken great steps to maintain high morale in a tough environment by minimizing layoffs with innovative cost-reduction programs. Although we reduced our headcount by approximately 20 percent, our employees feel that we have made hard but wise choices that will keep the business moving forward through these difficult times and allow us to respond quickly in the upturn. Bottom line: we are confident we will emerge stronger in the next cycle.

INNOVATIVE NEW PRODUCTS

We continue to accelerate innovation through new product development. Major milestones included the introduction of second-generation 300mm semiconductor manufacturing tools and a visionary model for lifecycle service and support that harnesses the power of sophisticated performance diagnostics and optimization software. In 2001, we introduced the HC3 300mm high current ion implanter, the FusionES3i 300mm dry strip system and the Summit 300XT, a new rapid thermal processing system to complete our already strong 300mm product portfolio. We also introduced the IntegraNET data integration and management platform, which provides a framework for e-diagnostics and advanced process control. These innovative tools and services are delivering unprecedented levels of productivity and enabling new generations of devices using 0.10-micron technologies and below. A testament to our success includes significant wins at many of the industry's most advanced 200mm and 300mm fabs.

INVESTING IN THE FUTURE

Growing our intellectual property portfolio, and protecting it, is an essential ingredient of our future success. We are committed to making intelligent investments in our core product areas, as well as expanding our portfolio in evolving high-growth applications, including copper damascene integration schemes, non-volatile memory charge erasure and ultra-shallow junction formation technologies. We completed construction of our

AXCELIS INNOVATIONS

1999

AXCELIS DEVELOPS UNIQUE, ENABLING PROCESSES FOR STRIP OVER LOW K DIELECTRIC MATERIALS AND COPPER, FOCUSED ON MAINTAINING CRITICAL LOW K CHARACTERISTICS WHILE ACHIEVING HIGH STRIP SELECTIVITIES.

2000

AXCELIS LAUNCHES THE NEXT PHASE OF ITS E-BUSINESS STRATEGY, THE AXCELIS CONNECTION™, DRAMATICALLY REDUCING TRANSACTION COSTS AND SIMPLIFYING THE B2B INTERFACE FOR CUSTOMERS.

AXCELIS INTRODUCES THE MC3 300MM MEDIUM CURRENT ION IMPLANTER DESIGNED FOR LOW RISK TRANSITION TO 300MM PRODUCTION.

AXCELIS INTRODUCES THE GSDIII/LED TO COVER THE FULL RANGE OF PRODUCTION LOW ENERGY, HIGH DOSE APPLICATIONS, WHICH ENABLE ULTRA SHALLOW JUNCTION FORMATION.

TOYO, JAPAN

WORLDWIDE LOCATIONS

AXCELIS HAS KEY TECHNOLOGY CENTERS IN BEVERLY, MASSACHUSETTS, ROCKVILLE, MARYLAND AND TOYO, JAPAN THROUGH ITS JOINT VENTURE SUMITOMO EATON NOVA [SEN].

AXCELIS HAS SALES AND SERVICE OFFICES AT 68 LOCATIONS IN TWELVE COUNTRIES.

new Advanced Technology Center in Beverly; this center will be essential in the development of next generation applications for chip manufacturing. We also entered into three new strategic alliances to accelerate the expansion of our technology portfolio.

AGGRESSIVELY PURSUING NEW BUSINESS OPPORTUNITIES

China's emergence as a leading center for chip manufacturing is finally dawning, and we continue to lead in this market. Active in this area for fifteen years, Axcelis has the largest installed base of implant systems in China, and we are aggressively leveraging this position into all product areas. In 2001, we had great success with new fab opportunities in China, including a major win at Semiconductor Manufacturing International Corp. (SMIC), one of the nation's leading fabs. This region will continue to be a major area of focus for Axcelis in 2002.

MEETING BOTTOM-LINE CHALLENGES

We are aggressively pursuing ways to improve our gross margins and increase our overall profitability in the next cycle. Our commitment to operational excellence through programs like 'ship from cell' has resulted in dramatic improvements in cycle time, inventory management and product quality. We plan to extend this model by driving continued value chain improvements with an expanded outsourcing model for additional flexibility and increased efficiencies.

PEOPLE MAKE THE DIFFERENCE

Our employees continue to be our most important asset. This year, we introduced the Axcelis Fellows program to recognize those engineers and scientists who are driving the culture of innovation at Axcelis. Meanwhile, our field organization continues to build on a tradition of award-winning customer support as evidenced by our ranking in VLSI Research's top ten customer satisfaction survey for the 11th consecutive year. The collaboration of these organizations will make the difference.

Although the timing of the recovery is uncertain, we are better positioned than ever for success. Our technology portfolio is strong and expanding, we have a sound balance sheet, strong operational practices are in place, and the best human capital in the industry – to ensure excellence and innovation in all that we do.

Sincerely,

Mary Puma
President and CEO

Mike Luttati
Executive VP and COO

Neil Moses
Executive VP and CFO

2001

AXCELIS INTRODUCES THE HC3 300mm HIGH CURRENT IMPLANTER AND THE SUMMIT 300XT PROVIDING PRECISE PROCESS CONTROL AND SUPERIOR MANUFACTURING CAPABILITY REQUIRED FOR ULTRA SHALLOW JUNCTION FORMATION.

AXCELIS LAUNCHES THE FUSIONES3i GIVING IC MANUFACTURERS THE ABILITY TO HANDLE COPPER, LOW-K DIELECTRIC, DEEP TRENCH/VIA, AND OTHER DRY STRIP CHALLENGES WITH A SINGLE TOOL.

AXCELIS INTRODUCES IntegraNET™ DATA INTEGRATION AND MANAGEMENT SYSTEM, PROVIDING A PLATFORM FOR E-DIAGNOSTICS AND ADVANCED PROCESS CONTROL.

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

Robert A. Mionis
Senior Vice President - Worldwide Operations

Kevin M. O'Connor
Senior Vice President - Human Resources

Lynnette C. Fallon
Senior Vice President and General Counsel

Jan Paul van Maaren
Vice President and General Manager - Curing and Cleaning

Ted S. Miller
Vice President and General Manager - Global Service Solutions

Kevin M. Bisson
Vice President and Controller

MANAGEMENT

Craig M. Halterman
Vice President and Chief Information Officer

Charles F. Lesko
Vice President of Worldwide Sales

John M. Poate
Vice President and Chief Technology Officer

Robert J. McDonough
Vice President of Tax

Paul R. McKelvey
Vice President and Treasurer

BOARD OF DIRECTORS

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

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

Ned C. Lautenbach *
Partner, Clayton, Dubilier & Rice, Inc.

Philip S. Paul *
Chairman, Paul Capital Partners, L.L.C.

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

Patrick H. Nettles
Executive Chairman of CIENA Corporation

Naoki Takahashi
Director, Sumitomo Heavy Industries, Ltd.

H. Brian Thompson
Chief Executive Officer, Universal Telecommunications, Inc.

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

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.

* Audit Committee
** The members of the Compensation Committee are each of the directors other than Ms. Puma.

ANNUAL MEETING DATE & LOCATION

The annual meeting of stockholders will be held at 11:00 a.m. on Wednesday, May 1, 2002 at:
State Street Bank
225 Franklin Street
Boston, MA 02110

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 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 02199-7613

SEC FORM 10-K

Copies of the Company's 2001 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, MA 01915-1053
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
www.equiserve.com

WEBSITE

www.axcelis.com

AXCELIS TECHNOLOGIES
55 CHERRY HILL DRIVE
BEVERLY, MA 01950-1053
978 787 4000

WWW.AXCELIS.COM

FORM 10-K ↗

2001

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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, 2001

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

For the transition period from _____ to _____

Commission file number 000-30941

AXCELIS TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**34-1818596**
(State of incorporation)	(IRS Employer Identification No.)

55 Cherry Hill Drive
Beverly, Massachusetts 01915

(Address of principal executive offices, including zip code)

(978) 787-4000

(Registrant's telephone number, including area code)

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

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

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

Common Stock, $.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. ☒

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

Number of shares outstanding of the registrant's Common Stock, $.001 par value, as of February 26, 2002: 97,987,921

Documents incorporated by reference:

Portions of the definitive Proxy Statement for Axcelis Technologies, Inc.'s Annual Meeting of Stockholders to be held on May 1, 2002 are incorporated by reference into Part III of this Form 10-K.

Forward Looking Statements

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

PART I

Item 1: Business

Overview of Our Business

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

Industry Overview

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

Semiconductor manufacturers seek efficiency improvements through increased throughput, equipment utilization and higher manufacturing yields. Capacity is added by increasing the amount of manufacturing equipment in existing fabrication facilities and by constructing new fabrication facilities. During the period from early 1999 through 2000, semiconductor manufacturers met the increased demand for chips mostly by building new fabrication facilities, and by making additional equipment purchases to expand existing fabrication facilities. Periodic downturns, such as that experienced in 2001 and continuing into 2002 have had a severe adverse impact on the semiconductor industry and on suppliers to the semiconductor industry.

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

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

Ion Implantation Systems

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

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

A high energy implanter is typically used to implant dopants deep in the wafer, which allows improved isolation of adjoining transistors on the same chip. As a result, in recent years the use of high energy implanters has expanded into the manufacture of virtually all types of chips. They are used in the manufacture of smaller, more complex chips, such as those used in cellular phones and other hand held devices because they enable more functionality with less power consumption. They are also used for non-volatile memory applications such as FLASH memories to allow for multiple voltages on the same chip. These systems are typically multi-wafer or “batch” systems.

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

Most ion implant steps occur with the ion beam perpendicular to the wafer. A high tilt/medium current implanter, however, is primarily used for the implant step that requires the ion beam to be positioned at an angle to the wafer to implant dopants below preexisting features. The use of the high tilt/medium current implanter extends into some high energy applications to allow customers greater flexibility in selecting the most optimal combination of implanters for their needs. These systems are typically single wafer machines to allow for the high tilt capability.

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

Product Category	Product Name	Description
High Energy	**GSD/HE**	• 200mm high energy implantation for logic and memory chips
	GSD/VHE	• 200mm very high energy implantation for logic, memory chips and FLASH memory chips
	HE3	• 300mm high energy implantation for all types of chips
	GSD/HEmc	• 200mm high energy/medium current applications
High Current	**GSD/200E2**	• 200mm standard high current implanter
	GSDIII/LED	• 200mm high current implanter for low energy applications
	HC3	• 300mm high current implanter with low energy capability
High Tilt/ Medium Current	**8250HT**	• 200mm high tilt and medium current applications for all chips
	MC3	• 300mm high tilt and medium current applications for all chips

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

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

Curing and Cleaning Systems

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

The following chart lists our principal products in each category:

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

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

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

Thermal Processing Systems

We introduced our rapid thermal processing products in 1999. At a number of points during the manufacturing process, silicon wafers need to be heated rapidly, often to 900 degrees centigrade or higher, in order to complete chemical or electronic reactions. This heating process is referred to as rapid thermal processing, or RTP.

Our RTP machine employs a patented design to process a single wafer in a hot wall vertical reactor. The reactor has three zones that are heated by resistive coils, as well as an actively cooled base, which create a uniform temperature gradient from top to bottom. Rapid heating and cooling of the wafer is achieved by simply adjusting the vertical position of the wafer within the reactor. Most other RTP equipment manufacturers use lamp-based RTP systems.

The following chart lists our principal RTP products:

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

Our Summit series of RTP systems has a flexible design, offering both single and dual chamber systems. Its engineering incorporates recent developments in furnace design, temperature measurement, emission correction techniques and wafer handling.

Post Sales Support and Services

We offer our customers extensive post sales service and support throughout the lifecycle of the equipment we manufacture. We believe that more than 3,400 of our products, including products shipped by SEN, are in use worldwide. The service and support that we provide include spare parts, equipment upgrades, maintenance services and customer training. We offer service at 68 locations in twelve countries.

Our customer support network includes over 500 sales and marketing personnel and service engineers, including field service engineers, spare parts support staff and applications engineers. An additional 300 persons located at our manufacturing facilities work with our customers to provide advanced equipment support, applications support, customer training and documentation.

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

Sales and Marketing

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

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

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

Customers

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

that more than 3,400 of our products, including products shipped by SEN, are in use worldwide.

Net sales to our ten largest customers accounted for 50.6 %, 56.3%, and 59.1% of net sales, respectively, in 2001, 2000 and 1999. We expect that sales of our products to relatively few customers will continue to account for a high percentage of net sales for the foreseeable future. In 2001 no customer represented more than 10% of our net sales. In 2000, STMicroelectronics N.V. accounted for 13.9 % of net sales and in 1999, net sales to STMicroelectronics N.V., Motorola, Inc and Texas Instruments Incorporated accounted for 15.9%, 10.6% and 10.5%, respectively, of our net sales.

SEN Joint Venture

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

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

SEN is obligated to pay us royalties on their net sales of ion implantation products in accordance with the rates set forth in the license agreement. These rates were negotiated between Eaton Corporation and SEN in 1996. These royalty payments were $5.8 million in 2001, $13.5 million in 2000, and $3.8 million in 1999. The license agreement expires on December 31, 2004 if either we or SEN gives notice of termination by the end of 2003. If neither party gives such notice, the license agreement will automatically renew for successive five year periods. We expect that we will renegotiate the royalty rates in connection with any renewal of the license agreement.

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

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

Research and Development

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

We devote a significant portion of our personnel and financial resources to research and development programs and seek to maintain close relationships with our customers to remain responsive to their product needs. We have also sought to reduce the development cycle for new products through a collaborative process whereby our engineering, manufacturing and marketing personnel work closely together with one another and

with our customers at an earlier stage in the process. We also use 3D, computer-aided design, finite element analysis and other computer-based modeling methods to test new designs. We conduct our research and development programs at our facilities in Beverly, Massachusetts and in Rockville, Maryland. SEN also conducts research and development in Toyo, Japan.

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

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

Manufacturing

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

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

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

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

After testing, the system is disassembled and packaged to maintain cleanroom standards during shipment. Installation is itself not a complex process and does not require specialized skills. It is typically performed by a team of assemblers from the customer and ourselves. It includes placing and leveling the equipment at its

installation site, connecting it to sources of gas, water and electricity and recalibrating it to specifications that had previously been tested and met.

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

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

Competition

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

Ion Implantation Systems. In high energy equipment our principal competitor is Varian Semiconductor Equipment Associates, Inc. ("Varian"). In high current products, we and Applied Materials Inc. have substantial market shares. In high tilt/medium current equipment, where we have a small market share, Varian has a commanding market position. SEN is the largest manufacturer of ion implantation equipment in Japan and competes with Nissin Electric Co., Ltd., Ulvac Technologies, Inc., Varian and Applied Materials Inc. for sales in that market.

Curing and Cleaning Systems. Our principal competitors in the dry strip product market are, Mattson Technology Inc., and Novellus Systems, Inc. and our principal competitor in photostabilization is Ushio Inc.

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

Intellectual Property

We rely on patent, copyright, trademark and trade secret protection, as well as contractual restrictions, in the United States and in other countries to protect our proprietary rights in our products and our business. As of February 28, 2002, we had 163 patents issued in the United States and 294 patents granted in other countries, as well as 488 patent applications (70 in the United States and 418 in other countries) on file with various patent agencies worldwide. We intend to file additional patent applications as appropriate. Although patents are

important to our business, we do not believe that we are substantially dependent on any single patent or any group of patents.

We have trademarks, both registered and unregistered, that are maintained to provide customer recognition for our products in the marketplace. We have a license from Eaton to use the Eaton trademark and logo for a fixed period of time in connection with the sale of semiconductor manufacturing equipment.

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

There has been substantial litigation regarding patent and other intellectual property rights in semiconductor-related industries. On January 8, 2001, we filed suit in federal district court in Boston, Massachusetts against Applied Materials, Inc., alleging infringement of Axcelis' U.S. Patent No. 4,667,111, tortious interference with contract and prospective advantageous business relationships, and unfair competition and trade practices. That patent survived two re-examination proceedings initiated by Applied Materials, Inc before the United States Patent and Trademark Office. The lawsuit is still pending. (See Item 3. "Legal Proceedings".)

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

Backlog

As of December 31, 2001, our backlog was $73.9 million, as compared to $211.0 million and $93.8 million, respectively, for the years ended 2000 and 1999. Our policy is to include in backlog only those orders for which we have accepted purchase orders. All orders are subject to cancellations or rescheduling by customers with limited or no penalties. Due to possible changes in system delivery schedules, cancellations of orders and delays in systems shipments, our backlog at any particular date is not necessarily indicative of our actual sales for any succeeding period. In addition, our backlog at the beginning of a quarter typically does not include all orders required to achieve our sales objectives for that quarter and is not a reliable indicator of our future sales.

Employees

As of December 31, 2001, we had 1,950 full-time and 58 temporary employees worldwide, of which 1,709 were employed in North America, 161 in Asia and 138 in Europe. All of our employees have entered into confidentiality and noncompetition agreements with us. At that date, none of our employees based in the United States was represented by a union, and we have never experienced a work stoppage, slowdown or strike. Our employees based in Germany are subject to collective bargaining agreements. We consider our relationship with our employees to be good.

Environmental

We are subject to environmental laws and regulations in the countries in which we operate that regulate, among other things: air emissions; water discharges; and the generation, use, storage, transportation, handling and disposal of solid and hazardous wastes produced by our manufacturing, research and development and sales activities. As with other companies engaged in like businesses, the nature of our operations exposes us to the risk of environmental liabilities, claims, penalties and orders. We believe, however, that our operations are

in substantial compliance with applicable environmental laws and regulations and that there are no pending environmental matters that would have a material impact on our business.

Item 2: Properties

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

Our manufacturing facilities are listed below:

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

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

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

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

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

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

Item 3: Legal Proceedings

On January 8, 2001, we filed a lawsuit against Applied Materials, Inc. (“Applied”) in the United States District Court for the District of Massachusetts. The complaint alleges that Applied’s medium current/high energy ion implanter machine launched in November 2000 infringes our patent for ion implantation equipment using radio frequency linear accelerator technology. We have also alleged that Applied unlawfully interfered with our existing and future contracts. On January 18, 2001, we filed a motion for a preliminary injunction for the reason, among others, that infringement at the time of transition between equipment capable of handling 200 mm wafers and equipment capable of handling 300 mm wafers would

irreparably harm us. Through this motion, we asked the court to stop Applied from manufacturing, selling or offering to sell its medium current/high energy ion implanter machine and to order Applied to remove all Axcelis patented technology from implanters that Applied may have placed in chipmakers' plants for process development trials. Applied filed counterclaims of unfair competition, defamation, and tortious interference with prospective economic advantage, all of which it contends arise from certain communications allegedly made by Axcelis about the lawsuit and its claims of infringement.

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

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

None

Executive Officers and Key Management

Executive Officers

Mary G. Puma , 44, has been the Company's Chief Executive Officer since January 2002. From May 2000 until January 2002, Ms. Puma was the Company's President and Chief Operating Officer, prior to which she served as a Vice President of the Company from February 1999. In 1998, she became General Manager and Vice President of the Implant Systems Division of Eaton Corporation, a global diversified industrial manufacturer. In May 1996, she joined Eaton as General Manager of the Commercial Controls Division. Prior to joining Eaton, Ms. Puma spent 15 years in various marketing and general management positions for General Electric Company. Ms. Puma is a director of Nordson Corporation.

Michael J. Luttati, 46, has been the Company's Executive Vice President and Chief Operating Officer since January 2002 and a Senior Vice President since July 2000. Mr. Luttati was General Manager, Ion Implant and Rapid Thermal Processing Systems from January 2000 until January 2002, prior to which he served as Director, Sales and Service from November 1998. Prior to joining us, Mr. Luttati served as Vice President, North America Sales Operations of Teradyne Inc., a manufacturer of semiconductor test and interconnection products, from 1996 to 1998 and, from 1983 to 1996, he held several other sales and marketing positions with Teradyne.

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

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

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

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

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

Ted S. Miller, 43, has been our Vice President and General Manager – Global Service Solutions since July 2000 and was our Director of Global Customer Service since the beginning of 2000. Prior to joining us,

Mr. Miller most recently served as Division Marketing Manager, Global Customer Service at Teradyne, Inc. and since 1980, he held various other marketing and other positions at Teradyne, including ten years experience in the semiconductor service segment.

Jan-Paul van Maaren, 40, has been our Vice President and General Manager of our Curing and Cleaning business since December 2001. Prior to that, Dr. van Maaren held several management positions at Axcelis since joining us in 1997, most recently, as Director of Business Excellence for Ion Implantation and Rapid Thermal Processing systems. Prior to joining Axcelis, Dr. van Maaren held various marketing and management positions at Honeywell.

Key Management

Craig M. Halterman, 38, has been our Vice President and Chief Information Officer since July 2000 and was our Director of Information Technology since the beginning of 2000. Prior to joining us, Mr. Halterman was Information Technology Director at Honeywell/Allied Signal in its space and defense systems business since 1997. Prior to that, Mr. Halterman held various information technology positions at The Dow Chemical Co., Thompson Consumer Electronics, General Electric Co. and RCA Consumer Electronics.

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

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

PART II

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

Our common stock has traded on the Nasdaq stock market under the symbol ACLS since our initial public offering on July 11, 2000. The following table sets forth the high and low closing sale prices as reported on the Nasdaq stock market during each quarter since our initial public offering. As of February 26, 2002, we had approximately 11,748 stockholders of record. Other than the $300 million cash dividend paid to Eaton out of the proceeds from our initial public offering in 2000, Axcelis has not paid and does not anticipate paying cash dividends in the future.

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

Item 6: Selected Financial Data

The following selected consolidated statements of operations data for each of the three years ended December 31, 2001, 2000 and 1999 and the consolidated balance sheet data as of December 31, 2001 and 2000 has been derived from the audited consolidated financial statements contained in Item 8 of Part II of this Form 10-K. The selected consolidated statements of operations data for each of the years ended December 31, 1998 and 1997 and the consolidated balance sheet data as of December 31, 1998 has been derived from the audited financial statements contained in our registration statement on Form S-1 filed on May 5, 2000, as amended. The consolidated balance sheet data as of December 31, 1997 has been derived from our unaudited consolidated financial data.

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

	Years ended December 31,				
	2001	**2000**	**1999**	**1998**	**1997**
	(in thousands, except per share amounts)				
Consolidated statements of operations data:					
Net sales	$365,264	$680,401	$397,267	$265,709	$460,010
Gross profit	131,025	299,309	157,082	64,229	172,802
Operating income (loss)	(62,245)	104,637	12,333	(137,909)	(72,035)
Net income (loss)	(20,163)	99,115	14,428	(82,047)	(61,467)
Net income (loss) per share:					
Basic	$ (0.21)	$ 1.13	$ 0.18	$ (1.03)	$ (0.77)
Diluted	$ (0.21)	$ 1.13	$ 0.18	$ (1.03)	$ (0.77)

Shares used in computing per share amounts:					
Basic	97,215	88,063	80,000	80,000	80,000
Diluted	97,215	88,064	80,000	80,000	80,000
Consolidated balance sheet data:					
Cash and cash equivalents	$124,177	$168,157	$ 3,530	$ 3,338	$ 3,479
Working capital	226,412	297,348	169,759	91,028	149,041
Total assets	551,396	672,331	422,835	341,121	457,567
Stockholders' equity	462,861	491,369	342,296	269,161	349,192

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

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

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

Overview

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

Separation from Eaton Corporation

Prior to the initial public offering on July 10, 2000, we were a wholly owned subsidiary of Eaton Corporation (Eaton). On June 30, 2000, Eaton substantially completed the transfer to us of all of the assets of its semiconductor equipment operations that were not previously owned by us, and we assumed the related liabilities. On December 29, 2000, Eaton completed the divestiture of its investment in Axcelis by distributing its remaining 82% ownership interest in Axcelis in the form of a spin-off to Eaton shareholders. We also entered into various other agreements with Eaton which provided for transitional services and support, including those associated with voice and data transmissions and other data-related operations, accounts receivable, accounts payable, fixed assets, payroll, general accounting, financial accounting consolidation, cash management, human resources, tax, legal and real estate. Under these agreements, we reimbursed Eaton for its direct and indirect costs of providing these services until completion of the divestiture, and thereafter, for a limited time, we reimbursed Eaton for its costs plus an additional fee. The transition periods covered by these agreements generally expired on December 29, 2001. The agreements did not necessarily reflect the costs of obtaining these services from unrelated third parties or of providing the applicable services in-house. However, management believed that purchasing these services from Eaton provided an efficient means of obtaining these services during the transition period.

Basis of Presentation

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

Critical Accounting Policies

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

The Company believes the following critical accounting policies affect its more significant judgments and estimates used in the preparation of its consolidated financial statements.

Revenue Recognition

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

Deferred Tax Assets

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

Accounts Receivable

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

Inventory

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

Accrued Warranty and Installation Costs

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

Results of Operations

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

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

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

Net Sales

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

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

accounted for $73.0 million in total sales in fiscal 2001, a decrease of $73.0 million, or 50.0%, as compared to $146.0 million in fiscal 2000.

Gross Profit

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

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

Research and Development

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

Selling

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

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

General and Administrative

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

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

Amortization of Goodwill and Intangible Assets

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

Income (Loss) from Operations

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

Other Income (Expense)

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

Income Taxes (Credit)

The company had an income tax credit of $20.2 million in fiscal 2001 as compared to income tax expense of $45.2 million in fiscal 2000. Our effective income tax rate was 50.1% in fiscal 2001 as compared to 31.3% in fiscal 2000. The tax rate in both periods differs from the U.S. federal statutory rate primarily due to undistributed nontaxable equity income from SEN and credits from increased research activities. See Note 13 to the Consolidated Financial Statements contained in Item 8 of this Form 10-K.

Net Income (Loss)

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

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

Net Sales

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

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

Gross Profit

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

Research and Development

Research and development expense was $68.8 million in fiscal 2000, an increase of $17.2 million, or

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

Selling

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

General and Administrative

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

Amortization of Goodwill and Intangible Assets

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

Income from Operations

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

Other Income (Expense)

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

Income Taxes

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

Net Income (Loss)

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

Liquidity and Capital Resources

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

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

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

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

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

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

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

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

Recent Accounting Pronouncements

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

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

Outlook

The Company’s performance in 2001 in comparison to 2000 and 1999 is illustrative of the highly cyclical nature of the semiconductor industry in general, and in particular, of the semiconductor capital equipment sector. Periodic downturns, such as that experienced in 2001 and continuing into 2002, have had a severe adverse impact on the semiconductor industry and on suppliers to the semiconductor industry, including us. Our business depends in significant part upon capital expenditures by semiconductor manufacturers, especially manufacturers that are opening new or expanding existing fabrication facilities. The level of capital expenditures by these manufacturers depends upon the current and anticipated market demand for semiconductors and the products utilizing them, the available manufacturing capacity in manufacturers' fabrication facilities, and the ability of manufacturers to increase productivity in existing facilities without incurring additional capital expenditures. Our outlook for 2002 is dependent on whether our customers decide to expand existing fabrication facilities or build new facilities, and it is very difficult for us to predict such capital investment. We derive most of our revenues from the sale of a relatively small number of expensive products to a small number of customers. The list prices on these products range from $150,000 to over $5.0 million. At our current sales level, each sale, or failure to make a sale, could have a material effect on us in a particular quarter.

In addition, the continued requirements for investments in engineering, research and development and marketing necessary to develop new products and to maintain extensive customer service and support capabilities limit our ability to reduce expenses during downturns in proportion to declining sales.

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

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

Item 7a: Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Sensitivity

Axcelis' exposure to market risk for changes in interest rates relates primarily to our investment portfolio, which consists entirely of cash-equivalents as of December 31, 2001. The primary objective of our investment activities is to preserve principal while maximizing yields without significantly increasing risk. This is accomplished by investing in marketable high investment grade securities, and by limiting exposure to any one issue or issuer. We do not use derivative financial instruments in managing our investment portfolio and, due to the nature of our investments, we do not expect our operating results or cash flows to be affected to any significant degree by any change in market interest rates. As of December 31, 2001, all investments mature within 90 days and are carried at cost, which approximates fair value.

Foreign Currency Exchange Risk

Prior to our separation from Eaton, our exposure to foreign currency exchange rate risk was managed on an enterprise-wide basis as part of Eaton's risk management strategy. Having now separated from Eaton, we manage our exchange rate risk on an independent basis. Currently, substantially all of our sales are billed in U.S. dollars, thereby reducing the impact of fluctuations in foreign exchange rates on our results. Our investment in SEN and our royalty and equity income from SEN are subject to foreign currency exchange risks. The effect of a 10% depreciation of the Japanese yen compared to the U.S. dollar would result in a write-down in the Company's investment in SEN and a corresponding increase in other comprehensive loss (included in stockholders' equity) of $4.8 million at December 31, 2001.

Item 8: Financial Statements and Supplementary Data

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

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

None

PART III

Item 10: Directors and Executive Officers of the Registrant

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

Item 11: Executive Compensation

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

Item 12: Security Ownership of Certain Beneficial Owners and Management

The information required by Item 12 of Form 10-K is incorporated by reference from the information contained in the section captioned "Share Ownership" in the Proxy Statement.

Item 13: Certain Relationships and Related Transactions

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

PART IV

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

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

1) Financial Statements:

2) Financial Statement Schedules:

Schedule II—Valuation and Qualifying Accounts for the fiscal years ended December 31, 2001, 2000 and 1999

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

(b) Reports on Form 8-K

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

(c) Exhibits

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

(d) Financial Statement Schedules

The response to this portion of Item 14 is submitted as a separate section of this report.

Report of Ernst & Young LLP, Independent Auditors

Board of Directors and Stockholders
Axcelis Technologies, Inc.

We have audited the accompanying consolidated balance sheets of Axcelis Technologies, Inc. (the "Company") as of December 31, 2001 and 2000, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2001. Our audits also included the financial statement schedule listed in the Index at Item 14(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Axcelis Technologies, Inc. at December 31, 2001 and 2000, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2001, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ ERNST & YOUNG LLP

Boston, Massachusetts
January 22, 2002

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

	Year Ended December 31,		
	2001	**2000**	**1999**
Net sales	$ 365,264	$680,401	$397,267
Cost of products sold	234,239	381,092	240,185
Gross profit	131,025	299,309	157,082
Operating expenses:			
Research & development	76,538	68,768	51,599
Selling	49,439	56,427	37,946
General & administrative	58,014	60,198	45,925
Amortization of goodwill & intangible assets	9,279	9,279	9,279
Income (loss) from operations	(62,245)	104,637	12,333
Other income (expense):			
Royalty income	6,463	15,054	5,854
Equity income of Sumitomo Eaton Nova Corporation	12,205	19,570	1,338
Interest income	5,400	5,801	—
Other-net	(2,224)	(790)	28
Income (loss) before income taxes	(40,401)	144,272	19,553
Income taxes (credit)	(20,238)	45,157	5,125
Net income (loss)	$ (20,163)	$ 99,115	$ 14,428
Basic net income (loss) per share	$ (0.21)	$ 1.13	$ 0.18
Diluted net income (loss) per share	$ (0.21)	$ 1.13	$ 0.18
Shares used in computing:			
Basic net income (loss) per share	97,215	88,063	80,000
Diluted net income (loss) per share	97,215	88,064	80,000

See accompanying Notes to Consolidated Financial Statements

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

	December 31,	
	2001	**2000**
ASSETS		
Current assets:		
Cash & cash equivalents	$124,177	$168,157
Accounts receivable	63,057	150,482
Inventories	105,339	122,036
Deferred income taxes & other current assets	18,622	26,851
Total current assets	311,195	467,526
Property, plant & equipment, net	92,618	75,653
Investment in Sumitomo Eaton Nova Corporation	48,183	44,915
Goodwill	39,282	42,977
Intangible assets	14,601	20,418
Other assets	45,517	20,842
Total assets	$551,396	$672,331
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 32,602	$ 46,855
Payable to Eaton Corporation	—	25,818
Accrued compensation	6,966	17,686
Warranty reserve	24,218	33,324
Income taxes payable	—	31,153
Other current liabilities	20,997	15,342
Total current liabilities	84,783	170,178
Deferred income taxes	—	7,391
Other long-term liabilities	3,752	3,393
Stockholders' equity:		
Preferred stock, $0.001 par value, 30,000 shares authorized; none outstanding	—	—
Common stock, $0.001 par value, 300,000 shares authorized; 97,495 shares issued and 97,375 shares outstanding at December 31, 2001; 97,050 shares issued and outstanding at December 31, 2000	97	97
Additional paid-in capital	440,638	437,472
Treasury stock-at cost	(1,218)	—
Retained earnings	38,519	58,682
Accumulated other comprehensive loss	(15,175)	(4,882)
Total stockholders' equity	462,861	491,369
Total liabilities and stockholders' equity	$551,396	$672,331

See accompanying Notes to Consolidated Financial Statements

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

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Treasury Stock	Parent Company Investment	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total
Balance at December 31, 1998	80,000	$80	—	—	$274,901	—	$ (5,820)	$269,161
Comprehensive income:								
Net income	—	—	—	—	14,428	—	—	14,428
Foreign currency translation adjustments	—	—	—	—	—	—	291	291
Total comprehensive income	—	—	—	—	—	—	—	14,719
Net transfers from Eaton Corporation	—	—	—	—	58,416	—	—	58,416
Balance at December 31, 1999	80,000	80	—	—	347,745	—	(5,529)	342,296
Comprehensive income:								
Net income	—	—	—	—	40,433	$58,682	—	99,115
Foreign currency translation adjustments	—	—	—	—	—	—	647	647
Total comprehensive income	—	—	—	—	—	—	—	99,762
Initial public offering	17,050	17	$348,568	—	—	—	—	348,585
Dividend paid to Eaton Corporation ($3.75 per share)	—	—	—	—	(300,000)	—	—	(300,000)
Net transfers from Eaton Corporation	—	—	—	—	726	—	—	726
Reclassification of parent company investment to additional paid-in capital	—	—	88,904	—	(88,904)	—	—	—
Balance at December 31, 2000	97,050	97	437,472	—	—	58,682	(4,882)	491,369
Comprehensive loss:								
Net loss	—	—	—	—	—	(20,163)	—	(20,163)
Foreign currency translation adjustments	—	—	—	—	—	—	(10,293)	(10,293)
Total comprehensive loss	—	—	—	—	—	—	—	(30,456)
Exercise of stock options	133	—	2,296	—	—	—	—	2,296
Issuance of shares under Employee Stock Purchase Plan	312	—	870	—	—	—	—	870
Acquisition of treasury shares	—	—	—	$(1,218)	—	—	—	(1,218)
Balance at December 31, 2001	97,495	$97	$440,638	$(1,218)	$ —	$38,519	$(15,175)	$462,861

See accompanying Notes to Consolidated Financial Statements

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

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

See accompanying Notes to Consolidated Financial Statements

AXCELIS TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Nature of Business and Basis of Presentation

Axcelis Technologies, Inc. ("Axcelis" or the "Company"), a wholly owned subsidiary of Eaton Corporation ("Eaton") prior to July 10, 2000, is a leading producer of ion implantation, dry strip and photostabilization equipment used in the fabrication of semiconductors in the United States, Europe and Asia Pacific. The Company also produces rapid thermal processing equipment, which is used in semiconductor manufacturing primarily before and after the ion implantation process. In addition, the Company provides extensive aftermarket service and support, including spare parts, equipment upgrades, maintenance services and customer training. The Company has a 50-50 joint venture with Sumitomo Heavy Industries, Ltd. in Japan. This joint venture, which is known as Sumitomo Eaton Nova Corporation, or SEN, licenses technology from the company for ion implantation, has exclusive rights to the territory of Japan and is the leading producer of ion implantation equipment in Japan.

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

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

Note 2. Significant Accounting Policies

Principles of Consolidation

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

Use of Estimates

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

Foreign Currency

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

Cash and Cash Equivalents

Cash and cash equivalents are highly liquid investments (primarily time deposits) acquired with a remaining maturity of three months or less at the time of acquisition.

Inventories

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

Long-Lived Assets

Depreciation and amortization are computed by the straight-line method for financial statement purposes. The historical cost of buildings is depreciated over forty years and machinery and equipment principally over three to ten years. Substantially all goodwill is amortized over fifteen years. Intangible assets, consisting of developed technology, are amortized over seven years.

Goodwill and other long-lived assets are reviewed for impairment losses whenever events or changes in circumstances indicate the carrying amount may not be recoverable. Events or circumstances that would result in an impairment review primarily include operations reporting sustained losses or a significant change in the use of an asset. The asset would be considered impaired when the future net undiscounted cash flows generated by the asset are less than its carrying value. An impairment loss would be recognized based on the amount by which the carrying value of the asset exceeds its fair value.

Concentration of Credit Risk

Financial instruments, which potentially expose Axcelis to concentrations of credit risk, consist principally of accounts receivable and cash equivalents. These financial instruments are recorded at cost, which approximates fair value. Axcelis' customers consist of semiconductor manufacturers located throughout the world. Axcelis' net sales to its ten largest customers accounted for 50.6%, 56.3% and 59.1% of net sales in 2001, 2000 and 1999, respectively. Axcelis performs ongoing credit evaluations of its customers' financial condition and generally requires no collateral to secure accounts receivable. For selected overseas sales, Axcelis requires customers to enter into letters of credit. Axcelis maintains a reserve for potentially uncollectible accounts receivable based on its assessment of the collectibility of accounts receivable.

Revenue Recognition

Axcelis recognizes sales at the time of shipment to the customer. The costs of system installation at the customer's site are accrued at the time of shipment. Management believes the customer's post delivery acceptance provisions and installation process have been established to be routine, commercially inconsequential and perfunctory because the process is a replication of the pre-shipment procedures. The majority of Axcelis' systems are designed and tailored to meet the customer's specifications as outlined in the contract between the customer and Axcelis. To ensure that the customer's specifications are satisfied, per contract terms, the systems are tested at Axcelis' facilities prior to shipment, normally with the customer present, under conditions that substantially replicate the customer's production environment and the customer's criteria are confirmed to have been met. Axcelis has never failed to successfully complete a system installation. Should an installation not be successfully completed, the contractual provisions do not provide for forfeiture, refund or other purchase price concession beyond those prescribed by the provisions of the Uniform Commercial Code applicable generally to such transactions. Installation is non-complex and does not require specialized skills, and the related costs are predictable and insignificant to the total purchase price. Axcelis has a demonstrated history of customer acceptance subsequent to shipment and installation of these systems.

Shipping and Handling Costs

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

Stock-Based Compensation

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

Income Taxes

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

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

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

Beginning in 2001, all of Axcelis' operations outside the United States account and pay for income taxes related to their operations. Prior to 2001, for those operations which have not accounted and paid for income

taxes related to their operations, the consolidated statements of operations include an allocation of Eaton's foreign income taxes in amounts generally equivalent to the provisions which would have resulted had Axcelis filed separate income tax returns for the years presented. These operations have also been allocated foreign deferred income taxes based on the estimated differences between the book and tax bases of their assets and liabilities.

Net Income (Loss) Per Share

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

Reclassifications

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

Recent Accounting Pronouncements

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

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

Note 3. Accounts Receivable

The components of accounts receivable follow (in thousands):

	December 31,	
	2001	2000
Trade	$ 66,758	$141,676
Sumitomo Eaton Nova Corporation	401	10,915
	67,159	152,591
Allowance for doubtful accounts	(4,102)	(2,109)
	$ 63,057	$150,482

Note 4. Inventories

The components of inventories follow (in thousands):

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

Note 5. Property, Plant & Equipment

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

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

Note 6. Goodwill & Other Intangible Assets

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

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

Note 7. Financing Arrangements

Revolving Credit Facility

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

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

Note 8. Defined Contribution Plan

During 2000, the Company established the Axcelis Long-Term Investment Plan, a defined contribution plan that became effective on January 1, 2001. All regular employees are eligible to participate and may contribute up to 17% of their eligible compensation, subject to limitations set by federal income tax regulations. The Company matches 50% of contributions for the first 6% of eligible pay contributed by the

employee. Beginning in January of 2002, the Company's matching contribution was changed to reflect a guaranteed match of 100% of contributions for the first 6% of eligible pay with a maximum match of $1,000. In addition, the Company has the option to match up to 100% of contributions, capped in combination with the guaranteed match, at a total of 6% of eligible pay contributed by the employee. Under this plan, $2.7 million was recognized as expense in 2001. No expense was recognized in 2000.

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

Note 9. Stock Option Plans

Axcelis Stock Option Plan

During 2000, the Company adopted the Axcelis Technologies, Inc. 2000 Stock Plan (the Plan), a stock award and incentive plan which permits the issuance of options, stock appreciation rights, restricted stock, and performance awards to selected employees, directors and consultants of the Company. The Plan reserved 18.5 million shares of common stock for grant under the Plan, which maximum amount increases annually by the lesser of (i) five percent (5%) of the then number of outstanding shares of Common Stock, (ii) 5,000,000 shares or (iii) such lesser amount as may be determined by the Board. The effect of this provision in 2001 was to increase the shares available for grant under the Plan by 4,875,742. Expiration of options or stock appreciation rights are based on award agreements, or in the case of incentive stock options, expire ten years from the date of grant. Non-qualified stock options may, if approved by the Board of Directors, have a stated term in excess of ten years. Generally, options granted to employees terminate upon termination of employment. Under the terms of the Plan, the exercise price, determined by the Board of Directors, may not be less than the fair market value of a share of the Company's common stock on the date of grant.

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

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

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

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

Stock Options for Eaton Common Shares Granted to Axcelis Employees

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

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

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

Pro Forma Disclosure

As permitted under Statement of Financial Accounting Standard (SFAS) No. 123, Accounting for Stock-Based Compensation, Axcelis has elected to follow APB No. 25, Accounting for Stock Issued to Employees, and related interpretations in accounting for stock-based awards to employees. Under APB

No. 25, the Company recognizes no compensation expense with respect to such awards, since on the date the options were granted, the option price equaled the market value of the common shares.

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

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

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

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

Note 10. Stockholders' Equity

Common and Preferred Stock

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

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

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

Employee Stock Purchase Plan

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

Note 11. Lease Commitments

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

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

Note 12. Business Segment and Geographic Region Information

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

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

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

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

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

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

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

Note 13. Income Taxes

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

	December 31,		
	2001	2000	1999
United States	$(58,643)	$108,296	$12,999
Foreign	6,037	16,406	5,216
Equity income of Sumitomo Eaton Nova Corporation	12,205	19,570	1,338
	$(40,401)	$144,272	$19,553

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

	December 31,		
	2001	2000	1999
Current:			
United States			
Federal	$ (6,859)	$44,761	$4,150
State	(556)	3,546	1,883
Foreign	3,194	5,205	1,850
	(4,221)	53,512	7,883

Deferred:			
United States	(14,708)	(8,355)	(2,211)
Foreign	(1,309)	—	(547)
	(16,017)	(8,355)	(2,758)
	$(20,238)	$45,157	$5,125

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

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

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

	Current Assets	Long-term Assets	Long-term Liabilities
2001			
Inventories	$10,819	—	—
Accrued warranty	5,645	—	—
Accrued vacation	1,280	—	—
Property, plant & equipment	—	$ (4,472)	—
Intangible assets	—	(5,144)	—
Net operating loss carryforwards	—	22,148	—
Tax credit carryforwards	—	3,048	—
Other items	(879)	1,592	—
	$16,865	$17,172	—
2000			
Inventories	$11,309	—	—
Accrued warranty	8,300	—	—
Accrued vacation	2,206	—	—
Property, plant & equipment	—	—	$(2,032)
Intangible assets	—	—	(5,245)
Other items	3,596	—	(114)
	$25,411	—	$(7,391)

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

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

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

Note 14. Significant Customers

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

Note 15. Sumitomo Eaton Nova Corporation

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

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

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

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

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

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

Note 16. Transactions with Eaton Corporation

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

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

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

Note 17. Quarterly Results of Operations (unaudited)

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

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

SIGNATURES

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

AXCELIS TECHNOLOGIES, INC.

DATED: MARCH 11, 2002

By: /s/ MARY G. PUMA
Mary G. Puma, Chief Executive Officer

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

Signature	Title	Date
/s/ MARY G. PUMA Mary G. Puma	Director and Principal Executive Officer	March 11, 2002
/s/ CORNELIUS F. MOSES, III Cornelius F. Moses, III	Principal Accounting and Financial Officer	March 11, 2002
/s/ ALEXANDER M. CUTLER Alexander M. Cutler	Director	March 11, 2002
/s/ STEPHEN R. HARDIS Stephen R. Hardis	Director	March 11, 2002
/s/ NED C. LAUTENBACH Ned C. Lautenbach	Director	March 11, 2002
/s/ PATRICK H. NETTLES Patrick H. Nettles	Director	March 11, 2002
/s/ PHILIP S. PAUL Philip S. Paul	Director	March 11, 2002
/s/ NAOKI TAKAHASHI Naoki Takahashi	Director	March 11, 2002
/s/ H. BRIAN THOMPSON H. Brian Thompson	Director	March 11, 2002
/s/ GARY L. TOOKER Gary L. Tooker	Director	March 11, 2002

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